


2025
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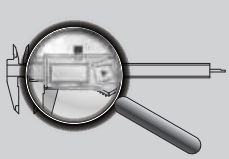
# MEASURING INSTRUMENTS

CATALOGUE NO. 208

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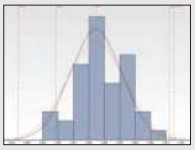
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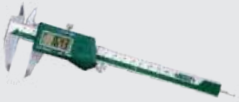

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DATA MANAGEMENT SOFTWARES

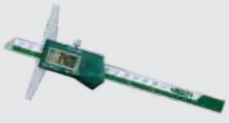

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BORE GAUGES


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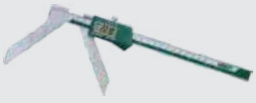

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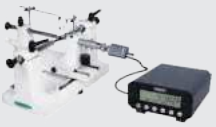

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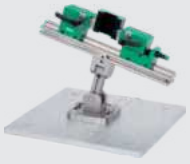

CMM


MEASURING ARMS


STYLI FOR CMM

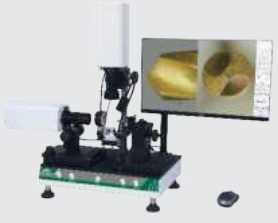

GAUGE BLOCK STANDS FOR CMM

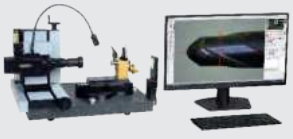

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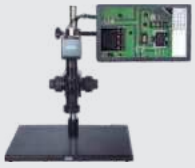

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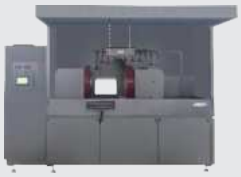

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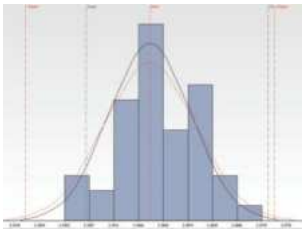

DIGITAL MULTIMETERS


DIGITAL AC/DC CLAMP METERS


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# 01 DATA OUTPUT AND SOFTWARE



**Data Management Softwares**
**Page 2-4**



**Wireless Data Transmission Systems**
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**Data Output Cables**
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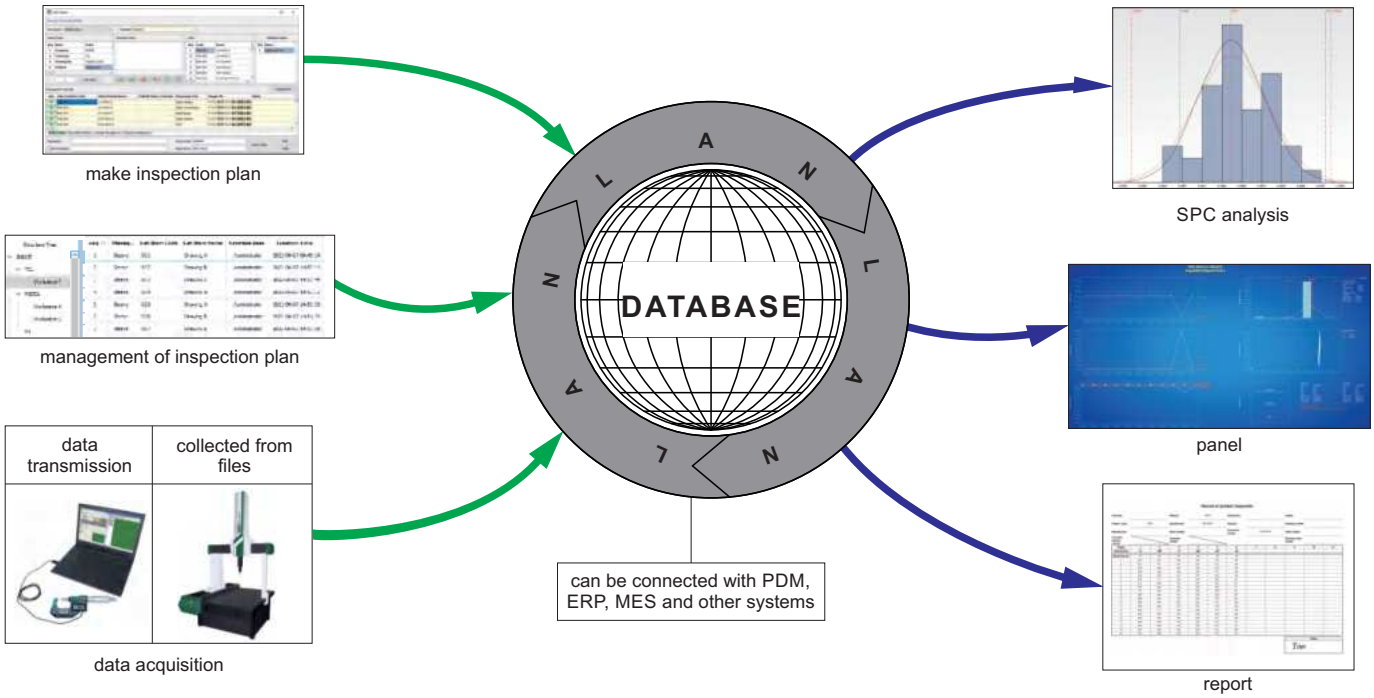


**Mobile Workbenches**
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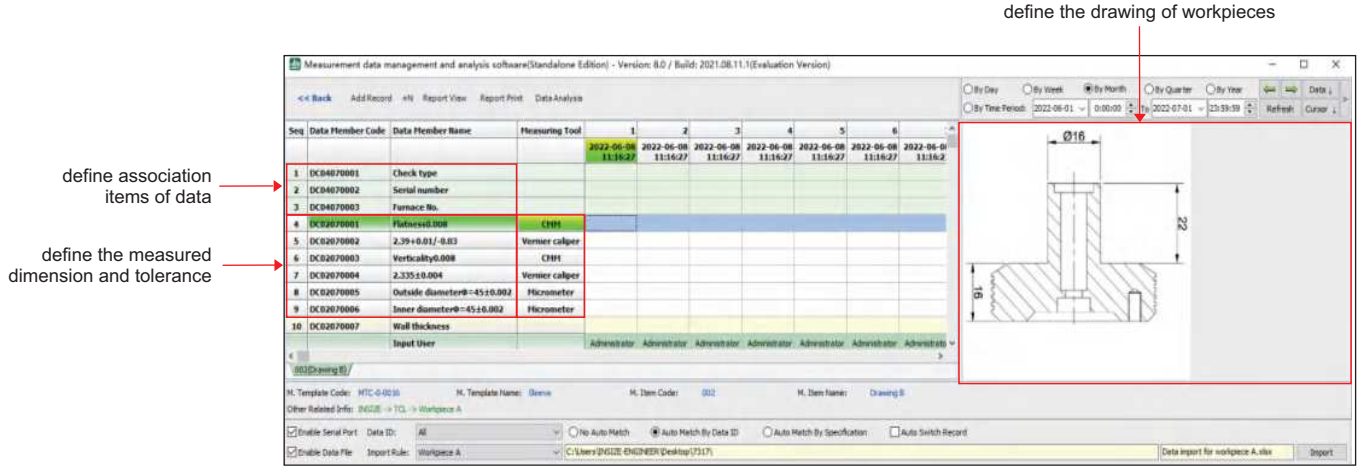
# MEASUREMENT DATA MANAGEMENT AND ANALYSIS SOFTWARE



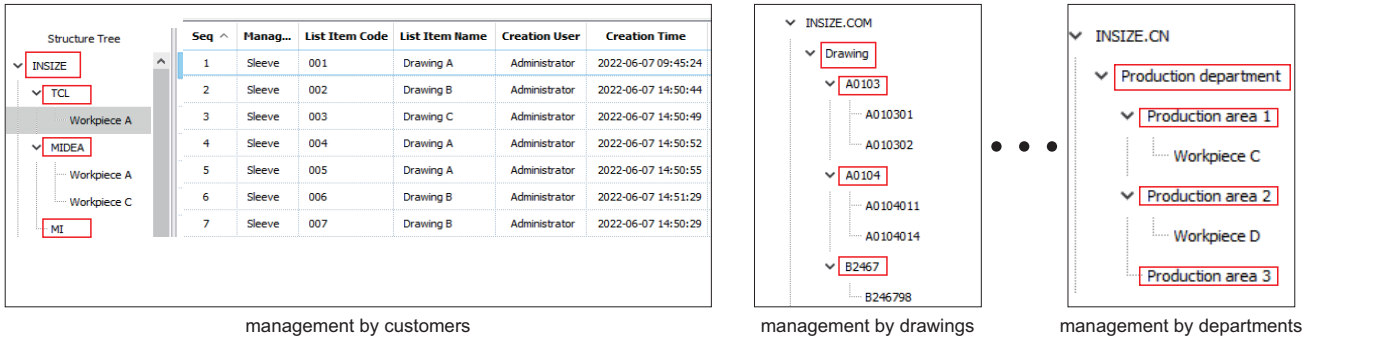

## Make inspection plan

VIDEO

- Define the dimensions, tolerances, control range and other parameters of workpieces




## Management of inspection plan




management by customers | management by drawings | management by departments

To be continued



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Continued from previous page

## Data acquisition



manual input



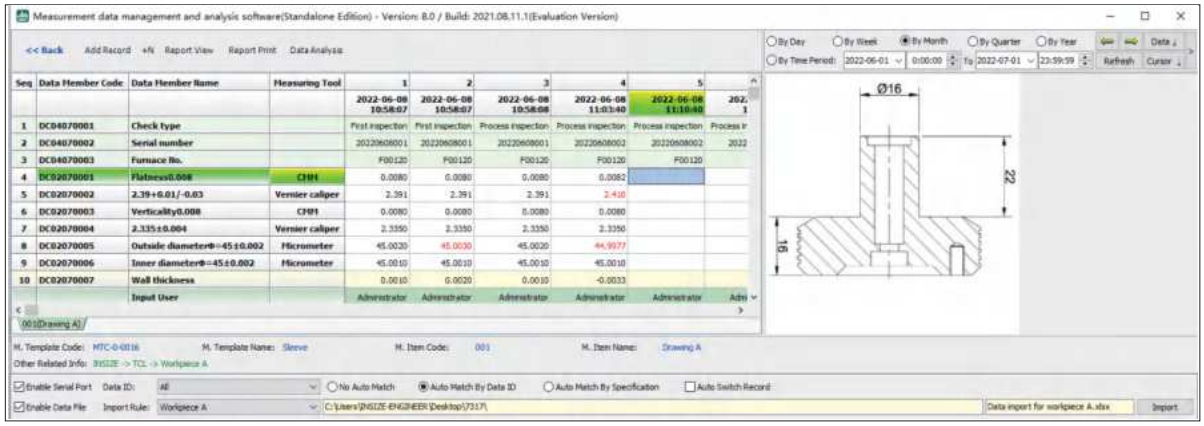
data transmission



file parsing



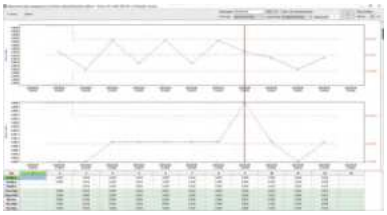
screen capture



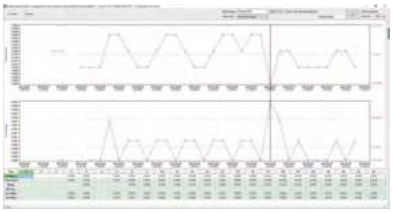

measurement interface

## SPC

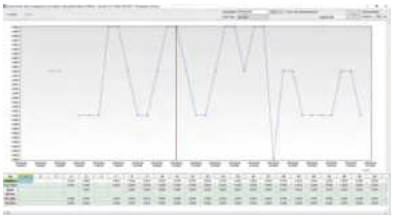
- Provide variety of quality analysis control charts



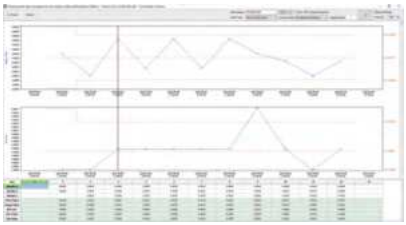
Xbar-R control chart



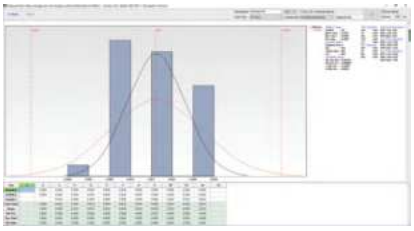
I-MR control chart



run control chart



Xbar-S control chart



CPK control chart



subgroup run chart

To be continued

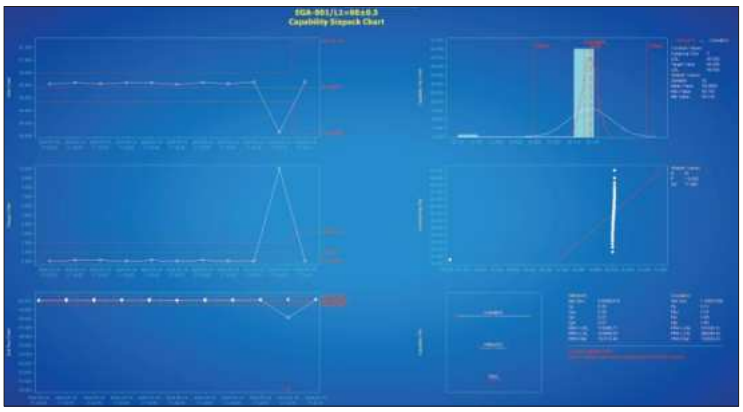


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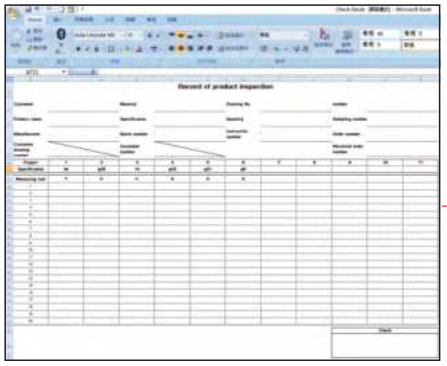
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## Panel

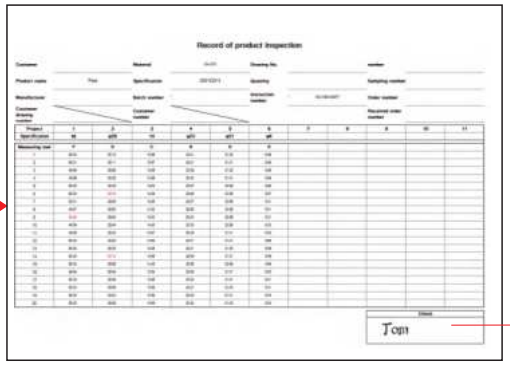
- Real-time display of SPC charts of multiple dimensions on the panel to monitor production quality



## Report



report template



generate report

support exporting electronic signature

**Complete version**

| Code | Data acquisition | | | SPC data analysis | Quality report | Real-time panel |
|---|---|---|---|---|---|---|
| | Manual input + Data transmission | File parsing | Screen capture | | | |
| 7317 | √ | √ | √ | √ | √ | √ |

**Acquisition+Analyze+Report**

| Code | Data acquisition | | SPC data analysis | Quality report |
|---|---|---|---|---|
| | Manual input + Data transmission | File parsing | | |
| 7317-A1 | √ | | √ | √ |
| 7317-A2 | | √ | √ | √ |

**Acquisition+Analyze**

| Code | Data acquisition | | SPC data analysis |
|---|---|---|---|
| | Manual input + Data transmission | File parsing | |
| 7317-B1 | √ | | √ |
| 7317-B2 | | √ | √ |

**Acquisition+Report**

| Code | Data acquisition | | Quality report |
|---|---|---|---|
| | Manual input + Data transmission | File parsing | |
| 7317-C1 | √ | | √ |
| 7317-C2 | | √ | √ |

**Acquisition**

| Code | Data acquisition | |
|---|---|---|
| | Manual input + Data transmission | File parsing |
| 7317-D1 | √ | |
| 7317-D2 | | √ |

**Panel**

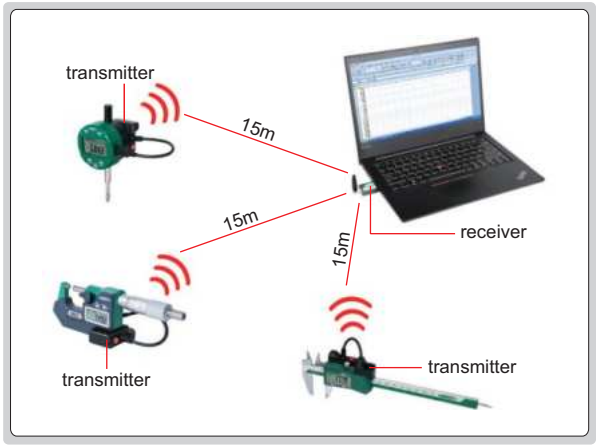
| Code | Real-time panel |
|---|---|
| 7317-P | √ |



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# WIRELESS DATA TRANSMISSION SYSTEM (ZIGBEE)

VIDEO




- Through wireless transmission, the readings of measuring tools can be transmitted to computers or mobile phone
- Wireless zigbee protocol, conforming to IEEE802, 2.4GHz band
- Transmission distance is 15 meter (under the condition of no obstruction and no electromagnetic interference)

## Transmitter

- Connecting to digital measuring tools such as calipers, micrometers and indicators
- CR2032 battery

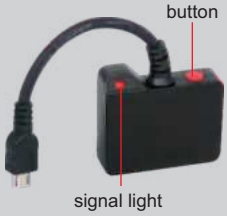
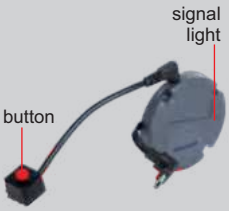
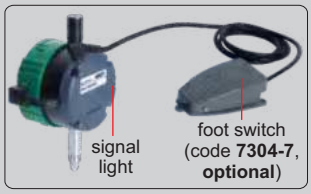
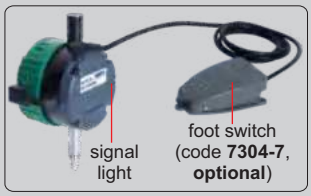
| Code | Description | Transmitter | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7315-25** | transmitter for digital calipers |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-22** | transmitter for large digital calipers |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-30** | transmitter for digital micrometers |  |  <br>for **3102**, **3128**, **3565** series digital micrometers | ▪ Press the "data" button of digital micrometer, can also press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once, at the same time, the signal light on the digital micrometer flashes once |

To be continued



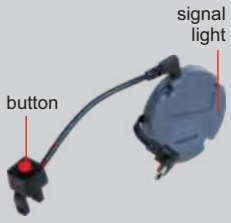
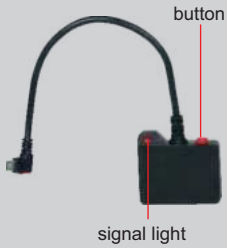
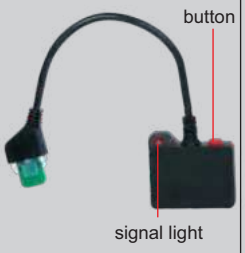
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Continued from previous page

| Code | Description | Transmitter | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7315-31** | transmitter for digital micrometers |  |  <br>  | ▪ Press the "data" button of digital micrometer<br>▪ Data is transmitted once, the signal light on the digital micrometer flashes once |
| **7315-50M** | transmitter for digital indicators |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-51** | transmitter for digital indicators |  |  <br>for **2108, 2138, 2139** series digital indicators<br>  <br>  <br>for other digital indicators<br>  | ▪ Press the "DATA" button of digital indicator, can also press the button of the transmitter<br>▪ Transmitter button can be fixed on request<br>▪ Data is transmitted once, the signal light on digital indicator flashes once<br><br>▪ Press the button of the transmitter<br>▪ Transmitter button can be fixed on request<br>▪ Data is transmitted once, the signal light on digital indicator flashes once |

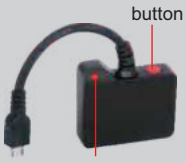
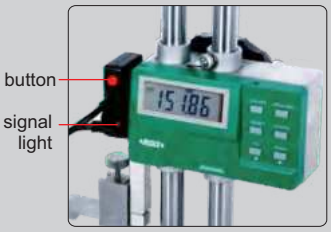
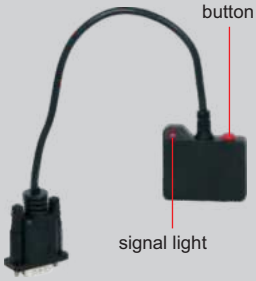
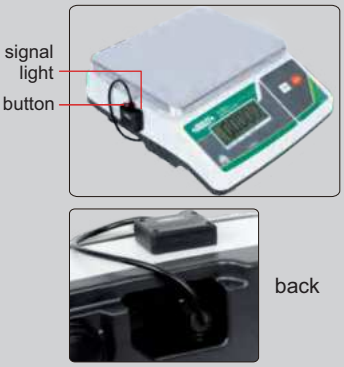
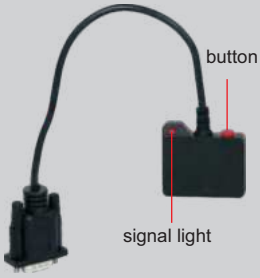
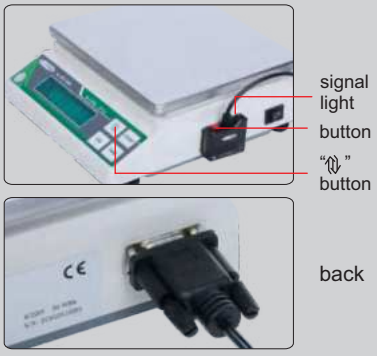
To be continued

Continued from previous page

| Code | Description | Transmitter | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7315-51B** | transmitter for bore gauges |  |  | ▪ Press the "DATA" button of digital indicator, can also press the button of the transmitter<br>▪ Data is transmitted once, the signal light on digital indicator flashes once |
| **7315-2183** | transmitter for digital indicators |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-60** | transmitter for high precision digital indicators |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-80** | transmitter for digital calipers/ micrometers |  |  | ▪ Press the "SET" button of the calipers/micrometers, can also press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-3350** | transmitter for digital micrometers |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-1150** | transmitter for digital height gauges |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |

To be continued

Continued from previous page

| Code | Description | Transmitter | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7315-1151** | transmitter for digital height gauges |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-2172** | transmitter for digital protractors |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-2771** | transmitter for digital protractors |  |  | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-8001** | transmitter for electronic balances |  |  <br>for **8001-6D**, **8001-15D**, **8001-30D** series weighing scales and **8501** series platform scales | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7315-8301** | transmitter for electronic balances |  |  | ▪ Press the “⇳” button of the electronic balances, can also press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |

To be continued

Continued from previous page

## Receiver (keyboard signal)

- For computers and mobile phones
- Recognized as HID keyboard device, the transmitted data is recognized by computers or mobile phones as keyboard input data and press enter key, such as 12.34↙. No need to install drivers and softwares
- Data can be transmitted to excel, word, txt etc.
- For any softwares which can receive keyboard signal

| Code | Product | Description | Remark |
|---|---|---|---|
| **7315-3** |   | single channel receiver | connected with 1 transmitter only |
| **7315-6** |   | multichannel receiver | connected with 6 transmitters, each channel has status indicator |
| **7315-7** |   | | |
| **7315-8** |   | | |
| **7315-9** |   | | |

## Receiver (text format, virtual com port)

- For computers with windows system
- Text format virtual com port, converted to keyboard format with supplied software
- Supplied with Excel directional input software
- Measurement data can be transmitted to excel, word, txt etc. and any software which receives keyboard signal

| Code | Product | Description | Remark |
|---|---|---|---|
| **7315-2** |   | multichannel receiver | connected with maximum 16 transmitters, each of them has unique identification code |

To be continued

Continued from previous page

## Receiver (485 communication)

- Modbus-RTU protocols , baud rate 9600
- Can be connected to a PC or PLC
- The communication address is configurable

| Code | Product | Description | Remark |
|---|---|---|---|
| **7315-485** |   | multichannel receiver | connected with 6 transmitters, each channel has status indicator |

## Excel directional input software

- Supplied with **7315-2** receiver
- The readings of measuring tools can be transmitted to the designated area of excel, which facilitates data management and improves efficiency

Excel directional input software (included in **7315-2**), application example 1

Set the display area of caliper at B4-B9, the readings of caliper are displayed at B4, B5...B9.
Set the display area of micrometer at C4-C9, the readings of micrometer are displayed at C4, C5... C9.
Set the display area of height gauge at D4-D9, the readings of height gauge are displayed at D4, D5... D9.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Project | Length | Width | Height |
| 2 | Dimension and Tolerance | 50±0.05 | 24±0.01 | 10+0.05/-0.06 |
| 3 | Measuring tool | Caliper | Micrometer | Height gage |
| 4 | 1 | 50.02 | 24.004 | 9.98 |
| 5 | 2 | 50.01 | 24.010 | 10.01 |
| 6 | 3 | 49.99 | 23.990 | 10.02 |
| 7 | 4 | 50.00 | 23.996 | 9.99 |
| 8 | 5 | 50.04 | 24.000 | 10.01 |
| 9 | 6 | Channel 1 | Channel 2 | Channel 3 |

serial of workpieces — the next data display area is indicated in green

Excel directional input software (included in **7315-2**), application example 2

Set the display area of micrometer at B4-C9, data input is from the left to the right, the readings of micrometer are displayed at B4, C4, B5, C5... B9, C9.
Set the display area of caliper at D4-D9, the readings of caliper are displayed at D4, D5... D9.
Set the display area of depth gauge at E4-E9, the readings of depth gauge are displayed at E4, E5... E9.

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Project | External diameter1 | External diameter2 | Length | Depth |
| 2 | Dimension and Tolerance | Φ23+0.01/-0.02 | Φ21+0.01/-0.02 | 50±0.04 | 28±0.05 |
| 3 | Measuring tool | Micrometer | Micrometer | Caliper | Depth gage |
| 4 | 1 | 23.010 | 21.008 | 49.98 | 28.01 |
| 5 | 2 | 23.010 | 21.000 | 49.98 | 27.98 |
| 6 | 3 | 22.999 | 21.000 | 50 | 28 |
| 7 | 4 | 23.007 | 20.998 | 50 | 28 |
| 8 | 5 | 23.000 | 20.985 | 50.01 | 28.01 |
| 9 | 6 | 23.008 | Channel 1 | Channel 2 | Channel 3 |

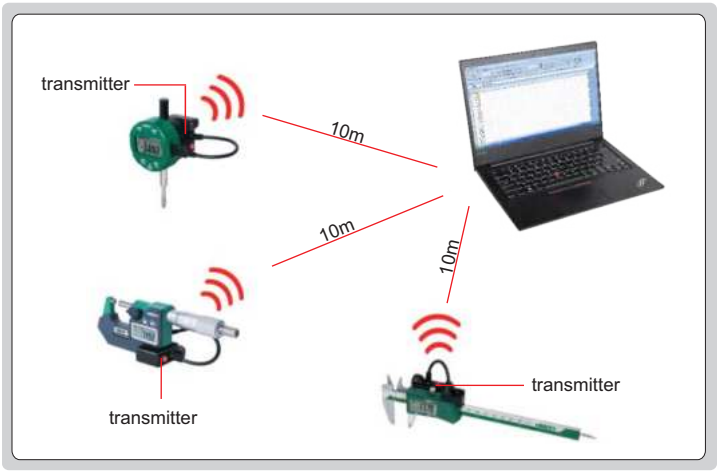
serial of workpieces — the next data display area is indicated in green

# BLUETOOTH TRANSMITTERS

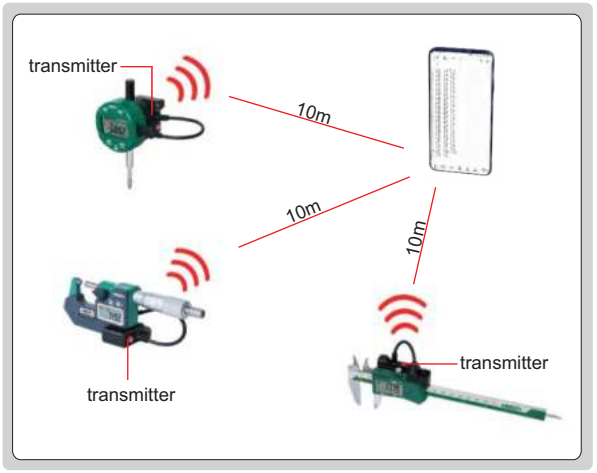
VIDEO

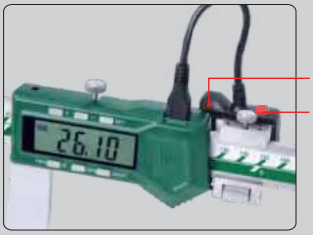
- Through bluetooth transmission, the readings of measuring tools can be transmitted to computers or mobile phones
- 2.4GHz band
- Recognized as HID keyboard device, the transmitted data is recognized by computers or mobile phones as keyboard input data and press enter key, such as 12.34 ↙
- No need to install drivers and softwares, data can be transmitted to excel, word, txt etc.
- For any softwares which can receive keyboard signal
- Transmission distance is 10 meter (under the condition of no obstruction and no electromagnetic interference)
- Connecting to digital measuring tools such as calipers, micrometers and indicators
- CR2032 battery

connecting with computer



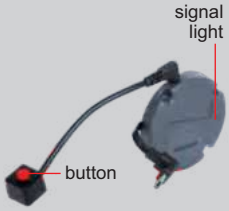
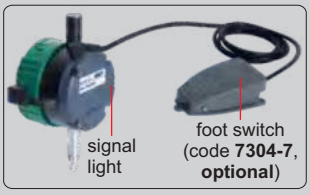
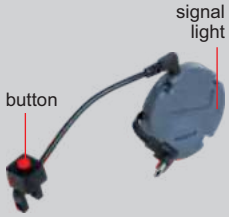

connecting with mobile phone




| Code | Description | Transmitter | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7214-25** | transmitter for digital calipers |   |   | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7214-22** | transmitter for large digital calipers |   |   | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7214-30** | transmitter for digital micrometers |   |   for **3102**, **3128**, **3565** series digital micrometers | ▪ Press the “data” button of the digital micrometer, can also press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitted flashes once, at the same time, the signal light on the digital micrometer flashes once |

To be continued

Continued from previous page

| Code | Description | Transmitter | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7214-31** | transmitter for digital micrometers |  |  <br>  | ▪ Press the "data" button of digital micrometer<br>▪ Data is transmitted once, the signal light on the digital micrometer flashes once |
| **7214-50M** | transmitter for digital indicators |  |  <br>for digital indicators without data button | ▪ Press the button of the transmitter<br>▪ Data is transmitted once, the signal light of the transmitter flashes once |
| **7214-51** | transmitter for digital indicators |  |  <br>for digital indicators with data button<br>  <br>back | ▪ Press the "DATA" button of digital indicator, can also press the button of the transmitter<br>▪ Transmitter button can be fixed on request<br>▪ Data is transmitted once, the signal light on digital indicator flashes once |
| **7214-51B** | transmitter for bore gauges |  |  <br>for bore gauges with data button | ▪ Press the "DATA" button of digital indicator, can also press the button of the transmitter<br>▪ Data is transmitted once, the signal light on digital indicator flashes once |

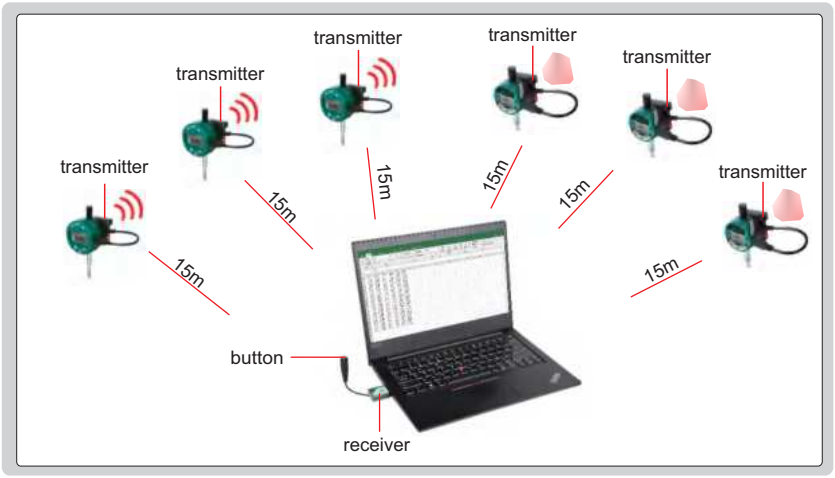
# WIRELESS DATA TRANSMISSION SYSTEM OF DIGITAL INDICATORS (REMOTE CONTROL)

VIDEO

- The readings of digital indicators can be transmitted to computers or mobile phones
- Data acquisition can be remotely controlled through the receiver
- Wireless zigbee protocol, conforming to IEEE802, 2.4GHz band
- Transmission distance is 15 meter (under the condition of no obstruction and no electromagnetic interference)

transmission method: the button on receiver is pressed once,
the readings of all digital indicators are transmitted

| | channel 1 | channel 2 | channel 3 | channel 4 | channel 5 | channel 6 |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| 1 | 24.35 | 0.4045 | 57.72 | 1.949 | 0.4075 | 0.03568 |
| 2 | 24.45 | 0.5045 | 57.82 | 2.049 | 0.5075 | 0.13568 |
| 3 | 26.35 | 0.4045 | 57.72 | 1.949 | 0.4075 | 0.00078 |
| 4 | 27.35 | 0.4045 | 57.72 | 1.7575 | 0.4075 | 0.0762 |
| 5 | 28.35 | 0.4045 | 57.72 | 1.7575 | 0.4075 | 0.0762 |
| 6 | 29.35 | 0.4045 | 57.72 | 1.7575 | 0.4075 | 0.07618 |
| 7 | 30.35 | 0.4045 | 57.72 | 1.7575 | 0.4075 | 0.55334 |
| 8 | 31.35 | 0.4045 | 57.72 | 1.7575 | 0.4075 | 0.61198 |
| 9 | 24.35 | 0.4045 | 57.72 | 1.7575 | 0.4075 | 0.6172 |




## Transmitter

- Suitable for digital indicators
- CR2032 battery
- 80 hours of operation on a single battery in measurement mode

| Code | Transmitter | Connecting with digital indicators | Transmit data |
|---|---|---|---|
| 7213-56 |  |  | ▪ Press and hold the button to enter the measurement mode<br>▪ Press the receiver button in measurement mode to acquire data |

To be continued

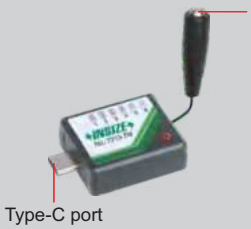
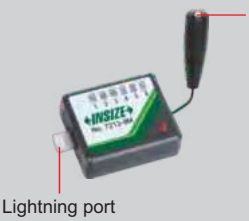


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## Receiver (keyboard signal)

- For computers and mobile phones
- Recognized as HID keyboard device, the transmitted data is recognized by computers or mobile phones as keyboard input data and press enter key, such as 12.34↙. No need to install drivers and softwares
- Data can be transmitted to excel, word, txt etc.
- Suitable for any softwares which can receive keyboard signal

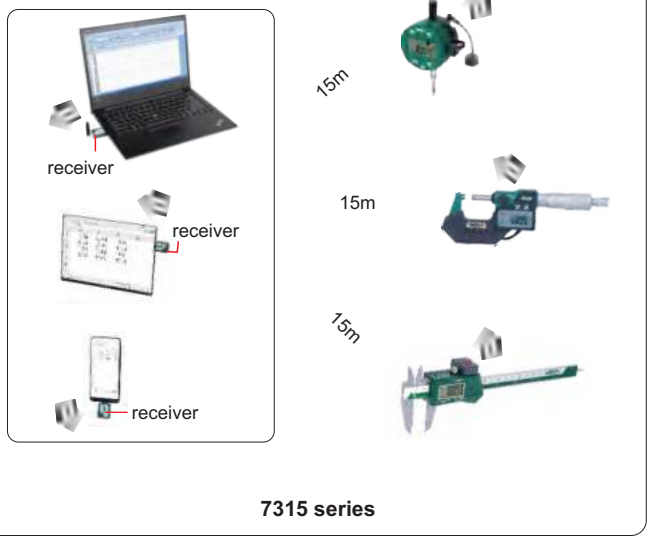
| Code | Product | Description | Remark | Transmit data |
|---|---|---|---|---|
| **7213-6M** |  | multichannel receiver | connected with 6 transmitter, each channel has status indicator | ▪ Press the button of the receiver<br>▪ Data is transmitted once, the signal light of the receiver flashes once |
| **7213-7M** |  | | | |
| **7213-8M** |  | | | |
| **7213-9M** |  | | | |

hand switch, code **7213-SW** (included), length 2m



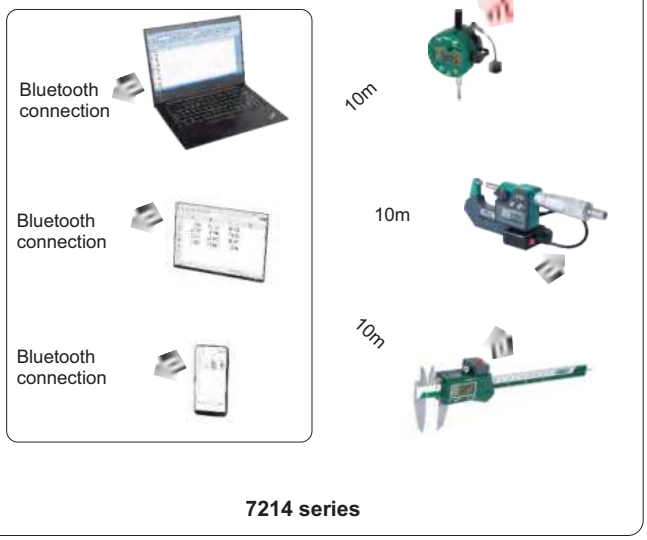
# COMPARISON TABLE

## ZIGBEE Wireless Transmission




**7315 series**

## Bluetooth Wireless Transmission



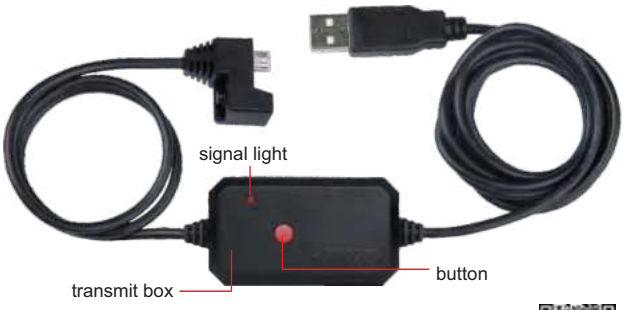

**7214 series**

| Code | 7315 series | 7214 series |
|---|---|---|
| Function | wireless transmission of measurement data from measuring tools to computers or mobile phones | |
| Operation system | Windows, Android or iOS | |
| Wireless module | Zigbee | Bluetooth 5.0 |
| Receiver | need receiver<br>(one receiver can be connected to 16 transmitters) | receiver is not needed, Bluetooth connection<br>(one computer/mobile phone can be connected to 7 transmitters) |
| Communication type | keyboard format<br>(suitable for any software or APP<br>which can receive keyboard input values) | keyboard format<br>(suitable for any software or APP<br>which can receive keyboard input values) |
| | text format, virtual com port<br>(a. connect to software which recognizes different channels and IDs according to serial communication protocols and defines data entry area for different measurement tools;<br>b. can also use the software (included in the **7315-2** receiver) to transmit measurement data from multiple measuring tools to the designated area in Excel for easy data management) | |
| Acquisition method | press-button single transmission | |
| Transmission performance | transmission performance with low power consumption, high speed, accurate and stable data, and strong anti-interference performance | transmission performance depends<br>on the Bluetooth performance of computers/mobile phones |
| Transmission distance | 15m | 10m |
| Connection memory | matching operation is not needed after the computer/mobile phone is turned off and on again | need to press the button to match after the computer/mobile phone is turned off and on again |



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## 1) Data output cables with transmit box

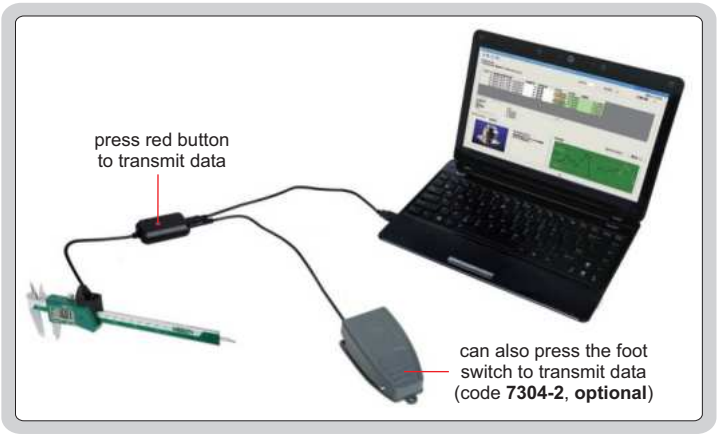


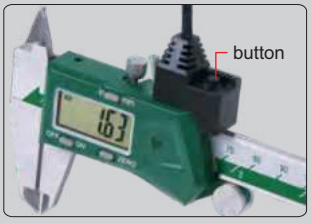
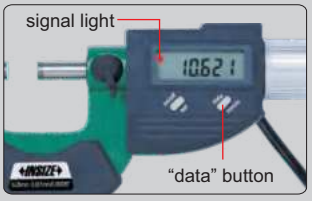

**7305-21**

**Single transmit (can be switched to continuous transmit)**

VIDEO

application




| Code | Description | Plug to measuring tool | Plug to computer | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|---|
| **7305-21**<br>**7305-R21** | cable for digital calipers (length 3m) |  |  |  | ▪ Press the button on the plug of cable, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7305-22**<br>**7305-R22** | cable for large digital calipers (length 2.5m) |  |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7305-30**<br>**7305-R30** | cable for digital micrometers (length 2.5m) |  |  |  <br>  <br>for **3102**, **3128**, **3565** series digital micrometers | ▪ Press the "data" button of digital micrometer, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once |
| **7305-31**<br>**7305-R31** | cable for digital micrometers (length 2.5m) |  |  |  <br>  | ▪ Press the "data" button of digital micrometer, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once |

To be continued

Continued from previous page

| Code | Description | Plug to measuring tool | Plug to computer | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|---|
| **7305-50M**<br>**7305-R50M** | cable for digital gauges (length 2.5m) |  |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7305-1150**<br>**7305-R1150** | cable for digital height gauges (length 2.5m) |  |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |




**7305-40M**

**Continuous transmit (can be switched to single transmit)**

| Code | Description | Plug to measuring tool | Plug to computer | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|---|
| **7305-40M** | cable for digital indicators (length 2.5m) |  |  |  <br>for **2108**, **2138**, **2139** series digital indicators | Continuous transmit is controlled in software<br>Single transmit:<br>▪ Press the “DATA” button of digital indicator, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on digital indicator flashes once<br>Note: long press button to zero the digital indicators; software of data transmit is included |
| | | | |  <br>for other digital indicators | Continuous transmit is controlled in software<br>Single transmit:<br>▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once<br>Note: long press button to zero the digital indicators; software of data transmit is included |

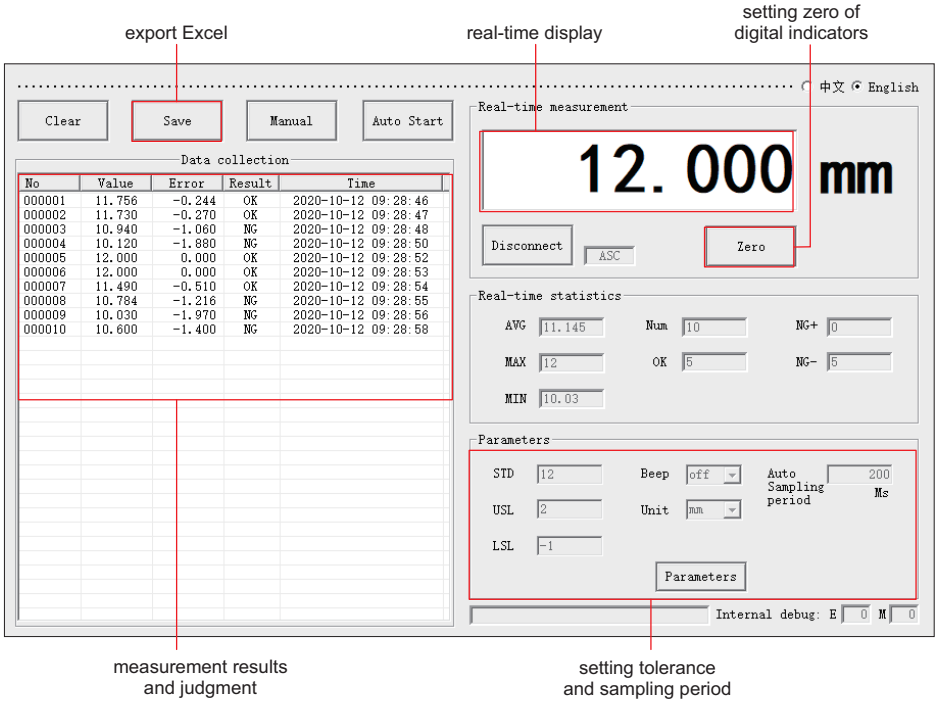
To be continued

Continued from previous page

| Code | Description | Plug to measuring tool | Plug to computer | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|---|
| **7305-R40M** | cable for digital indicators (length 2.5m) |  |  |  <br>for **2108**, **2138**, **2139** series digital indicators | Continuous transmit is controlled in software<br><br>Single transmit:<br>▪ Press the "DATA" button of digital indicator, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on digital indicator flashes once<br><br>Note: long press button to zero the digital indicators; software of data transmit is included |
| | | | |  <br>for other digital indicators | Continuous transmit is controlled in software<br><br>Single transmit:<br>▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once<br><br>Note: long press button to zero the digital indicators; software of data transmit is included |

## Software (included in 7305-40M and 7305-R40M)

- Real-time display
- Tolerance setting, automatic judgment, out-of-tolerance alarm
- Real time statistics: max, min, average, Go/No-Go number
- Can save results as Excel




To be continued

Continued from previous page

communication protocol

- Baud: 9600bps
  Data bit: 8
  Stop bit 1
  Check bit: None
  No flow control

- Data output format

| D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 |
|---|---|---|---|---|---|---|---|---|---|

+or- Data section (floating point) CR

Data format example
Display Output
1.234 ➡ +0001.234↙
-1.234 ➡ -0001.234↙

- Data output format with ID number

| D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | D13 | D14 | D15 | D16 | D17 | D18 | D19 | D20 | D21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

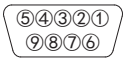
ID number Blank +or- Data section (floating point) CR

Data format example
Display Output
1.234 ➡ 4109210605 +0001.234↙
-1.234 ➡ 4109210605 -0001.234↙

- The data transmission mode can be switched:
  single or continuous;
  The data output format can be switched:
  with ID number or without ID number;
  Data can be transmitted by command;
  The digital indicators can be zeroed by command

- Pin definition of RS232 plug:






| Pin No. | Symbol | Description |
|---|---|---|
| 2 | TXD | Data OUT |
| 3 | RXD | Data IN |
| 4 | VDD | +5V Power |
| 5 | GND | Ground |

## 2) Data output cables without transmit box



**7305-G3350**

application



**Single transmit**

| Code | Description | Plug to measuring tool | Plug to computer | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|---|
| **7305-G60** | cable for high precision digital indicators (length 3m) |  |  |  | ▪ Press the "DATA" button of high precision digital indicator |
| **7305-G3350** | cable for digital micrometers (length 3m) |  |  |  | ▪ Press the "DATA" button of digital micrometer |

communication protocol

- Baud: 9600bps
  Data bit: 8
  Stop bit 1
  Check bit: None
  No flow control

- Data output format

| D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 |
|---|---|---|---|---|---|---|---|---|---|

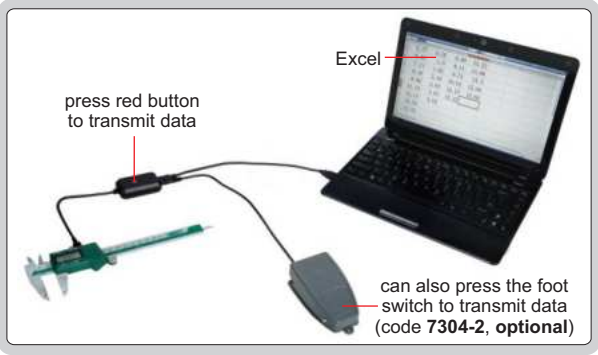
+or- Data section (floating point) CR

Data format example
Display Output
1.234 ➡ +0001.234↙
-1.234 ➡ -0001.234↙

- Data can be transmitted by command
  The digital indicators or micrometers can be zeroed by command

# DATA OUTPUT CABLES (KEYBOARD FORMAT)

application







**7302-21**

- Recognized as HID keyboard device by computer, no need to install drivers and softwares
- Data can be transmitted to Excel, Word, txt and other files (press transmit button, which is recognized by the computer as keyboard input data and press enter key, such as 12.34↙)
- For any softwares which can receive keyboard signal
- Optional accessory: foot switch (code: **7304-2**), hub (code: **7324-HUB4**, **7324-HUB7**), extension cables (code: **7325-ADD5**, **7325-ADD10**)

VIDEO

| Code | Description | Plug | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7302-21** | cable for digital calipers (length 3m) |  |  button | ▪ Press the button on the plug of cable, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7302-22** | cable for large digital calipers (length 2.5m) |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7302-30** | cable for digital micrometers (length 2.5m) |  |  signal light<br>"data" button<br>  back<br>for **3102**, **3128**, **3565** series digital micrometers | ▪ Press the "data" button of digital micrometer, can also press the button of the box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once |
| **7302-31** | cable for digital micrometers (length 2.5m) |  |  signal light<br>"data" button<br>  back | ▪ Press the "data" button of digital micrometer, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once |

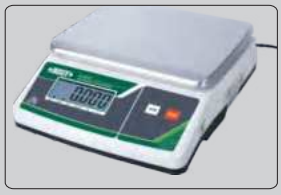
To be continued

Continued from previous page

| Code | Description | Plug | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7302-50M** | cable for digital gauges (length 2.5m) |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7302-40M** | cable for digital indicators (length 2.5m) |  |  <br>for **2108**, **2138**, **2139** series digital indicators | ▪ Press the "DATA" button of digital indicator, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on digital indicator flashes once<br>Note: long press button to zero the digital indicators |
| | | |  <br>for other digital indicators | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once<br>Note: long press button to zero the digital indicators |
| **7302-60** | cable for high precision digital indicators (length 2.5m) |  |  | ▪ Press the "DATA" button of high precision digital indicator, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7302-3350** | cable for digital micrometers (length 2.5m) |  |  | ▪ Press the "DATA" button of digital micrometer, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7302-1151** | cable for digital height gauges (length 2.5m) |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |

To be continued

Continued from previous page

| Code | Description | Plug | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7302-SPC7** | cable for digital height gauges (length 2.5m) |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7302-8001** | cable for weighing scales (length 2.5m) |  |  <br>back<br>  <br>for **8301** and **8305** series electronic balances | ▪ Press the "⇳" button of electronic balance, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| | | |  <br>back<br>  <br>for **8001-6D**, **8001-15D**, **8001-30D** series weighing scales and **8501** series platform scales | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7302-8304** | cable for electronic balances (length 3m) |  |  <br>back<br>  | ▪ Press the "⎙" button of electronic balance, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7302-LDM** | cable for laser scan micrometers (length 3m) |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |

# 485 DATA OUTPUT CABLES

- Modbus-RTU protocols
- Can be connected to a PC or PLC
- The baud rate is configurable (9600, 19200, 38400)
- The communication address is configurable



7215-50M

| Code | Description | Plug | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7215-21** | cable for digital calipers (length 3m) |  |  | ▪ Acquiring data through host computers |
| **7215-22** | cable for digital calipers (length 2.5m) |  |  | ▪ Acquiring data through host computers |
| **7215-30** | cable for digital micrometers (length 2.5m) |  |  for **3102**, **3128**, **3565** series digital micrometers  back | ▪ Acquiring data through host computers |
| **7215-31** | cable for digital micrometers (length 2.5m) |  |   back | ▪ Acquiring data through host computers |
| **7215-40M** | cable for digital indicators (length 2.5m) |  |  | ▪ Acquiring data through host computers |
| **7215-50M** | cable for digital gauges (length 2.5m) |  |  | ▪ Acquiring data through host computers |



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# INTERFACE BOX AND DATA OUTPUT CABLES

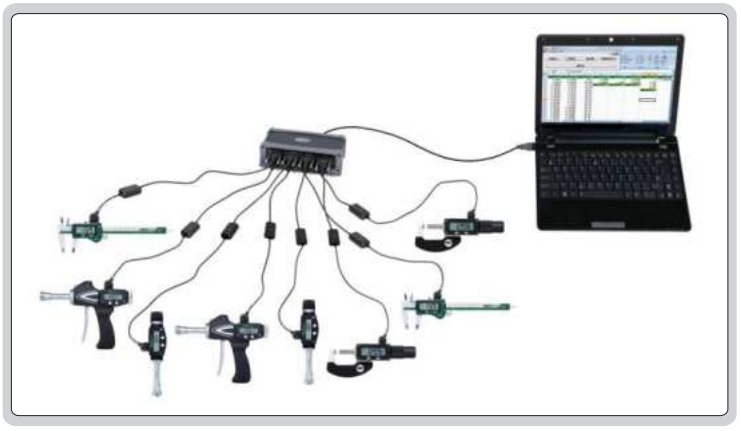



**8-channel interface box**
**7210-2**



**data output cable**
**7305-R40M**

application



- The interface box can be connected to digital measuring tools, such as calipers, micrometers, indicators (**7305-R** series data output cables are needed)
- The interface box is supplied with Excel directional input software
- The interface box can be connected with 8 data output cables, each of them has unique identification code

**INTERFACE BOX SPECIFICATION**

| Code | 7210-2 |
|---|---|
| Quantity of digital measuring tools to be connected | 8 pcs |
| Output port | USB (virtual serial signal) |

## Excel directional input software

- Supplied with **7210-2** interface box
- The measurement data of multiple measuring tools can be transmitted to the designated area of Excel, which is convenient for data management and improves efficiency

excel directional input software
application example 1

Set the display area of caliper at B4-B9,
the readings of caliper are displayed at B4, B5...B9.
Set the display area of micrometer at C4-C9,
the readings of micrometer are displayed at C4, C5... C9.
Set the display area of height gauge at D4-D9,
the readings of height gauge are displayed at D4, D5... D9.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Project | Length | Width | Height |
| 2 | Dimension and Tolerance | 50±0.05 | 24±0.01 | 10+0.05/-0.06 |
| 3 | Measuring tool | Caliper | Micrometer | Height gage |
| 4 | 1 | 50.02 | 24.004 | 9.98 |
| 5 | 2 | 50.01 | 24.010 | 10.01 |
| 6 | 3 | 49.99 | 23.990 | 10.02 |
| 7 | 4 | 50.00 | 23.996 | 9.99 |
| 8 | 5 | 50.04 | 24.000 | 10.01 |
| 9 | 6 | Channel 1 | Channel 2 | Channel 3 |

serial of workpieces

the next data display area is indicated in green

excel directional input software
application example 2

Set the display area of micrometer at B4-C9, data input is from the left to the right,
the readings of micrometer are displayed at B4, C4, B5, C5... B9, C9.
Set the display area of caliper at D4-D9,
the readings of caliper are displayed at D4, D5... D9.
Set the display area of depth gauge at E4-E9,
the readings of depth gauge are displayed at E4, E5... E9.

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Project | External diameter1 | External diameter2 | Length | Depth |
| 2 | Dimension and Tolerance | Φ23+0.01/-0.02 | Φ21+0.01/-0.02 | 50±0.04 | 28±0.05 |
| 3 | Measuring tool | Micrometer | Micrometer | Caliper | Depth gage |
| 4 | 1 | 23.010 | 21.008 | 49.98 | 28.01 |
| 5 | 2 | 23.010 | 21.000 | 49.98 | 27.98 |
| 6 | 3 | 22.999 | 21.000 | 50 | 28 |
| 7 | 4 | 23.007 | 20.998 | 50 | 28 |
| 8 | 5 | 23.000 | 20.985 | 50.01 | 28.01 |
| 9 | 6 | 23.008 | Channel 1 | Channel 2 | Channel 3 |

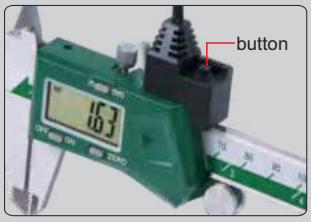
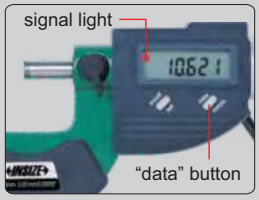
serial of workpieces

the next data display area is indicated in green

To be continued

Continued from previous page

**DATA OUTPUT CABLE SPECIFICATION**

| Code | Description | Plug to measuring tool | Connecting with measuring tool | Transmit data |
|---|---|---|---|---|
| **7305-R21** | cable for digital calipers (length 3m) |  |  | ▪ Press the button on the plug of cable, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7305-R22** | cable for large digital calipers (length 2.5m) |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7305-R30** | cable for digital micrometers (length 2.5m) |  |  <br>  <br>back | ▪ Press the "data" button of digital micrometer, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on the digital micrometer flashes once |
| **7305-R40M** | cable for digital indicators (length 2.5m) |  |  <br>suitable for **2108, 2138, 2139** series digital indicators | ▪ Press the "DATA" button of digital indicator, can also press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once, at the same time, the signal light on digital indicator flashes once |
| | | |  <br>suitable for other digital indicators | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7305-R50M** | cable for digital gauges (length 2.5m) |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |
| **7305-R1150** | cable for digital height gauges (length 2. 5m) |  |  | ▪ Press the button of the transmit box, or press the foot switch<br>▪ Data is transmitted once, the signal light of the transmit box flashes once |

connected with digital indicator

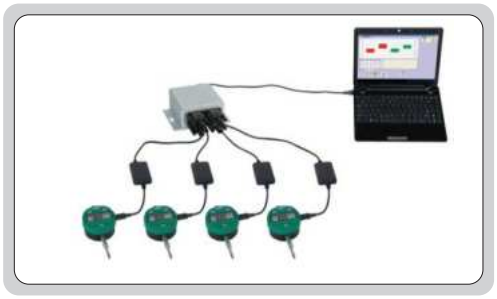




## DISPLAY UNIT CODE 7106-1A

REFER TO PAGE 563 FOR DETAILS

connected with digital indicators



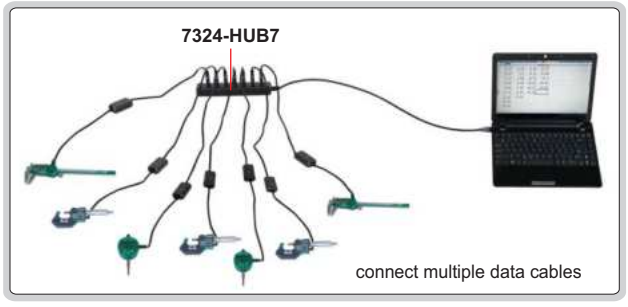
## MULTICHANNEL INTERFACE BOXES

REFER TO PAGE 564 FOR DETAILS



**7107-1**

application




## HUBS



**7324-HUB4**



**7324-HUB7**

- Suitable for USB plug data cable

adapter **(optional)**



**7324-ADAPTER**



**7324-HUB16**

| Code | Description | Applicable products | Note |
|---|---|---|---|
| **7324-HUB4** | 4-channel hub (length 0.2m, USB computer plug) | **7302** series data cables (USB plug) **7305** series data cables (USB plug) | no adapter required |
| **7324-HUB7** | 7-channel hub (length 1m, USB computer plug) | | optional: adapter (code: **7324-ADAPTER**) note: adapter required for connecting high power devices |
| **7324-HUB16** | 16-channel hub (length 1m, USB computer plug) | | adapter is included |

## EXTENSION CABLES

| Code | Description | Applicable products |
|---|---|---|
| **7325-ADD5** | data extension cable (length 5m, USB plug) | **7302** series data cables |
| **7325-ADD10** | data extension cable (length 10m, USB plug) | **7305** series data cables (USB plug) |



**7325-ADD5**

application

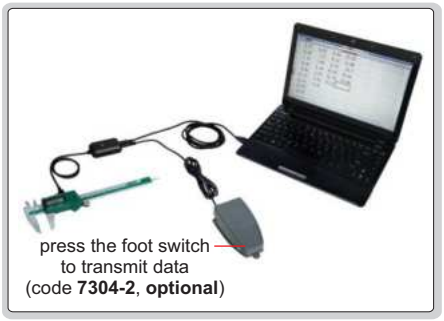


## FOOT SWITCH



7304-2

application




- For data transmission

| Code | Description | Applicable products |
|---|---|---|
| 7304-2 | data transmission foot switch with cable (length 2m) | **7302** series data cables<br>**7305** series data cables |

## OK/NG INPUT SWITCHES



7327-FS



7327-SW

application



- Used with **7317** software, output OK or NG
- USB plug, length 1.5m

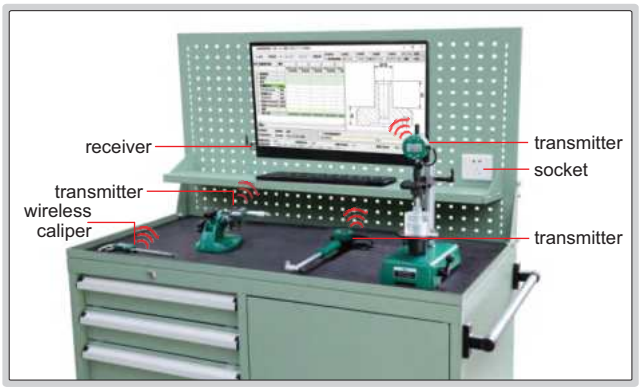
| Code | Description |
|---|---|
| 7327-FS | foot switch for OK/NG input |
| 7327-SW | hand switch for OK/NG input |

## MOBILE WORKBENCH

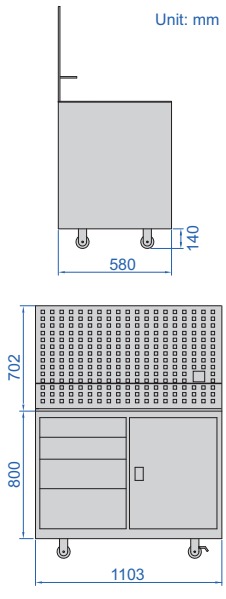


7901-10A

application




Unit: mm




- Tabletop can support 50kg

| Code | L×W×H (without caster) |
|---|---|
| 7901-10A | 1103×580×1502mm |



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**Digital Calipers**
**Page 29-37**



**Vernier Calipers**
**Page 37-40**



**Dial Calipers**
**Page 41**



**Caliper/Height Gauge Checkers**
**Page 47**



**Caliper End Grinding Machines**
**Page 47**



**Depth Base Attachments**
**Page 48**



**Accessory Sets For Digital Calipers**
**Page 48-49**



**Special Purpose Calipers**
**Page 50-83**

## IP67 WATERPROOF DIGITAL CALIPERS

INSIZE PLUS
MADE IN EUROPE

INSPECTION CERTIFICATE | DATA OUTPUT | IP67 WATERPROOF

- IP67 dust/waterproof
- Resolution: 0.01mm/0.0005"
- Button function: zero, mm/inch, preset, data output
- Battery CR2032
- Automatic power off, move the digital unit to turn on power
- Data output
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-80** (receiver is needed) page 7,
  data output cable code **7302-80**,
  accessory set for digital calipers (code **6144,** only for range 0-150mm and 0-200mm),
  depth base attachment (code **6140**)

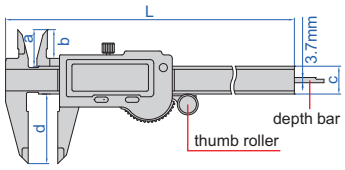


**1195-150**

**(mm)**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d | Remark |
|---|---|---|---|---|---|---|---|---|---|
| **1195-150*** | 0-150mm/0-6" | ±0.02mm | with | 235 | 21 | 16.5 | 16 | 40 | with depth bar |
| **1195-200*** | 0-200mm/0-8" | ±0.03mm | with | 290 | 24.5 | 20 | 16 | 50 | with depth bar |
| **1195-300*** | 0-300mm/0-12" | ±0.03mm | with | 387 | 23 | 18.5 | 16 | 64 | without depth bar |

*Supplied with manufacturer inspection certificate




## IP67 WATERPROOF DIGITAL CALIPERS

ATTENTION: IT IS NECESSARY TO SET ZERO AFTER POWER ON EACH TIME

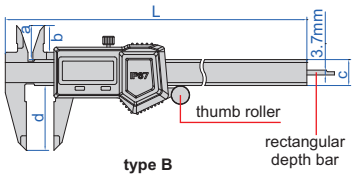
ATTENTION: NO DATA OUTPUT

IP67 WATERPROOF

INSPECTION CERTIFICATE



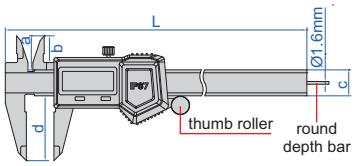
**1118-150B**




**type B**



**1118-150R**




**type R**

- IP67 dust/waterproof
- Resolution: 0.01mm/0.0005"
- Button function: zero, on/off, mm/inch, ABS/REL, hold
- Battery CR2032
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  accessory set for digital calipers
  (code **6144,** only for range 0-150mm and 0-200mm),
  depth base attachment (code **6140**)

| Code | Range | Accuracy | Thumb roller | Type | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|---|
| **1118-150B*** | 0-150mm/0-6" | ±0.03mm | with | B | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1118-200B*** | 0-200mm/0-8" | ±0.03mm | with | B | 286mm | 24mm | 19mm | 16mm | 50mm |
| **1118-300B*** | 0-300mm/0-12" | ±0.03mm | with | B | 400mm | 25mm | 20.5mm | 16mm | 60mm |
| **1118-150BW*** | 0-150mm/0-6" | ±0.03mm | without | B | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1118-200BW*** | 0-200mm/0-8" | ±0.03mm | without | B | 286mm | 24mm | 19mm | 16mm | 50mm |
| **1118-300BW*** | 0-300mm/0-12" | ±0.03mm | without | B | 400mm | 25mm | 20.5mm | 16mm | 60mm |
| **1118-150R*** | 0-150mm/0-6" | ±0.03mm | with | R | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1118-150RW*** | 0-150mm/0-6" | ±0.03mm | without | R | 236mm | 21mm | 16mm | 16mm | 40mm |

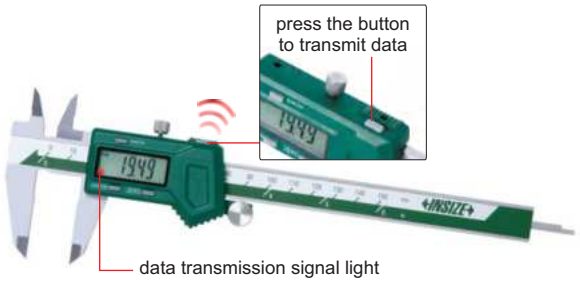
*Supplied with manufacturer inspection certificate

## WIRELESS DIGITAL CALIPERS (ZIGBEE)

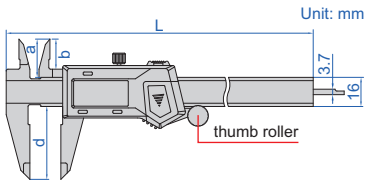
**ATTENTION: THE WORKING LIFE OF A BATTERY IS ABOUT 3-5 MONTHS**

INSPECTION CERTIFICATE

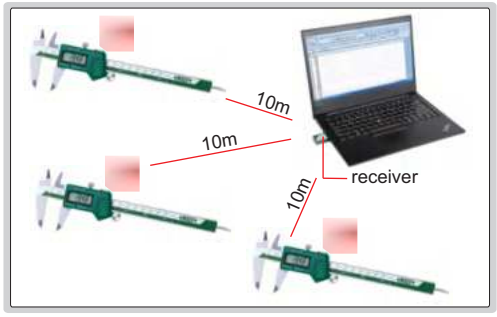
VIDEO




**1113-150**




application



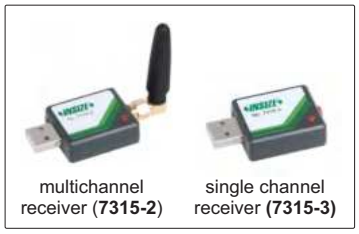

- Non waterproof
- Built-in wireless data transmission module, Zigbee signal
- Transmission distance is 10 meter (under the condition of no obstruction and no electromagnetic interference)
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, data transmission
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: receiver (code **7315-2/3/6/7/8/9**), accessory set for digital calipers (code **6144,** only for range 0-150mm and 0-200mm), depth base attachment (code **6140**)

**(mm)**

| Code | Range | Accuracy | Thumb roller | L | a | b | d |
|---|---|---|---|---|---|---|---|
| **1113-150** * | 0-150mm/0-6" | ±0.03mm | with | 236 | 21 | 16 | 40 |
| **1113-200** * | 0-200mm/0-8" | ±0.03mm | with | 286 | 24 | 19 | 50 |
| **1113-300** * | 0-300mm/0-12" | ±0.03mm | with | 400 | 25 | 20.5 | 60 |
| **1113-150W** * | 0-150mm/0-6" | ±0.03mm | without | 236 | 21 | 16 | 40 |
| **1113-200W** * | 0-200mm/0-8" | ±0.03mm | without | 286 | 24 | 19 | 50 |
| **1113-300W** * | 0-300mm/0-12" | ±0.03mm | without | 400 | 25 | 20.5 | 60 |

*Supplied with manufacturer inspection certificate

receiver (**optional**)




## DIGITAL CALIPERS (STANDARD TYPE)

POPULAR MODEL

INSPECTION CERTIFICATE

DATA OUTPUT

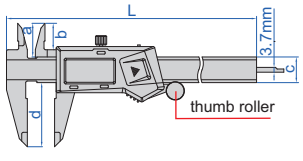
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Meet DIN862
- Made of stainless steel
- Optional accessory: wireless transmitter code **7315-25** (receiver is needed) page 5, bluetooth transmitter code **7214-25** page 11, data output cable code **7302-21** page 20, accessory set for digital calipers (code **6144,** only for range 0-150mm and 0-200mm), depth base attachment (code **6140**)



**1108-150**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1108-150** * | 0-150mm/0-6" | ±0.02mm | with | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1108-200** * | 0-200mm/0-8" | ±0.03mm | with | 286mm | 24mm | 19mm | 16mm | 50mm |
| **1108-250** * | 0-250mm/0-10" | ±0.03mm | with | 350mm | 25mm | 20.5mm | 16mm | 60mm |
| **1108-300** * | 0-300mm/0-12" | ±0.03mm | with | 400mm | 25mm | 20.5mm | 16mm | 60mm |
| **1108-150W** * | 0-150mm/0-6" | ±0.02mm | without | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1108-200W** * | 0-200mm/0-8" | ±0.03mm | without | 286mm | 24mm | 19mm | 16mm | 50mm |
| **1108-300W** * | 0-300mm/0-12" | ±0.03mm | without | 400mm | 25mm | 20.5mm | 16mm | 60mm |

*Supplied with manufacturer inspection certificate



## DIGITAL CALIPERS (ABSOLUTE SYSTEM)

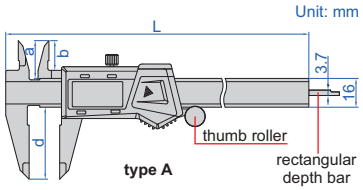
INSPECTION CERTIFICATE

DATA OUTPUT

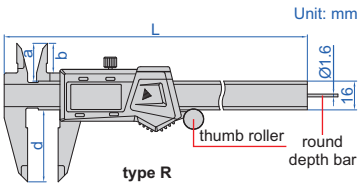


1103-150

- Non waterproof
- Absolute system, low power consumption, long battery life
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, mm/inch, ORIGIN, ZERO/ABS
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-22** (receiver is needed) page 5,
  bluetooth transmitter code **7214-22** page 11,
  data output cable code **7302-22** page 20,
  accessory set for digital calipers (code **6144,** only for range 0-150mm and 0-200mm),
  depth base attachment (code **6140**)




| Code | Range | Accuracy | Thumb roller | Type | L | a | b | d |
|---|---|---|---|---|---|---|---|---|
| **1103-150*** | 0-150mm/0-6" | ±0.03mm | with | A | 236mm | 21mm | 16.5mm | 40mm |
| **1103-200*** | 0-200mm/0-8" | ±0.03mm | with | A | 286mm | 24mm | 19.5mm | 50mm |
| **1103-300*** | 0-300mm/0-12" | ±0.03mm | with | A | 400mm | 26mm | 21.5mm | 60mm |
| **1103-150W*** | 0-150mm/0-6" | ±0.03mm | without | A | 236mm | 21mm | 16.5mm | 40mm |
| **1103-200W*** | 0-200mm/0-8" | ±0.03mm | without | A | 286mm | 24mm | 19.5mm | 50mm |
| **1103-300W*** | 0-300mm/0-12" | ±0.03mm | without | A | 400mm | 26mm | 21.5mm | 60mm |
| **1103-150R*** | 0-150mm/0-6" | ±0.03mm | with | R | 236mm | 21mm | 16.5mm | 40mm |
| **1103-150RW*** | 0-150mm/0-6" | ±0.03mm | without | R | 236mm | 21mm | 16.5mm | 40mm |




*Supplied with manufacturer inspection certificate

## DIGITAL CALIPERS

INSPECTION CERTIFICATE

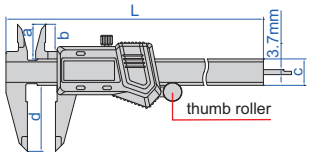
ATTENTION: NO DATA OUTPUT

- Non waterproof
- Zinc alloy housing for digital unit
- Resolution: 0.01mm/0.0005"
- Buttons: zero, on/off, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  accessory set for digital calipers
  (code **6144,** only for range 0-150mm and 0-200mm),
  depth base attachment (code **6140**)



1114-150A

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1114-150A*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1114-200A*** | 0-200mm/0-8" | ±0.03mm | with | 286mm | 24mm | 19mm | 16mm | 50mm |
| **1114-300A*** | 0-300mm/0-12" | ±0.03mm | with | 400mm | 25mm | 20.5mm | 17mm | 60mm |
| **1114-150AW*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1114-200AW*** | 0-200mm/0-8" | ±0.03mm | without | 286mm | 24mm | 19mm | 16mm | 50mm |
| **1114-300AW*** | 0-300mm/0-12" | ±0.03mm | without | 400mm | 25mm | 20.5mm | 17mm | 60mm |




*Supplied with manufacturer inspection certificate

DATA OUTPUT

INSPECTION CERTIFICATE

## DIGITAL CALIPERS (FRACTION READING)



1102-150

- Non waterproof
- Resolution: 1/128", 0.01mm, 0.0005"
- Buttons: unit (inch fraction/mm/inch), on/off, zero
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output (for mm and inch)
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-25** (receiver is needed) page 5,
  bluetooth transmitter code **7214-25** page 11,
  data output cable code **7302-21** page 20,
  accessory set for digital calipers
  (code **6144,** only for range 0-150mm and 0-200mm),
  depth base attachment (code **6140**)



inch fraction reading



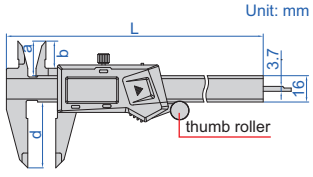
mm reading



inch reading

| Code | Range | Accuracy | Thumb roller | L | a | b | d |
|---|---|---|---|---|---|---|---|
| **1102-150*** | 0-150mm/0-6" | ±0.02mm | with | 236mm | 21mm | 16mm | 40mm |
| **1102-200*** | 0-200mm/0-8" | ±0.03mm | with | 286mm | 24mm | 19mm | 50mm |
| **1102-300*** | 0-300mm/0-12" | ±0.03mm | with | 400mm | 25mm | 20.5mm | 60mm |
| **1102-150W*** | 0-150mm/0-6" | ±0.02mm | without | 236mm | 21mm | 16mm | 40mm |
| **1102-200W*** | 0-200mm/0-8" | ±0.03mm | without | 286mm | 24mm | 19mm | 50mm |
| **1102-300W*** | 0-300mm/0-12" | ±0.03mm | without | 400mm | 25mm | 20.5mm | 60mm |

*Supplied with manufacturer inspection certificate




DATA OUTPUT

INSPECTION CERTIFICATE

## HEAVY DUTY 300mm DIGITAL CALIPER

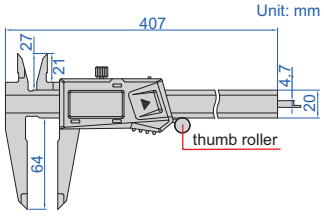


1196-300

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-22** (receiver is needed) page 5,
  bluetooth transmitter code **7214-22** page 11,
  data output cable code **7302-22** page 20

| Code | Range | Thumb roller | Accuracy |
|---|---|---|---|
| **1196-300*** | 0-300mm/0-12" | with | ±0.03mm |
| **1196-300W*** | 0-300mm/0-12" | without | ±0.03mm |

*Supplied with manufacturer inspection certificate



## METRIC DIGITAL CALIPERS

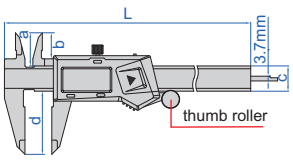
INSPECTION CERTIFICATE | LOCK READING WITH "HOLD" BUTTON | DATA OUTPUT

- Non waterproof
- Resolution: 0.01mm
- Buttons: on/off, zero, hold
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-25** (receiver is needed) page 5,
  bluetooth transmitter code **7214-25** page 11,
  data output cable code **7302-21** page 20,
  accessory set for digital calipers
  (code **6144,** only for range 0-150mm and 0-200mm),
  depth base attachment (code **6140**)



**1109-150**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1109-150*** | 0-150mm | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1109-200*** | 0-200mm | ±0.03mm | with | 286mm | 24mm | 19mm | 16mm | 50mm |
| **1109-300*** | 0-300mm | ±0.03mm | with | 400mm | 25mm | 20.5mm | 16mm | 60mm |
| **1109-150W*** | 0-150mm | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1109-200W*** | 0-200mm | ±0.03mm | without | 286mm | 24mm | 19mm | 16mm | 50mm |
| **1109-300W*** | 0-300mm | ±0.03mm | without | 400mm | 25mm | 20.5mm | 16mm | 60mm |




*Supplied with manufacturer inspection certificate

## DIGITAL CALIPERS WITH ROUND DEPTH BAR

INSPECTION CERTIFICATE | DATA OUTPUT

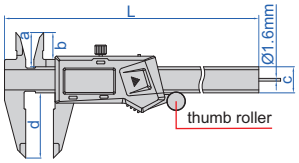
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  accessory set for digital calipers (code **6144**),
  depth base attachment (code **6140**)



**1119-150**

**With data interface**
**(optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1119-150*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1119-150W*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm |




**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1119-150WL*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm |
| **1119-150WWL*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm |



round depth bar Ø1.6mm

*Supplied with manufacturer inspection certificate

DATA OUTPUT

INSPECTION CERTIFICATE

## LEFT HAND DIGITAL CALIPERS

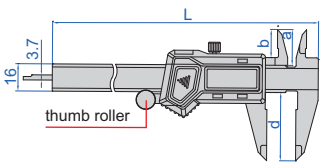
- Non waterproof
- Designed for left handed users
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Meet DIN862
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-22** (receiver is needed) page 5,
  bluetooth transmitter code **7214-22** page 11,
  data output cable code **7302-22** page 20,
  accessory set for digital calipers (code **6144,** only for range 0-150mm and 0-200mm),
  depth base attachment (code **6140**)



**1130-150**

| Code | Range | Accuracy | Thumb roller | L | a | b | d |
|---|---|---|---|---|---|---|---|
| **1130-150*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 40mm |
| **1130-200*** | 0-200mm/0-8" | ±0.03mm | with | 286mm | 24mm | 19mm | 50mm |
| **1130-300*** | 0-300mm/0-12" | ±0.03mm | with | 400mm | 25mm | 20.5mm | 60mm |
| **1130-150W*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 40mm |
| **1130-200W*** | 0-200mm/0-8" | ±0.03mm | without | 286mm | 24mm | 19mm | 50mm |
| **1130-300W*** | 0-300mm/0-12" | ±0.03mm | without | 400mm | 25mm | 20.5mm | 60mm |

Unit: mm




*Supplied with manufacturer inspection certificate

DATA OUTPUT

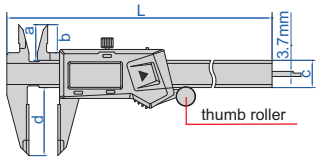
INSPECTION CERTIFICATE

## DIGITAL CALIPERS WITH CERAMIC TIPPED JAWS

- Non waterproof
- Ceramic tipped jaws for outside measurement, extremely wear-resistant, non-magnetic and non electric conductive
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, made of stainless steel
- Meet DIN862
- Optional accessory:
  depth base attachment (code **6140**)



**1193-150**




ceramic tipped jaws



**With data interface**
**(optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1193-150*** | 0-150mm/0-6" | ±0.03mm | with | 235mm | 21mm | 16.5mm | 16mm | 40mm |
| **1193-200*** | 0-200mm/0-8" | ±0.03mm | with | 287mm | 24mm | 20mm | 16mm | 50mm |
| **1193-300*** | 0-300mm/0-12" | ±0.03mm | with | 390mm | 26mm | 21.5mm | 16mm | 60mm |
| **1193-150W*** | 0-150mm/0-6" | ±0.03mm | without | 235mm | 21mm | 16.5mm | 16mm | 40mm |
| **1193-200W*** | 0-200mm/0-8" | ±0.03mm | without | 297mm | 24mm | 20mm | 16mm | 50mm |
| **1193-300W*** | 0-300mm/0-12" | ±0.03mm | without | 390mm | 26mm | 21.5mm | 16mm | 60mm |

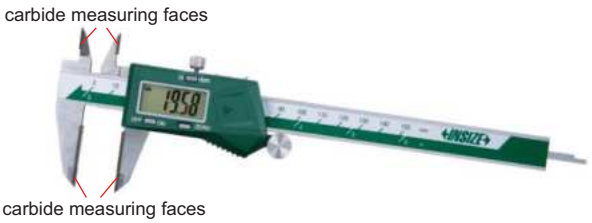
**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1193-150WL*** | 0-150mm/0-6" | ±0.03mm | with | 235mm | 21mm | 16.5mm | 16mm | 40mm |
| **1193-200WL*** | 0-200mm/0-8" | ±0.03mm | with | 287mm | 24mm | 20mm | 16mm | 50mm |
| **1193-300WL*** | 0-300mm/0-12" | ±0.03mm | with | 390mm | 26mm | 21.5mm | 16mm | 60mm |
| **1193-150WWL*** | 0-150mm/0-6" | ±0.03mm | without | 235mm | 21mm | 16.5mm | 16mm | 40mm |
| **1193-200WWL*** | 0-200mm/0-8" | ±0.03mm | without | 297mm | 24mm | 20mm | 16mm | 50mm |
| **1193-300WWL*** | 0-300mm/0-12" | ±0.03mm | without | 390mm | 26mm | 21.5mm | 16mm | 60mm |

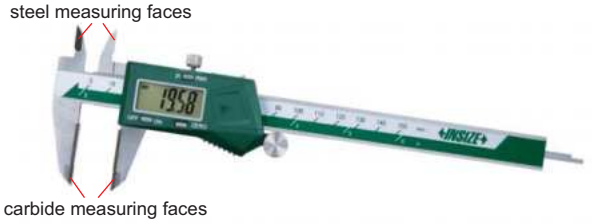
*Supplied with manufacturer inspection certificate

# DIGITAL CALIPERS WITH CARBIDE TIPPED JAWS

INSPECTION CERTIFICATE




1110-150A

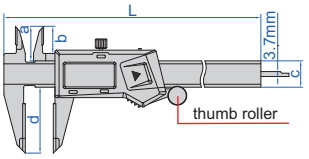



1110-150B




1110-150C

- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Meet DIN862
- Made of stainless steel
- Optional accessory: depth base attachment (code **6140**)




**Non waterproof, with data interface**
**(optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d | Remark |
|---|---|---|---|---|---|---|---|---|---|
| **1110-150A*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped upper and lower jaws |
| **1110-200A*** | 0-200mm/0-8" | ±0.03mm | with | 286mm | 24mm | 19mm | 16mm | 50mm | carbide tipped upper and lower jaws |
| **1110-300A*** | 0-300mm/0-12" | ±0.03mm | with | 400mm | 25mm | 20.5mm | 16mm | 60mm | carbide tipped upper and lower jaws |
| **1110-150AW*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped upper and lower jaws |
| **1110-200AW*** | 0-200mm/0-8" | ±0.03mm | without | 286mm | 24mm | 19mm | 16mm | 50mm | carbide tipped upper and lower jaws |
| **1110-300AW*** | 0-300mm/0-12" | ±0.03mm | without | 400mm | 25mm | 20.5mm | 16mm | 60mm | carbide tipped upper and lower jaws |
| **1110-150B*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped lower jaws |
| **1110-200B*** | 0-200mm/0-8" | ±0.03mm | with | 286mm | 24mm | 19mm | 16mm | 50mm | carbide tipped lower jaws |
| **1110-300B*** | 0-300mm/0-12" | ±0.03mm | with | 400mm | 25mm | 20.5mm | 16mm | 60mm | carbide tipped lower jaws |
| **1110-150BW*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped lower jaws |
| **1110-200BW*** | 0-200mm/0-8" | ±0.03mm | without | 286mm | 24mm | 19mm | 16mm | 50mm | carbide tipped lower jaws |
| **1110-300BW*** | 0-300mm/0-12" | ±0.03mm | without | 400mm | 25mm | 20.5mm | 16mm | 60mm | carbide tipped lower jaws |

**Non waterproof, built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d | Remark |
|---|---|---|---|---|---|---|---|---|---|
| **1110-150AWL*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped upper and lower jaws |
| **1110-200AWL*** | 0-200mm/0-8" | ±0.03mm | with | 286mm | 24mm | 19mm | 16mm | 50mm | carbide tipped upper and lower jaws |
| **1110-300AWL*** | 0-300mm/0-12" | ±0.03mm | with | 400mm | 25mm | 20.5mm | 16mm | 60mm | carbide tipped upper and lower jaws |
| **1110-150AWWL*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped upper and lower jaws |
| **1110-200AWWL*** | 0-200mm/0-8" | ±0.03mm | without | 286mm | 24mm | 19mm | 16mm | 50mm | carbide tipped upper and lower jaws |
| **1110-300AWWL*** | 0-300mm/0-12" | ±0.03mm | without | 400mm | 25mm | 20.5mm | 16mm | 60mm | carbide tipped upper and lower jaws |
| **1110-150BWL*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped lower jaws |
| **1110-200BWL*** | 0-200mm/0-8" | ±0.03mm | with | 286mm | 24mm | 19mm | 16mm | 50mm | carbide tipped lower jaws |
| **1110-300BWL*** | 0-300mm/0-12" | ±0.03mm | with | 400mm | 25mm | 20.5mm | 16mm | 60mm | carbide tipped lower jaws |
| **1110-150BWWL*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped lower jaws |
| **1110-200BWWL*** | 0-200mm/0-8" | ±0.03mm | without | 286mm | 24mm | 19mm | 16mm | 50mm | carbide tipped lower jaws |
| **1110-300BWWL*** | 0-300mm/0-12" | ±0.03mm | without | 400mm | 25mm | 20.5mm | 16mm | 60mm | carbide tipped lower jaws |

**IP67 dust/waterproof, without data interface**

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d | Remark |
|---|---|---|---|---|---|---|---|---|---|
| **1110-150C*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped upper and lower jaws |
| **1110-150D*** | 0-150mm/0-6" | ±0.03mm | with | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped lower jaws |
| **1110-150CW*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped upper and lower jaws |
| **1110-150DW*** | 0-150mm/0-6" | ±0.03mm | without | 236mm | 21mm | 16mm | 16mm | 40mm | carbide tipped lower jaws |

*Supplied with manufacturer inspection certificate

## DIGITAL CALIPERS

DATA OUTPUT



1170-300

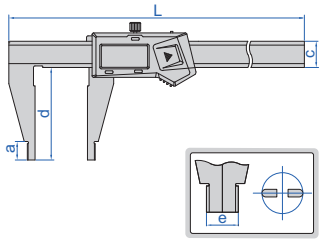
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| **1170-200** | 0-200mm/0-8" | ±0.03mm | 12mm | 17mm | 60mm | 10mm | 314mm |
| **1170-306** | 0-300mm/0-12" | ±0.04mm | 12mm | 17mm | 60mm | 10mm | 420mm |
| **1170-300** | 0-300mm/0-12" | ±0.06mm | 12mm | 17mm | 90mm | 10mm | 420mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| **1170-200WL** | 0-200mm/0-8" | ±0.03mm | 12mm | 17mm | 60mm | 10mm | 314mm |
| **1170-306WL** | 0-300mm/0-12" | ±0.04mm | 12mm | 17mm | 60mm | 10mm | 420mm |
| **1170-300WL** | 0-300mm/0-12" | ±0.06mm | 12mm | 17mm | 90mm | 10mm | 420mm |




## DIGITAL CALIPERS

DATA OUTPUT



1171-300

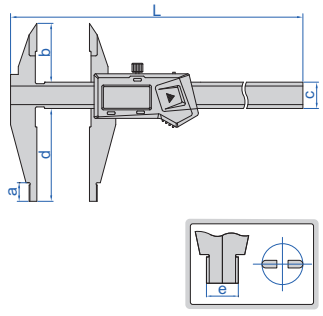
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1171-200** | 0-200mm/0-8" | ±0.03mm | 12mm | 38mm | 17mm | 60mm | 10mm | 320mm |
| **1171-250** | 0-250mm/0-10" | ±0.03mm | 12mm | 38mm | 17mm | 60mm | 10mm | 365mm |
| **1171-306** | 0-300mm/0-12" | ±0.04mm | 12mm | 38mm | 17mm | 60mm | 10mm | 420mm |
| **1171-300** | 0-300mm/0-12" | ±0.06mm | 12mm | 38mm | 17mm | 90mm | 10mm | 420mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1171-200WL** | 0-200mm/0-8" | ±0.03mm | 12mm | 38mm | 17mm | 60mm | 10mm | 320mm |
| **1171-250WL** | 0-250mm/0-10" | ±0.03mm | 12mm | 38mm | 17mm | 60mm | 10mm | 365mm |
| **1171-306WL** | 0-300mm/0-12" | ±0.04mm | 12mm | 38mm | 17mm | 60mm | 10mm | 420mm |
| **1171-300WL** | 0-300mm/0-12" | ±0.06mm | 12mm | 38mm | 17mm | 90mm | 10mm | 420mm |



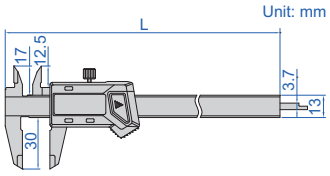
## MINI DIGITAL CALIPERS

ATTENTION: NO DATA OUTPUT

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: zero, mm/inch, on/off
- Automatic power off, move the digital unit to turn on power
- Battery LR44
- Meet DIN862
- Made of stainless steel



1111-100A




| Code | Range | Accuracy | L |
|---|---|---|---|
| 1111-75A | 0-75mm/0-3" | ±0.02mm | 144mm |
| 1111-100A | 0-100mm/0-4" | ±0.02mm | 170mm |

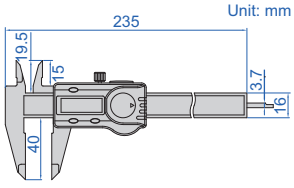
## PLASTIC DIGITAL CALIPER

ATTENTION: NO DATA OUTPUT

- Non waterproof
- Made of hard plastic, non-magnetic and non electric conductive
- Prevent workpieces from scratching by calipers
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off



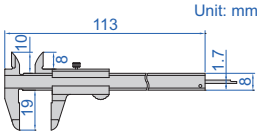
1139-150




| Code | Range | Accuracy |
|---|---|---|
| 1139-150 | 0-150mm/0-6" | ±0.1mm |

## MINI VERNIER CALIPERS

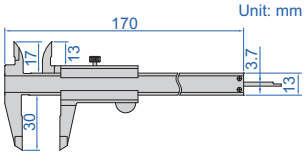
- Meet DIN862
- Made of stainless steel
- Satin chrome plated reading surface






1204-70

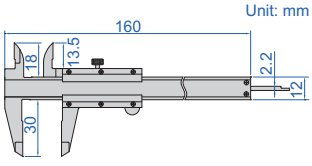
| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 1204-70 | 0-70mm | 0.05mm | ±0.05mm |






1203-1003

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 1203-1003 | 0-100mm | 0.05mm | ±0.05mm |






1201-1003

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 1201-1003 | 0-100mm | 0.05mm | ±0.05mm |



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POPULAR MODEL

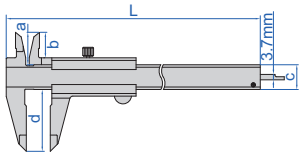
## VERNIER CALIPERS



1205-150S

**Graduation 0.05mm/1/128"** (mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1205-150S | 0-150mm/0-6" | ±0.05mm | 235 | 20.5 | 15.5 | 16 | 40 |
| 1205-200S | 0-200mm/0-8" | ±0.05mm | 290 | 23.5 | 19 | 17 | 50 |
| 1205-250S | 0-250mm/0-10" | ±0.05mm | 364 | 27.5 | 22 | 20 | 64 |
| 1205-300S | 0-300mm/0-12" | ±0.05mm | 414 | 27.5 | 22 | 20 | 64 |




**Graduation 0.05mm** (mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1205-1503S | 0-150mm | ±0.05mm | 235 | 20.5 | 15.5 | 16 | 40 |
| 1205-2003S | 0-200mm | ±0.05mm | 290 | 23.5 | 19 | 17 | 50 |
| 1205-2503S | 0-250mm | ±0.05mm | 350 | 26 | 21.5 | 16 | 60 |
| 1205-3003S | 0-300mm | ±0.05mm | 414 | 27.5 | 22 | 20 | 64 |

- Meet DIN862
- Made of stainless steel
- Satin chrome plated reading surface

**Graduation 0.02mm/0.001"** (mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1205-1502S | 0-150mm/0-6" | ±0.03mm | 235 | 20.5 | 15.5 | 16 | 40 |
| 1205-2002S | 0-200mm/0-8" | ±0.03mm | 290 | 23.5 | 19 | 17 | 50 |
| 1205-2502S | 0-250mm/0-10" | ±0.03mm | 364 | 27.5 | 22 | 20 | 64 |
| 1205-3002S | 0-300mm/0-12" | ±0.03mm | 414 | 27.5 | 22 | 20 | 64 |

**Graduation 0.02mm** (mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1205-1501S | 0-150mm | ±0.03mm | 235 | 20.5 | 15.5 | 16 | 40 |
| 1205-2001S | 0-200mm | ±0.03mm | 290 | 23.5 | 19 | 17 | 50 |
| 1205-2501S | 0-250mm | ±0.03mm | 350 | 26 | 21.5 | 16 | 60 |
| 1205-3001S | 0-300mm | ±0.03mm | 414 | 27.5 | 22 | 20 | 64 |

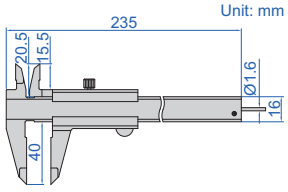
## VERNIER CALIPER WITH ROUND DEPTH BAR



1202-150

- Graduation 0.05mm/1/128"
- Round depth bar
- Meet DIN862
- Made of stainless steel
- Satin chrome plated reading surface

| Code | Range | Accuracy |
|---|---|---|
| 1202-150 | 0-150mm/0-6" | ±0.05mm |



## VERNIER CALIPERS WITH FINE ADJUSTMENT

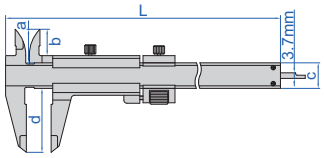
- Graduation 0.02mm/0.001"
- With fine adjustment
- Meet DIN862
- Made of stainless steel
- Satin chrome plated reading surface



1233-130

(mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1233-130 | 0-130mm/0-5" | ±0.03mm | 230 | 20.5 | 16.5 | 16 | 40 |
| 1233-180 | 0-180mm/0-7" | ±0.03mm | 295 | 23.5 | 19 | 16 | 50 |
| 1233-280 | 0-280mm/0-11" | ±0.03mm | 410 | 26 | 20 | 20 | 60 |




## VERNIER CALIPERS WITH THUMB CLAMP

- Meet DIN862
- With thumb clamp
- Made of stainless steel
- Satin chrome plated reading surface



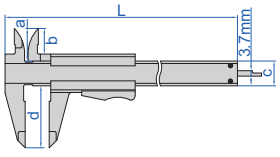
1223-150

**Graduation 0.05mm/1/128"** (mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1223-150 | 0-150mm/0-6" | ±0.05mm | 230 | 20.5 | 16.5 | 16 | 40 |
| 1223-200 | 0-200mm/0-8" | ±0.05mm | 295 | 23.5 | 19 | 16 | 50 |

**Graduation 0.02mm/0.001"** (mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1223-1502 | 0-150mm/0-6" | ±0.03mm | 230 | 20.5 | 16.5 | 16 | 40 |
| 1223-2002 | 0-200mm/0-8" | ±0.03mm | 295 | 23.5 | 19 | 16 | 50 |




## VERNIER CALIPERS WITH CARBIDE TIPPED JAWS

- Carbide tipped jaws for inside and outside measurements
- Meet DIN862
- Made of stainless steel
- Satin chrome plated reading surface



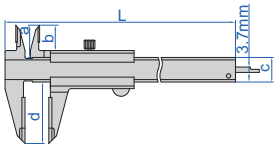

1238-150

**Graduation 0.05mm/1/128"** (mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1238-150 | 0-150mm/0-6" | ±0.05mm | 230 | 21 | 16.5 | 16 | 40 |
| 1238-200 | 0-200mm/0-8" | ±0.05mm | 295 | 24 | 19 | 16 | 50 |
| 1238-300 | 0-300mm/0-12" | ±0.05mm | 410 | 25 | 20 | 16 | 60 |

**Graduation 0.02mm/0.001"** (mm)

| Code | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|
| 1238-1502 | 0-150mm/0-6" | ±0.03mm | 230 | 21 | 16.5 | 16 | 40 |
| 1238-2002 | 0-200mm/0-8" | ±0.03mm | 295 | 24 | 19 | 16 | 50 |
| 1238-3002 | 0-300mm/0-12" | ±0.03mm | 410 | 25 | 20 | 16 | 60 |



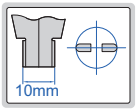
## VERNIER CALIPERS

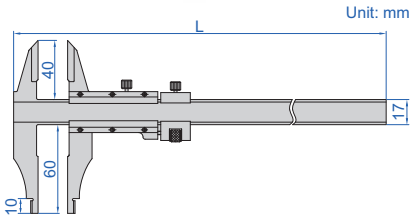


**1217-3001**

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface

| Code | Range | Graduation | Accuracy | L |
|---|---|---|---|---|
| **1217-2503** | 0-250mm | 0.05mm | ±0.05mm | 360mm |
| **1217-3001** | 0-300mm | 0.02mm | ±0.03mm | 410mm |




## VERNIER CALIPERS (ANTI MAGNETIC)

ATTENTION: NOT HARDENED

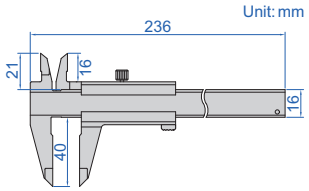
PURE COPPER



**1224-150A**

- Suitable for magnetic parts
- Made of pure copper

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **1224-150A** | 0-150mm | 0.02mm | ±0.05mm |
| **1224-1501A** | 0-150mm | 0.05mm | ±0.05mm |



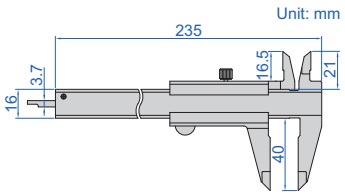

## LEFT HAND VERNIER CALIPERS



**1239-1502**

- Designed for left handed users
- Made of stainless steel
- Satin chrome plated reading surface

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **1239-150** | 0-150mm/0-6" | 0.05mm/1/128" | ±0.05mm |
| **1239-1503** | 0-150mm | 0.05mm | ±0.05mm |
| **1239-1502** | 0-150mm/0-6" | 0.02mm/0.001" | ±0.03mm |
| **1239-1501** | 0-150mm | 0.02mm | ±0.03mm |



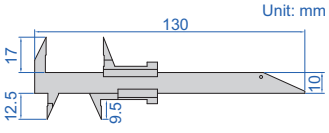

## TEETH VERNIER CALIPER



**1226-70**

- Used for teeth
- Made of stainless steel

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **1226-70** | 0-70mm | 0.1mm | ±0.1mm |






## DIAL CALIPERS

INSPECTION CERTIFICATE

SHOCK PROOF

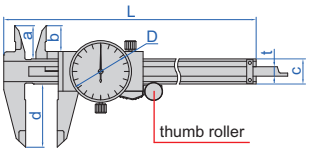


- Shockproof dial indicator
- Made of stainless steel

1312-150A

**Dial indicator graduation: 0.02mm** (mm)

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d | D | t |
|---|---|---|---|---|---|---|---|---|---|---|
| 1312-150A* | 0-150mm | ±0.03mm | with | 235 | 21 | 16.5 | 16 | 40 | Ø39 | 6.5 |
| 1312-200A* | 0-200mm | ±0.03mm | with | 288 | 24 | 19 | 16 | 48 | Ø39 | 6.5 |
| 1312-300A* | 0-300mm | ±0.03mm | with | 410 | 28 | 22 | 20 | 62 | Ø44.5 | 7.5 |
| 1312-100AW* | 0-100mm | ±0.02mm | without | 165 | 18 | 13 | 13 | 30 | Ø32 | 6 |




**Dial indicator graduation: 0.01mm** (mm)

| Code | Range | Accuracy | Thumb roller | L | a | b | c | d | D | t |
|---|---|---|---|---|---|---|---|---|---|---|
| 1311-150A* | 0-150mm | ±0.03mm | with | 235 | 21 | 16.5 | 16 | 40 | Ø39 | 6.5 |
| 1311-200A* | 0-200mm | ±0.03mm | with | 288 | 24 | 19 | 16 | 48 | Ø39 | 6.5 |
| 1311-300A* | 0-300mm | ±0.03mm | with | 410 | 28 | 22 | 20 | 62 | Ø44.5 | 7.5 |

*Supplied with manufacturer inspection certificate

## DIAL CALIPERS WITH CARBIDE TIPPED JAWS

INSPECTION CERTIFICATE

SHOCK PROOF

- Shockproof dial indicator
- Dial indicator graduation: 0.02mm
- Carbide tipped jaws for inside and outside measurements
- Made of stainless steel

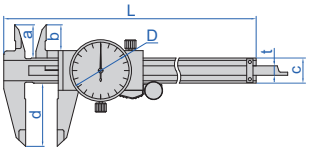



1339-150

(mm)

| Code | Range | Accuracy | L | a | b | c | d | D | t |
|---|---|---|---|---|---|---|---|---|---|
| 1339-150* | 0-150mm | ±0.03mm | 235 | 21 | 16.5 | 16 | 40 | Ø39 | 6.5 |
| 1339-200* | 0-200mm | ±0.03mm | 288 | 24 | 19 | 16 | 48 | Ø39 | 6.5 |
| 1339-300* | 0-300mm | ±0.03mm | 410 | 28 | 22 | 20 | 62 | Ø44.5 | 7.5 |

*Supplied with manufacturer inspection certificate




## DIAL CALIPERS

SHOCK PROOF

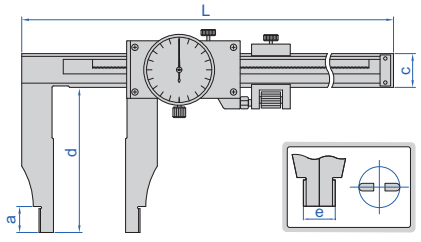


- Shockproof dial indicator
- Dial indicator graduation: 0.02mm
- Made of stainless steel

1316-500

(mm)

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| 1316-500 | 0-500mm | ±0.05mm | 18 | 21 | 90 | 20 | 650 |
| 1316-600 | 0-600mm | ±0.05mm | 18 | 21 | 90 | 20 | 750 |
| 1316-1000 | 0-1000mm | ±0.07mm | 24 | 28 | 150 | 20 | 1190 |
| 1316-1500 | 0-1500mm | ±0.11mm | 24 | 28 | 150 | 20 | 1690 |



DATA OUTPUT

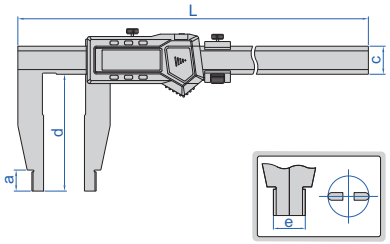
POPULAR MODEL

# DIGITAL CALIPERS





1106-501




- Non waterproof
- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Battery CR2032
- Made of stainless steel
- Optional accessory: accessory set for large digital calipers (code **6145-500/6146-500B**, for calipers with c=24mm)

**With data interface** **(mm)**

| Code | Range | Accuracy | a | c | d | e | L | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|
| **1106-301** | 0-300mm/0-12" | ±0.05mm | 18 | 24 | 100 | 20 | 420 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1106-302** | 0-300mm/0-12" | ±0.05mm | 18 | 24 | 150 | 20 | 475 | |
| **1106-451** | 0-450mm/0-18" | ±0.05mm | 18 | 24 | 100 | 20 | 625 | |
| **1106-501** | 0-500mm/0-20" | ±0.05mm | 18 | 24 | 100 | 20 | 675 | |
| **1106-502** | 0-500mm/0-20" | ±0.06mm | 18 | 24 | 150 | 20 | 675 | |
| **1106-503** | 0-500mm/0-20" | ±0.06mm | 24 | 31 | 200 | 20 | 675 | |
| **1106-505** | 0-500mm/0-20" | ±0.08mm | 24 | 42 | 300 | 20 | 675 | **7315-20B** (receiver is needed), **7302-SPC1A** |
| **1106-601** | 0-600mm/0-24" | ±0.05mm | 18 | 24 | 100 | 20 | 770 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1106-602** | 0-600mm/0-24" | ±0.06mm | 18 | 24 | 150 | 20 | 770 | |
| **1106-603** | 0-600mm/0-24" | ±0.06mm | 24 | 31 | 200 | 20 | 825 | |
| **1106-802** | 0-800mm/0-32" | ±0.07mm | 24 | 31 | 150 | 20 | 1025 | |
| **1106-1002** | 0-1000mm/0-40" | ±0.08mm | 24 | 31 | 150 | 20 | 1220 | |
| **1106-1003** | 0-1000mm/0-40" | ±0.08mm | 24 | 31 | 200 | 20 | 1220 | |
| **1106-1005** | 0-1000mm/0-40" | ±0.10mm | 24 | 42 | 300 | 20 | 1220 | **7315-20B** (receiver is needed), **7302-SPC1A** |
| **1106-1502** | 0-1500mm/0-60" | ±0.11mm | 24 | 42 | 150 | 20 | 1780 | |
| **1106-1503** | 0-1500mm/0-60" | ±0.12mm | 24 | 42 | 200 | 20 | 1780 | |
| **1106-2002** | 0-2000mm/0-80" | ±0.14mm | 24 | 42 | 150 | 20 | 2290 | |
| **1106-2003** | 0-2000mm/0-80" | ±0.14mm | 24 | 42 | 200 | 20 | 2290 | |
| **1106-2502** | 0-2500mm/0-100" | ±0.22mm | 24 | 42 | 150 | 20 | 2800 | |
| **1106-3002** | 0-3000mm/0-120" | ±0.26mm | 24 | 42 | 150 | 20 | 3300 | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| **1106-301WL** | 0-300mm/0-12" | ±0.05mm | 18mm | 24mm | 100mm | 20mm | 420mm |
| **1106-302WL** | 0-300mm/0-12" | ±0.05mm | 18mm | 24mm | 150mm | 20mm | 420mm |
| **1106-451WL** | 0-450mm/0-18" | ±0.05mm | 18mm | 24mm | 100mm | 20mm | 625mm |
| **1106-501WL** | 0-500mm/0-20" | ±0.05mm | 18mm | 24mm | 100mm | 20mm | 675mm |
| **1106-502WL** | 0-500mm/0-20" | ±0.06mm | 18mm | 24mm | 150mm | 20mm | 675mm |
| **1106-601WL** | 0-600mm/0-24" | ±0.05mm | 18mm | 24mm | 100mm | 20mm | 770mm |
| **1106-602WL** | 0-600mm/0-24" | ±0.06mm | 18mm | 24mm | 150mm | 20mm | 770mm |

## DIGITAL CALIPERS

DATA OUTPUT

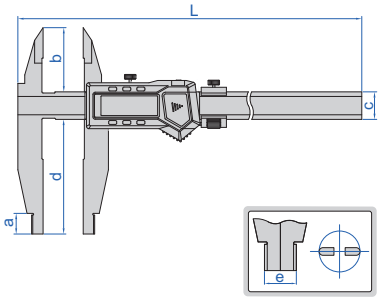


1117-501

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Battery CR2032
- Made of stainless steel
- Optional accessory: accessory set for large digital calipers (code **6145-500/6146-500B**, for calipers with c=24mm)

**With data interface (optional data output cable: code 7315-22 receiver is needed page 5, 7214-22 page 11, 7302-22 page 20)**

| Code | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1117-301** | 0-300mm/0-12" | ±0.05mm | 18mm | 56mm | 24mm | 100mm | 20mm | 420mm |
| **1117-501** | 0-500mm/0-20" | ±0.05mm | 18mm | 56mm | 24mm | 100mm | 20mm | 675mm |
| **1117-502** | 0-500mm/0-20" | ±0.06mm | 24mm | 56mm | 24mm | 150mm | 20mm | 675mm |
| **1117-601** | 0-600mm/0-24" | ±0.05mm | 18mm | 56mm | 24mm | 100mm | 20mm | 770mm |
| **1117-802** | 0-800mm/0-32" | ±0.07mm | 24mm | 67mm | 31mm | 150mm | 20mm | 1025mm |
| **1117-1002** | 0-1000mm/0-40" | ±0.08mm | 24mm | 67mm | 31mm | 150mm | 20mm | 1220mm |




**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1117-301WL** | 0-300mm/0-12" | ±0.05mm | 18mm | 56mm | 24mm | 100mm | 20mm | 420mm |
| **1117-501WL** | 0-500mm/0-20" | ±0.05mm | 18mm | 56mm | 24mm | 100mm | 20mm | 675mm |
| **1117-502WL** | 0-500mm/0-20" | ±0.06mm | 24mm | 56mm | 24mm | 150mm | 20mm | 675mm |
| **1117-601WL** | 0-600mm/0-24" | ±0.05mm | 18mm | 56mm | 24mm | 100mm | 20mm | 770mm |

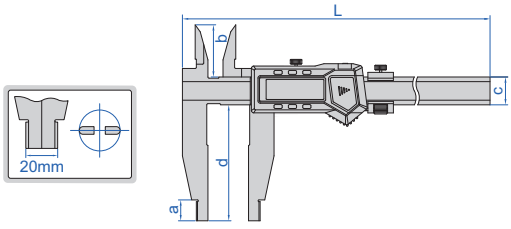
## DIGITAL CALIPERS

DATA OUTPUT



1136-501

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Battery CR2032
- Made of stainless steel
- Optional accessory: accessory set for large digital calipers (code **6145-500/6146-500B**, for calipers with c=24mm)




**With data interface (optional data output cable: code 7315-22 receiver is needed page 5, 7214-22 page 11, 7302-22 page 20, for calipers with c=24mm or 31mm)**

**(mm)**

| Code | Range | Accuracy | a | b | c | d | L |
|---|---|---|---|---|---|---|---|
| **1136-301** | 0-300mm/0-12" | ±0.05mm | 18 | 45 | 24 | 100 | 420 |
| **1136-451** | 0-450mm/0-18" | ±0.05mm | 18 | 45 | 24 | 100 | 625 |
| **1136-501** | 0-500mm/0-20" | ±0.05mm | 18 | 45 | 24 | 100 | 675 |
| **1136-502** | 0-500mm/0-20" | ±0.06mm | 18 | 45 | 24 | 150 | 675 |
| **1136-503** | 0-500mm/0-20" | ±0.06mm | 24 | 60 | 31 | 200 | 675 |
| **1136-601** | 0-600mm/0-24" | ±0.05mm | 18 | 45 | 24 | 100 | 770 |
| **1136-1002** | 0-1000mm/0-40" | ±0.08mm | 24 | 60 | 31 | 150 | 1220 |
| **1136-1502** | 0-1500mm/0-60" | ±0.11mm | 24 | 60 | 42 | 150 | 1780 |
| **1136-2002** | 0-2000mm/0-80" | ±0.14mm | 24 | 60 | 42 | 150 | 2290 |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

**(mm)**

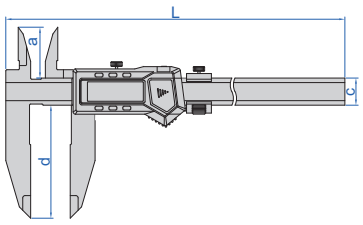
| Code | Range | Accuracy | a | b | c | d | L |
|---|---|---|---|---|---|---|---|
| **1136-301WL** | 0-300mm/0-12" | ±0.05mm | 18 | 45 | 24 | 100 | 420 |
| **1136-451WL** | 0-450mm/0-18" | ±0.05mm | 18 | 45 | 24 | 100 | 625 |
| **1136-501WL** | 0-500mm/0-20" | ±0.05mm | 18 | 45 | 24 | 100 | 675 |
| **1136-502WL** | 0-500mm/0-20" | ±0.06mm | 18 | 45 | 24 | 150 | 675 |
| **1136-601WL** | 0-600mm/0-24" | ±0.05mm | 18 | 45 | 24 | 100 | 770 |

## DIGITAL CALIPERS

DATA OUTPUT



1135-601




- Non waterproof
- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Battery CR2032
- Made of stainless steel

**With data interface (optional data output cable: code 7315-22 receiver is needed page 5, 7214-22 page 11, 7302-22 page 20)** (mm)

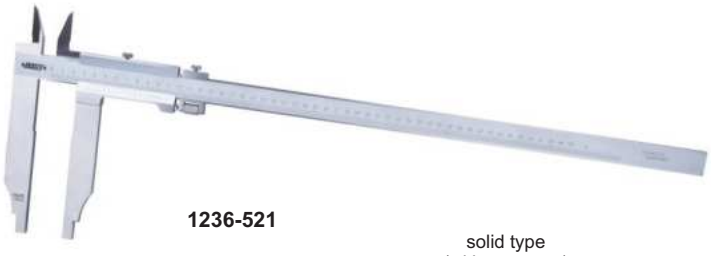
| Code | Range | Accuracy | a | c | d | L |
|---|---|---|---|---|---|---|
| **1135-451** | 0-450mm/0-18" | ±0.05mm | 45 | 24 | 100 | 625 |
| **1135-601** | 0-600mm/0-24" | ±0.05mm | 45 | 24 | 100 | 770 |
| **1135-1002** | 0-1000mm/0-40" | ±0.08mm | 60 | 31 | 150 | 1220 |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)** (mm)

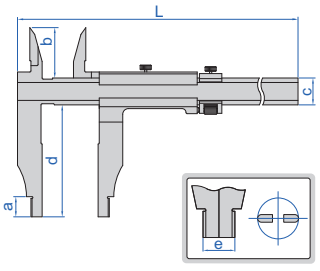
| Code | Range | Accuracy | a | c | d | L |
|---|---|---|---|---|---|---|
| **1135-451WL** | 0-450mm/0-18" | ±0.05mm | 45 | 24 | 100 | 625 |
| **1135-601WL** | 0-600mm/0-24" | ±0.05mm | 45 | 24 | 100 | 770 |

## VERNIER CALIPERS (SOLID TYPE)

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



1236-521




solid type (without screw)



**Graduation 0.05mm/1/128"** (mm)

| Code | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1236-394** | 0-300mm/0-12" | ±0.07mm | 12 | 38 | 20 | 90 | 10 | 450 |
| **1236-514** | 0-500mm/0-20" | ±0.07mm | 18 | 45 | 24 | 100 | 20 | 670 |
| **1236-524** | 0-500mm/0-20" | ±0.08mm | 18 | 45 | 24 | 150 | 20 | 670 |
| **1236-614** | 0-600mm/0-24" | ±0.08mm | 18 | 45 | 24 | 100 | 20 | 770 |
| **1236-824** | 0-800mm/0-32" | ±0.09mm | 24 | 60 | 31 | 150 | 20 | 1030 |
| **1236-1024** | 0-1000mm/0-40" | ±0.12mm | 24 | 60 | 31 | 150 | 20 | 1230 |

**Graduation 0.02mm** (mm)

| Code | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1236-511** | 0-500mm | ±0.05mm | 18 | 45 | 24 | 100 | 20 | 670 |
| **1236-521** | 0-500mm | ±0.06mm | 18 | 45 | 24 | 150 | 20 | 670 |
| **1236-1021** | 0-1000mm | ±0.08mm | 24 | 60 | 31 | 150 | 20 | 1230 |

## VERNIER CALIPERS (SOLID TYPE)



1207-514

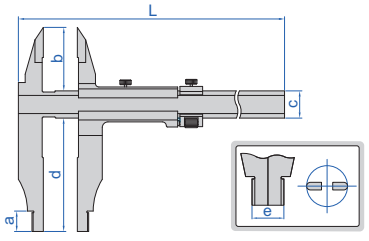
- Graduation 0.05mm/1/128"
- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface

(mm)

| Code | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1207-394** | 0-300mm/0-12" | ±0.07mm | 12 | 40 | 20 | 90 | 10 | 440 |
| **1207-514** | 0-500mm/0-20" | ±0.07mm | 18 | 56 | 24 | 100 | 20 | 670 |
| **1207-524** | 0-500mm/0-20" | ±0.08mm | 18 | 56 | 24 | 150 | 20 | 670 |
| **1207-824** | 0-800mm/0-32" | ±0.09mm | 24 | 67 | 31 | 150 | 20 | 930 |
| **1207-1024** | 0-1000mm/0-40" | ±0.12mm | 24 | 67 | 31 | 150 | 20 | 1230 |

solid type (without screw)





# VERNIER CALIPERS (SOLID TYPE)

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



1208-511

**Graduation 0.05mm/1/128"** **(mm)**

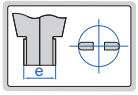
| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| **1208-214** | 0-200mm/0-8" | ±0.06mm | 10 | 20 | 100 | 10 | 330 |
| **1208-394** | 0-300mm/0-12" | ±0.07mm | 10 | 20 | 90 | 10 | 410 |
| **1208-324** | 0-300mm/0-12" | ±0.07mm | 18 | 24 | 150 | 20 | 410 |
| **1208-524** | 0-500mm/0-20" | ±0.08mm | 18 | 24 | 150 | 20 | 670 |
| **1208-614** | 0-600mm/0-24" | ±0.08mm | 18 | 24 | 100 | 20 | 770 |
| **1208-624** | 0-600mm/0-24" | ±0.09mm | 18 | 24 | 150 | 20 | 770 |
| **1208-824** | 0-800mm/0-32" | ±0.09mm | 24 | 31 | 150 | 20 | 1030 |
| **1208-1024** | 0-1000mm/0-40" | ±0.12mm | 24 | 31 | 150 | 20 | 1230 |
| **1208-1524** | 0-1500mm/0-60" | ±0.16mm | 24 | 42 | 150 | 20 | 1820 |
| **1208-2024** | 0-2000mm/0-80" | ±0.20mm | 24 | 42 | 150 | 20 | 2330 |

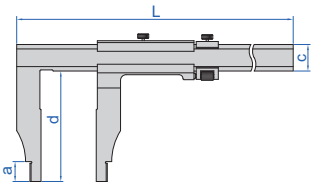
solid type
(without screw)



**Graduation 0.02mm** **(mm)**

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| **1208-511** | 0-500mm | ±0.05mm | 18 | 24 | 100 | 20 | 670 |
| **1208-521** | 0-500mm | ±0.06mm | 18 | 24 | 150 | 20 | 670 |
| **1208-1021** | 0-1000mm | ±0.08mm | 24 | 31 | 150 | 20 | 1230 |
| **1208-1521** | 0-1500mm | ±0.11mm | 24 | 42 | 150 | 20 | 1820 |




# VERNIER CALIPERS (SOLID TYPE)

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



1210-611

**Graduation 0.05mm/1/128"** **(mm)**

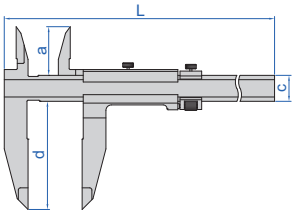
| Code | Range | Accuracy | a | c | d | L |
|---|---|---|---|---|---|---|
| **1210-614** | 0-600mm/0-24" | ±0.08mm | 45 | 24 | 100 | 770 |
| **1210-1024** | 0-1000mm/0-40" | ±0.12mm | 60 | 31 | 150 | 1230 |

**Graduation 0.02mm** **(mm)**

| Code | Range | Accuracy | a | c | d | L |
|---|---|---|---|---|---|---|
| **1210-611** | 0-600mm | ±0.05mm | 45 | 24 | 100 | 770 |
| **1210-1021** | 0-1000mm | ±0.08mm | 60 | 31 | 150 | 1230 |

solid type
(without screw)





## VERNIER CALIPERS (SEPARATE TYPE)

POPULAR MODEL

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



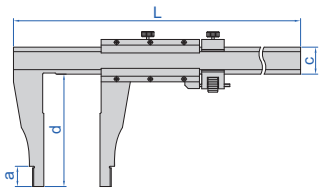
1214-500

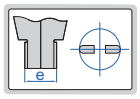
**Graduation 0.02mm/0.001"** (mm)

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| 1214-300 | 0-300mm/0-12" | ±0.05mm | 10 | 20 | 75 | 10 | 410 |
| 1214-450 | 0-450mm/0-18" | ±0.05mm | 18 | 24 | 100 | 20 | 620 |
| 1214-500 | 0-500mm/0-20" | ±0.05mm | 18 | 24 | 100 | 20 | 670 |
| 1214-600 | 0-600mm/0-24" | ±0.05mm | 18 | 24 | 100 | 20 | 770 |
| 1214-1000 | 0-1000mm/0-40" | ±0.08mm | 24 | 32 | 140 | 20 | 1216 |
| 1214-1500 | 0-1500mm/0-60" | ±0.12mm | 24 | 42 | 200 | 20 | 1830 |
| 1214-2000 | 0-2000mm/0-80" | ±0.14mm | 24 | 42 | 200 | 20 | 2320 |

**Graduation 0.05mm/1/128"** (mm)

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| 1214-6004 | 0-600mm/0-24" | ±0.08mm | 18 | 24 | 100 | 20 | 770 |
| 1214-1004 | 0-1000mm/0-40" | ±0.12mm | 24 | 32 | 140 | 20 | 1216 |




separate type (with screws)



## LONG JAW VERNIER CALIPERS (SEPARATE TYPE)

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



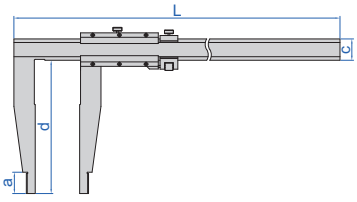
1215-1032

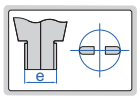
**Graduation 0.02mm/0.001"** (mm)

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| 1215-392 | 0-300mm/0-12" | ±0.05mm | 10 | 17 | 90 | 10 | 410 |
| 1215-322 | 0-300mm/0-12" | ±0.05mm | 18 | 24 | 150 | 20 | 470 |
| 1215-522 | 0-500mm/0-20" | ±0.06mm | 18 | 24 | 150 | 20 | 670 |
| 1215-532 | 0-500mm/0-20" | ±0.06mm | 18 | 24 | 200 | 20 | 670 |
| 1215-622 | 0-600mm/0-24" | ±0.06mm | 18 | 24 | 150 | 20 | 770 |
| 1215-642 | 0-600mm/0-24" | ±0.08mm | 24 | 32 | 250 | 20 | 870 |
| 1215-822 | 0-800mm/0-32" | ±0.07mm | 24 | 32 | 150 | 20 | 1020 |
| 1215-832 | 0-800mm/0-32" | ±0.07mm | 24 | 32 | 200 | 20 | 1020 |
| 1215-1032 | 0-1000mm/0-40" | ±0.08mm | 24 | 32 | 200 | 20 | 1220 |
| 1215-1052 | 0-1000mm/0-40" | ±0.11mm | 24 | 42 | 300 | 20 | 1330 |
| 1215-3052 | 0-3000mm/0-120" | ±0.26mm | 24 | 50 | 300 | 20 | 3360 |

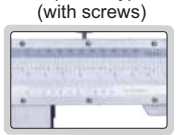
**Graduation 0.05mm/1/128"** (mm)

| Code | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|
| 1215-524 | 0-500mm/0-20" | ±0.08mm | 18 | 24 | 150 | 20 | 670 |
| 1215-1034 | 0-1000mm/0-40" | ±0.12mm | 24 | 32 | 200 | 20 | 1330 |




separate type (with screws)



## CALIPER INSPECTION GAUGE BLOCK AND RING GAUGE SETS

REFER TO PAGE 355 FOR DETAILS



4176-30

## CALIPER/HEIGHT GAUGE CHECKERS

REFER TO PAGE 360 FOR DETAILS



horizontal use



vertical use

6884-300

## CALIPER END GRINDING MACHINE CODE 6309

VIDEO

- Used for grinding the depth measuring surface of the end of calipers




application



**SPECIFICATION**

| | |
|---|---|
| **Power supply** | 220V, 50/60Hz |
| **Dimension (L×W×H)** | 370×200×160mm |
| **Weight** | 15kg |

## CALIPER/MICROMETER LAPPING MACHINE CODE 6318

REFER TO PAGE 191 FOR DETAILS



- For lapping measuring surfaces of caliper lower jaws

lapping measuring surfaces of caliper lower jaws



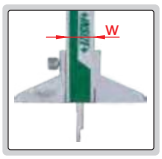
# DEPTH BASE ATTACHMENTS

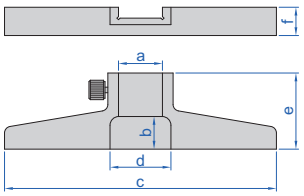


6140



6140-16B




- To increase the stability of depth measurement
- Made of stainless steel

(mm)

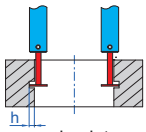
| Code | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| **6140** | 16.5 | 9 | 75 | 18 | 30 | 6 |
| **6140-300A** | 20 | 15 | 125 | 22 | 34 | 9 |
| **6140-16B** | 16 | 12.5 | 75 | 24.5 | 30 | 11 |
| **6140-300B** | 20 | 15 | 125 | 28 | 35 | 13 |

**Application**

| Code | Type | Application |
|---|---|---|
| **6140** | narrow base (f=6mm) | suitable for **1195/1118/1113/1108/1103/1114/1109/1130/1193/1110** series digital calipers with beam width (w) 16mm |
| **6140-300A** | narrow base (f=9mm) | suitable for **1196** series digital calipers with beam width (w) 20mm |
| **6140-16B** | wide base (f=11mm), high stability | suitable for **1195/1118/1113/1108/1103/1114/1109/1130/1193/1110** series digital calipers and **1312/1311/1339** series dial calipers with b am width (w) 16mm |
| **6140-300B** | wide base (f=13), high stability | suitable for **1196** series digital calipers and **1312/1311/1339** series dial calipers with beam width (w) 20mm |

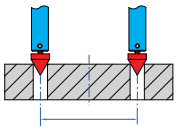
# ACCESSORY SET FOR DIGITAL CALIPERS CODE 6144



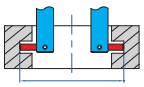

measuring internal groove diameter (h≤3.5mm)





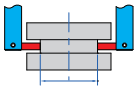
measuring center distance



spherical points for groove diameter (inside hole) measurement

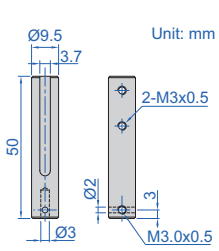


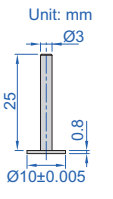



flat points for external groove diameter measurement

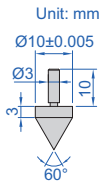


6144

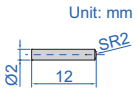



disk points (stainless steel)




conical points (stainless steel)




spherical/flat points (stainless steel)

- Suitable for 0-150mm/0-6" and 0-200mm/0-8" digital calipers (thickness of lower jaws≤3.7mm)

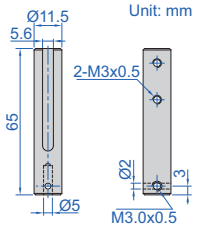
| Code |
|---|
| **6144** |

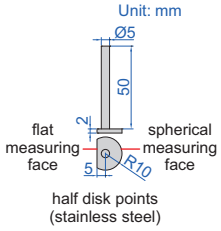
## ACCESSORY SET FOR LARGE DIGITAL CALIPERS
## CODE 6145-500

VIDEO

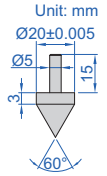


6145-500

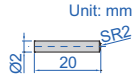



half disk points
(stainless steel)



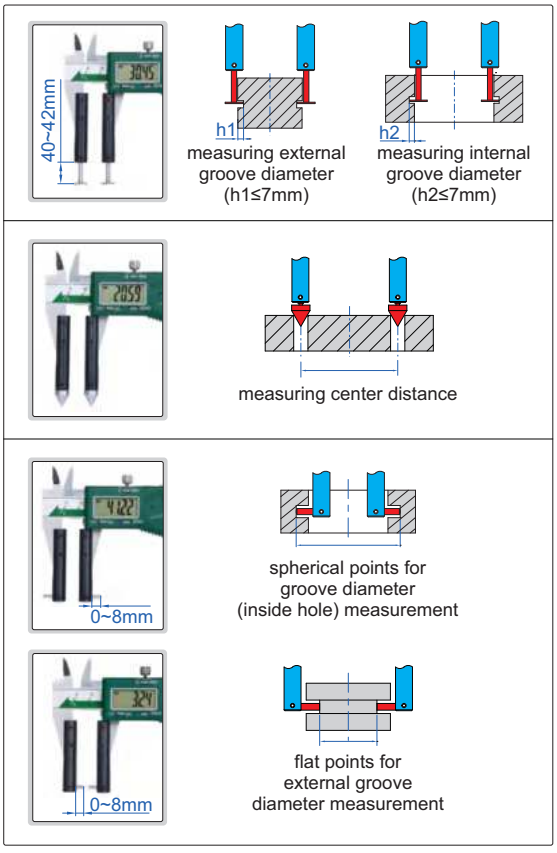

conical points
(stainless steel)




spherical/flat points
(stainless steel)

- Suitable for 0-500mm/0-20" and 0-600mm/0-24" digital calipers (thickness of lower jaws≤5.6mm)

| Code |
|---|
| 6145-500 |

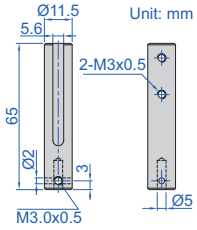


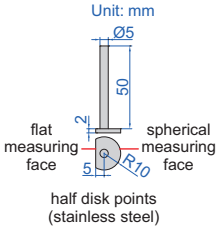

## ACCESSORY SET FOR LARGE DIGITAL CALIPERS (WITH SIDE POINTS)
## CODE 6146-500B

VIDEO

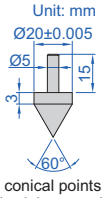


6146-500B

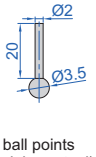



half disk points
(stainless steel)



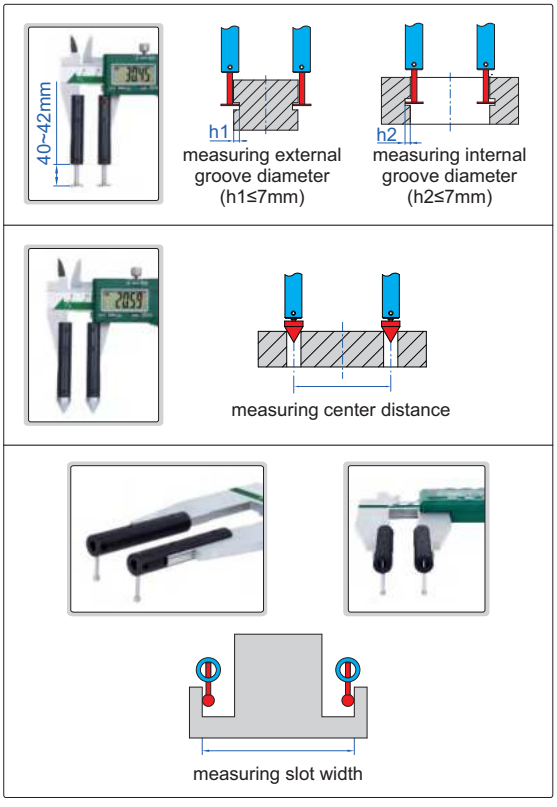

conical points
(stainless steel)




ball points
(stainless steel)

- Suitable for 0-500mm/0-20" and 0-600mm/0-24" digital calipers (thickness of lower jaws≤5.6mm)

| Code |
|---|
| 6146-500B |






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# UNIVERSAL CALIPERS



VIDEO

DATA OUTPUT



- Non waterproof
- Buttons: on/off, set, mm/inch, ABS, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

**With data interface (optional data output cable: code 7315-22 receiver is needed page 5, 7214-22 page 11, 7302-22 page 20)**

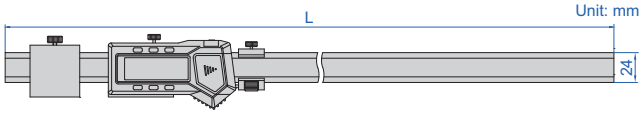
| Code | Range* | Resolution | Accuracy | L |
|---|---|---|---|---|
| 1125-600 | 0-600mm/0-24" | 0.01mm/0.0005" | ±0.05mm | 778mm |
| 1125-1000 | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1205mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range* | Resolution | Accuracy | L |
|---|---|---|---|---|
| 1125-600WL | 0-600mm/0-24" | 0.01mm/0.0005" | ±0.05mm | 778mm |
| 1125-1000WL | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1205mm |

*The range changes according to different points

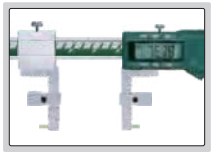
**1125-600**




working with stands

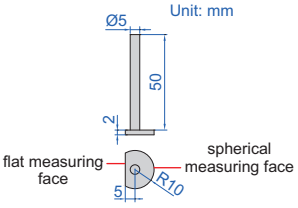


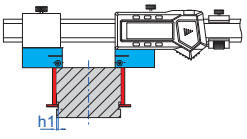
working with measuring jaws



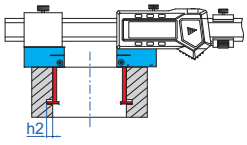
### Half disk points (included)






measuring external groove diameter with flat measuring face (depth h1≤2.5mm)

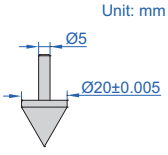


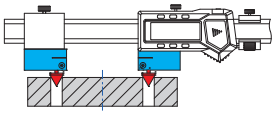

measuring internal groove diameter with spherical measuring face (depth h2≤7.5mm)

### Conical points (optional)



Code
1125-T101



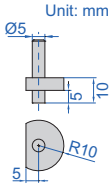



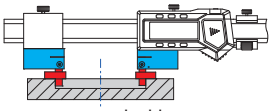
measuring center distance

### Round shoulder points (optional)



Code
1125-T102



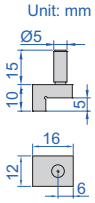



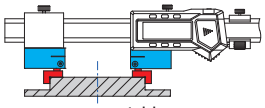
measure inside diameter of shallow hole

### Flat shoulder points (optional)



Code
1125-T103

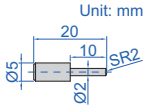


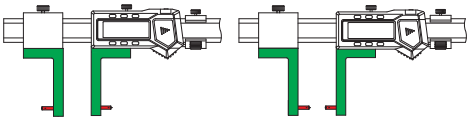



measure outside diameter of low boss

### Spherical points (included)



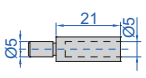


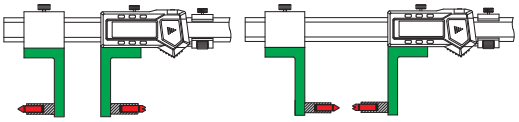



### Point sleeve (optional)



Code
1125-T104

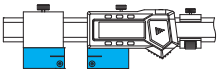


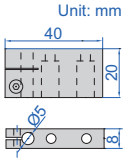



working with multifunctional points, ball points and screw thread points

### Stands (included)





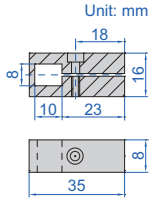


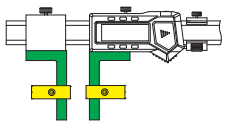

To be continued

Continued from previous page

**Depth stop (included)**

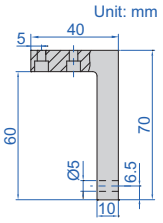


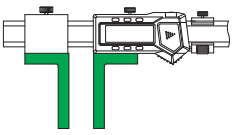


**Measuring jaws (included)**





**Multifunctional points 7392* (optional**, page 52)



*It is necessary to use point sleeve (code **1125-T104**) for these points

**Ball points 7391* (optional**, page 52)



**Screw thread points 7381*, 7321* (optional,** page 52)



## DIGITAL CALIPERS WITH INTERCHANGEABLE POINTS

DATA OUTPUT

VIDEO



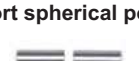
**1526-200**

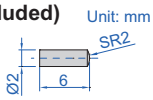
- Non waterproof
- Supplied with 3 pairs of points and zero setting block for external measurement
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: points

preset buttons



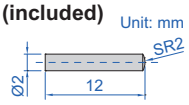
**short spherical points (included)**





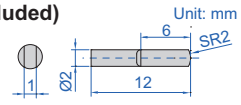

**long spherical/flat points (included)**

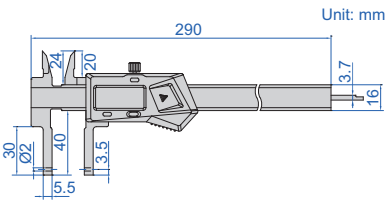





**spherical blade points (included)**






**With data interface**

| Code | Data output cable (optional) |
|---|---|
| **1526-200** | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |

**Built-in wireless**

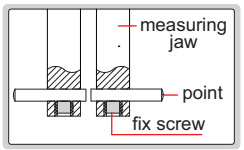
| Code | Receiver (optional) |
|---|---|
| **1526-200WL** | code **7315-2/3/6/7/8/9** |

| Point | Range | Accuracy | Application |
|---|---|---|---|
| **short spherical points** | 12-212mm/0.5-8.5" (internal) | ±0.03mm | for grooves inside small hole |
| **long spherical/flat points** | 24-224mm/1-8.8" (internal)<br>0-187mm/0-7.5" (external) | ±0.03mm | spherical points for grooves inside hole<br>flat points for external grooves |
| **spherical blade points** | 24-224mm/1-8.8" (internal)<br>0-187mm/0-7.5" (external) | ±0.03mm | for narrow grooves inside hole |

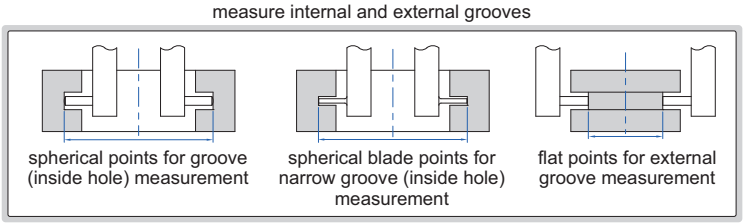
zero setting block for external measurement (included)



install points




measure internal and external grooves

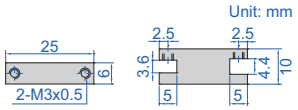



To be continued

Continued from previous page

### Depth stop (optional)

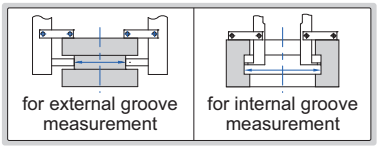
| Code |
|---|
| 6143 |






6143

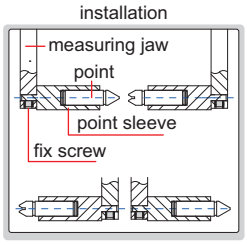





### Point sleeve (optional)




1526-T101

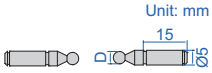



| Code |
|---|
| 1526-T101 |

### Ball points (optional)



7391-T5

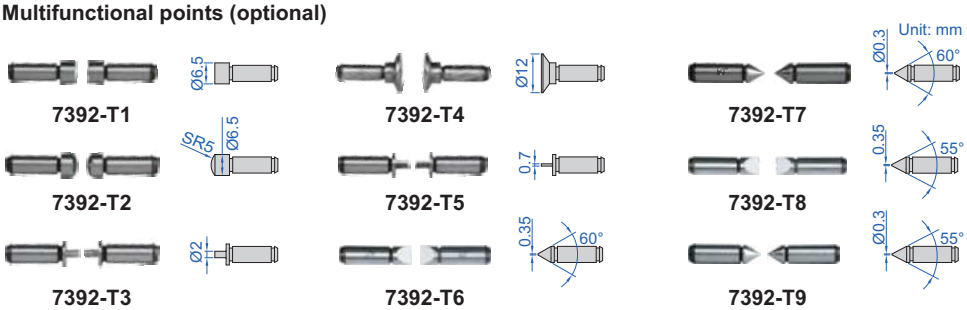



*It is necessary to use point sleeve (code **1526-T101**) for these points

**Range of **1526-200** and **1526-200WL** after installing the points and point sleeve

| Code | Ball dia. (D) | Range** |
|---|---|---|
| 7391-T3* | SØ2.0mm | 75-275mm/3.0-10.8" (internal)<br>0-146mm/0-5.7" (external) |
| 7391-T4* | SØ2.5mm | 76-276mm/3.0-10.8" (internal)<br>0-145mm/0-5.7" (external) |
| 7391-T5* | SØ3.0mm | 77-277mm/3.0-10.9" (internal)<br>0-144mm/0-5.6" (external) |
| 7391-T6* | SØ3.5mm | 78-278mm/3.1-10.9" (internal)<br>0-143mm/0-5.6" (external) |
| 7391-T7* | SØ4.0mm | 79-279mm/3.1-10.9" (internal)<br>0-142mm/0-5.6" (external) |
| 7391-T8* | SØ4.5mm | 80-280mm/3.2-11.0" (internal)<br>0-141mm/0-5.5" (external) |
| 7391-T9* | SØ5.0mm | 81-281mm/3.2-11.0" (internal)<br>0-140mm/0-5.5" (external) |
| 7391-T10* | SØ6.0mm | 83-283mm/3.3-11.1" (internal)<br>0-138mm/0-5.4" (external) |

### Multifunctional points (optional)




| Range** |
|---|
| 66-266mm/2.6-10.5" (internal), 0-155mm/0-6.1" (external) |

**Range of **1526-200** and **1526-200WL** after installing the points and point sleeve

| Code | Type |
|---|---|
| 7392-T1* | flat |
| 7392-T2* | spherical |
| 7392-T3* | spline |
| 7392-T4* | disk |
| 7392-T5* | blade |
| 7392-T6* | knife-edge |
| 7392-T7* | point |
| 7392-T8* | knife-edge |
| 7392-T9* | point |

*It is necessary to use point sleeve (code **1526-T101**) for these points

### Screw thread points (optional)




7321-T16




7381-T11

**Internal thread (60° thread angle)**

| Code | Pitch |
|---|---|
| 7321-T11* | 0.4-0.5mm/64-48TPI |
| 7321-T12* | 0.6-0.9mm/44-28TPI |
| 7321-T13* | 1-1.75mm/24-14TPI |
| 7321-T14* | 2-3mm/13-9TPI |
| 7321-T15* | 3.5-5mm/8-5TPI |
| 7321-T16* | 5.5-7mm/4.5-3.5TPI |
| 7321-T1S* | 6 pairs/set, including all above points |

**External thread (60° thread angle)**

| Code | Pitch |
|---|---|
| 7381-T11* | 0.4-0.5mm/64-48TPI |
| 7381-T12* | 0.6-0.9mm/44-28TPI |
| 7381-T13* | 1-1.75mm/24-14TPI |
| 7381-T14* | 2-3mm/13-9TPI |
| 7381-T15* | 3.5-5mm/8-5TPI |
| 7381-T16* | 5.5-7mm/4.5-3.5TPI |
| 7381-TS* | 6 pairs/set, including all above points |

| Range** |
|---|
| 66-266mm/2.6-10.5" (internal)<br>0-155mm/0-6.1" (external) |

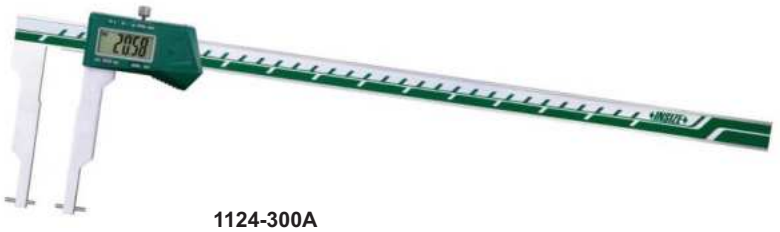
**Range of **1526-200** and **1526-200WL** after installing the points and point sleeve

*It is necessary to use point sleeve (code **1526-T101**) for these points

# DIGITAL CALIPERS WITH INTERCHANGEABLE POINTS

DATA OUTPUT

VIDEO

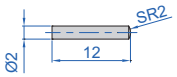


**1124-300A**

**short spherical/flat points (included)**



Unit: mm




**long spherical/flat points (included)**



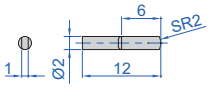
Unit: mm




**short spherical blade points (included)**



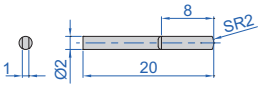
Unit: mm

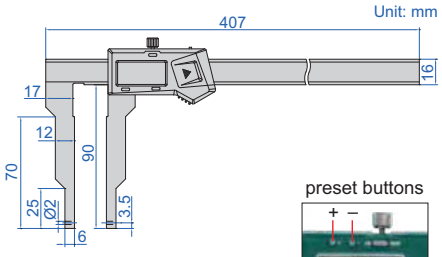



**long spherical blade points (included)**



Unit: mm




preset buttons

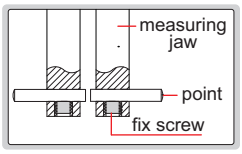


zero setting block for external measurement (included)



- Non waterproof
- Supplied with 4 pairs of points and zero setting block for external measurement
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: points (code **1526-T101**, **7392**, **7391**, **7381**, **7321**), depth stop (code **6143**)

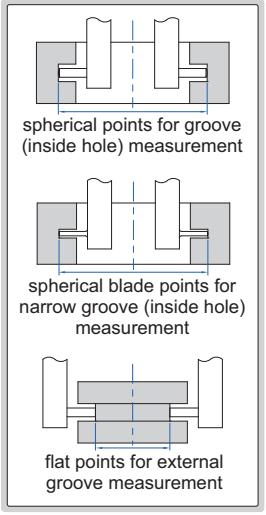
install points




depth stop **6143** (**optional**)



measure internal and external grooves




**With data interface**

| Code | Data output cable (optional) |
|---|---|
| **1124-300A** | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |

**Built-in wireless**

| Code | Receiver (optional) |
|---|---|
| **1124-300AWL** | code **7315-2/3/6/7/8/9** |

| Point | Range | Accuracy | Application |
|---|---|---|---|
| **short spherical/flat points** | 24-324mm/1-12.7" (internal)<br>0-288mm/0-11.3" (external) | ±0.04mm | spherical points for grooves inside hole (small hole)<br>flat points for external grooves |
| **long spherical/flat points** | 40-340mm/1.5-13.3" (internal)<br>0-272mm/0-10.7" (external) | ±0.04mm | spherical points for grooves inside hole (large hole)<br>flat points for external grooves |
| **short spherical blade points** | 24-324mm/1-12.7" (internal)<br>0-288mm/0-11.3" (external) | ±0.04mm | for narrow grooves inside hole (small hole) |
| **long spherical blade points** | 40-340mm/1.5-13.3" (internal)<br>0-272mm/0-10.7" (external) | ±0.04mm | for narrow grooves inside hole (large hole) |

**Multifunctional points 7392*** **(optional**, page 52**)**



**Ball points 7391*(optional**, page 52**)**



**Screw thread points 7381***, **7321*** **(optional**, page 52**)**



*It is necessary to use point sleeve (code **1526-T101**) for these points

DATA OUTPUT

VARIOUS POINTS ARE AVAILABLE (PAGE 272~276)

# DIGITAL CALIPERS WITH INTERCHANGEABLE POINTS

VIDEO

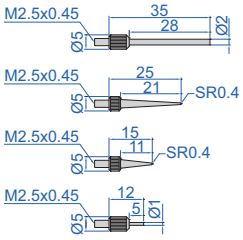
preset buttons

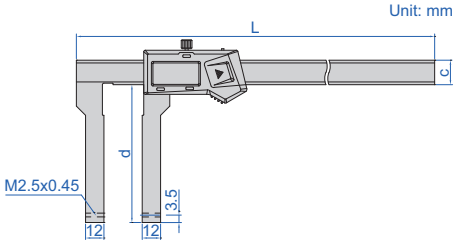




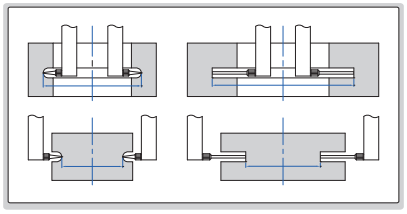
**1530-300**

- Non waterproof
- Supplied with 4 pairs of points and zero setting block for external measurement
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: points (page 272~276), depth stop (code **6143**)

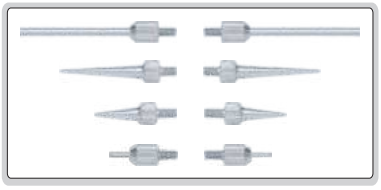



measure internal and external grooves



4 pairs of points (included)



zero setting block for external measurement (included)



| Code | Range* | Accuracy | L | d | c | Data output cable (optional) |
|---|---|---|---|---|---|---|
| **1530-300** | 0-300mm/0-12" | ±0.06mm | 407mm | 90mm | 16mm | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1530-500** | 0-500mm/0-20" | ±0.08mm | 740mm | 100mm | 24mm | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |

**Built-in wireless**
**(receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range* | Accuracy | L | d | c |
|---|---|---|---|---|---|
| **1530-300WL** | 0-300mm/0-12" | ±0.06mm | 407mm | 90mm | 16mm |
| **1530-500WL** | 0-500mm/0-20" | ±0.08mm | 740mm | 100mm | 24mm |

*For different points, the measuring range changes accordingly

depth stop **6143** (**optional**)



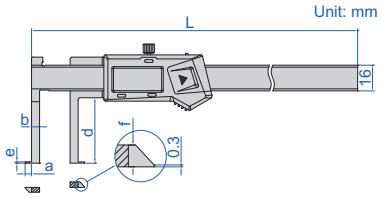
# DIGITAL INSIDE GROOVE CALIPERS



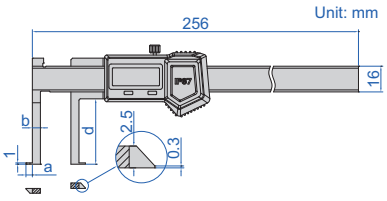

**1520-150**



**1520-150P**

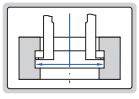



**type A**




**type B**

- Measure diameter of grooves inside small bores
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, set, mm/inch, preset (+, -),
  type B: on/off, zero, mm/inch, ABS/REL, hold
- Battery CR2032
- Made of stainless steel
- Optional accessory: depth stop (code **6143**)



depth stop **6143**
(**optional**)



**Non waterproof, with data interface**
**(optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Type | Accuracy | L | a | b | d | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1520-150** | 11-150mm/0.43-6" | A | ±0.04mm | 236mm | 3.5mm | 5mm | 41mm | 1mm | 2.5mm |
| **1520-200** | 16-200mm/0.63-8" | A | ±0.04mm | 285mm | 5mm | 7mm | 41mm | 1mm | 3mm |
| **1520-300** | 20-300mm/0.79-12" | A | ±0.05mm | 398mm | 7.5mm | 9mm | 62mm | 2mm | 4mm |

**Non waterproof, built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Type | Accuracy | L | a | b | d | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1520-150WL** | 11-150mm/0.43-6" | A | ±0.04mm | 236mm | 3.5mm | 5mm | 41mm | 1mm | 2.5mm |
| **1520-200WL** | 16-200mm/0.63-8" | A | ±0.04mm | 285mm | 5mm | 7mm | 41mm | 1mm | 3mm |
| **1520-300WL** | 20-300mm/0.79-12" | A | ±0.05mm | 398mm | 7.5mm | 9mm | 62mm | 2mm | 4mm |

**IP67 dust/waterproof, no automatic power off, set zero after power on each time, without data interface**

| Code | Range | Type | Accuracy | a | b | d |
|---|---|---|---|---|---|---|
| **1520-150P** | 14-150mm/0.56-6" | B | ±0.04mm | 5mm | 7mm | 30mm |
| **1520-1501P** | 8-150mm/0.31-6" | B | ±0.04mm | 2mm | 4mm | 40mm |

DATA OUTPUT

# DIGITAL INSIDE POINT CALIPERS

depth stop **6143** (**optional**)



preset buttons

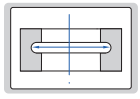


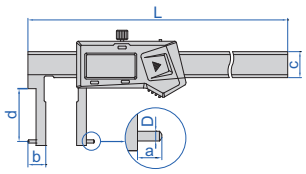
**1121-150A**
**type A**



**1121-150B**
**type B**

- Non waterproof
- Measure groove diameter
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, set, mm/inch, preset (+, -)
  type B: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: depth stop
  (code **6143**, for calipers with c=16mm)






**Preset (no need to add the width of the jaws on the reading), with data interface** **(mm)**

| Code | Range | Type | Accuracy | L | a | b | c | d | D | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|---|---|
| **1121-150A** | 24-150mm/0.94-6" | A | ±0.04mm | 250 | 5 | 12 | 16 | 28 | Ø2 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1121-1501** | 35-150mm/1.38-6" | A | ±0.05mm | 250 | 6 | 17.5 | 16 | 60 | Ø2 | |
| **1121-200A** | 25-200mm/0.98-8" | A | ±0.04mm | 310 | 5 | 12.5 | 16 | 37 | Ø2 | |
| **1121-2001** | 40-200mm/1.57-8" | A | ±0.05mm | 310 | 7 | 20 | 16 | 70 | Ø3 | |
| **1121-300A** | 30-300mm/1.18-12" | A | ±0.07mm | 410 | 5 | 15 | 16 | 50 | Ø2 | |
| **1121-3001A** | 50-300mm/1.97-12" | A | ±0.07mm | 410 | 8 | 25 | 16 | 77 | Ø3 | |
| **1121-500A** | 40-500mm/1.57-20" | A | ±0.07mm | 680 | 5 | 20 | 24 | 90 | Ø3 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1121-5001** | 60-500mm/2.36-20" | A | ±0.08mm | 680 | 10 | 30 | 24 | 120 | Ø3 | |
| **1121-5002** | 80-500mm/3.15-20" | A | ±0.08mm | 680 | 16 | 40 | 24 | 150 | Ø3 | |

**Preset (no need to add the width of the jaws on the reading), built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Type | Accuracy | L | a | b | c | d | D |
|---|---|---|---|---|---|---|---|---|---|
| **1121-150AWL** | 24-150mm/0.94-6" | A | ±0.04mm | 250mm | 5mm | 12mm | 16mm | 28mm | Ø2mm |
| **1121-1501WL** | 35-150mm/1.38-6" | A | ±0.05mm | 250mm | 6mm | 17.5mm | 16mm | 60mm | Ø2mm |
| **1121-200AWL** | 25-200mm/0.98-8" | A | ±0.04mm | 310mm | 5mm | 12.5mm | 16mm | 37mm | Ø2mm |
| **1121-2001WL** | 40-200mm/1.57-8" | A | ±0.05mm | 310mm | 7mm | 20mm | 16mm | 70mm | Ø3mm |
| **1121-300AWL** | 30-300mm/1.18-12" | A | ±0.07mm | 410mm | 5mm | 15mm | 16mm | 50mm | Ø2mm |
| **1121-3001AWL** | 50-300mm/1.97-12" | A | ±0.07mm | 410mm | 8mm | 25mm | 16mm | 77mm | Ø3mm |
| **1121-500AWL** | 40-500mm/1.57-20" | A | ±0.07mm | 680mm | 5mm | 20mm | 24mm | 90mm | Ø3mm |
| **1121-5001WL** | 60-500mm/2.36-20" | A | ±0.08mm | 680mm | 10mm | 30mm | 24mm | 120mm | Ø3mm |
| **1121-5002WL** | 80-500mm/3.15-20" | A | ±0.08mm | 680mm | 16mm | 40mm | 24mm | 150mm | Ø3mm |

**No preset (need to add the width of the jaws on the reading)**

| Code | Range | Type | Accuracy | L | a | b | c | d | D |
|---|---|---|---|---|---|---|---|---|---|
| **1121-150B** | 50-150mm/1.97-6" | B | ±0.06mm | 270mm | 8mm | 25mm | 20mm | 90mm | Ø3mm |
| **1121-200B** | 60-200mm/2.36-8" | B | ±0.06mm | 320mm | 10mm | 30mm | 20mm | 100mm | Ø3mm |
| **1121-300B** | 60-300mm/2.36-12" | B | ±0.07mm | 420mm | 10mm | 30mm | 20mm | 110mm | Ø3mm |

# DIGITAL INSIDE GROOVE CALIPERS

depth stop **6143** (**optional**)



preset buttons

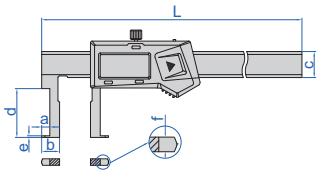


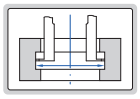
**1120-150A**
**type A**

- Measure groove diameter
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, set, mm/inch, preset (+, -)
  type B: on/off, zero, mm/inch
  type C: on/off, zero, mm/inch, ABS/REL, hold
- Battery CR2032
- Made of stainless steel
- Optional accessory: depth stop
  (code **6143**, for calipers with c=16mm)



**1120-150B**
**type B**





**1120-150P**
**type C**

**Non waterproof, preset (no need to add the width of the jaws on the reading), with data interface** **(mm)**

| Code | Range | Type | Accuracy | L | a | b | c | d | e | f | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1120-150A** | 22-150mm/0.87-6" | A | ±0.04mm | 250 | 5 | 11 | 16 | 30 | 1 | 4 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1120-1501** | 35-150mm/1.38-6" | A | ±0.06mm | 250 | 6 | 17.5 | 16 | 60 | 1.5 | 4 | |
| **1120-200A** | 25-200mm/0.98-8" | A | ±0.04mm | 310 | 5 | 12.5 | 16 | 40 | 1 | 4 | |
| **1120-2001** | 40-200mm/1.57-8" | A | ±0.06mm | 310 | 7 | 20 | 16 | 70 | 2.5 | 4 | |
| **1120-300A** | 30-300mm/1.18-12" | A | ±0.05mm | 410 | 5 | 15 | 16 | 50 | 1.5 | 4 | |
| **1120-3001** | 50-300mm/1.97-12" | A | ±0.07mm | 410 | 8 | 25 | 16 | 80 | 2.5 | 4 | |
| **1120-500** | 40-500mm/1.57-20" | A | ±0.07mm | 680 | 5 | 20 | 24 | 90 | 2.2 | 5.5 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1120-5001** | 60-500mm/2.36-20" | A | ±0.08mm | 680 | 10 | 30 | 24 | 120 | 3.4 | 5.5 | |
| **1120-5002** | 80-500mm/3.15-20" | A | ±0.08mm | 680 | 16 | 40 | 24 | 150 | 5.2 | 5.5 | |

**Non waterproof, preset (no need to add the width of the jaws on the reading), built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Type | Accuracy | L | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|---|
| **1120-150AWL** | 22-150mm/0.87-6" | A | ±0.04mm | 250mm | 5mm | 11mm | 16mm | 30mm | 1mm | 4mm |
| **1120-1501WL** | 35-150mm/1.38-6" | A | ±0.06mm | 250mm | 6mm | 17.5mm | 16mm | 60mm | 1.5mm | 4mm |
| **1120-200AWL** | 25-200mm/0.98-8" | A | ±0.04mm | 310mm | 5mm | 12.5mm | 16mm | 40mm | 1mm | 4mm |
| **1120-2001WL** | 40-200mm/1.57-8" | A | ±0.06mm | 310mm | 7mm | 20mm | 16mm | 70mm | 2.5mm | 4mm |
| **1120-300AWL** | 30-300mm/1.18-12" | A | ±0.05mm | 410mm | 5mm | 15mm | 16mm | 50mm | 1.5mm | 4mm |
| **1120-3001WL** | 50-300mm/1.97-12" | A | ±0.07mm | 410mm | 8mm | 25mm | 16mm | 80mm | 2.5mm | 4mm |
| **1120-500WL** | 40-500mm/1.57-20" | A | ±0.07mm | 680mm | 5mm | 20mm | 24mm | 90mm | 2.2mm | 5.5mm |
| **1120-5001WL** | 60-500mm/2.36-20" | A | ±0.08mm | 680mm | 10mm | 30mm | 24mm | 120mm | 3.4mm | 5.5mm |
| **1120-5002WL** | 80-500mm/3.15-20" | A | ±0.08mm | 680mm | 16mm | 40mm | 24mm | 150mm | 5.2mm | 5.5mm |

**Non waterproof, no preset (need to add the width of the jaws on the reading)**

| Code | Range | Type | Accuracy | L | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|---|
| **1120-150B** | 50-150mm/1.97-6" | B | ±0.06mm | 270mm | 8mm | 25mm | 20mm | 90mm | 3.4mm | 4mm |
| **1120-200B** | 60-200mm/2.36-8" | B | ±0.06mm | 320mm | 10mm | 30mm | 20mm | 100mm | 3.4mm | 4mm |
| **1120-300B** | 60-300mm/2.36-12" | B | ±0.07mm | 420mm | 10mm | 30mm | 20mm | 110mm | 3.4mm | 4mm |

**IP67 dust/waterproof, no automatic power off, set zero after power on each time, no preset (need to add the width of the jaws on the reading), without data interface**

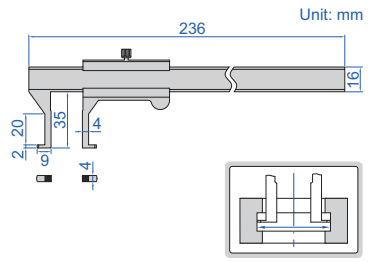
| Code | Range | Type | Accuracy | L | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|---|
| **1120-150P** | 22-150mm/0.87-6" | C | ±0.04mm | 250mm | 5mm | 11mm | 16mm | 30mm | 1mm | 4mm |

## INSIDE GROOVE VERNIER CALIPER

- Measure diameter of grooves inside bores
- Made of stainless steel
- Satin chrome plated reading surface

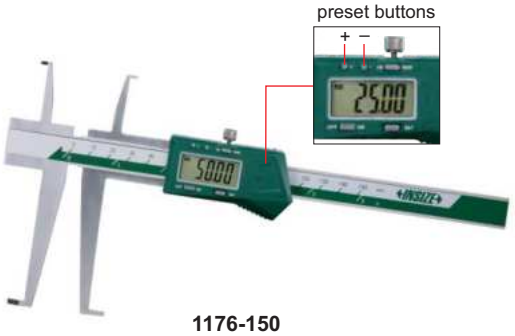


**1262-150A**




| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **1262-150A** | 18-150mm | 0.02mm | ±0.04mm |

## DIGITAL INSIDE GROOVE CALIPERS



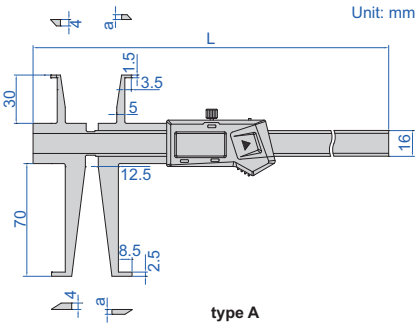

**1176-150**



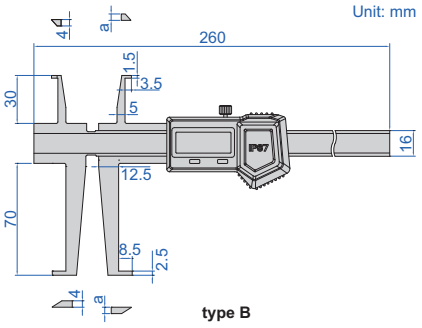
**1176-150P**

depth stop **6143** (**optional**)





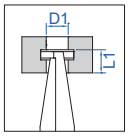

**type A**




**type B**

- Measure diameter of grooves inside bores
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, set, mm/inch, preset (+, -)
  type B: on/off, zero, mm/inch, ABS/REL, hold
- Battery CR2032
- Made of stainless steel
- Optional accessory: depth stop (code **6143**)

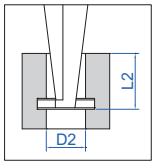
sizes to be measured (use upper jaws)




(mm)

| D1 | L1 |
|---|---|
| Ø9 | <8 |
| Ø10 | <15 |
| Ø11~200 | <30 |

sizes to be measured (use lower jaws)




(mm)

| D2 | L2 |
|---|---|
| Ø17 | <16 |
| Ø18 | <28 |
| Ø19 | <40 |
| Ø20 | <50 |
| Ø21 | <58 |
| Ø22~200 | <70 |

**Non waterproof, with data interface**
**(optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range of upper jaw | Range of lower jaw | Type | Accuracy | L | a |
|---|---|---|---|---|---|---|
| **1176-150** | 9-150mm/0.35-6" | 17-150mm/0.70-6" | A | ±0.04mm | 260mm | 3mm |
| **1176-200** | 9-200mm/0.35-8" | 17-200mm/0.70-8" | A | ±0.05mm | 320mm | 3.5mm |

**Non waterproof, built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range of upper jaw | Range of lower jaw | Type | Accuracy | L | a |
|---|---|---|---|---|---|---|
| **1176-150WL** | 9-150mm/0.35-6" | 17-150mm/0.70-6" | A | ±0.04mm | 260mm | 3mm |
| **1176-200WL** | 9-200mm/0.35-8" | 17-200mm/0.70-8" | A | ±0.05mm | 320mm | 3.5mm |

**IP67 dust/waterproof, without data interface, no automatic power off, set zero after power on each time**

| Code | Range of upper jaw | Range of lower jaw | Type | Accuracy | a |
|---|---|---|---|---|---|
| **1176-150P** | 9-150mm/0.35-6" | 17-150mm/0.70-6" | B | ±0.04mm | 4mm |

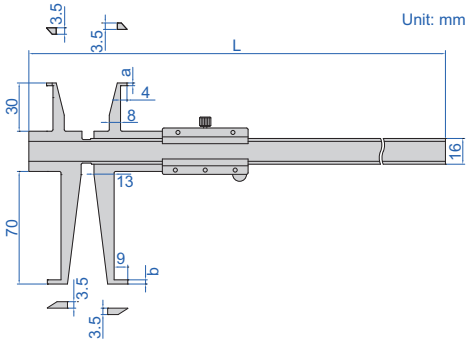
## INSIDE GROOVE CALIPERS



1199-150

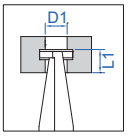
depth stop **6143** (**optional**)






- Measure diameter of grooves inside bores
- Graduation: 0.02mm
- Made of stainless steel
- Optional accessory: depth stop (code **6143**)

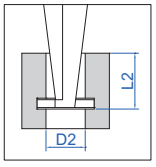
sizes to be measured (use upper jaws)




(mm)

| D1 | L1 |
|---|---|
| Ø9 | <8 |
| Ø10 | <12 |
| Ø11 | <15 |
| Ø12 | <20 |
| Ø13~300 | <30 |

sizes to be measured (use lower jaws)



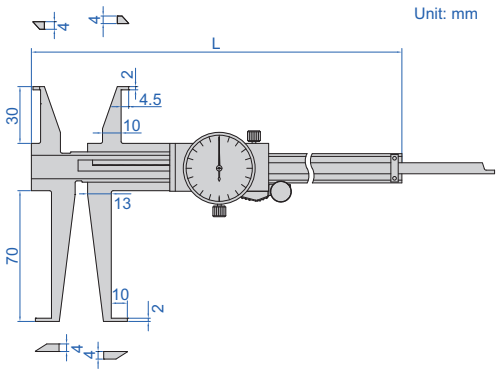

(mm)

| D2 | L2 |
|---|---|
| Ø18 | <30 |
| Ø19 | <40 |
| Ø20 | <45 |
| Ø21 | <55 |
| Ø22 | <60 |
| Ø23~300 | <70 |

| Code | Range of upper jaw | Range of lower jaw | Accuracy | L | a | b |
|---|---|---|---|---|---|---|
| **1199-150** | 9-150mm | 18-150mm | ±0.04mm | 248mm | 1.6mm | 2.5mm |
| **1199-200** | 9-200mm | 18-200mm | ±0.05mm | 298mm | 1.8mm | 2.8mm |
| **1199-300** | 9-300mm | 18-300mm | ±0.06mm | 398mm | 2.0mm | 3.0mm |

## INSIDE GROOVE DIAL CALIPERS

SHOCK PROOF

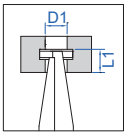





1376-150

- Measure diameter of grooves inside bores
- Shockproof dial indicator
- Dial indicator graduation: 0.02mm
- Made of stainless steel
- Optional accessory: depth stop (code **6143**)

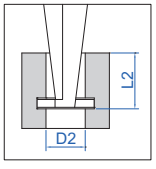
sizes to be measured (use upper jaws)




(mm)

| D1 | L1 |
|---|---|
| Ø11 | <8 |
| Ø12 | <10 |
| Ø13 | <15 |
| Ø14 | <20 |
| Ø15~300 | <30 |

sizes to be measured (use lower jaws)

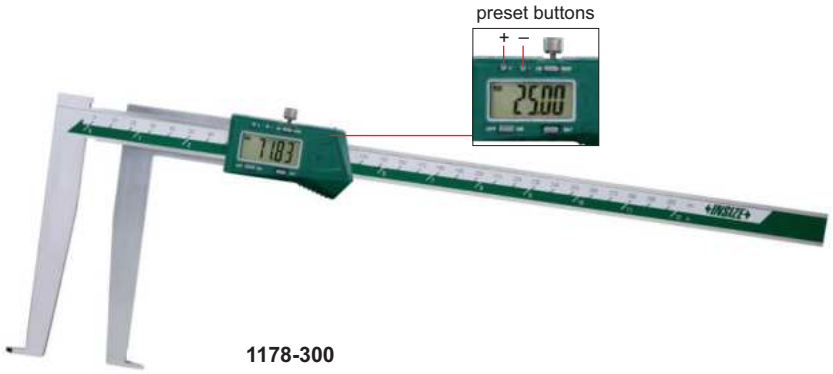



(mm)

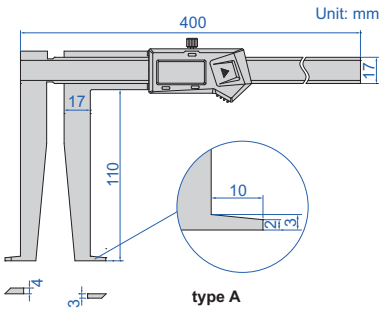
| D2 | L2 |
|---|---|
| Ø18 | <20 |
| Ø19 | <28 |
| Ø20 | <35 |
| Ø21 | <40 |
| Ø22 | <50 |
| Ø23~300 | <70 |

| Code | Range of upper jaw | Range of lower jaw | Accuracy | L |
|---|---|---|---|---|
| **1376-150** | 11-150mm | 18-150mm | ±0.03mm | 240mm |
| **1376-200** | 11-200mm | 18-200mm | ±0.03mm | 290mm |
| **1376-300** | 11-300mm | 18-300mm | ±0.04mm | 390mm |

# DIGITAL INSIDE GROOVE CALIPERS

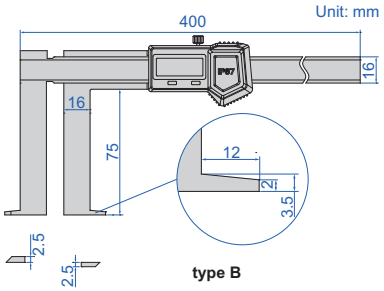



**1178-300**






**1178-300P**




- Measure diameter of grooves inside bores
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, set, mm/inch, preset (+, -)
  type B: on/off, zero, mm/inch, ABS/REL, hold
- Battery CR2032
- Made of stainless steel
- Optional accessory: depth stop (code **6143**)

depth stop **6143**
(**optional**)



**Non waterproof, with data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Type | Accuracy |
|---|---|---|---|
| **1178-300** | 25-300mm/1.18-12" | A | ±0.05mm |

**Non waterproof, built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Type | Accuracy |
|---|---|---|---|
| **1178-300WL** | 25-300mm/1.18-12" | A | ±0.05mm |

**IP67 dust/waterproof, no automatic power off, set zero after power on each time, without data interface**

| Code | Range | Type | Accuracy |
|---|---|---|---|
| **1178-300P** | 33-300mm/1.30-12" | B | ±0.05mm |

## DIGITAL DEEP HOLE INSIDE GROOVE CALIPERS

DATA OUTPUT

preset buttons





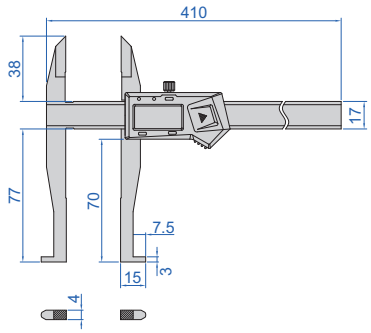
**1129-300**

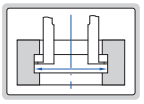
- Non waterproof
- Measure diameter of grooves inside deep holes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: depth stop (code **6143**)

depth stop **6143** (**optional**)



Unit: mm



**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range of upper jaw | Range of lower jaw | Accuracy |
|---|---|---|---|
| **1129-300** | 0-300mm/0-12" | 30-300mm/1.2-12" | ±0.06mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range of upper jaw | Range of lower jaw | Accuracy |
|---|---|---|---|
| **1129-300WL** | 0-300mm/0-12" | 30-300mm/1.2-12" | ±0.06mm |

## DIGITAL INSIDE GROOVE CALIPERS

DATA OUTPUT



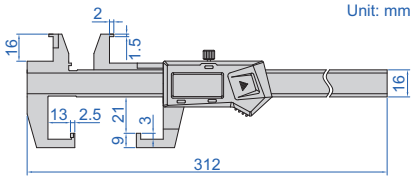
**1128-200**

- Non waterproof
- Measure diameter or distance of grooves
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

preset buttons



Unit: mm

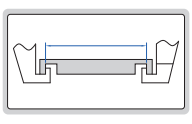


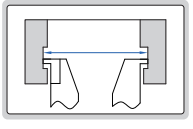

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range of upper jaw | Range of lower jaw | Accuracy |
|---|---|---|---|
| **1128-200** | 10-200mm/0.39-8" | 3-200mm/0.12-8" | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range of upper jaw | Range of lower jaw | Accuracy |
|---|---|---|---|
| **1128-200WL** | 10-200mm/0.39-8" | 3-200mm/0.12-8" | ±0.03mm |



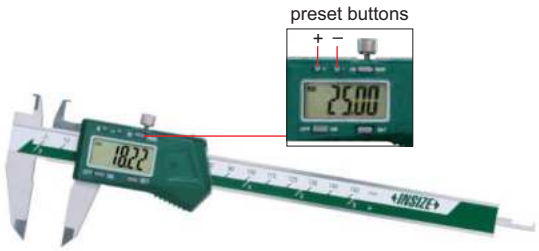


DATA OUTPUT

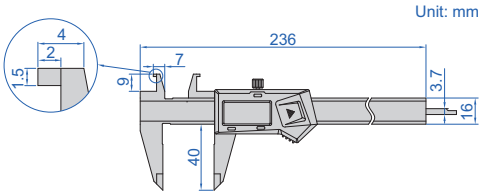
## DIGITAL INSIDE GROOVE CALIPERS



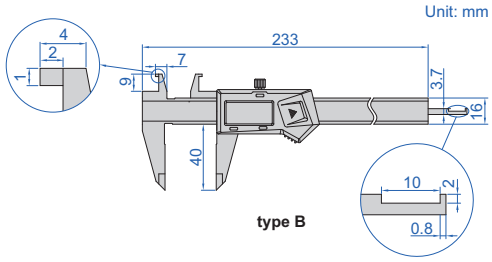
1191-150




1191-150B



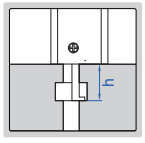

type A



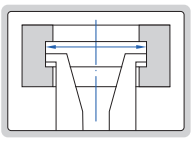

type B

- Non waterproof
- Upper jaws for measuring diameter of grooves
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, zero, mm/inch
  type B: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

measure depth of grooves (h<10mm, only for type B)



measure diameter of grooves 8-150mm



**With data interface**
**(optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

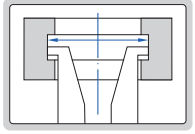
| Code | Range of upper jaw | Range of lower jaw | Accuracy | Type |
|---|---|---|---|---|
| **1191-150** | 8-150mm/0.3-6" | 0-150mm/0-6" | ±0.03mm | A |
| **1191-150B** | 8-150mm/0.3-6" | 0-150mm/0-6" | ±0.03mm | B |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

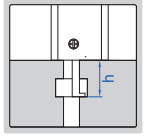
| Code | Range of upper jaw | Range of lower jaw | Accuracy | Type |
|---|---|---|---|---|
| **1191-150WL** | 8-150mm/0.3-6" | 0-150mm/0-6" | ±0.03mm | A |
| **1191-150BWL** | 8-150mm/0.3-6" | 0-150mm/0-6" | ±0.03mm | B |

## INSIDE GROOVE VERNIER CALIPER

measure diameter of grooves 8-150mm

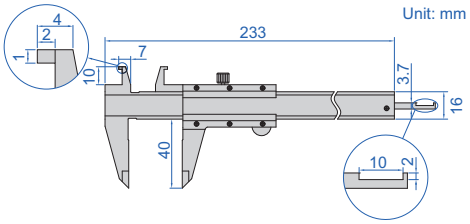


measure depth of grooves (h<10mm)





1291-150




- Graduation: 0.02mm
- Made of stainless steel
- Satin chrome plated reading surface

| Code | Range of upper jaw | Range of lower jaw | Accuracy |
|---|---|---|---|
| **1291-150** | 8-150mm | 0-150mm | ±0.03mm |

## DIGITAL OUTSIDE NECK CALIPERS

DATA OUTPUT

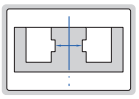


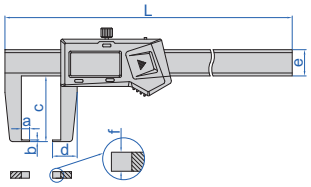
1187-150A

depth stop **6143** (**optional**)



- Non waterproof
- Measure grooves and recesses
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: depth stop (code **6143**, for calipers with e=16mm)






**With data interface** **(mm)**

| Code | Range | Accuracy | L | a | b | c | d | e | f | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|---|---|
| **1187-150A** | 0-150mm/0-6" | ±0.04mm | 250 | 5 | 1 | 40 | 15 | 16 | 4 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1187-200A** | 0-200mm/0-8" | ±0.05mm | 310 | 9 | 1.5 | 80 | 23 | 16 | 4 | |
| **1187-300A** | 0-300mm/0-12" | ±0.06mm | 490 | 12 | 2 | 150 | 36 | 24 | 4 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1187-500A** | 0-500mm/0-20" | ±0.07mm | 690 | 12 | 2 | 150 | 36 | 24 | 5.5 | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1187-150AWL** | 0-150mm/0-6" | ±0.04mm | 250mm | 5mm | 1mm | 40mm | 15mm | 16mm | 4mm |
| **1187-200AWL** | 0-200mm/0-8" | ±0.05mm | 310mm | 9mm | 1.5mm | 80mm | 23mm | 16mm | 4mm |
| **1187-300AWL** | 0-300mm/0-12" | ±0.06mm | 490mm | 12mm | 2mm | 150mm | 36mm | 24mm | 4mm |
| **1187-500AWL** | 0-500mm/0-20" | ±0.07mm | 690mm | 12mm | 2mm | 150mm | 36mm | 24mm | 5.5mm |

## DIGITAL OUTSIDE POINT CALIPERS

DATA OUTPUT

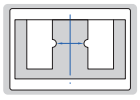


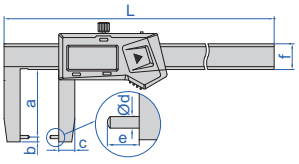
1185-150A

depth stop **6143** (**optional**)



- Non waterproof
- Measure wall thickness inside bores and recesses
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: depth stop (code **6143**)






**With data interface** **(mm)**

| Code | Range | Accuracy | L | a | b | c | Ød | e | f | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|---|---|
| **1185-150A** | 0-150mm/0-6" | ±0.04mm | 250 | 40 | 3 | 10 | 2 | 5 | 16 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1185-200A** | 0-200mm/0-8" | ±0.05mm | 310 | 80 | 3 | 14 | 3 | 9 | 16 | |
| **1185-300A** | 0-300mm/0-12" | ±0.06mm | 490 | 150 | 3 | 20 | 3 | 12 | 24 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | a | b | c | Ød | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1185-150AWL** | 0-150mm/0-6" | ±0.04mm | 250mm | 40mm | 3mm | 10mm | 2mm | 5mm | 16mm |
| **1185-200AWL** | 0-200mm/0-8" | ±0.05mm | 310mm | 80mm | 3mm | 14mm | 3mm | 9mm | 16mm |
| **1185-300AWL** | 0-300mm/0-12" | ±0.06mm | 490mm | 150mm | 3mm | 20mm | 3mm | 12mm | 24mm |

## DIGITAL OUTSIDE GROOVE CALIPERS

DATA OUTPUT

- Non waterproof
- Measure grooves and recesses in small spaces
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1535-100

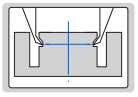


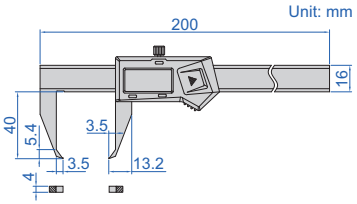
**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1535-100 | 0-100mm/0-4" | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| 1535-100WL | 0-100mm/0-4" | ±0.03mm |



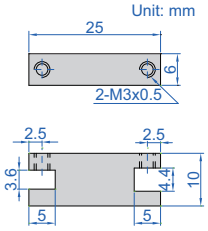



## DEPTH STOP FOR CALIPERS

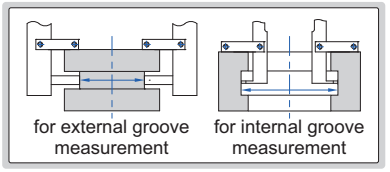




6143




application




- Supplied in pair
- Made of stainless steel
- Suitable for caliper series **1124, 1526, 1530, 1199, 1520, 1176, 1178, 1120, 1121, 1187, 1129, 1185** and **1376**

| Code |
|---|
| 6143 |

## DIGITAL SMALL POINT CALIPERS

DATA OUTPUT

- Non waterproof
- Small pointed jaws fit into small grooves and recesses
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



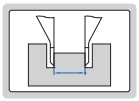
1169-150

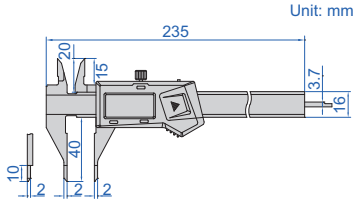
**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1169-150 | 0-150mm/0-6" | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| 1169-150WL | 0-150mm/0-6" | ±0.03mm |





## DIGITAL POINT CALIPERS

DATA OUTPUT

- Non waterproof
- Pointed jaws fit into small grooves and recesses
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



**1183-150A**

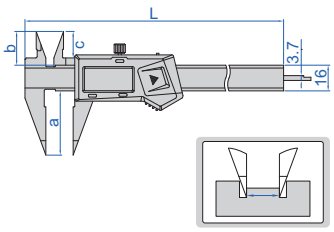
**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|
| **1183-150A** | 0-150mm/0-6" | ±0.03mm | 236mm | 40mm | 21mm | 16.5mm |
| **1183-200A** | 0-200mm/0-8" | ±0.03mm | 286mm | 50mm | 24mm | 19.5mm |
| **1183-300A** | 0-300mm/0-12" | ±0.03mm | 400mm | 60mm | 25mm | 21.5mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|
| **1183-150AWL** | 0-150mm/0-6" | ±0.03mm | 236mm | 40mm | 21mm | 16.5mm |
| **1183-200AWL** | 0-200mm/0-8" | ±0.03mm | 286mm | 50mm | 24mm | 19.5mm |
| **1183-300AWL** | 0-300mm/0-12" | ±0.03mm | 400mm | 60mm | 25mm | 21.5mm |

Unit: mm




## DIGITAL CALIPERS WITH POSITIONING SURFACES

DATA OUTPUT

- Non waterproof
- Lower jaws with positioning surfaces, for measuring inside diameters quickly
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

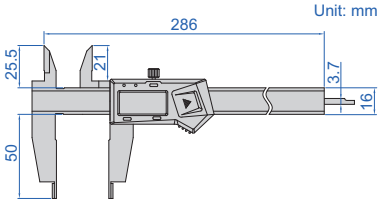


**1534-200**

preset buttons



Unit: mm

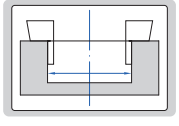


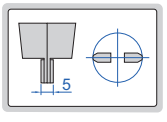

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **1534-200** | 0-200mm/0-8" | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **1534-200WL** | 0-200mm/0-8" | ±0.03mm |





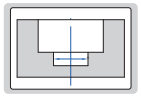
DATA OUTPUT

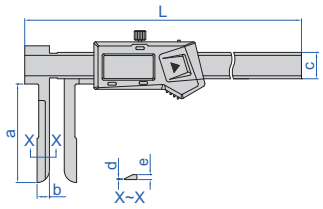
## DIGITAL INSIDE KNIFE-EDGE CALIPERS



1123-150A

- Non waterproof
- Measure diameter of deep step holes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel






**With data interface** **(mm)**

| Code | Range | Accuracy | L | a | b | c | d | e | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|---|
| **1123-150A** | 15-150mm/0.6-6" | ±0.05mm | 250 | 60 | 12 | 16 | 0.3 | 3.5 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1123-200A** | 20-200mm/0.8-8" | ±0.06mm | 305 | 100 | 17 | 16 | 0.3 | 3.5 | |
| **1123-300A** | 24-300mm/0.9-12" | ±0.06mm | 500 | 150 | 22 | 24 | 0.5 | 3.5 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | a | b | c | d | e |
|---|---|---|---|---|---|---|---|---|
| **1123-150AWL** | 15-150mm/0.6-6" | ±0.05mm | 250mm | 60mm | 12mm | 16mm | 0.3mm | 3.5mm |
| **1123-200AWL** | 20-200mm/0.8-8" | ±0.06mm | 305mm | 100mm | 17mm | 16mm | 0.3mm | 3.5mm |

DATA OUTPUT

## DIGITAL CALIPERS WITH KNIFE-EDGE LOWER JAWS

- Non waterproof
- Measure diameter of narrow grooves
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



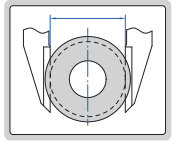
1532-200

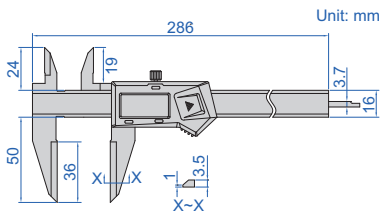
**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **1532-200** | 0-200mm/0-8" | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **1532-200WL** | 0-200mm/0-8" | ±0.03mm |





## DIGITAL CALIPERS WITH LONG UPPER JAWS

DATA OUTPUT

- Non waterproof
- Long upper jaws for measuring diameter of deep holes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



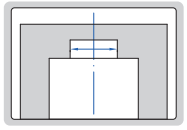
**1138-200**

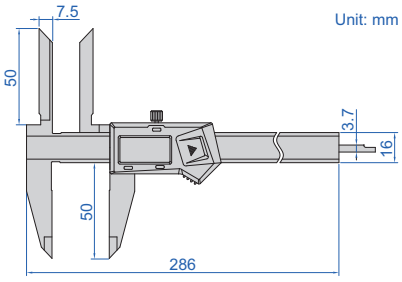
**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **1138-200** | 0-200mm/0-8" | ±0.04mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **1138-200WL** | 0-200mm/0-8" | ±0.04mm |



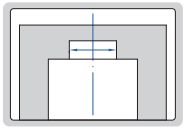



## DIAL CALIPERS WITH LONG UPPER JAWS

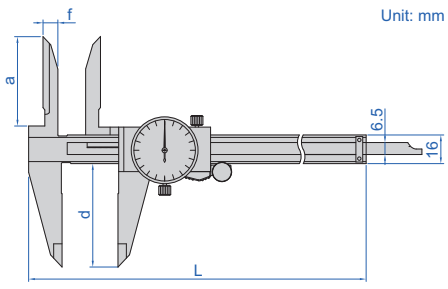
SHOCK PROOF



**1338-300**



- Long upper jaws for measuring diameter of deep holes
- Shockproof dial indicator
- Dial indicator graduation: 0.02mm
- Made of stainless steel




**(mm)**

| Code | Range | Accuracy | L | a | d | f |
|---|---|---|---|---|---|---|
| **1338-150** | 0-150mm | ±0.03mm | 236 | 40 | 40 | 6.5 |
| **1338-200** | 0-200mm | ±0.03mm | 288 | 45 | 50 | 7.5 |
| **1338-300** | 0-300mm | ±0.04mm | 400 | 50 | 60 | 8 |

DATA OUTPUT

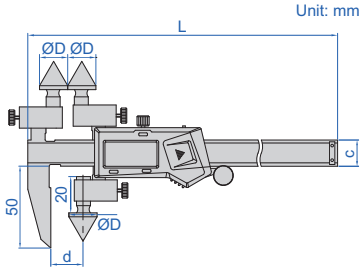
# DIGITAL CENTERLINE AND EDGE TO CENTER CALIPERS





1521-2002

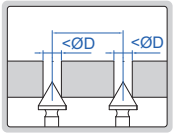
- Non waterproof
- Measure hole center distance in the same or offset planes and edge to hole center distance
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)** **(mm)**

| Code | Range | Accuracy | ØD | d | L | c |
|---|---|---|---|---|---|---|
| **1521-150** | 5-140mm/0.2-5.5" | ±0.05mm | 5 | 5 | 236 | 16 |
| **1521-1501** | 10-140mm/0.4-5.5" | ±0.05mm | 10 | 10 | 236 | 16 |
| **1521-1502** | 20-140mm/0.8-5.5" | ±0.05mm | 20 | 20 | 236 | 16 |
| **1521-200** | 5-190mm/0.2-7.5" | ±0.05mm | 5 | 5 | 285 | 16 |
| **1521-2001** | 10-190mm/0.4-7.5" | ±0.05mm | 10 | 10 | 285 | 16 |
| **1521-2002** | 20-190mm/0.8-7.5" | ±0.05mm | 20 | 20 | 285 | 16 |
| **1521-300** | 5-290mm/0.2-11.5" | ±0.07mm | 5 | 5 | 385 | 17 |
| **1521-3001** | 10-290mm/0.4-11.5" | ±0.07mm | 10 | 10 | 385 | 17 |
| **1521-3002** | 20-290mm/0.8-11.5" | ±0.07mm | 20 | 20 | 385 | 17 |

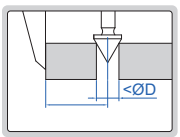
measure hole center distance




**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)** **(mm)**

| Code | Range | Accuracy | ØD | d | L | c |
|---|---|---|---|---|---|---|
| **1521-150WL** | 5-140mm/0.2-5.5" | ±0.05mm | 5 | 5 | 236 | 16 |
| **1521-1501WL** | 10-140mm/0.4-5.5" | ±0.05mm | 10 | 10 | 236 | 16 |
| **1521-1502WL** | 20-140mm/0.8-5.5" | ±0.05mm | 20 | 20 | 236 | 16 |
| **1521-200WL** | 5-190mm/0.2-7.5" | ±0.05mm | 5 | 5 | 285 | 16 |
| **1521-2001WL** | 10-190mm/0.4-7.5" | ±0.05mm | 10 | 10 | 285 | 16 |
| **1521-2002WL** | 20-190mm/0.8-7.5" | ±0.05mm | 20 | 20 | 285 | 16 |
| **1521-300WL** | 5-290mm/0.2-11.5" | ±0.07mm | 5 | 5 | 385 | 17 |
| **1521-3001WL** | 10-290mm/0.4-11.5" | ±0.07mm | 10 | 10 | 385 | 17 |
| **1521-3002WL** | 20-290mm/0.8-11.5" | ±0.07mm | 20 | 20 | 385 | 17 |

measure edge to hole center distance



# DIGITAL CENTERLINE AND EDGE TO CENTER CALIPERS

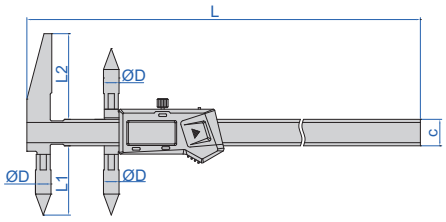
DATA OUTPUT

preset buttons



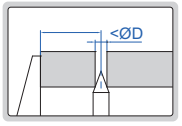


**1525-300**

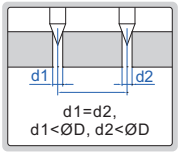



- Non waterproof
- Measure hole center distance or edge to hole center distance
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

measure edge to hole center distance




measure hole center distance




**With data interface** **(mm)**

| Code | Range of upper jaw (edge to center) | Range of lower jaw (center to center) | Accuracy | ØD | L1 | L2 | c | L | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|---|
| **1525-300** | 5-300mm/0.2-12" | 10-300mm/0.4-12" | ±0.08mm | 10 | 44.5 | 55 | 17 | 410 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1525-3001** | 10-300mm/0.4-12" | 20-300mm/0.8-12" | ±0.08mm | 20 | 48 | 60 | 17 | 410 | |
| **1525-500** | 10-500mm/0.4-20" | 20-500mm/0.8-20" | ±0.09mm | 20 | 50 | 60 | 24 | 690 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1525-1000** | 15-1000mm/0.6-40" | 30-1000mm/1.2-40" | ±0.12mm | 30 | 70 | 81 | 31 | 1255 | |
| **1525-1500** | 15-1500mm/0.6-60" | 30-1500mm/1.2-60" | ±0.15mm | 30 | 70 | 81 | 31 | 1760 | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)** **(mm)**

| Code | Range of upper jaw (edge to center) | Range of lower jaw (center to center) | Accuracy | ØD | L1 | L2 | c | L |
|---|---|---|---|---|---|---|---|---|
| **1525-300WL** | 5-300mm/0.2-12" | 10-300mm/0.4-12" | ±0.08mm | 10 | 44.5 | 55 | 17 | 410 |
| **1525-3001WL** | 10-300mm/0.4-12" | 20-300mm/0.8-12" | ±0.08mm | 20 | 48 | 60 | 17 | 410 |
| **1525-500WL** | 10-500mm/0.4-20" | 20-500mm/0.8-20" | ±0.09mm | 20 | 50 | 60 | 24 | 690 |

DATA OUTPUT

preset buttons

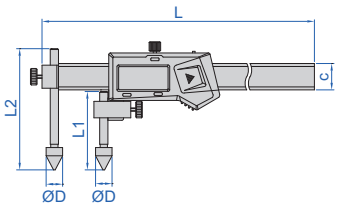


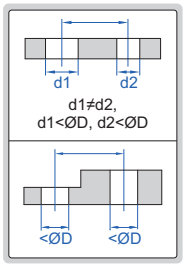
## DIGITAL OFFSET CENTERLINE CALIPERS



**1192-150A**

- Non waterproof
- Measure hole center distance in the same or offset planes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel




**With data interface**

| Code | Range | Accuracy | c | ØD | L1 | L2 | L | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|
| **1192-150A** | 10-150mm/0.4-6" | ±0.05mm | 16mm | 10mm | 46mm | 79mm | 236mm | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1192-200A** | 10-200mm/0.4-8" | ±0.07mm | 16mm | 10mm | 46mm | 79mm | 286mm | |
| **1192-300A** | 10-300mm /0.4-12" | ±0.09mm | 16mm | 10mm | 46mm | 79mm | 396mm | |
| **1192-500A** | 20-500mm/0.8-20" | ±0.09mm | 24mm | 20mm | 70mm | 110mm | 683mm | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1192-1000A** | 30-1000mm/1.2-40" | ±0.12mm | 31mm | 30mm | 75mm | 120mm | 1255mm | |
| **1192-1500A** | 30-1500mm/1.2-60" | ±0.15mm | 31mm | 30mm | 75mm | 120mm | 1760mm | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | c | ØD | L1 | L2 | L |
|---|---|---|---|---|---|---|---|
| **1192-150AWL** | 10-150mm/0.4-6" | ±0.05mm | 16mm | 10mm | 46mm | 79mm | 236mm |
| **1192-200AWL** | 10-200mm/0.4-8" | ±0.07mm | 16mm | 10mm | 46mm | 79mm | 286mm |
| **1192-300AWL** | 10-300mm /0.4-12" | ±0.09mm | 16mm | 10mm | 46mm | 79mm | 396mm |
| **1192-500AWL** | 20-500mm/0.8-20" | ±0.09mm | 24mm | 20mm | 52mm | 112mm | 725mm |

DATA OUTPUT

preset buttons

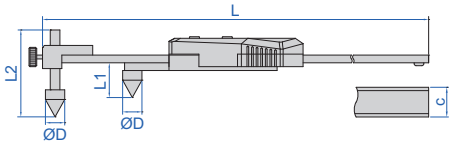


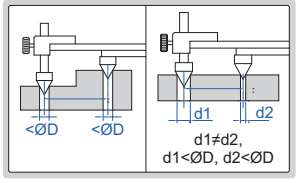
## DIGITAL BACK-JAW CENTERLINE CALIPERS



**1177-200**

- Non waterproof
- Measure hole center distance in the same or offset planes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel




**With data interface**

| Code | Range | Accuracy | ØD | c | L1 | L2 | L | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|
| **1177-200** | 10-200mm/0.4-8" | ±0.10mm | 10mm | 16mm | 18mm | 45mm | 310mm | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1177-300** | 10-300mm/0.4-12" | ±0.10mm | 10mm | 16mm | 18mm | 45mm | 410mm | |
| **1177-500** | 20-500mm/0.8-20" | ±0.10mm | 20mm | 24mm | 26mm | 70mm | 692mm | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1177-1000** | 30-1000mm/1.2-40" | ±0.12mm | 30mm | 31mm | 39mm | 70mm | 1242mm | |
| **1177-1500** | 30-1500mm/1.2-60" | ±0.15mm | 30mm | 31mm | 39mm | 70mm | 1745mm | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | ØD | c | L1 | L2 | L |
|---|---|---|---|---|---|---|---|
| **1177-200WL** | 10-200mm/0.4-8" | ±0.10mm | 10mm | 16mm | 18mm | 45mm | 310mm |
| **1177-300WL** | 10-300mm/0.4-12" | ±0.10mm | 10mm | 16mm | 18mm | 45mm | 410mm |
| **1177-500WL** | 20-500mm/0.8-20" | ±0.10mm | 20mm | 24mm | 26mm | 70mm | 692mm |

back-jaw



## DIGITAL BACK-JAW EDGE TO CENTER CALIPERS

DATA OUTPUT

- Non waterproof
- Measure edge to hole center distance
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1524-200

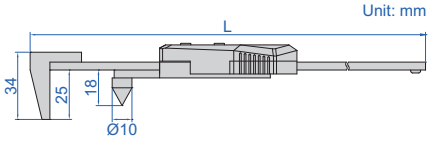
back-jaw



**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | L |
|---|---|---|---|
| **1524-200** | 5-200mm/0.2-8" | ±0.1mm | 310mm |
| **1524-300** | 5-300mm/0.2-12" | ±0.1mm | 410mm |

Unit: mm

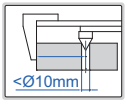



**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L |
|---|---|---|---|
| **1524-200WL** | 5-200mm/0.2-8" | ±0.1mm | 310mm |
| **1524-300WL** | 5-300mm/0.2-12" | ±0.1mm | 410mm |

preset buttons





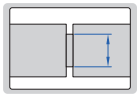

## DIGITAL BLADE CALIPERS

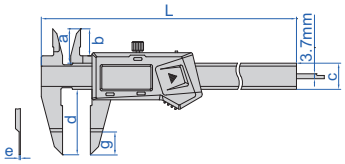
DATA OUTPUT



1188-150A

- Non waterproof
- The blade jaws fit into small grooves
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel






**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | L | a | b | c | d | e | g |
|---|---|---|---|---|---|---|---|---|---|
| **1188-150A** | 0-150mm/0-6" | ±0.03mm | 235mm | 21mm | 16.5mm | 16mm | 40mm | 0.85mm | 17mm |
| **1188-200A** | 0-200mm/0-8" | ±0.03mm | 297mm | 24mm | 20mm | 16mm | 50mm | 0.85mm | 17mm |
| **1188-300A** | 0-300mm/0-12" | ±0.04mm | 390mm | 26mm | 21.5mm | 16mm | 60mm | 1.00mm | 17mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | a | b | c | d | e | g |
|---|---|---|---|---|---|---|---|---|---|
| **1188-150AWL** | 0-150mm/0-6" | ±0.03mm | 235mm | 21mm | 16.5mm | 16mm | 40mm | 0.85mm | 17mm |
| **1188-200AWL** | 0-200mm/0-8" | ±0.03mm | 297mm | 24mm | 20mm | 16mm | 50mm | 0.85mm | 17mm |
| **1188-300AWL** | 0-300mm/0-12" | ±0.04mm | 390mm | 26mm | 21.5mm | 16mm | 60mm | 1.00mm | 17mm |



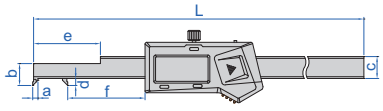
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DATA OUTPUT

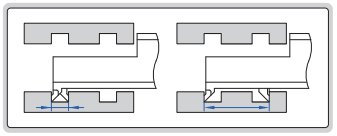
## DIGITAL HOOK CALIPERS



**1122-300**




- Non waterproof
- Measure width and distance of grooves inside bores
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | L | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1122-150** | 3-150mm/0.12-6" | ±0.03mm | 260mm | 3mm | 12mm | 12.5mm | 4mm | 24mm | 27mm |
| **1122-200** | 3-200mm/0.12-8" | ±0.03mm | 310mm | 3mm | 12mm | 12.5mm | 4mm | 24mm | 27mm |
| **1122-300** | 4-300mm/0.16-12" | ±0.04mm | 466mm | 4mm | 14mm | 15mm | 5mm | 86mm | 89mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1122-150WL** | 3-150mm/0.12-6" | ±0.03mm | 260mm | 3mm | 12mm | 12.5mm | 4mm | 24mm | 27mm |
| **1122-200WL** | 3-200mm/0.12-8" | ±0.03mm | 310mm | 3mm | 12mm | 12.5mm | 4mm | 24mm | 27mm |
| **1122-300WL** | 4-300mm/0.16-12" | ±0.04mm | 466mm | 4mm | 14mm | 15mm | 5mm | 86mm | 89mm |

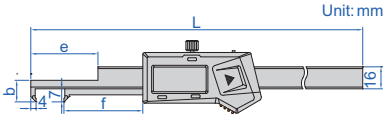
DATA OUTPUT

## DIGITAL EXTERNAL HOOK CALIPERS



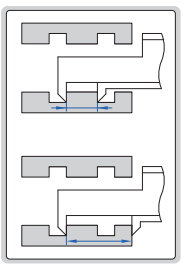
**1164-200**

- Non waterproof
- Measure width and distance of grooves inside bores
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | L | b | e | f |
|---|---|---|---|---|---|---|
| **1164-150** | 0-150mm/0-6" | ±0.03mm | 275mm | 14mm | 52mm | 50mm |
| **1164-200** | 0-200mm/0-8" | ±0.03mm | 325mm | 14mm | 52mm | 50mm |
| **1164-300** | 0-300mm/0-12" | ±0.04mm | 460mm | 15mm | 82mm | 80mm |



**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | b | e | f |
|---|---|---|---|---|---|---|
| **1164-150WL** | 0-150mm/0-6" | ±0.03mm | 275mm | 14mm | 52mm | 50mm |
| **1164-200WL** | 0-200mm/0-8" | ±0.03mm | 325mm | 14mm | 52mm | 50mm |
| **1164-300WL** | 0-300mm/0-12" | ±0.04mm | 460mm | 15mm | 82mm | 80mm |

## DIGITAL V SHAPE CALIPER

DIRECT READING, CALCULATION IS NOT REQUIRED

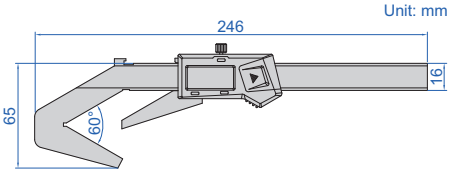
DATA OUTPUT



**1539-3**

- Non waterproof
- Measure outside diameter of three number of flutes (such as taps, reamers, end mills and gears)
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Battery CR2032
- Automatic power off, move the digital unit to turn on power
- Data output
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-25** (receiver is needed) page 5,
  bluetooth transmitter code **7214-25** page 11,
  data output cable code **7302-21** page 20

Unit: mm




| Code | Range | Accuracy |
|---|---|---|
| **1539-3** | Ø4-Ø40mm/0.16"-1.58" DIA | ±0.03mm |

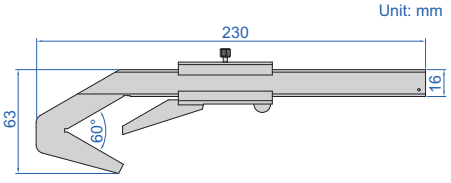
## V SHAPE VERNIER CALIPER



**1273-403**

- Measure outside diameter of three number of flutes (such as taps, reamers, end mills and gears)
- Made of stainless steel
- Satin chrome plated reading surface

Unit: mm




| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **1273-403** | Ø4-40mm | 0.05mm | ±0.05mm |

DIRECT READING, CALCULATION IS NOT REQUIRED

DATA OUTPUT

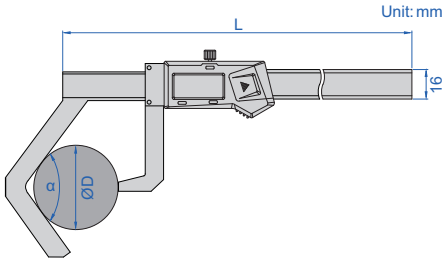
## DIGITAL V TYPE CALIPERS

VIDEO



1529-5

- Non waterproof
- Measure the outside diameter of odd number of flutes (such as taps, reamers, end mills and gears)
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Battery CR2032
- Automatic power off, move the digital unit to turn on power
- Data output
- Made of stainless steel
- Optional accessory: Ø50mm calibration cylinder (code **6316-50**), wireless transmitter code **7315-25** (receiver is needed) page 5, bluetooth transmitter code **7214-25** page 11, data output cable code **7302-21** page 20




Ø50mm calibration cylinder (code **6316-50**, **optional**)



| Code | Range (ØD) | Flutes | Accuracy | Angleα | L |
|---|---|---|---|---|---|
| **1529-3** | Ø50-Ø200mm/2-8" DIA | 3 | ±0.06mm | 60° | 390mm |
| **1529-5** | Ø50-Ø200mm/2-8" DIA | 5 | ±0.06mm | 108° | 318mm |
| **1529-19** | Ø50-Ø200mm/2-8" DIA | 19 | ±0.06mm | 85°15'47" | 336mm |
| **1529-23** | Ø50-Ø200mm/2-8" DIA | 23 | ±0.06mm | 70°26'5" | 362mm |
| **1529-31** | Ø50-Ø200mm/2-8" DIA | 31 | ±0.06mm | 75°29'2" | 355mm |

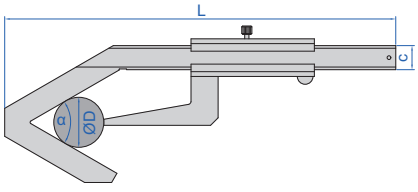
## V SHAPE VERNIER CALIPERS

- Measure outside diameter of odd number of flutes (such as taps, reamers, end mills and gears)
- Made of stainless steel
- Satin chrome plated reading surface
- Optional accessory: 4mm pin gauge (code **4110-4D00**), Ø50mm calibration cylinder (code **6316-50**)



1229-3

| Code | Range (ØD) | Graduation | Accuracy | Flutes | Angle α | L | c |
|---|---|---|---|---|---|---|---|
| **1229-3** | Ø4-60mm | 0.02mm | ±0.04mm | 3 | 60° | 260mm | 16mm |
| **1229-35** | Ø50-200mm | 0.02mm | ±0.06mm | 3 | 60° | 516mm | 20mm |
| **1229-5** | Ø4-60mm | 0.02mm | ±0.04mm | 5 | 108° | 210mm | 16mm |
| **1229-55** | Ø50-200mm | 0.02mm | ±0.06mm | 5 | 108° | 360mm | 20mm |



## DIGITAL CALIPERS WITH ONE DIRECTION UPPER JAWS

DATA OUTPUT

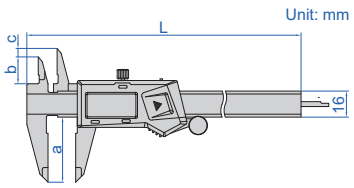


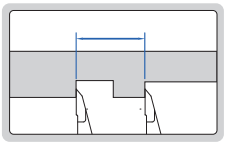
1184-200



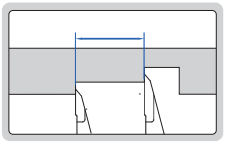
1184-150A

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: zero, power on/off, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-25** (receiver is needed) page 5,
  bluetooth transmitter code **7214-25** page 11,
  data output cable code **7302-21** page 20



jaws with same height used for measuring the distance in same level



jaws with different height used for measuring the distance in different level

**Jaws with same height** (mm)

| Code | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|
| **1184-150** | 0-150mm/0-6" | ±0.03mm | 236 | 40 | 17 | 0 |
| **1184-200** | 0-200mm/0-8" | ±0.03mm | 286 | 50 | 20 | 0 |
| **1184-300** | 0-300mm/0-12" | ±0.03mm | 400 | 60 | 22 | 0 |

**Jaws with different height** (mm)

| Code | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|
| **1184-150A** | 0-150mm/0-6" | ±0.03mm | 236 | 40 | 17 | 5 |
| **1184-200A** | 0-200mm/0-8" | ±0.03mm | 286 | 50 | 20 | 8 |
| **1184-300A** | 0-300mm/0-12" | ±0.03mm | 400 | 60 | 22 | 10 |

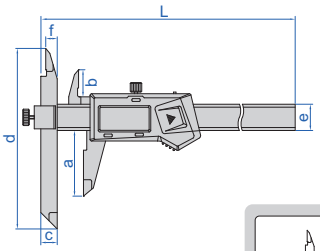
## DIGITAL OFFSET CALIPERS

DATA OUTPUT



1186-150A

- Non waterproof
- The left jaw can slide up and down to facilitate measurement of stepped sections
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

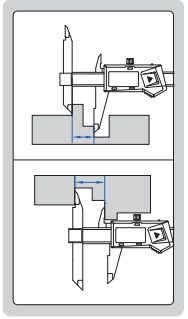



**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)** (mm)

| Code | Range | Accuracy | L | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1186-150A** | 0-150mm/0-6" | ±0.04mm | 249 | 40 | 16.5 | 10 | 110 | 17 | 7 |
| **1186-200A** | 0-200mm/0-8" | ±0.04mm | 299 | 50 | 19.5 | 10 | 120 | 17 | 7 |
| **1186-300A** | 0-300mm/0-12" | ±0.05mm | 399 | 60 | 20.5 | 10 | 130 | 17 | 7 |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)** (mm)

| Code | Range | Accuracy | L | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1186-150AWL** | 0-150mm/0-6" | ±0.04mm | 249 | 40 | 16.5 | 10 | 110 | 17 | 7 |
| **1186-200AWL** | 0-200mm/0-8" | ±0.04mm | 299 | 50 | 19.5 | 10 | 120 | 17 | 7 |
| **1186-300AWL** | 0-300mm/0-12" | ±0.05mm | 399 | 60 | 20.5 | 10 | 130 | 17 | 7 |





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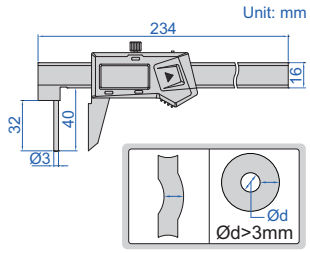
## DIGITAL TUBE THICKNESS CALIPERS

DATA OUTPUT

- Non waterproof
- Measure wall thickness of tubes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1161-150A




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **1161-150A** | 0-150mm/0-6" | ±0.05mm |

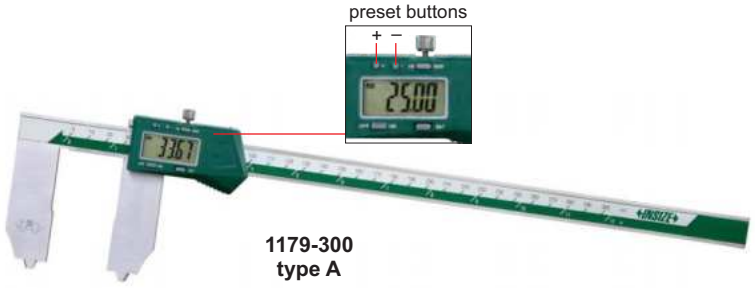
**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **1161-150AWL** | 0-150mm/0-6" | ±0.05mm |

## DIGITAL RTJ RING GROOVE CALIPERS

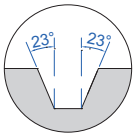
DATA OUTPUT

- Non waterproof
- Angle of RTJ ring groove: 23°
- Measure ring grooves of flange
- Resolution: 0.01mm/0.0005"
- Button function: on/off, set, zero, mm/inch, data preset
- Battery CR2032
- Made of stainless steel

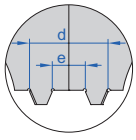



1179-300
type A

applicable for RTJ ring grooves with angle 23°



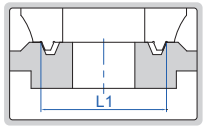

d and e need to be added on the reading



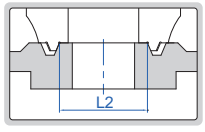


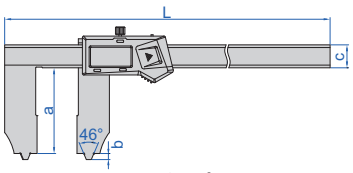

1179-600
type B

measure outside diameter of RTJ ring groove

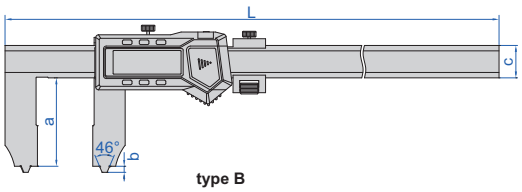



measure inside diameter of RTJ ring groove




type A




type B

**With data interface** **(mm)**

| Code | Range (inside diameter of RTJ ring groove) | Range (outside diameter of RTJ ring groove) | Accuracy | Type | L | a | b | c | d | e | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1179-300** | 10-300mm/0.4-12" | 25-300mm/1-12" | ±0.06mm | A | 410 | 63.5 | 4.5 | 17 | 25 | 10 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1179-600** | 10-600mm/0.4-24" | 25-600mm/1-24" | ±0.07mm | B | 770 | 65.5 | 4.5 | 24 | 25 | 10 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1179-1000** | 15-1000mm/0.6-40" | 30-1000mm/1.2-40" | ±0.09mm | B | 1220 | 90 | 5 | 31 | 30 | 15 | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)** **(mm)**

| Code | Range (inside diameter of RTJ ring groove) | Range (outside diameter of RTJ ring groove) | Accuracy | Type | L | a | b | c | d | e |
|---|---|---|---|---|---|---|---|---|---|---|
| **1179-300WL** | 10-300mm/0.4-12" | 25-300mm/1-12" | ±0.06mm | A | 410 | 63.5 | 4.5 | 17 | 25 | 10 |
| **1179-600WL** | 10-600mm/0.4-24" | 25-600mm/1-24" | ±0.07mm | B | 770 | 65.5 | 4.5 | 24 | 25 | 10 |

## DIGITAL CALIPERS WITH INTERCHANGEABLE BALL TIPS

DATA OUTPUT

back-jaw

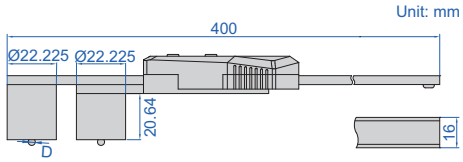



preset buttons





1527-3001




- Non waterproof
- Resolution 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: ball tips

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1527-3001 | (22.22+D)~300mm* | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

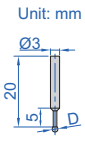
| Code | Range | Accuracy |
|---|---|---|
| 1527-3001WL | (22.22+D)~300mm* | ±0.03mm |

*"D" is the diameter of ball tips.

**Ball tips (optional, supplied in pair)**



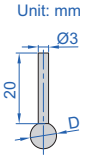
1527-T101




type A



1527-T104

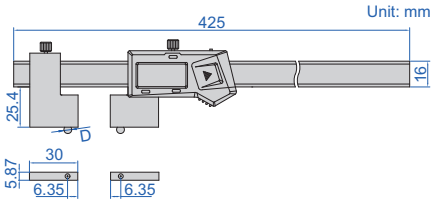



type B

| Code | Diameter (D) | Accuracy of diameter | Type | Material |
|---|---|---|---|---|
| 1527-T101 | 1/16" (Ø1.5875mm) | ±0.005mm | A | ruby |
| 1527-T102 | 1/8" (Ø3.175mm) | ±0.005mm | B | stainless steel |
| 1527-T103 | 3/16" (Ø4.7625mm) | ±0.005mm | B | stainless steel |
| 1527-T104 | 1/4" (Ø6.35mm) | ±0.005mm | B | stainless steel |
| 1527-T105 | 3/8" (Ø9.525mm) | ±0.005mm | B | stainless steel |
| 1527-T106 | 1/2" (Ø12.7mm) | ±0.005mm | B | stainless steel |

## DIGITAL CALIPERS WITH INTERCHANGEABLE BALL TIPS

DATA OUTPUT







1528-3001

preset buttons



- Non waterproof
- Resolution 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: ball tips

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1528-3001 | (12.7+D)~300mm* | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

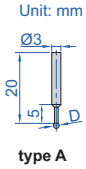
| Code | Range | Accuracy |
|---|---|---|
| 1528-3001WL | (12.7+D)~300mm* | ±0.03mm |

*"D" is the diameter of ball tips.

**Ball tips (optional, supplied in pair)**



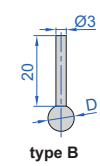
1527-T101




type A



1527-T104




type B

| Code | Diameter (D) | Accuracy of diameter | Type | Material |
|---|---|---|---|---|
| 1527-T101 | 1/16" (Ø1.5875mm) | ±0.005mm | A | ruby |
| 1527-T102 | 1/8" (Ø3.175mm) | ±0.005mm | B | stainless steel |
| 1527-T103 | 3/16" (Ø4.7625mm) | ±0.005mm | B | stainless steel |
| 1527-T104 | 1/4" (Ø6.35mm) | ±0.005mm | B | stainless steel |
| 1527-T105 | 3/8" (Ø9.525mm) | ±0.005mm | B | stainless steel |
| 1527-T106 | 1/2" (Ø12.7mm) | ±0.005mm | B | stainless steel |

## DIGITAL CRIMP HEIGHT CALIPERS

RELATIVE PRODUCT: CRIMP HEIGHT MICROMETER (CODE 3266-25BA, 3566-25BA)

DATA OUTPUT

- Non waterproof
- Measure crimp height
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, meet DIN862
- Made of stainless steel

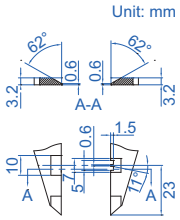


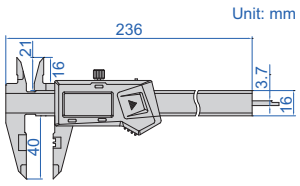
1165-150A



**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1165-150A | 0-150mm/0-6" | ±0.03mm |




**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| 1165-150AWL | 0-150mm/0-6" | ±0.03mm |

## DIGITAL CALIPERS WITH LARGE MEASURING FACES

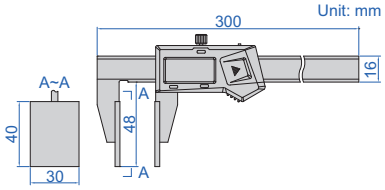
DATA OUTPUT





1172-200

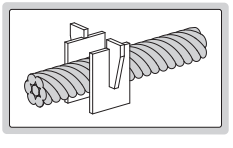
- Non waterproof
- Measure diameter of wire ropes, and thickness of soft materials like rubber, sponge, etc.
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



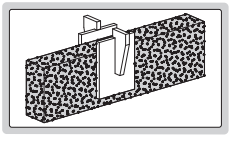

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1172-200 | 0-200mm/0-8" | ±0.07mm |

measure diameter of wire ropes



measure thickness of rubber, sponge, etc.



**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| 1172-200WL | 0-200mm/0-8" | ±0.07mm |

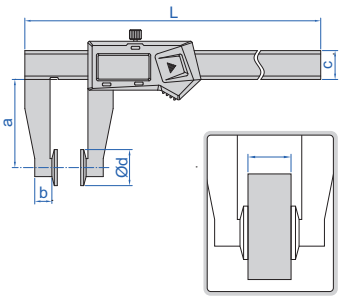
## DIGITAL CALIPERS WITH DISK FACES

DATA OUTPUT

- Non waterproof
- Measure thickness of soft sheets
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1533-150




**With data interface** (mm)

| Code | Range | Accuracy | L | a | b | c | Ød | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|
| **1533-150** | 0-150mm/0-6" | ±0.04mm | 245 | 50 | 11 | 16 | 20 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1533-200** | 0-200mm/0-8" | ±0.05mm | 310 | 80 | 11 | 16 | 30 | |
| **1533-500** | 0-500mm/0-20" | ±0.07mm | 680 | 150 | 12.5 | 24 | 50 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)** (mm)

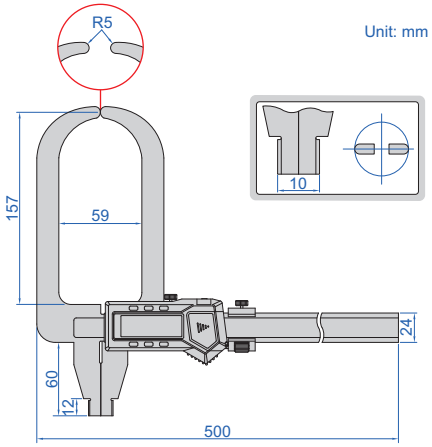
| Code | Range | Accuracy | L | a | b | c | Ød |
|---|---|---|---|---|---|---|---|
| **1533-150WL** | 0-150mm/0-6" | ±0.04mm | 245 | 50 | 11 | 16 | 20 |
| **1533-200WL** | 0-200mm/0-8" | ±0.05mm | 310 | 80 | 11 | 16 | 30 |
| **1533-500WL** | 0-500mm/0-20" | ±0.07mm | 680 | 150 | 12.5 | 24 | 50 |

## DIGITAL WALL THICKNESS CALIPERS

DATA OUTPUT



1536-300



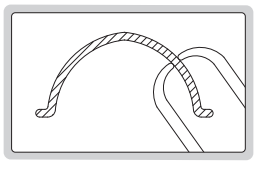

- Non waterproof
- Measure wall thickness of helmets, domes and curved pots
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, ABS, data preset
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

**With data interface (optional data output cable: code 7315-22 receiver is needed page 5, 7214-22 page 11, 7302-22 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **1536-300** | 0-300mm/0-12" | ±0.05mm |

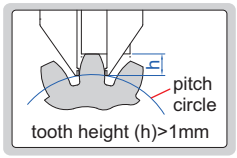
**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **1536-300WL** | 0-300mm/0-12" | ±0.05mm |



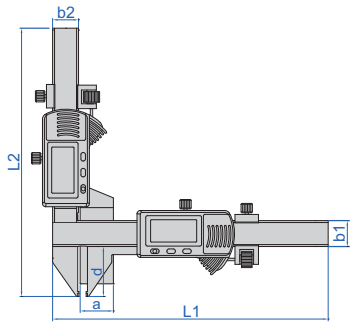
## DIGITAL GEAR TOOTH CALIPERS

ATTENTION:
NO DATA OUTPUT





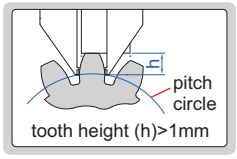

1181-M25A




- Non waterproof
- Resolution: 0.01mm/0.0005"
- Carbide tips
- Measure the tooth thickness by positioning the tooth height (for tooth height>1mm)
- Buttons: zero, on/off, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

| Code | Range | Accuracy of height measurement | Accuracy of thickness measurement | Total accuracy | L1 | L2 | a | b1 | b2 | d |
|---|---|---|---|---|---|---|---|---|---|---|
| **1181-M25A** | M1-25mm | ±0.03mm | ±0.03mm | ±0.04mm | 170mm | 165.5mm | 21mm | 16mm | 16mm | 30.5mm |
| **1181-M50A** | M5-50mm | ±0.03mm | ±0.03mm | ±0.04mm | 220mm | 190mm | 50.5mm | 16mm | 16mm | 55mm |

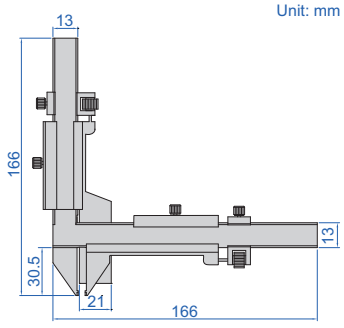
## GEAR TOOTH VERNIER CALIPER






1281-M26A

Unit: mm




- Carbide tips
- Measure the tooth thickness by positioning the tooth height (for tooth height>1mm)
- Made of stainless steel
- Satin chrome plated reading surface

| Code | Range | Graduation | Accuracy of height measurement | Accuracy of thickness measurement | Total accuracy |
|---|---|---|---|---|---|
| **1281-M26A** | M1-26mm | 0.02mm | ±0.03mm | ±0.03mm | ±0.04mm |

## DIGITAL DISK BRAKE CALIPERS

RELATIVE PRODUCT: DISK BRAKE MICROMETER (CODE 3288-, 3588-)

DATA OUTPUT

- Non waterproof
- Measure thickness of disk brakes
- Resolution 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



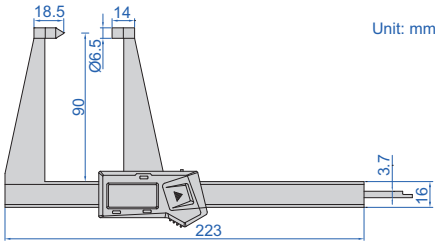
1162-125A

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1162-125A | 0-125mm/0-5" | ±0.05mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| 1162-125AWL | 0-125mm/0-5" | ±0.05mm |






## DIGITAL DISK BRAKE AND PAD CALIPERS

RELATIVE PRODUCT: DISK BRAKE MICROMETER (CODE 3288-, 3588-)

DATA OUTPUT

- Non waterproof
- Measure thickness of disk brakes and pad wear
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1167-150A



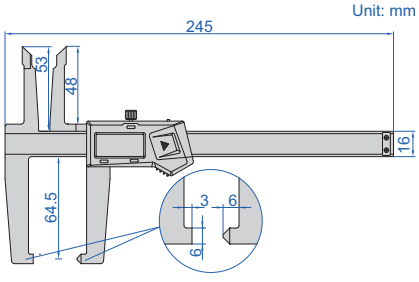


**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1167-150A | 0-150mm/0-6" | ±0.07mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| 1167-150AWL | 0-150mm/0-6" | ±0.07mm |



RELATIVE PRODUCT: DISK BRAKE MICROMETER (CODE 3288-, 3588-)

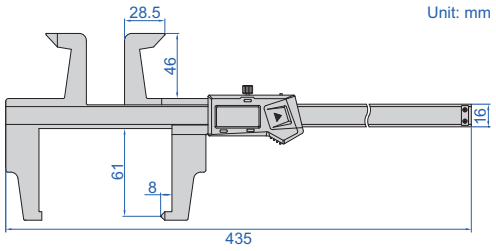
DATA OUTPUT

## DIGITAL DRUM BRAKE CALIPERS



**1168-300A**

- Non waterproof
- Measure internal and external diameter of drum brakes
- Resolution 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **1168-300A** | 0-300mm/0-12" | ±0.07mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **1168-300AWL** | 0-300mm/0-12" | ±0.07mm |

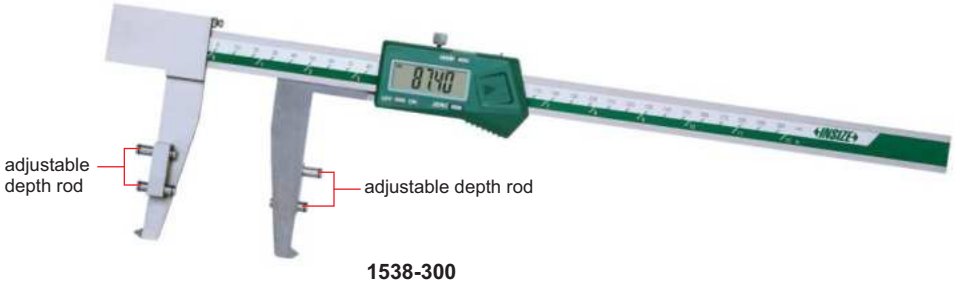


DATA OUTPUT

## DIGITAL DRUM BRAKE CALIPER

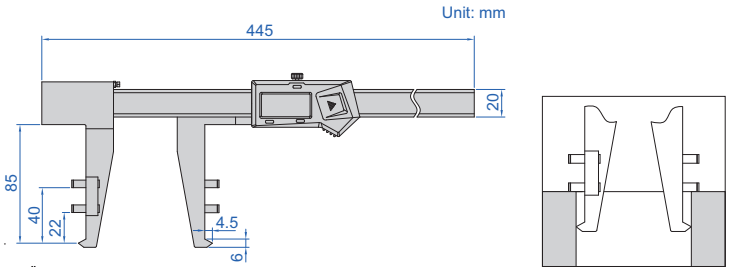
calibration block (included)






**1538-300**

- Non waterproof
- Measure internal diameter of drum brakes
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: wireless transmitter code **7315-22** (receiver is needed) page 5, bluetooth transmitter code **7214-22** page 11, data output cable code **7302-22** page 20




| Code | Range | Accuracy |
|---|---|---|
| **1538-300** | 30-300mm/1.2-12" | ±0.05mm |

## DIGITAL ARC RADIUS CALIPERS

REFER TO PAGE 238
FOR DETAILS



1189-200B

## DIGITAL SCRIBING CALIPERS

REFER TO PAGE 479
FOR DETAILS



1166-150A

## KEYWAY SYMMETRY DIGITAL CALIPERS

REFER TO PAGE 241
FOR DETAILS



1531-60



1531-200

# DEPTH MEASURING TOOLS





Digital Depth Gauges
Page 85-89



Dial Depth Gauges
Page 89



Vernier Depth Gauges
Page 90-92



Extension Bases
Page 92



Mini Depth Gauges
Page 92-93



Depth Gauges
Page 94-97



Depth Micrometers
Page 98-99



Measuring Tools Dynamometers
Page 99



Depth Micrometer Checkers
Page 100

## IP67 WATERPROOF DIGITAL DEPTH GAUGES

ATTENTION: NO DATA OUTPUT

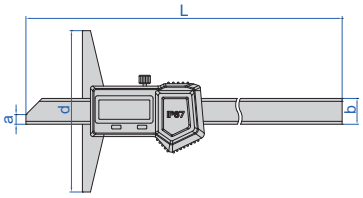
ATTENTION: IT IS NECESSARY TO SET ZERO AFTER POWER ON EACH TIME

IP67 WATERPROOF

- IP67 dust/waterproof
- Resolution: 0.01mm/0.0005"
- Button function: zero, on/off, mm/inch, ABS/REL, hold
- Meet DIN862
- Battery CR2032
- Made of stainless steel




1149-150




| Code | Range | Accuracy | L | a | b | d |
|---|---|---|---|---|---|---|
| 1149-150 | 0-150mm/0-6" | ±0.03mm | 240mm | 6mm | 16mm | 100mm |
| 1149-200 | 0-200mm/0-8" | ±0.03mm | 290mm | 6mm | 16mm | 100mm |
| 1149-300 | 0-300mm/0-12" | ±0.03mm | 390mm | 6mm | 16mm | 150mm |

## DIGITAL DEPTH GAUGES (STANDARD TYPE)

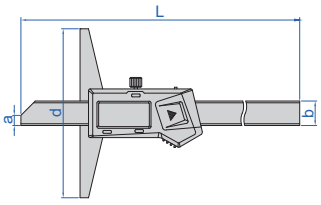
POPULAR MODEL

DATA OUTPUT

- Non waterproof
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Meet DIN862 (except 0-500mm/0-20", 0-1000mm/0-40", 0-1500mm/0-60")
- Battery CR2032
- Made of stainless steel




1141-150A




**With data interface** **(mm)**

| Code | Range | Resolution | Accuracy | L | a | b | d | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|
| 1141-150A | 0-150mm/0-6" | 0.01mm/0.0005" | ±0.03mm | 230 | 6 | 14.5 | 100 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| 1141-200A | 0-200mm/0-8" | 0.01mm/0.0005" | ±0.03mm | 280 | 6 | 14.5 | 100 | |
| 1141-300A | 0-300mm/0-12" | 0.01mm/0.0005" | ±0.03mm | 380 | 6 | 14.5 | 150 | |
| 1141-500A | 0-500mm/0-20" | 0.01mm/0.0005" | ±0.05mm | 585 | 7 | 15 | 150 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| 1141-5001A | 0-500mm/0-20" | 0.01mm/0.0005" | ±0.05mm | 585 | 7 | 15 | 200 | |
| 1141-1000A | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1188 | 7 | 18 | 150 | |
| 1141-10001A | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1188 | 7 | 18 | 200 | |
| 1141-10002A | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1188 | 7 | 18 | 250 | |
| 1141-10003A | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1188 | 7 | 18 | 300 | |
| 1141-1500A | 0-1500mm/0-60" | 0.01mm/0.0005" | ±0.11mm | 1695 | 7 | 18 | 200 | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Resolution | Accuracy | L | a | b | d |
|---|---|---|---|---|---|---|---|
| 1141-150AWL | 0-150mm/0-6" | 0.01mm/0.0005" | ±0.03mm | 230mm | 6mm | 14.5mm | 100mm |
| 1141-200AWL | 0-200mm/0-8" | 0.01mm/0.0005" | ±0.03mm | 280mm | 6mm | 14.5mm | 100mm |
| 1141-300AWL | 0-300mm/0-12" | 0.01mm/0.0005" | ±0.03mm | 380mm | 6mm | 14.5mm | 150mm |
| 1141-500AWL | 0-500mm/0-20" | 0.01mm/0.0005" | ±0.05mm | 585mm | 7mm | 15mm | 150mm |
| 1141-5001AWL | 0-500mm/0-20" | 0.01mm/0.0005" | ±0.05mm | 585mm | 7mm | 15mm | 200mm |
| 1141-1000AWL | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1188mm | 7mm | 18mm | 150mm |
| 1141-10001AWL | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1188mm | 7mm | 18mm | 200mm |
| 1141-10002AWL | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1188mm | 7mm | 18mm | 250mm |
| 1141-10003AWL | 0-1000mm/0-40" | 0.01mm/0.0005" | ±0.07mm | 1188mm | 7mm | 18mm | 300mm |
| 1141-1500AWL | 0-1500mm/0-60" | 0.01mm/0.0005" | ±0.11mm | 1695mm | 7mm | 18mm | 200mm |



info@insz.sk | +421 944 367 573 | www.insz.sk

DATA OUTPUT

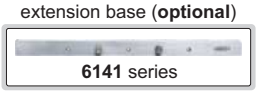
## DIGITAL DEPTH GAUGES WITH MOUNTING HOLES FOR EXTENSION BASE

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Meet DIN862
- Battery CR2032
- Made of stainless steel
- Optional accessory: extension base (code **6141**)



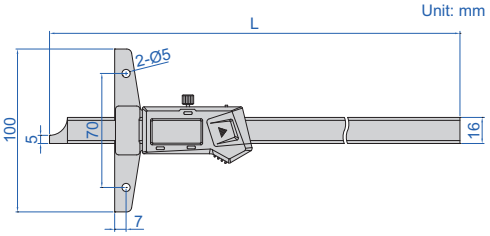
**1147-300**

extension base (**optional**)



**6141** series

Unit: mm




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | L |
|---|---|---|---|
| **1147-150** | 0-150mm/0-6" | ±0.03mm | 237mm |
| **1147-200** | 0-200mm/0-8" | ±0.03mm | 287mm |
| **1147-300** | 0-300mm/0-12" | ±0.03mm | 403mm |
| **1147-500** | 0-500mm/0-20" | ±0.05mm | 605mm |
| **1147-700** | 0-700mm/0-28" | ±0.06mm | 805mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L |
|---|---|---|---|
| **1147-150WL** | 0-150mm/0-6" | ±0.03mm | 237mm |
| **1147-200WL** | 0-200mm/0-8" | ±0.03mm | 287mm |
| **1147-300WL** | 0-300mm/0-12" | ±0.03mm | 403mm |
| **1147-500WL** | 0-500mm/0-20" | ±0.05mm | 605mm |
| **1147-700WL** | 0-700mm/0-28" | ±0.06mm | 805mm |

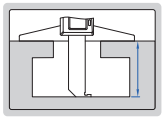
DATA OUTPUT

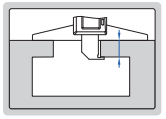
## DIGITAL HOOK DEPTH GAUGES

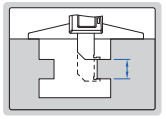
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



**1142-150A**





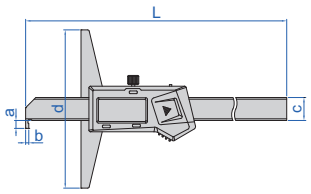


**With data interface**

| Code | Range | Accuracy | L | d | a | b | c | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|
| **1142-150A** | 0-150mm/0-6" | ±0.03mm | 230mm | 100mm | 5mm | 2mm | 14.5mm | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1142-200A** | 0-200mm/0-8" | ±0.03mm | 280mm | 100mm | 5mm | 2mm | 14.5mm | |
| **1142-300A** | 0-300mm/0-12" | ±0.04mm | 380mm | 150mm | 5mm | 2mm | 14.5mm | |
| **1142-500A** | 0-500mm/0-20" | ±0.05mm | 585mm | 150mm | 8mm | 3mm | 15mm | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| **1142-5001A** | 0-500mm/0-20" | ±0.05mm | 585mm | 200mm | 8mm | 3mm | 15mm | |
| **1142-1000A** | 0-1000mm/0-40" | ±0.07mm | 1188mm | 150mm | 10mm | 4mm | 18mm | |
| **1142-10001A** | 0-1000mm/0-40" | ±0.07mm | 1188mm | 200mm | 10mm | 4mm | 18mm | |
| **1142-10002A** | 0-1000mm/0-40" | ±0.07mm | 1188mm | 250mm | 10mm | 4mm | 18mm | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | d | a | b | c |
|---|---|---|---|---|---|---|---|
| **1142-150AWL** | 0-150mm/0-6" | ±0.03mm | 230mm | 100mm | 5mm | 2mm | 14.5mm |
| **1142-200AWL** | 0-200mm/0-8" | ±0.03mm | 280mm | 100mm | 5mm | 2mm | 14.5mm |
| **1142-300AWL** | 0-300mm/0-12" | ±0.04mm | 380mm | 150mm | 5mm | 2mm | 14.5mm |
| **1142-500AWL** | 0-500mm/0-20" | ±0.05mm | 585mm | 150mm | 8mm | 3mm | 15mm |
| **1142-5001AWL** | 0-500mm/0-20" | ±0.05mm | 585mm | 200mm | 8mm | 3mm | 15mm |
| **1142-1000AWL** | 0-1000mm/0-40" | ±0.07mm | 1188mm | 150mm | 10mm | 4mm | 18mm |
| **1142-10001AWL** | 0-1000mm/0-40" | ±0.07mm | 1188mm | 200mm | 10mm | 4mm | 18mm |
| **1142-10002AWL** | 0-1000mm/0-40" | ±0.07mm | 1188mm | 250mm | 10mm | 4mm | 18mm |



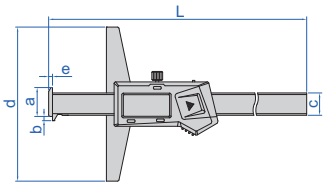
## DIGITAL DOUBLE HOOK DEPTH GAUGES

DATA OUTPUT

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Meet DIN862
- Battery CR2032
- Made of stainless steel



1144-150A

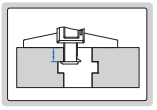


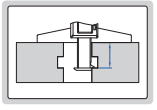

**With data interface** (mm)

| Code | Range | Accuracy | L | d | a | b | c | e | Data output cable (optional) |
|---|---|---|---|---|---|---|---|---|---|
| 1144-150A | 0-150mm/0-6" | ±0.03mm | 233 | 100 | 21.5 | 3.5 | 14.5 | 2.5 | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| 1144-200A | 0-200mm/0-8" | ±0.03mm | 283 | 100 | 21.5 | 3.5 | 14.5 | 2.5 | |
| 1144-300A | 0-300mm/0-12" | ±0.03mm | 383 | 150 | 21.5 | 3.5 | 14.5 | 2.5 | |
| 1144-500A | 0-500mm/0-20" | ±0.05mm | 585 | 150 | 25 | 5 | 15 | 3 | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |
| 1144-5001A | 0-500mm/0-20" | ±0.05mm | 585 | 200 | 25 | 5 | 15 | 3 | |
| 1144-1000A | 0-1000mm/0-40" | ±0.07mm | 1188 | 150 | 32 | 7 | 18 | 4 | |
| 1144-10001A | 0-1000mm/0-40" | ±0.07mm | 1188 | 200 | 32 | 7 | 18 | 4 | |
| 1144-10002A | 0-1000mm/0-40" | ±0.07mm | 1188 | 250 | 32 | 7 | 18 | 4 | |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | d | a | b | c | e |
|---|---|---|---|---|---|---|---|---|
| 1144-150AWL | 0-150mm/0-6" | ±0.03mm | 233mm | 100mm | 21.5mm | 3.5mm | 14.5mm | 2.5mm |
| 1144-200AWL | 0-200mm/0-8" | ±0.03mm | 283mm | 100mm | 21.5mm | 3.5mm | 14.5mm | 2.5mm |
| 1144-300AWL | 0-300mm/0-12" | ±0.03mm | 383mm | 150mm | 21.5mm | 3.5mm | 14.5mm | 2.5mm |
| 1144-500AWL | 0-500mm/0-20" | ±0.05mm | 585mm | 150mm | 25mm | 5mm | 15mm | 3mm |
| 1144-5001AWL | 0-500mm/0-20" | ±0.05mm | 585mm | 200mm | 25mm | 5mm | 15mm | 3mm |
| 1144-1000AWL | 0-1000mm/0-40" | ±0.07mm | 1188mm | 150mm | 32mm | 7mm | 18mm | 4mm |
| 1144-10001AWL | 0-1000mm/0-40" | ±0.07mm | 1188mm | 200mm | 32mm | 7mm | 18mm | 4mm |
| 1144-10002AWL | 0-1000mm/0-40" | ±0.07mm | 1188mm | 250mm | 32mm | 7mm | 18mm | 4mm |





## DIGITAL DOUBLE HOOK DEPTH GAUGE

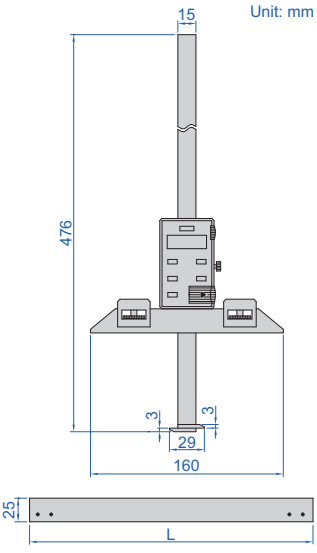
DATA OUTPUT

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, ABS/INC, data hold, TOL, set
- ABS/INC is for absolute and incremental measurement
- TOL is for tolerance measurement
- Made of stainless steel
- LR44 battery, data output
- Supplied with gauge block for zero setting
- Optional accessory: extension base, wireless transmitter code **7315-1150** (receiver is needed) page 7, data output cable (keyboard format) code **7302-SPC7** page 22




1540-300

Unit: mm



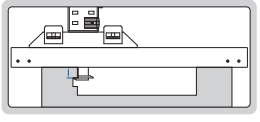

| Code | Range | Accuracy |
|---|---|---|
| 1540-300 | 0-300mm/0-12" | ±0.04mm |

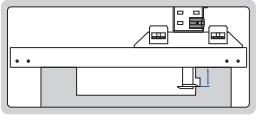
**Extension base (optional)**

| Code | L |
|---|---|
| 1540-L300 | 300mm |
| 1540-L400 | 400mm |
| 1540-L500 | 500mm |
| 1540-L600 | 600mm |
| 1540-L800 | 800mm |

gauge block for zero setting (included)







VIDEO

MEASURE DEPTH OF SMALL HOLES (>Ø4mm)

DATA OUTPUT

# DIGITAL DEPTH GAUGES WITH ROUND DEPTH BAR

MEASURE WIDTH AND DEPTH OF GROOVES INSIDE BORE



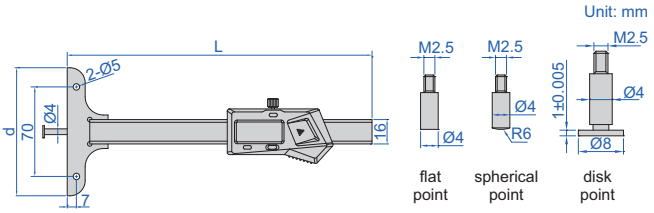
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Supplied with three interchangeable points (flat, spherical, disk)
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: extension base (code **6141**, for **1148-120**, **1148-120WL**, **1148-200**, **1148-200WL**, **1148-300** and **1148-300WL**)



**1148-100S**

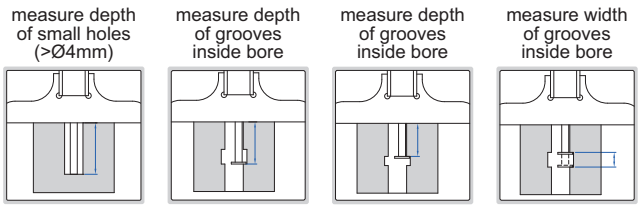
preset buttons

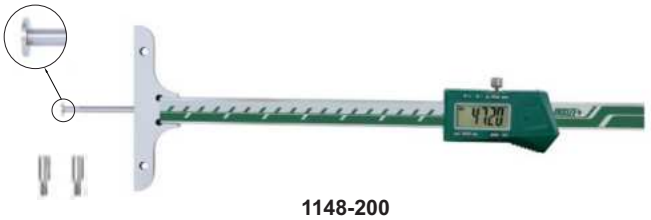







**1148-120**



**1148-200**

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range* | Accuracy | L | d | Remark |
|---|---|---|---|---|---|
| **1148-100S** | 0-100mm/0-4" | ±0.02mm | 200mm | 45mm | |
| **1148-100** | 0-100mm/0-4" | ±0.02mm | 200mm | 85mm | |
| **1148-120** | 0-120mm/0-4.7" | ±0.03mm | 300mm | 101mm | one-hand use, with mounting holes for extension base |
| **1148-200** | 0-200mm/0-8" | ±0.03mm | 300mm | 101mm | with mounting holes for extension base |
| **1148-300** | 0-300mm/0-12" | ±0.04mm | 400mm | 101mm | with mounting holes for extension base |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range* | Accuracy | L | d | Remark |
|---|---|---|---|---|---|
| **1148-100SWL** | 0-100mm/0-4" | ±0.02mm | 200mm | 45mm | |
| **1148-100WL** | 0-100mm/0-4" | ±0.02mm | 200mm | 85mm | |
| **1148-120WL** | 0-120mm/0-4.7" | ±0.03mm | 300mm | 101mm | one-hand use, with mounting holes for extension base |
| **1148-200WL** | 0-200mm/0-8" | ±0.03mm | 300mm | 101mm | with mounting holes for extension base |
| **1148-300WL** | 0-300mm/0-12" | ±0.04mm | 400mm | 101mm | with mounting holes for extension base |

*When disk points are used, the range is reduced by 10mm

one-hand use of **1148-120** and **1148-120WL**

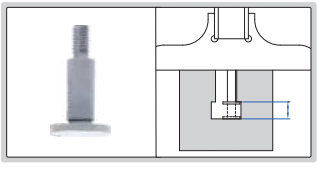


extension base for **1148-120**, **1148-120WL**, **1148-200**, **1148-200WL**, **1148-300** and **1148-300WL** (**optional**)



**6141** series

**1148-P103** (**optional**), measure width of bottom grooves inside blind hole



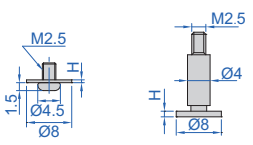
**OPTIONAL DISK POINTS**

| Code | Description | H | Remark |
|---|---|---|---|
| **1148-P101** | 0.5mm disk point | 0.5±0.005mm | for narrow grooves |
| **1148-P102** | 0.7mm disk point | 0.7±0.005mm | for narrow grooves |
| **1148-P103** | 1mm disk point | 1±0.005mm | for grooves inside blind hole |
| **1148-P104** | 0.5mm disk point | 0.5±0.005mm | for grooves inside blind hole |

**1148-P101** (**optional**)



Unit: mm




**1148-P101** and **1148-P102**

**1148-P103** and **1148-P104**

## DIGITAL POINT DEPTH GAUGES

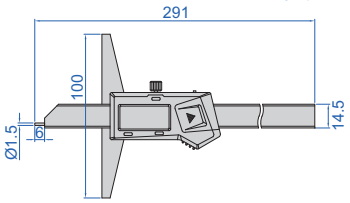
DATA OUTPUT

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Meet DIN862
- Battery CR2032
- Made of stainless steel



**1143-200A**

Unit: mm

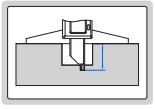



**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **1143-200A** | 0-200mm/0-8" | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **1143-200AWL** | 0-200mm/0-8" | ±0.03mm |



## DIAL DEPTH GAUGES

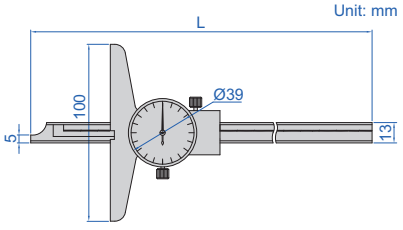
SHOCK PROOF



**1340-150**

- Shockproof dial indicator
- Made of stainless steel

Unit: mm




| Code | Range | Graduation | Accuracy | L |
|---|---|---|---|---|
| **1340-150** | 0-150mm | 0.02mm | ±0.03mm | 232mm |
| **1340-200** | 0-200mm | 0.02mm | ±0.03mm | 282mm |
| **1340-300** | 0-300mm | 0.02mm | ±0.04mm | 382mm |

## DIAL DEPTH GAUGES WITH ROUND BAR

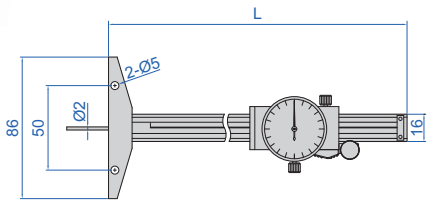
SHOCK PROOF



**1341-100**

- Shockproof dial indicator
- Dial indicator graduation: 0.02mm
- Made of stainless steel

Unit: mm




| Code | Range | Accuracy | L |
|---|---|---|---|
| **1341-100** | 0-100mm | ±0.02mm | 181mm |
| **1341-150** | 0-150mm | ±0.03mm | 234mm |
| **1341-200** | 0-200mm | ±0.03mm | 284mm |

## VERNIER DEPTH GAUGES (STANDARD TYPE)

POPULAR MODEL

- Made of stainless steel
- Satin chrome plated reading surface



1240-2001

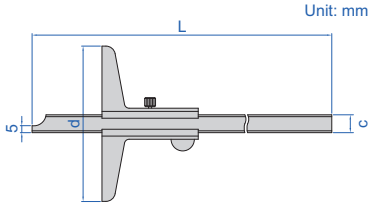
**Graduation 0.05mm**

| Code | Range | Accuracy | L | d | c |
|---|---|---|---|---|---|
| **1240-150** | 0-150mm | ±0.05mm | 250mm | 100mm | 10mm |
| **1240-200** | 0-200mm | ±0.05mm | 300mm | 100mm | 10mm |
| **1240-300** | 0-300mm | ±0.08mm | 400mm | 100mm | 10mm |
| **1240-500** | 0-500mm | ±0.09mm | 605mm | 150mm | 11mm |

**Graduation 0.02mm**

| Code | Range | Accuracy | L | d | c |
|---|---|---|---|---|---|
| **1240-1501** | 0-150mm | ±0.03mm | 250mm | 100mm | 10mm |
| **1240-2001** | 0-200mm | ±0.03mm | 300mm | 100mm | 10mm |
| **1240-3001** | 0-300mm | ±0.04mm | 400mm | 100mm | 10mm |
| **1240-5001** | 0-500mm | ±0.05mm | 605mm | 150mm | 11mm |

Unit: mm



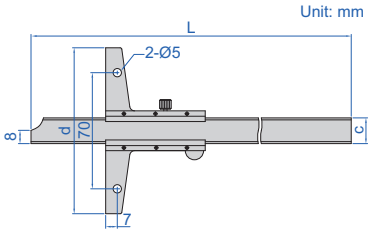

## VERNIER DEPTH GAUGES

WITH MOUNTING HOLES FOR EXTENSION BASE



1247-2001

Unit: mm




- Made of stainless steel
- Satin chrome plating finish on reading surface
- Optional accessory: extension base (code **6141**)

extension base (**optional**)



**6141** series

| Range | L | c | d |
|---|---|---|---|
| 0-150mm | 240mm | 16mm | 100mm |
| 0-200mm | 290mm | 16mm | 100mm |
| 0-300mm | 390mm | 16mm | 100mm |
| 0-600mm | 704mm | 16mm | 150mm |
| 0-1000mm | 1140mm | 16mm | 200mm |

| Code | Range | Accuracy | Graduation |
|---|---|---|---|
| **1247-150** | 0-150mm | ±0.05mm | 0.05mm |
| **1247-200** | 0-200mm | ±0.05mm | 0.05mm |
| **1247-300** | 0-300mm | ±0.08mm | 0.05mm |
| **1247-600** | 0-600mm | ±0.10mm | 0.05mm |
| **1247-1000** | 0-1000mm | ±0.15mm | 0.05mm |

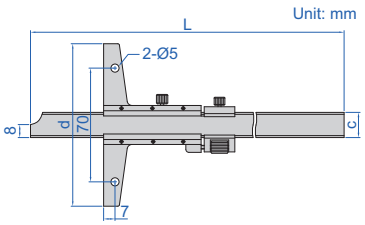
| Code | Range | Accuracy | Graduation |
|---|---|---|---|
| **1247-1501** | 0-150mm | ±0.03mm | 0.02mm |
| **1247-2001** | 0-200mm | ±0.03mm | 0.02mm |
| **1247-3001** | 0-300mm | ±0.04mm | 0.02mm |
| **1247-6001** | 0-600mm | ±0.05mm | 0.02mm |
| **1247-1001** | 0-1000mm | ±0.07mm | 0.02mm |

## VERNIER DEPTH GAUGES WITH FINE ADJUSTMENT

WITH MOUNTING HOLES FOR EXTENSION BASE



1249-1501




- With fine adjustment
- Made of stainless steel
- Satin chrome plating finish on reading surface
- Optional accessory: extension base (code **6141**)

extension base (**optional**)



**6141** series

**Graduation 0.02mm**

| Code | Range | Accuracy |
|---|---|---|
| **1249-1501** | 0-150mm | ±0.03mm |
| **1249-2001** | 0-200mm | ±0.03mm |
| **1249-3001** | 0-300mm | ±0.04mm |

**Graduation 0.05mm**

| Code | Range | Accuracy |
|---|---|---|
| **1249-150** | 0-150mm | ±0.05mm |
| **1249-200** | 0-200mm | ±0.05mm |
| **1249-300** | 0-300mm | ±0.08mm |

| Range | L | c | d |
|---|---|---|---|
| 0-150mm | 256mm | 16mm | 100mm |
| 0-200mm | 306mm | 16mm | 100mm |
| 0-300mm | 406mm | 16mm | 100mm |

## VERNIER HOOK DEPTH GAUGES

WITH MOUNTING HOLES FOR EXTENSION BASE

extension base (**optional**)

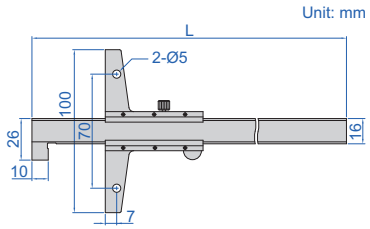


**6141** series



1248-1501

- Made of stainless steel
- Satin chrome plating finish on reading surface
- Optional accessory: extension base (code **6141**)

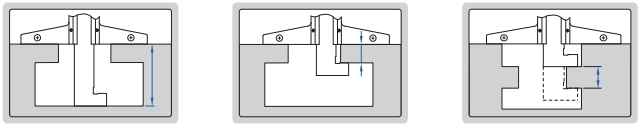



**Graduation 0.05mm**

| Code | Range | Accuracy | L |
|---|---|---|---|
| **1248-150** | 0-150mm | ±0.05mm | 266mm |
| **1248-200** | 0-200mm | ±0.05mm | 316mm |
| **1248-300** | 0-300mm | ±0.08mm | 416mm |

**Graduation 0.02mm**

| Code | Range | Accuracy | L |
|---|---|---|---|
| **1248-1501** | 0-150mm | ±0.03mm | 266mm |
| **1248-2001** | 0-200mm | ±0.03mm | 316mm |
| **1248-3001** | 0-300mm | ±0.04mm | 416mm |

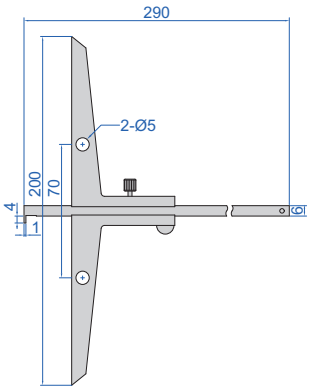


## VERNIER HOOK DEPTH GAUGE

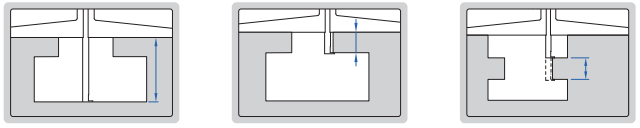


1243-2001

Unit: mm




- Graduation 0.02mm
- Made of stainless steel
- Satin chrome plating finish on reading surface



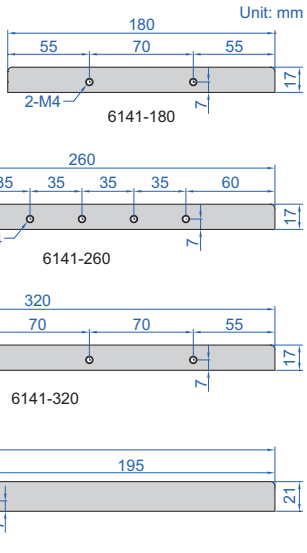
| Code | Range | Accuracy |
|---|---|---|
| **1243-2001** | 0-200mm | ±0.04mm |

## EXTENSION BASES

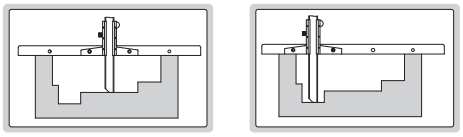


6141-260

Unit: mm




- Supplied with two screws
- Made of stainless steel
- Suitable for depth gauges series **1147**, **1148**, **1247**, **1248** and **1249**



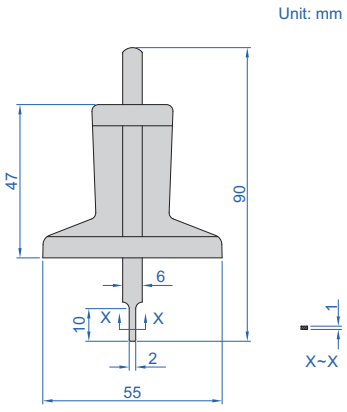
| Code | Length |
|---|---|
| **6141-180** | 180mm |
| **6141-260** | 260mm |
| **6141-320** | 320mm |
| **6141-600** | 600mm |

## MINI VERNIER DEPTH GAUGE



1244-30

Unit: mm




- Graduation: 0.1mm
- Made of stainless steel

| Code | Range | Accuracy |
|---|---|---|
| **1244-30** | 0-30mm | ±0.10mm |

## MINI DIGITAL DEPTH GAUGES

DATA OUTPUT



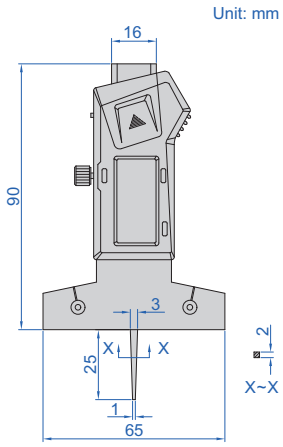




- Non waterproof
- Measure depth of small groove and hole, also measure depth of tire tread
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Supplied with zero set surface
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1145-25A




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| 1145-25A | 0-25mm/0-1" | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| 1145-25AWL | 0-25mm/0-1" | ±0.03mm |

## MINI DIGITAL DEPTH GAUGES WITH ROUND BAR

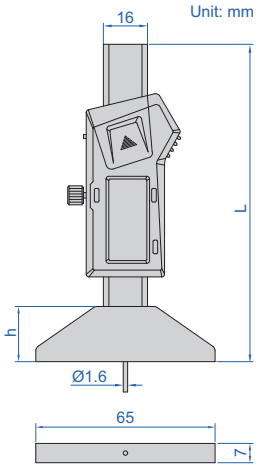
DATA OUTPUT



- Non waterproof
- Measure depth of small groove and hole
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+,-)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1140-25




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy | L | h |
|---|---|---|---|---|
| 1140-25 | 0-25mm/0-1" | ±0.02mm | 114mm | 20mm |
| 1140-50 | 0-50mm/0-2" | ±0.02mm | 140mm | 20mm |
| 1140-100 | 0-100mm/0-4" | ±0.02mm | 190mm | 20mm |
| 1140-150 | 0-150mm/0-6" | ±0.03mm | 236mm | 16mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | L | h |
|---|---|---|---|---|
| 1140-25WL | 0-25mm/0-1" | ±0.02mm | 114mm | 20mm |
| 1140-50WL | 0-50mm/0-2" | ±0.02mm | 140mm | 20mm |
| 1140-100WL | 0-100mm/0-4" | ±0.02mm | 190mm | 20mm |
| 1140-150WL | 0-150mm/0-6" | ±0.03mm | 236mm | 16mm |

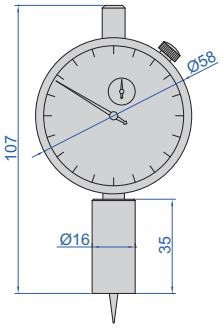
# DIAL DEPTH GAUGES

- Accuracy: ±0.017mm
- Stainless steel base
- Pointed tip

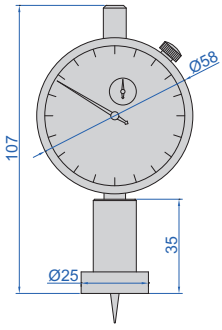


**2343-102**

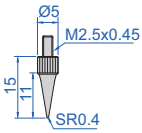
Unit: mm




2343-101




2343-102




**pointed tip**

| Code | Range | Dial indicator stroke | Dial indicator graduation | Base |
|---|---|---|---|---|
| **2343-101** | 0-10mm | 10mm | 0.01mm | Ø16mm |
| **2343-102** | 0-10mm | 10mm | 0.01mm | Ø25mm |

# DIGITAL DEPTH GAUGES

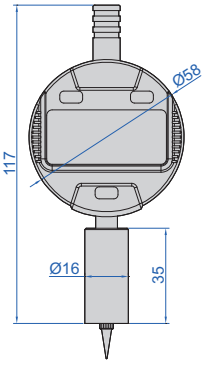
DATA OUTPUT

- Button function: on/off, zero, mm/inch, ABS, data preset, change measuring direction
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Pointed tip
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21

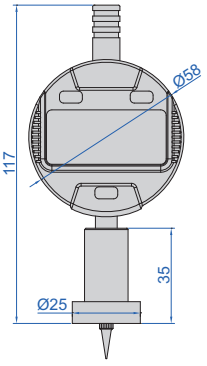



**2142-102**

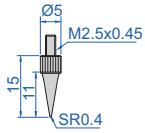
Unit: mm




2142-101/2142-301




2142-102/2142-302




**pointed tip**

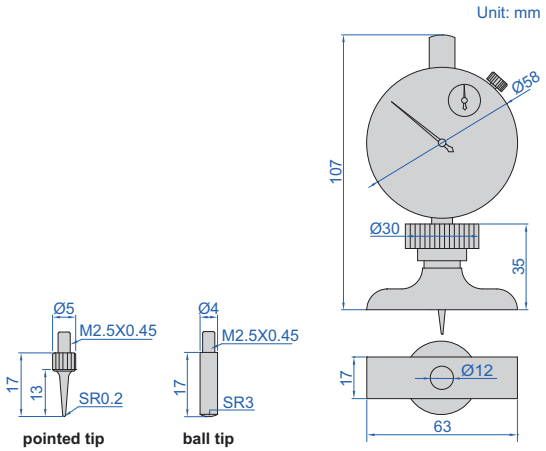
| Code | Range | Digital indicator stroke | Digital indicator resolution | Accuracy | Base |
|---|---|---|---|---|---|
| **2142-101** | 0-12.7mm/0-0.5" | 12.7mm/0.5" | 0.01mm/0.0005" | ±20μm | Ø16mm |
| **2142-102** | 0-12.7mm/0-0.5" | 12.7mm/0.5" | 0.01mm/0.0005" | ±20μm | Ø25mm |
| **2142-301** | 0-12.7mm/0-0.5" | 12.7mm/0.5" | 0.001mm/0.00005" | ±5μm | Ø16mm |
| **2142-302** | 0-12.7mm/0-0.5" | 12.7mm/0.5" | 0.001mm/0.00005" | ±5μm | Ø25mm |

## DIAL DEPTH GAUGE

- Accuracy: ±0.017mm
- Stainless steel base
- Supplied with pointed tip and ball tip



**2341-101A**



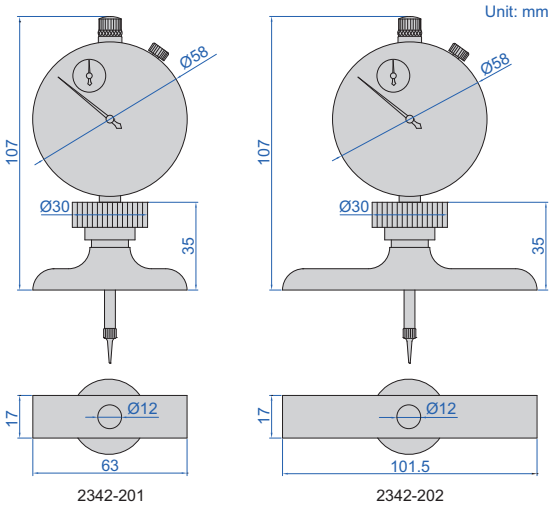

| Code | Range | Dial indicator stroke | Dial indicator graduation |
|---|---|---|---|
| **2341-101A** | 0-10mm | 10mm | 0.01mm |

## DIAL DEPTH GAUGES



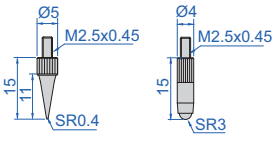
**2342-202**

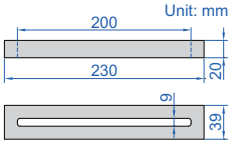




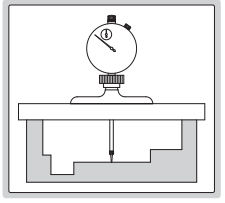


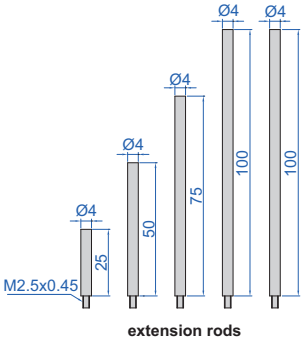

**2141-10** (**optional**), can be customized according to workpieces




application





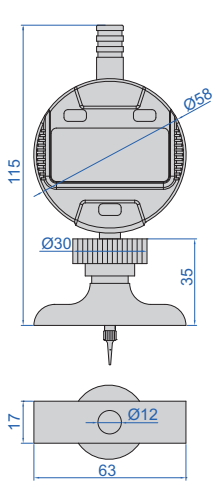

- Dial indicator graduation: 0.01mm
- Accuracy: ±0.03mm
- Stainless steel base
- Extension rods: 25mm (1pc), 50mm (1pc), 75mm (1pc), 100mm (2pcs)
- Supplied with pointed tip and ball tip
- Optional accessory: granite extension holder (code **2141-10**)

| Code | Range | Dial indicator stroke | Base |
|---|---|---|---|
| **2342-201** | 0-300mm | 30mm | 63×17mm |
| **2342-202** | 0-300mm | 30mm | 101.5×17mm |

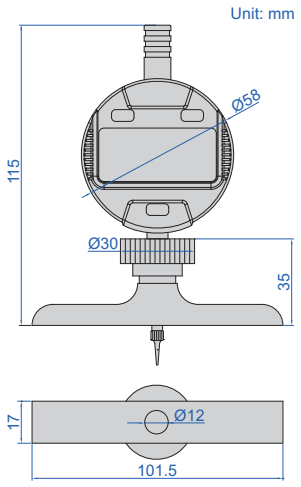



2141-202A



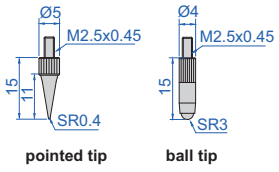



2141-201A/2141-301

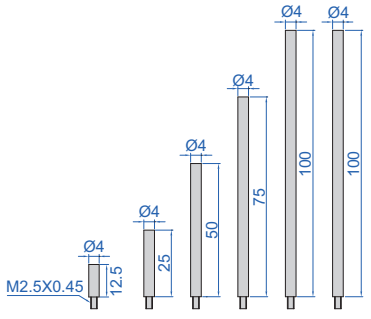



2141-202A/2141-302

- Button function: on/off, zero, mm/inch, ABS, data preset, change measuring direction
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Extension rods: 12.5mm (1pc), 25mm (1pc), 50mm (1pc), 75mm (1pc), 100mm (2pcs)
- Supplied with pointed tip and ball tip
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21,
  granite extension holder (code **2141-10**)



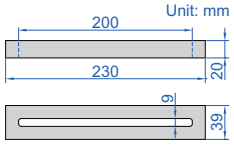

pointed tip ball tip



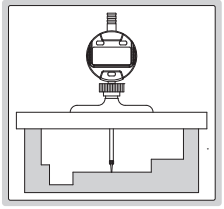

extension rods



**2141-10** (**optional**),
can be customized
according to workpieces




application



| Code | Range | Digital indicator stroke | Digital indicator resolution | Accuracy | Base |
|---|---|---|---|---|---|
| **2141-201A** | 0-300mm/0-12" | 12.7mm/0.5" | 0.01mm/0.0005" | ±20μm | 63×17mm |
| **2141-202A** | 0-300mm/0-12" | 12.7mm/0.5" | 0.01mm/0.0005" | ±20μm | 101.5×17mm |
| **2141-301** | 0-300mm/0-12" | 12.7mm/0.5" | 0.001mm/0.00005" | ±5μm | 63×17mm |
| **2141-302** | 0-300mm/0-12" | 12.7mm/0.5" | 0.001mm/0.00005" | ±5μm | 101.5×17mm |

## DIGITAL DEPTH GAUGE (60° KNIFE EDGE BASE)

DATA OUTPUT

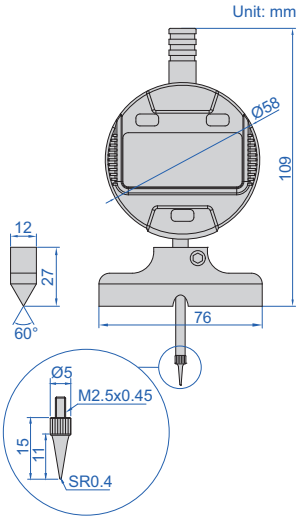
- Button function: on/off, zero, inch/mm, ABS, data preset, change measuring direction
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base with 60° knife edge
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21




front view



side view




**2143-101**

| Code | Range | Digital indicator stroke | Digital indicator resolution | Accuracy |
|---|---|---|---|---|
| **2143-101** | 0-12.7mm/0-0.5" | 12.7mm/0.5" | 0.01mm/0.0005" | ±20μm |

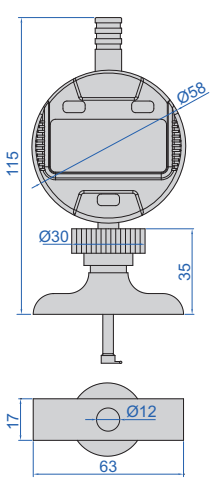
## DIGITAL GROOVE GAUGES

DATA OUTPUT

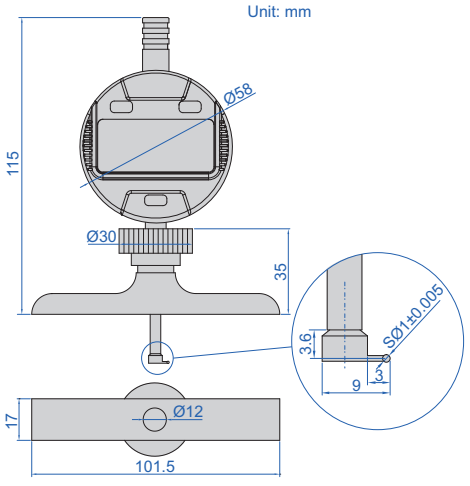
VIDEO




**2145-202**

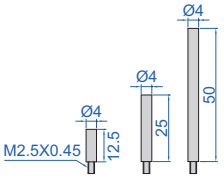



2145-201/2145-301



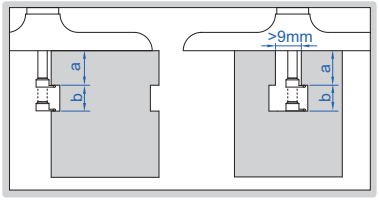

2145-202/2145-302

- Button function: on/off, zero, mm/inch, absolute/incremental measurement, data preset, change measuring direction
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Supplied with extension rods: 12.5mm (1pc), 25mm (1pc), 50mm (1pc)
- Supplied with groove point
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21




**extension rods**

measure width (b) and depth (a) of groove




| Code | Range (a) | Digital indicator stroke (b) | Digital indicator resolution | Accuracy | Base |
|---|---|---|---|---|---|
| **2145-201** | 0-85mm/0-3.35" | 12.7mm/0.5" | 0.01mm/0.0005" | ±20μm | 63×17mm |
| **2145-202** | 0-85mm/0-3.35" | 12.7mm/0.5" | 0.01mm/0.0005" | ±20μm | 101.5×17mm |
| **2145-301** | 0-85mm/0-3.35" | 12.7mm/0.5" | 0.001mm/0.00005" | ±5μm | 63×17mm |
| **2145-302** | 0-85mm/0-3.35" | 12.7mm/0.5" | 0.001mm/0.00005" | ±5μm | 101.5×17mm |



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# DIGITAL DEPTH MICROMETERS

IP65 WATERPROOF

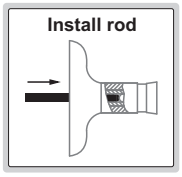
DATA OUTPUT



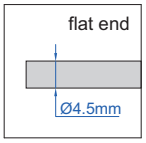
- Resolution: 0.001mm/0.00005"
- Micrometer head accuracy: +/-3µm
- Rod accuracy: +/-(2+L/75)µm, L is the measuring range in mm
- Button function: on/off, set, mm/inch, data transmit
- IP65 dust/waterproof
- Data output
- Automatic power off
- Rods with flat end
- Ratchet stop
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20

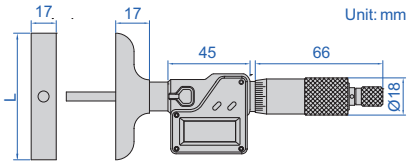



3540-50

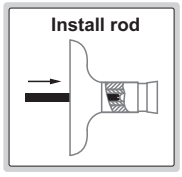



| Code | Range | Rods | L |
|---|---|---|---|
| **3540-25** | 0-25mm/0-1" | 1 pc | 101.5mm |
| **3540-50** | 0-50mm/0-2" | 2 pcs | 101.5mm |
| **3540-100** | 0-100mm/0-4" | 4 pcs | 101.5mm |
| **3540-150** | 0-150mm/0-6" | 6 pcs | 101.5mm |
| **3540-300** | 0-300mm/0-12" | 12 pcs | 101.5mm |
| **3540-B25** | 0-25mm/0-1" | 1 pc | 63mm |
| **3540-B50** | 0-50mm/0-2" | 2 pcs | 63mm |
| **3540-B100** | 0-100mm/0-4" | 4 pcs | 63mm |
| **3540-B150** | 0-150mm/0-6" | 6 pcs | 63mm |
| **3540-B300** | 0-300mm/0-12" | 12 pcs | 63mm |



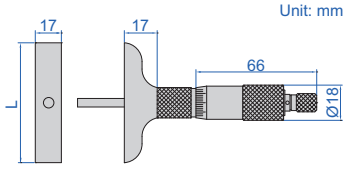



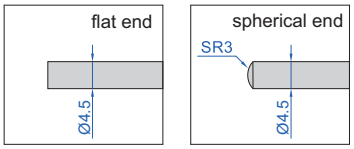

# DEPTH MICROMETERS






3240-100




- Meet DIN863-2
- Graduation: 0.01mm
- Micrometer head accuracy: +/-3µm
- Rod accuracy: +/-(2+L/75)µm,
  L is the measuring range in mm
- Rods with flat or spherical end
- Ratchet stop

**Flat end**

| Code | Range | Rods | L |
|---|---|---|---|
| **3240-25** | 0-25mm | 1 pc | 101.5mm |
| **3240-50** | 0-50mm | 2 pcs | 101.5mm |
| **3240-75** | 0-75mm | 3 pcs | 101.5mm |
| **3240-100** | 0-100mm | 4 pcs | 101.5mm |
| **3240-150** | 0-150mm | 6 pcs | 101.5mm |
| **3240-200** | 0-200mm | 8 pcs | 101.5mm |
| **3240-300** | 0-300mm | 12 pcs | 101.5mm |
| **3240-B25** | 0-25mm | 1 pc | 63mm |
| **3240-B50** | 0-50mm | 2 pcs | 63mm |
| **3240-B100** | 0-100mm | 4 pcs | 63mm |
| **3240-B150** | 0-150mm | 6 pcs | 63mm |
| **3240-B300** | 0-300mm | 12 pcs | 63mm |

**Spherical end**

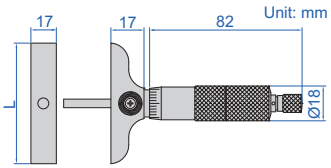
| Code | Range | Rods | L |
|---|---|---|---|
| **3240-25S** | 0-25mm | 1 pc | 101.5mm |
| **3240-50S** | 0-50mm | 2 pcs | 101.5mm |
| **3240-100S** | 0-100mm | 4 pcs | 101.5mm |
| **3240-150S** | 0-150mm | 6 pcs | 101.5mm |
| **3240-300S** | 0-300mm | 12 pcs | 101.5mm |
| **3240-B25S** | 0-25mm | 1 pc | 63mm |
| **3240-B50S** | 0-50mm | 2 pcs | 63mm |
| **3240-B100S** | 0-100mm | 4 pcs | 63mm |
| **3240-B150S** | 0-150mm | 6 pcs | 63mm |
| **3240-B300S** | 0-300mm | 12 pcs | 63mm |

# DEPTH MICROMETERS

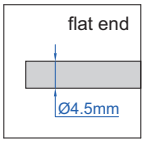


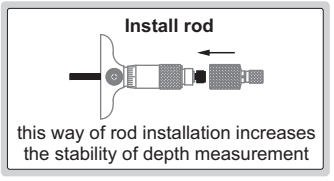
3241-100

- Meet DIN863-2
- Graduation: 0.01mm
- Micrometer head accuracy: +/-3μm
- Rod accuracy: +/-(2+L/75)μm, L is the measuring range in mm
- Rods with flat end
- Ratchet stop




| Code | Range | Rods | L |
|---|---|---|---|
| **3241-25** | 0-25mm | 1 pc | 101.5mm |
| **3241-50** | 0-50mm | 2 pcs | 101.5mm |
| **3241-75** | 0-75mm | 3 pcs | 101.5mm |
| **3241-100** | 0-100mm | 4 pcs | 101.5mm |
| **3241-150** | 0-150mm | 6 pcs | 101.5mm |
| **3241-200** | 0-200mm | 8 pcs | 101.5mm |
| **3241-300** | 0-300mm | 12 pcs | 101.5mm |
| **3241-B25** | 0-25mm | 1 pc | 63mm |
| **3241-B50** | 0-50mm | 2 pcs | 63mm |
| **3241-B100** | 0-100mm | 4 pcs | 63mm |
| **3241-B150** | 0-150mm | 6 pcs | 63mm |
| **3241-B300** | 0-300mm | 12 pcs | 63mm |




# MEASURING TOOLS DYNAMOMETERS

REFER TO PAGE 187 FOR DETAILS



ISF-DGD15



check the measuring force of depth gauges

## CYLINDER GAUGE BLOCKS FOR DEPTH MICROMETERS

INSPECTION CERTIFICATE

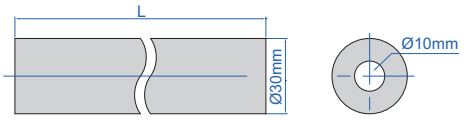
- Made of special alloy steel, hardness HRC64, high stability, wear resistance and easy combination
- Meet ISO3650 grade 1




4179-25

| Code | Length (L) |
|---|---|
| 4179-25* | 25mm |
| 4179-50* | 50mm |
| 4179-75* | 75mm |
| 4179-100* | 100mm |
| 4179-125* | 125mm |
| 4179-150* | 150mm |
| 4179-175* | 175mm |
| 4179-200* | 200mm |
| 4179-225* | 225mm |
| 4179-250* | 250mm |
| 4179-275* | 275mm |

*Supplied with manufacturer inspection certificate



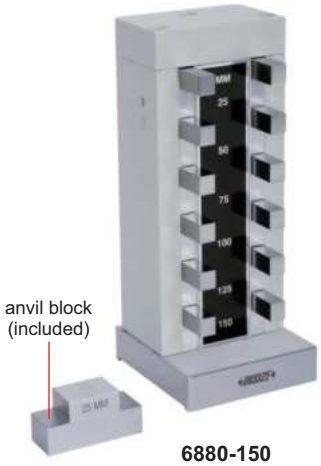

application



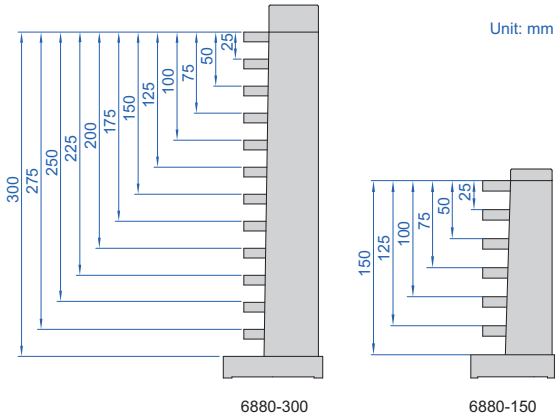
## DEPTH MICROMETER CHECKERS

VIDEO

INSPECTION CERTIFICATE




6880-150




6880-300 6880-150

application



- To check depth micrometers and set zero
- Constructed with steel gauge blocks
- Supplied with anvil block

| Code | Size | Range (mm) | Accuracy |
|---|---|---|---|
| 6880-150* | 0-150mm | 25, 50, 75, 100, 125, 150 | ±2μm |
| 6880-300* | 0-300mm | 25, 50, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300 | ±3μm |

*Supplied with manufacturer inspection certificate

# 04 HEIGHT MEASURING TOOLS



Digital Height Gauges
Page 102-104



Dial Indicator Stands
Page 104



Height Gauges
Page 105-110

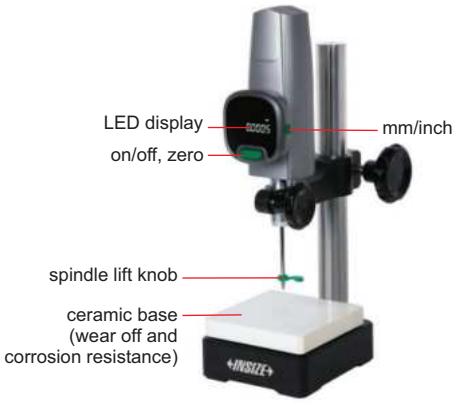


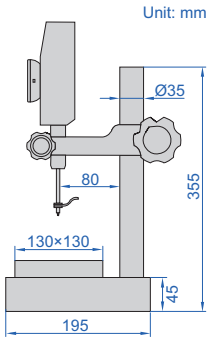
Height Gauge Checkers
Page 110

VIDEO

DATA OUTPUT

# HIGH PRECISION DIGITAL HEIGHT GAUGES

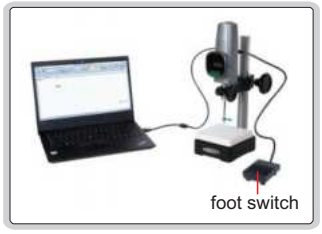



**1155-505**

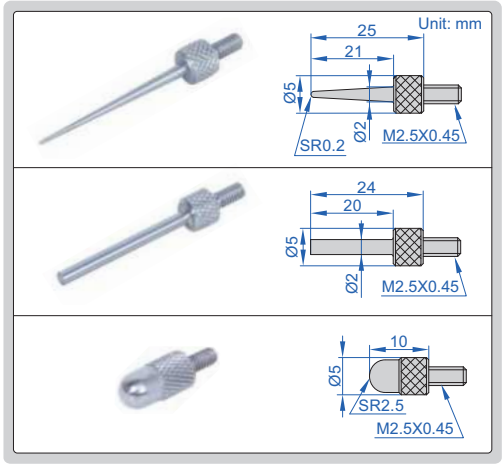


power supplied by charge pal




data transmitted to Excel without software; short press the foot switch to transmit data, long press to zero

measuring tips (included)




- High stability, high precision, high response speed (5000mm/s)
- High brightness LED display
- Ceramic base flatness: 1μm

| Code | Range | Resolution | Accuracy (at 20°C) | Measuring force | Output | Power supply |
|---|---|---|---|---|---|---|
| **1155-505** | 0~50mm | 0.5μm/0.00002" (can switch to: 1μm/0.00005") | 1.5μm | 0.8~1.2N | USB | 5V/1A (adapter or charge pal) |
| **1155-510** | 0~50mm | 0.1μm/0.000005" (can switch to: 1μm/0.00005") | 1μm | 0.8~1.2N | USB | 5V/1A (adapter or charge pal) |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Contact point** | code **6282** |
| **Charge pal** | **1155-5-POB** |
| **Data output cable (including foot switch)** | **1155-5-FOS** |

# DIGITAL HEIGHT GAUGES

DATA OUTPUT

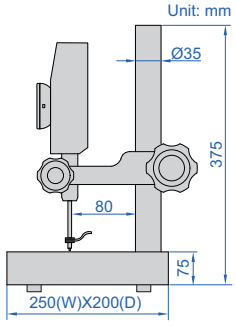
VIDEO



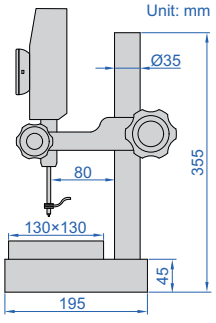

**1157-501**




**1157-502**




1157-501




1157-502

- Buttons: on/off, zero, mm/inch, max./min./max.-min.
- High response speed (5000mm/s)
- High brightness LED display

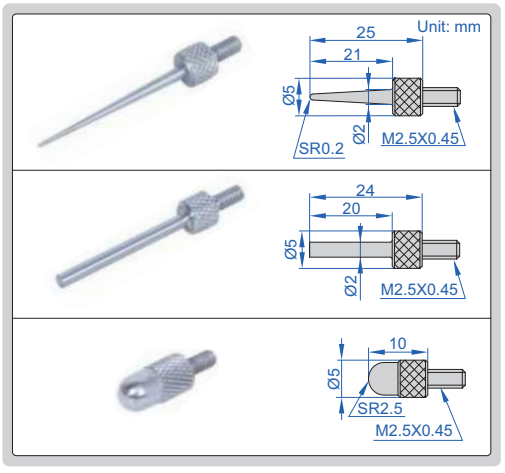


power supplied by charge pal




data transmitted to Excel without software; short press the foot switch to transmit data, long press to zero

measuring tips (included)




| Code | Range | Resolution | Accuracy (at 20°C) | Measuring force | Output | Power supply | Base |
|---|---|---|---|---|---|---|---|
| **1157-501** | 0~50mm | 1μm/0.00005" | 3μm | 0.8~1.2N | USB | 5V/1A (adapter or charge pal) | granite (flatness: 2μm) |
| **1157-502** | 0~50mm | 1μm/0.00005" | 3μm | 0.8~1.2N | USB | 5V/1A (adapter or charge pal) | ceramic (flatness: 1μm) |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Contact point** | code **6282** |
| **Charge pal** | **1155-5-POB** |
| **Data output cable (including foot switch)** | **1155-5-FOS** |



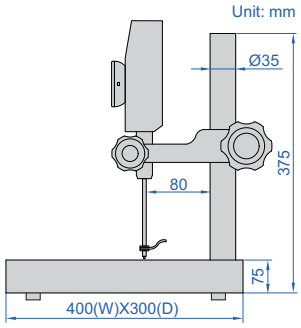
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VIDEO

DATA OUTPUT

# LARGE RANGE DIGITAL HEIGHT GAUGE

- High stability, high precision, high response speed (5000mm/s)
- High brightness LED display
- Granite base flatness: 3μm

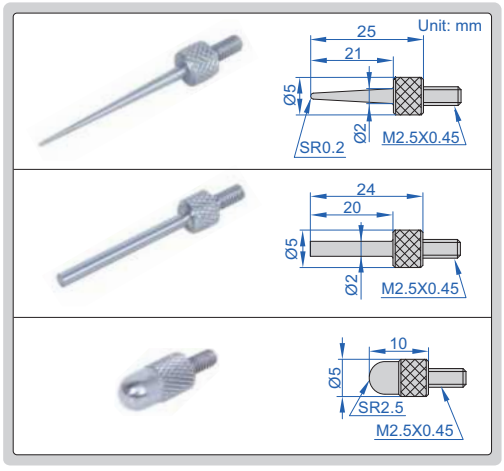


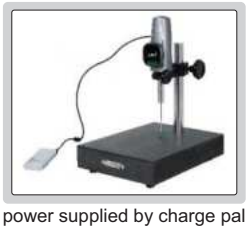




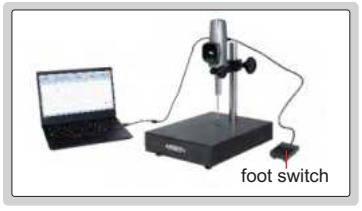
**1158-100**

measuring tips (included)



power supplied by charge pal




data transmitted to Excel without software; short press the foot switch to transmit data, long press to zero

| Code | Range | Resolution | Accuracy (at 20°C) | Measuring force | Output | Power supply |
|---|---|---|---|---|---|---|
| **1158-100** | 0~100mm | 0.1μm/0.000005" (can switch to: 1μm/0.00005") | 3μm | 0.8~1.2N | USB | 5V/1A (adapter or charge pal) |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Contact point** | code **6282** |
| **Charge pal** | **1155-5-POB** |
| **Data output cable (including foot switch)** | **1155-5-FOS** |

# DIAL INDICATOR STANDS

REFER TO PAGE 290~298 FOR DETAILS



**6862-1001**



**6864-250T**



**6867-250**

# DIGITAL HEIGHT GAUGES

DATA OUTPUT

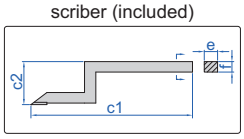


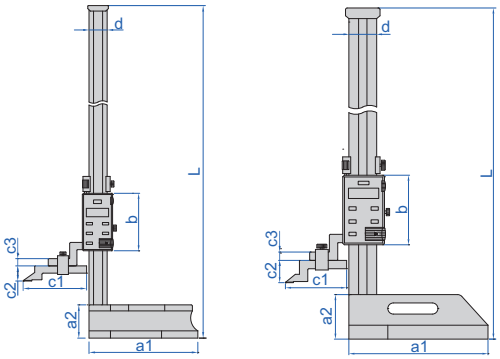
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, ABS/INC, data hold, TOL, set
- ABS/INC is for absolute and incremental measurement
- TOL is for tolerance measurement
- Carbide tipped scriber
- Made of stainless steel (except the base)
- LR44 battery, data output
- Supplied with dial test indicator holder
- Supplied with dust cover (except **1150-1500/2000**)
- Optional accessory:
  wireless transmitter code **7315-1150** (receiver is needed) page 7,
  data output cable (keyboard format) code **7302-SPC7** page 22,
  clamp for protractors (code **2372-CLAMP**, for **1150-300**)



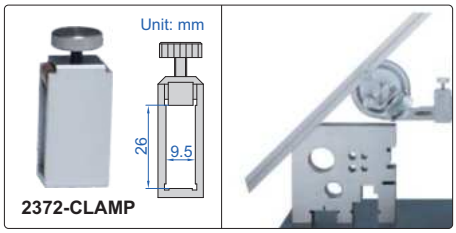
**1150-1000** **1150-500** **1150-300**

scriber (included)

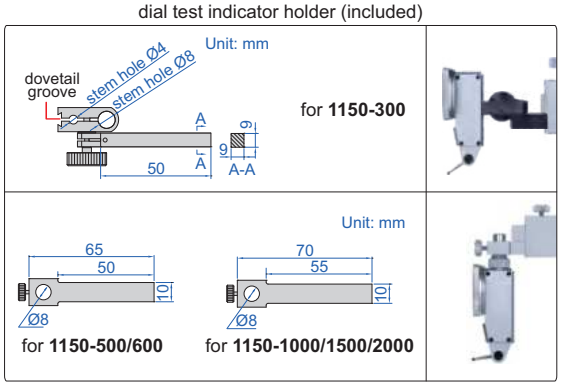



clamp for protractors (**optional**)
for **1150-300**




dial test indicator holder (included)




| Code | Range | Type | Accuracy | L | a1 | a2 | b | c1 | c2 | c3 | d | e | f |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1150-300** | 0-300mm/0-12" | A | ±0.04mm | 485mm | 138mm | 45mm | 95mm | 80mm | 30mm | 10mm | 28mm | 9mm | 9mm |
| **1150-500** | 0-500mm/0-20" | B | ±0.06mm | 720mm | 180mm | 55mm | 95mm | 103mm | 25mm | 12mm | 30mm | 10mm | 12mm |
| **1150-600** | 0-600mm/0-24" | B | ±0.06mm | 820mm | 180mm | 55mm | 95mm | 103mm | 25mm | 12mm | 30mm | 10mm | 12mm |
| **1150-1000** | 0-1000mm/0-40" | C | ±0.08mm | 1275mm | 250mm | 80mm | 125mm | 110mm | 39mm | 15mm | 50mm | 10mm | 15mm |
| **1150-1500** | 0-1500mm/0-60" | C | ±0.12mm | 1790mm | 280mm | 80mm | 125mm | 110mm | 39mm | 15mm | 50mm | 10mm | 15mm |
| **1150-2000** | 0-2000mm/0-80" | C | ±0.16mm | 2290mm | 280mm | 80mm | 125mm | 110mm | 39mm | 15mm | 50mm | 10mm | 15mm |

# DIGITAL HEIGHT GAUGES WITH DRIVING WHEEL

INSPECTION CERTIFICATE

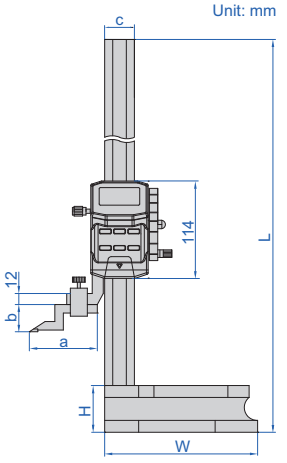
POPULAR MODEL

VIDEO

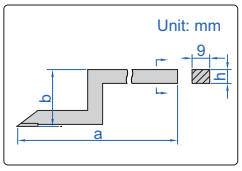
DATA OUTPUT



- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, preset +, preset -, ABS/INC
- Automatic power off, move the digital unit to turn on power
- Carbide tipped scriber
- Made of stainless steel
- Battery CR2032
- Data output
- Supplied with dust cover
- With dial test indicator holder
- Optional accessory: wireless transmitter code **7315-22** (receiver is needed) page 5, bluetooth transmitter code **7214-22** page 11, data output cable code **7302-22** page 20, clamp for protractors (code **2372-CLAMP**)




scriber (included)

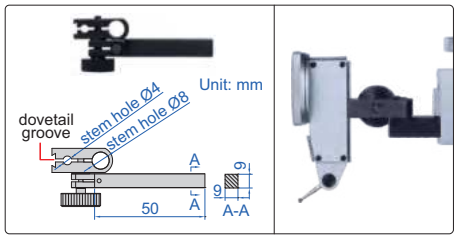




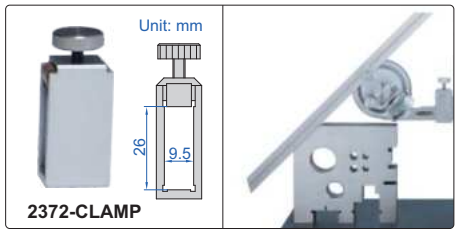


**1156-300** **1156-1000**

dial test indicator holder (included)




clamp for protractors (**optional**)



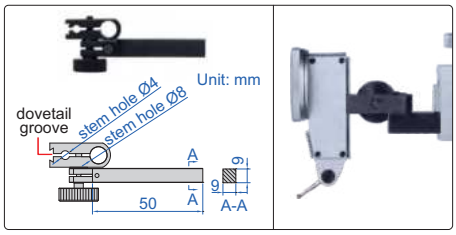

| Code | Range | Accuracy | L | W | H | a | b | c | h |
|---|---|---|---|---|---|---|---|---|---|
| **1156-300*** | 0-300mm/0-12" | ±0.03mm | 515mm | 180mm | 55mm | 80mm | 30mm | 35mm | 9mm |
| **1156-600*** | 0-600mm/0-24" | ±0.05mm | 815mm | 180mm | 55mm | 80mm | 30mm | 35mm | 9mm |
| **1156-1000*** | 0-1000mm/0-40" | ±0.07mm | 1220mm | 265mm | 70mm | 92mm | 48mm | 40mm | 12mm |

*Supplied with manufacturer inspection certificate

## DIGITAL HEIGHT GAUGES

DATA OUTPUT

dial test indicator holder (included)

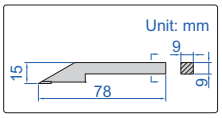


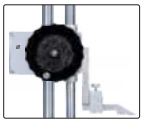

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, data hold, ABS/INC, preset
- ABS/INC is for absolute and incremental measurement
- Automatic power off, move the digital unit to turn on power
- Carbide tipped scriber
- Made of stainless steel
- Battery CR2032, data output
- With driving wheel
- With dial test indicator holder
- Supplied with dust cover
- Optional accessory: wireless transmitter code **7315-1151** (receiver is needed) page 8, data output cable code **7302-1151** page 21, clamp for protractors (code **2372-CLAMP**)



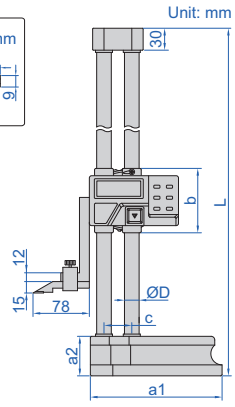
**1151-300A**

scriber (included)

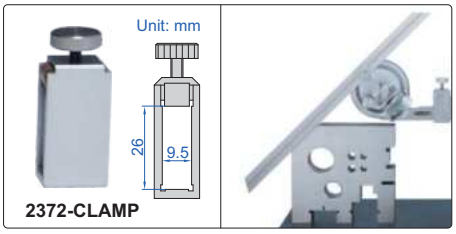


driving wheel on the back




clamp for protractors (**optional**)

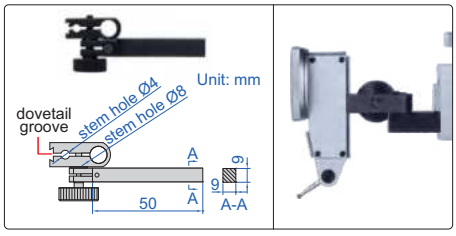



**(mm)**

| Code | Range | Accuracy | L | a1 | a2 | b | c | ØD |
|---|---|---|---|---|---|---|---|---|
| **1151-300A** | 0-300mm/0-12" | ±0.04mm | 475 | 135 | 43 | 84 | 33 | 15 |
| **1151-450A** | 0-450mm/0-18" | ±0.05mm | 660 | 180 | 54 | 88 | 38 | 20 |
| **1151-600A** | 0-600mm/0-24" | ±0.05mm | 810 | 180 | 54 | 88 | 38 | 20 |

## DIAL HEIGHT GAUGES

dial test indicator holder (included)

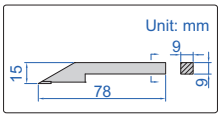


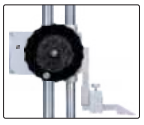

- Dial indicator graduation: 0.01mm
- One counter reads in the plus direction and another in the minus direction, so incremental measurement can be made in either direction
- Carbide tipped scriber
- Made of stainless steel (except the base)
- With driving wheel
- With dial test indicator holder
- Supplied with dust cover
- Optional accessory: clamp for protractors (code **2372-CLAMP**)



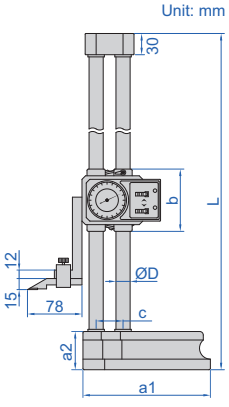
**1351-300**

scriber (included)

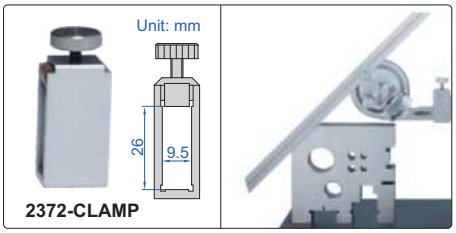


driving wheel on the back




clamp for protractors (**optional**)




**(mm)**

| Code | Range | Accuracy | L | a1 | a2 | b | c | ØD |
|---|---|---|---|---|---|---|---|---|
| **1351-300** | 0-300mm | ±0.04mm | 475 | 135 | 43 | 84 | 33 | 15 |
| **1351-450** | 0-450mm | ±0.05mm | 660 | 180 | 54 | 88 | 38 | 20 |
| **1351-600** | 0-600mm | ±0.05mm | 810 | 180 | 54 | 88 | 38 | 20 |

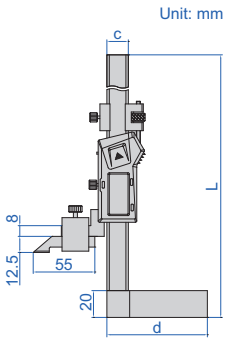
DATA OUTPUT

## MINI DIGITAL HEIGHT GAUGES

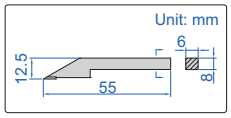
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Carbide tipped scriber
- With fine adjustment
- Made of stainless steel
- Battery CR2032
- Optional accessory: dial test indicator holder (code **7151-CL1**)



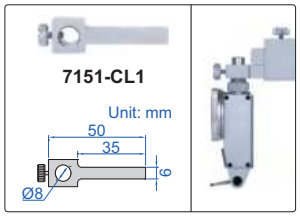
**1154-150**




scriber (included)




dial test indicator holder (**optional**)



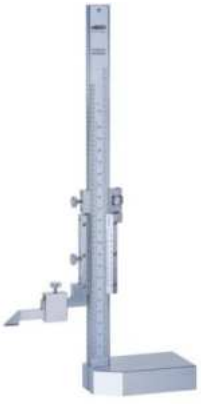

| Code | Range | Accuracy | L | c | d | Data output cable (optional) |
|---|---|---|---|---|---|---|
| **1154-150** | 0-150mm/0-6" | ±0.03mm | 280mm | 16mm | 75mm | **7315-25** (receiver is needed) page 5, **7214-25** page 11, **7302-21** page 20 |
| **1154-200** | 0-200mm/0-8" | ±0.03mm | 340mm | 20mm | 90mm | **7315-22** (receiver is needed) page 5, **7214-22** page 11, **7302-22** page 20 |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

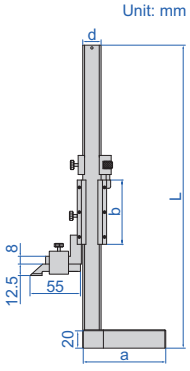
| Code | Range | Accuracy | L | c | d |
|---|---|---|---|---|---|
| **1154-150WL** | 0-150mm/0-6" | ±0.03mm | 280mm | 16mm | 75mm |

## MINI VERNIER HEIGHT GAUGES

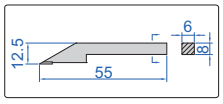
- Graduation: 0.02mm/0.001"
- Carbide tipped scriber
- Made of stainless steel (except the base)
- Satin chrome plated scale
- Optional accessory: dial test indicator holder (code **7151-CL1**)



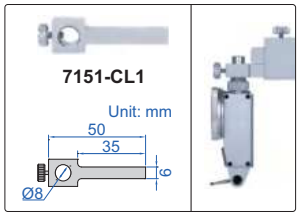
**1253-200**




scriber (included)




dial test indicator holder (**optional**)

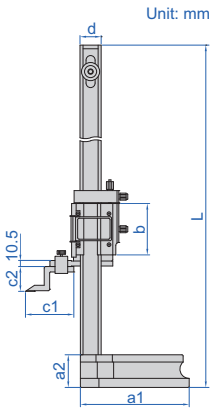



**(mm)**

| Code | Range | Accuracy | L | a | b | d |
|---|---|---|---|---|---|---|
| **1253-150** | 0-150mm/0-6" | ±0.03mm | 265 | 75 | 57 | 16 |
| **1253-200** | 0-200mm/0-8" | ±0.03mm | 325 | 90 | 70 | 20 |

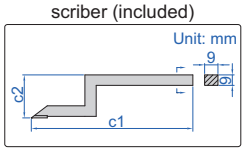
## VERNIER HEIGHT GAUGES





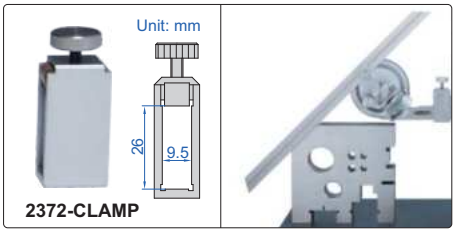

1250-300

scriber (included)

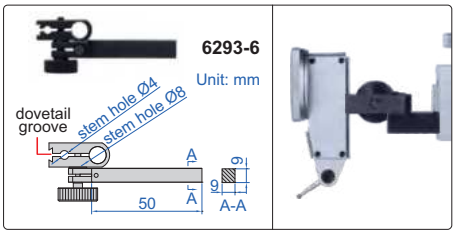



- Graduation: 0.02mm/0.001"
- Adjustable main scale to set zero
- Carbide tipped scriber
- Made of stainless steel (except the base)
- Satin chrome plated scale
- Supplied with magnifier
- With fine adjustment
- Supplied with dust cover
- Optional accessory: dial test indicator holder (code **6293-6**), clamp for protractors (code **2372-CLAMP**)

clamp for protractors (**optional**)




dial test indicator holder (**optional**)




(mm)

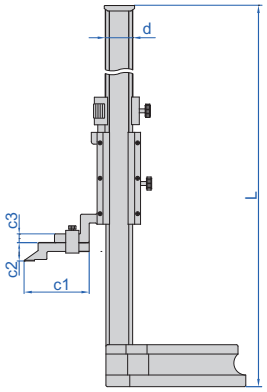
| Code | Range | Accuracy | L | a1 | a2 | b | c1 | c2 | d |
|---|---|---|---|---|---|---|---|---|---|
| **1250-300** | 0-300mm/0-12" | ±0.04mm | 545 | 135 | 43 | 75 | 80 | 30 | 28 |
| **1250-450** | 0-450mm/0-18" | ±0.05mm | 720 | 180 | 54 | 85 | 80 | 41 | 35 |
| **1250-600** | 0-600mm/0-24" | ±0.05mm | 870 | 180 | 54 | 85 | 80 | 41 | 35 |

## VERNIER HEIGHT GAUGES (BASIC TYPE)

POPULAR MODEL

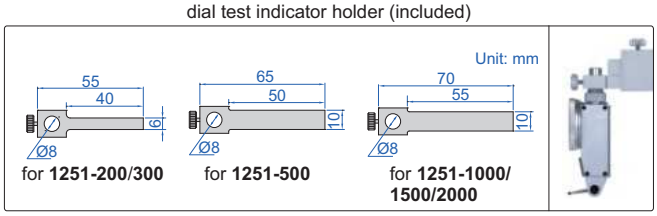
- Graduation: 0.02mm/0.001"
- Carbide tipped scriber
- Made of stainless steel (except the base)
- Satin chrome plated scale
- With dial test indicator holder
- Supplied with dust cover



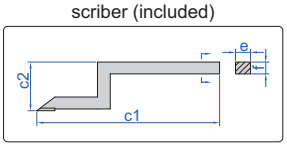



1251-200

dial test indicator holder (included)




scriber (included)




(mm)

| Code | Range | Accuracy | L | c1 | c2 | c3 | d | e | f |
|---|---|---|---|---|---|---|---|---|---|
| **1251-200** | 0-200mm/0-8" | ±0.03mm | 370 | 76 | 25 | 10 | 23 | 6 | 8 |
| **1251-300** | 0-300mm/0-12" | ±0.04mm | 470 | 76 | 25 | 10 | 23 | 6 | 8 |
| **1251-500** | 0-500mm/0-20" | ±0.05mm | 720 | 105 | 25 | 12 | 30 | 10 | 12 |
| **1251-1000** | 0-1000mm/0-40" | ±0.07mm | 1275 | 110 | 39 | 15 | 50 | 10 | 15 |
| **1251-1500** | 0-1500mm/0-60" | ±0.11mm | 1790 | 110 | 39 | 15 | 50 | 10 | 15 |
| **1251-2000** | 0-2000mm/0-80" | ±0.14mm | 2290 | 110 | 39 | 15 | 50 | 10 | 15 |



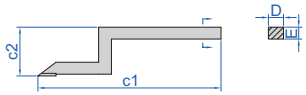
info@insz.sk | +421 944 367 573 | www.insz.sk

## SCRIBERS FOR HEIGHT GAUGES

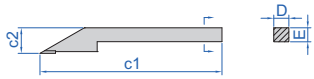




**7150-SC3**




type A




type B

- Carbide tipped

| Code | For height gauges | Type | c1 | c2 | D | E |
|---|---|---|---|---|---|---|
| **7150-SC2** | 1150-500, 1150-600 | A | 103mm | 25mm | 10mm | 12mm |
| **7150-SC3** | 1150-1000, 1150-1500, 1150-2000 | A | 110mm | 39mm | 10mm | 15mm |
| **7150-SC4** | 1351-300, 1351-450, 1351-600, 1151-300A, 1151-450A, 1151-600A | B | 78mm | 15mm | 9mm | 9mm |
| **7150-SC6** | 1250-300, 1156-300, 1156-600, 1150-300 | A | 80mm | 30mm | 9mm | 9mm |
| **7150-SC7** | 1250-450, 1250-600 | A | 80mm | 41mm | 9mm | 9mm |
| **7150-SC9** | 1253-150, 1253-200, 1154-150 | B | 55mm | 12.5mm | 6mm | 8mm |
| **7150-SC10** | 1156-1000 | A | 92mm | 48mm | 9mm | 12mm |

REFER TO PAGE 360 FOR DETAILS

## CALIPER/HEIGHT GAUGE CHECKERS

vertical use





horizontal use

**6884-300**

# 05 COMPARISON MEASURING TOOLS



**Carbon Fiber Comparison Gauges**
**Page 112-113**



**Comparison Gauges**
**Page 114-115**



**Internal/External Measuring Gauges**
**Page 116-123**



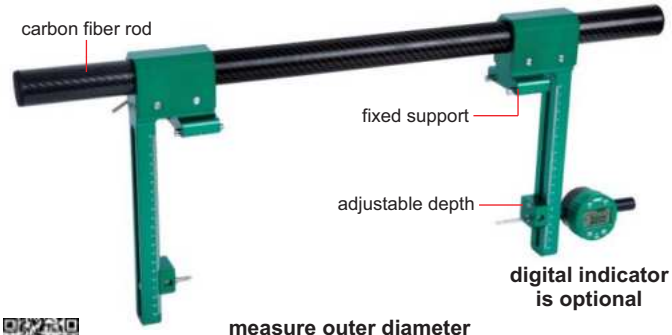
**Internal And External Diameter Comparison Instruments**
**Page 124-125**



**Outside Diameter Measuring Stands**
**Page 126**

CARBON FIBER RODS, LIGHT WEIGHT, NOT EASY TO DEFORM, NO TEMPERATURE EXPAND, SUITABLE FOR THIN-WALL WORKPIECES AND LARGE-SIZE WORKPIECES

# CARBON FIBER COMPARISON GAUGES




measure outer diameter

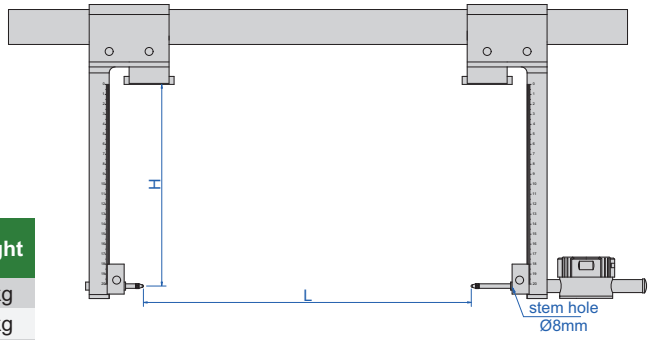



measure inside diameter,
minimum diameter is 220mm

VIDEO

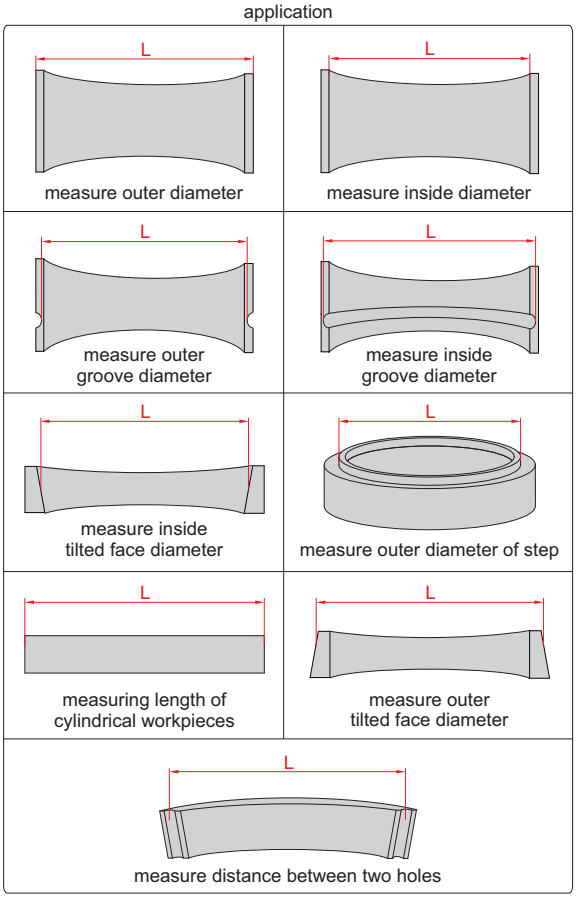
**2931-D1000B**

- Measure outer diameter, inside diameter, holes distance and cylindrical workpiece length
- Carbon fiber rods, light weight, not easy to deform, no temperature expand
- Optional accessory: cylinder gauge blocks (code **4001**), digtial indicators (code **2138-25SP/2139-25SP/2103-25SP/2104-25SP**)




| Code | Maximum measuring range (L) | Measuring depth (H) | Repeatability | Weight |
|---|---|---|---|---|
| **2931-D1000A** | 1000mm | 0-100mm | 5μm | 2.0kg |
| **2931-D1000B** | 1000mm | 0-200mm | 10μm | 2.3kg |
| **2931-D1000C** | 1000mm | 0-300mm | 25μm | 2.6kg |
| **2931-D1500A** | 1500mm | 0-100mm | 8μm | 2.3kg |
| **2931-D1500B** | 1500mm | 0-200mm | 15μm | 2.6kg |
| **2931-D1500C** | 1500mm | 0-300mm | 30μm | 2.9kg |
| **2931-D2000A** | 2000mm | 0-100mm | 10μm | 2.6kg |
| **2931-D2000B** | 2000mm | 0-200mm | 20μm | 2.9kg |
| **2931-D2000C** | 2000mm | 0-300mm | 35μm | 3.2kg |
| **2931-D2500A** | 2500mm | 0-100mm | 12μm | 2.9kg |
| **2931-D2500B** | 2500mm | 0-200mm | 25μm | 3.2kg |
| **2931-D2500C** | 2500mm | 0-300mm | 50μm | 3.5kg |
| **2931-D3000A** | 3000mm | 0-100mm | 14μm | 3.2kg |
| **2931-D3000B** | 3000mm | 0-200mm | 30μm | 3.5kg |
| **2931-D3000C** | 3000mm | 0-300mm | 60μm | 3.8kg |
| **2931-D4000A** | 4000mm | 0-100mm | 16μm | 3.8kg |
| **2931-D4000B** | 4000mm | 0-200mm | 35μm | 4.1kg |
| **2931-D4000C** | 4000mm | 0-300mm | 65μm | 4.4kg |
| **2931-D5000A** | 5000mm | 0-100mm | 25μm | 4.4kg |
| **2931-D5000B** | 5000mm | 0-200mm | 40μm | 4.7kg |
| **2931-D5000C** | 5000mm | 0-300mm | 70μm | 5.0kg |
| **2931-D6000A** | 6000mm | 0-100mm | 28μm | 8.4kg |
| **2931-D6000B** | 6000mm | 0-200mm | 50μm | 8.8kg |
| **2931-D6000C** | 6000mm | 0-300mm | 80μm | 9.2kg |
| **2931-D7000A** | 7000mm | 0-100mm | 30μm | 9.2kg |
| **2931-D7000B** | 7000mm | 0-200mm | 55μm | 9.6kg |
| **2931-D7000C** | 7000mm | 0-300mm | 100μm | 10kg |
| **2931-D8000A** | 8000mm | 0-100mm | 32μm | 10kg |
| **2931-D8000B** | 8000mm | 0-200mm | 60μm | 10.4kg |
| **2931-D8000C** | 8000mm | 0-300mm | 110μm | 10.8kg |
| **2931-D9000A** | 9000mm | 0-100mm | 35μm | 10.7kg |
| **2931-D9000B** | 9000mm | 0-200mm | 70μm | 11.1kg |
| **2931-D9000C** | 9000mm | 0-300mm | 120μm | 11.5kg |

application




To be continued

Continued from previous page





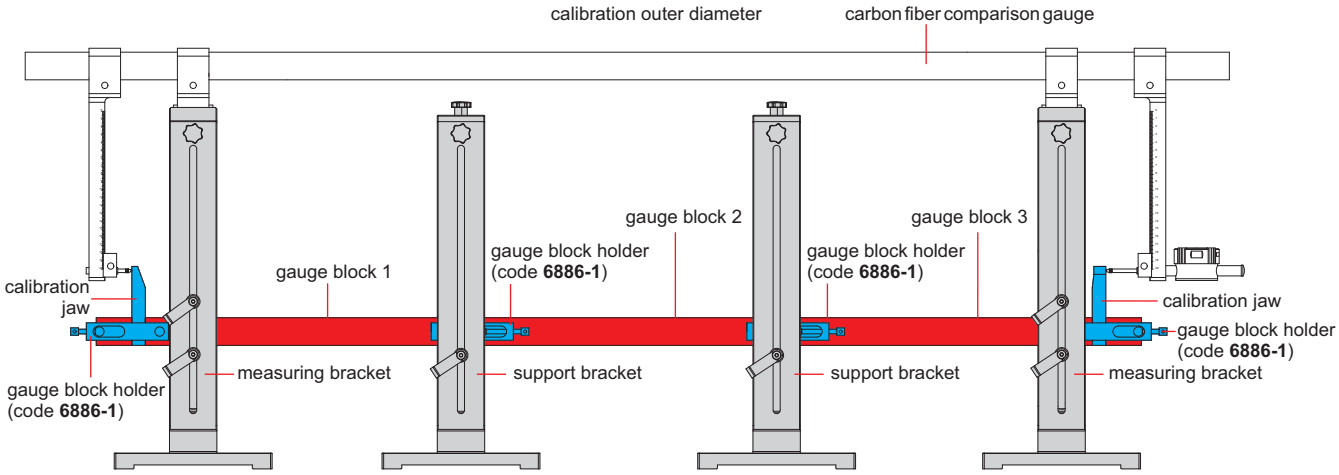
**Calibration bracket (optional)**

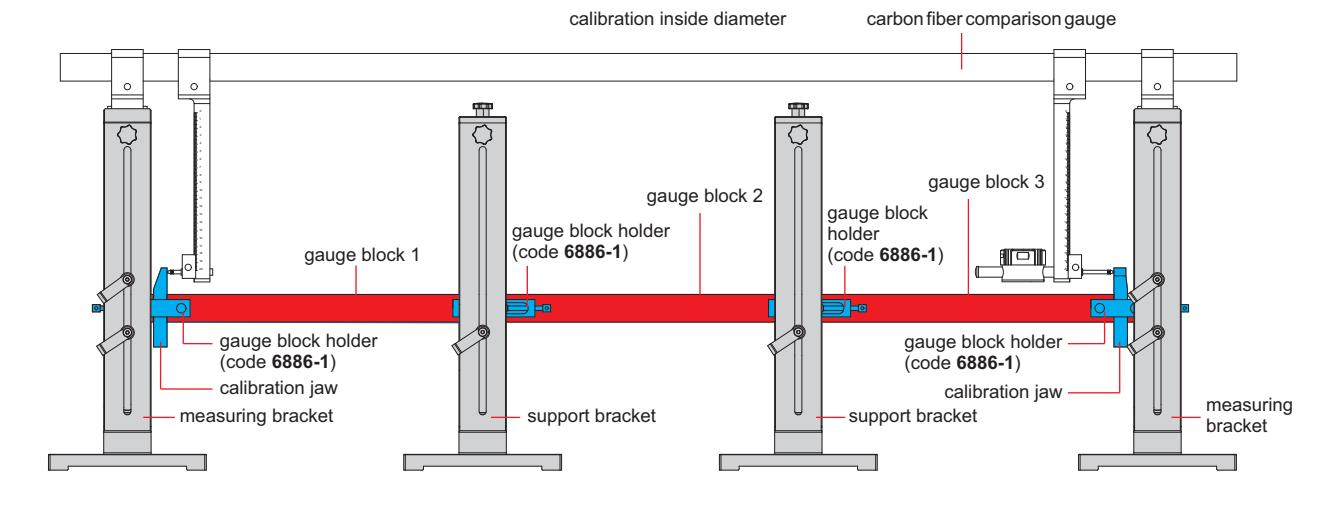
| Code | Remark |
|---|---|
| **2931-J**□□□□□ | can be customized according to carbon fiber comparison gauges, including 2 measuring brackets and multiple support brackets to support gauge blocks |

**Calibration jaw (optional, supplied in pair)**

| Code | Remark |
|---|---|
| **2931-F** | made of carbide |

application



VIDEO

CUSTOMIZABLE MEASURING JAWS AND POINTS



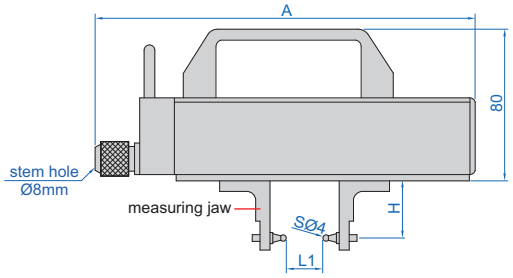
digital indicator is optional

measure external diameter
2252-110



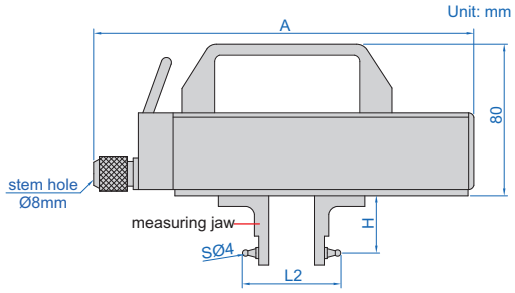
digital indicator is optional

measure internal diameter
2252-220




2252-101, 2252-102, 2252-110 and 2252-120

Unit: mm




2252-201, 2252-202, 2252-210 and 2252-220

- Measure external diameter, internal diameter and over-pin diameter of gears
- Total range of movable point: 8mm, effective range of movable point: ±2mm
- Optional accessory: digital indicator (code **2138-10F**), gauge block grade 1 (**4101-B** series)

**Measure external diameter**

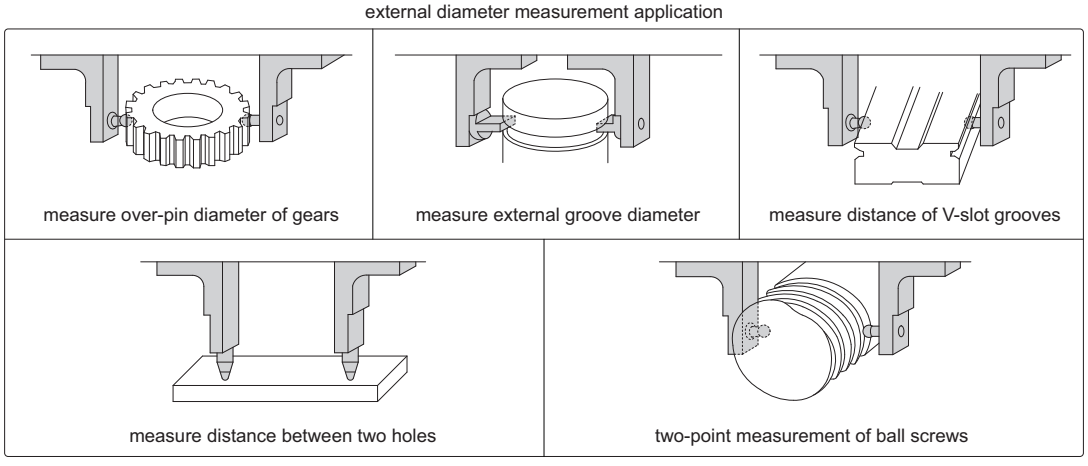
| Code | Range of external diameter (L1) | Accuracy* | Repeatability | A | H |
|---|---|---|---|---|---|
| **2252-101** | 25-90mm/1-3.54" | ±5μm | 1μm | 195mm | 40mm |
| **2252-102** | 25-140mm/1-5.51" | ±5μm | 1μm | 245mm | 40mm |
| **2252-110** | 25-90mm/1-3.54" | ±5μm | 2μm | 195mm | 70mm |
| **2252-120** | 25-140mm/1-5.51" | ±5μm | 2μm | 245mm | 70mm |

**Measure internal diameter**

| Code | Range of external diameter (L2) | Accuracy* | Repeatability | A | H |
|---|---|---|---|---|---|
| **2252-201** | 42-105mm/1.65-4.13" | ±5μm | 1μm | 195mm | 40mm |
| **2252-202** | 42-160mm/1.65-6.30" | ±5μm | 1μm | 245mm | 40mm |
| **2252-210** | 42-105mm/1.65-4.13" | ±5μm | 2μm | 195mm | 70mm |
| **2252-220** | 42-160mm/1.65-6.30" | ±5μm | 2μm | 245mm | 70mm |

*Within ±2mm effective range

external diameter measurement application

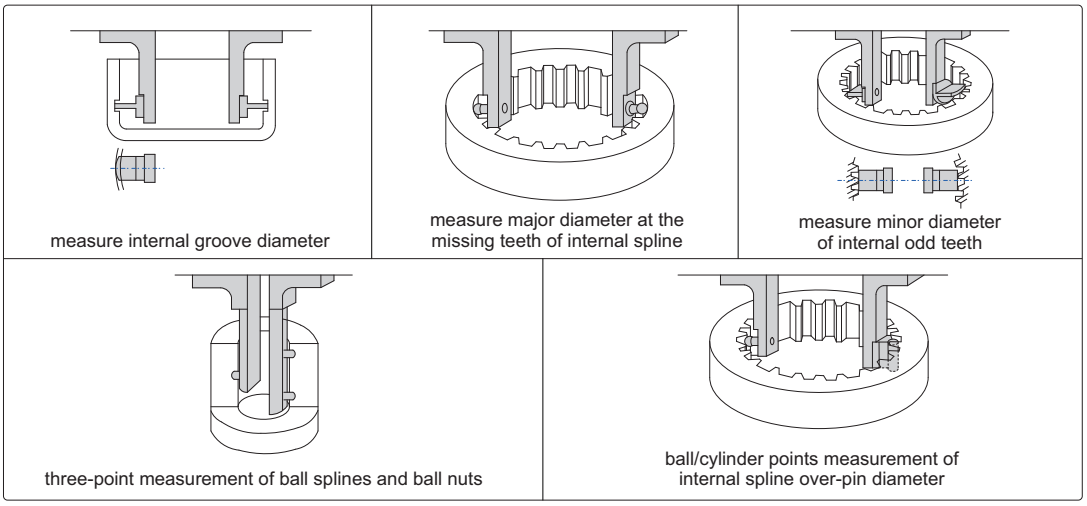



To be continued

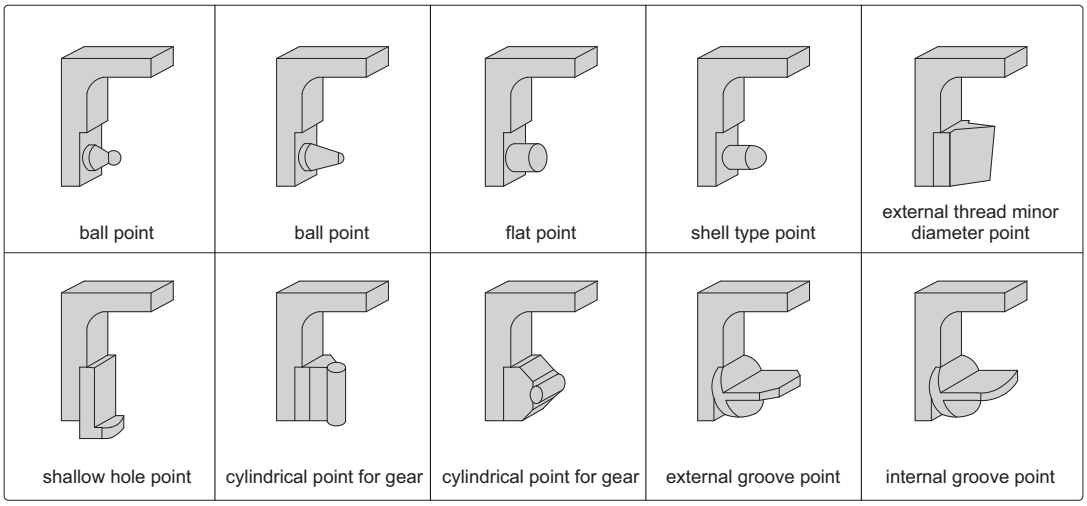
Continued from previous page



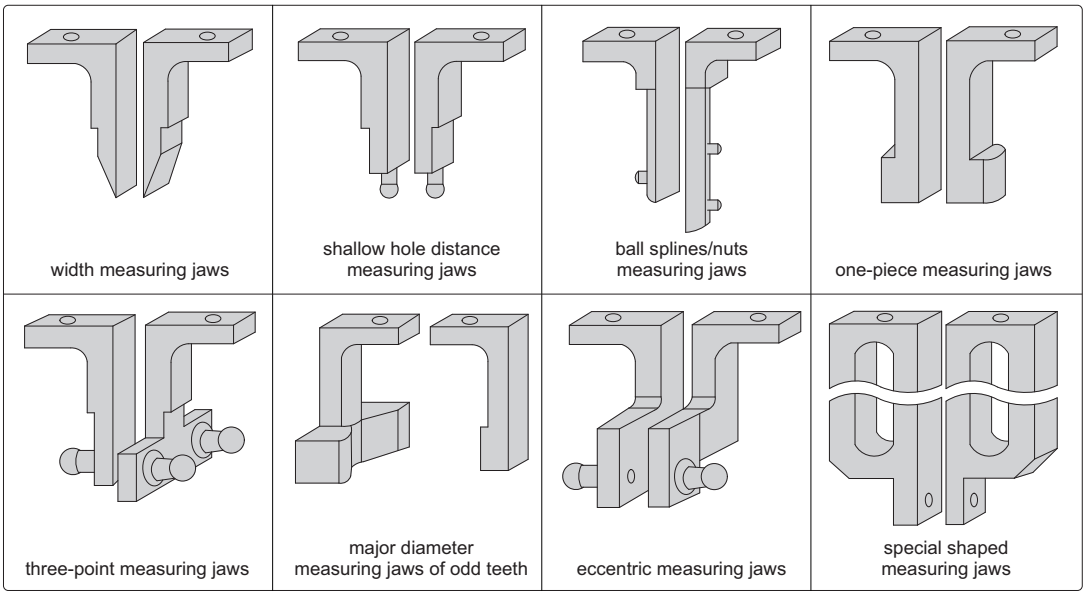
internal diameter measurement application




customizable points




customizable measuring jaws



VIDEO

DATA OUTPUT

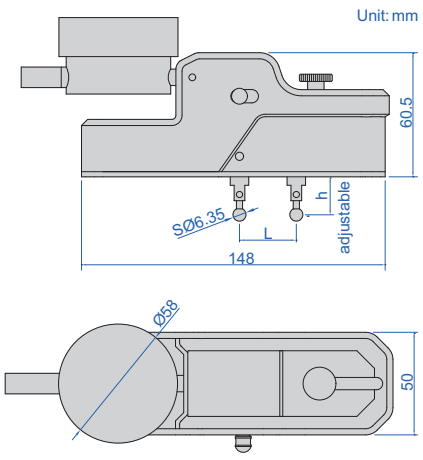
# DIGITAL INTERNAL MEASURING GAUGES

- Measure internal dimensions
- Resolution: 0.001mm/0.00005"
- Accuracy: 5μm
- Repeatability: 1μm
- Movable point stroke: 5mm/0.02"
- Point height is adjustable, h=2-25mm
- CR2032 battery, automatic power off (time is adjustable)
- Data output



2932-451

Unit: mm







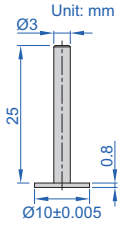
| Code | Measuring range (L)* | Indicator | Data output cable (optional) |
|---|---|---|---|
| **2932-45** | 24-50mm/0.95-2" | Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement | **7315-50M** (receiver is needed) page 6, **7214-50M** page 12, **7302-40M** page 21 |
| **2932-451** | 24-50mm/0.95-2" | With transmission button and signal light<br>Reading in digital and analog<br>Display can be rotated by 320°<br>Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement, max./min./TIR measurement, tolerance Go and No-Go display | **7315-51** (receiver is needed) page 6, **7214-51** page 12, **7302-40M** page 21 |

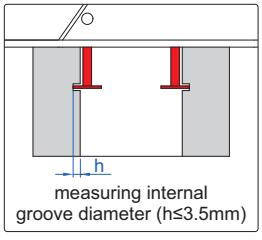
*The measuring range will change according to different measuring points

### Disk points (optional, supplied in pair)



Unit: mm



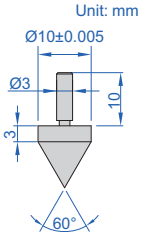

measuring internal groove diameter (h≤3.5mm)

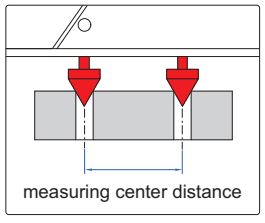
| Code | Measuring range | Material |
|---|---|---|
| **2932-S101** | 30-55mm/1.2-2.2" | stainless steel |

### Conical points (optional, supplied in pair)



Unit: mm



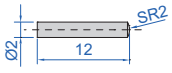
measuring center distance

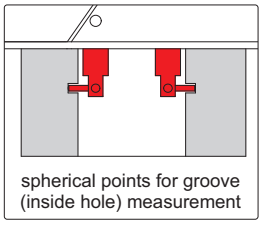
| Code | Measuring range | Material |
|---|---|---|
| **2932-S102** | 20-45mm/0.8-1.8" | stainless steel |

### Spherical points (optional, supplied in pair)



Unit: mm



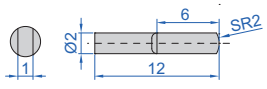
spherical points for groove (inside hole) measurement

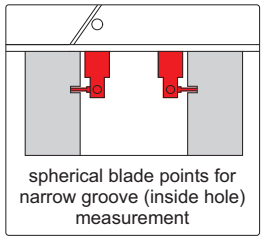
| Code | Measuring range | Material |
|---|---|---|
| **2932-S103** | 30-60mm/1.2-2.4" | stainless steel |

### Spherical blade points (optional, supplied in pair)



Unit: mm



spherical blade points for narrow groove (inside hole) measurement

| Code | Measuring range | Material |
|---|---|---|
| **2932-S104** | 30-60mm/1.2-2.4" | stainless steel |

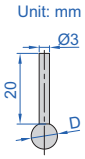
To be continued

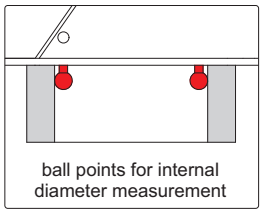
Continued from previous page

### Ball points (optional, supplied in pair)



1527-T104

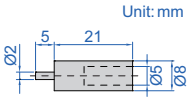


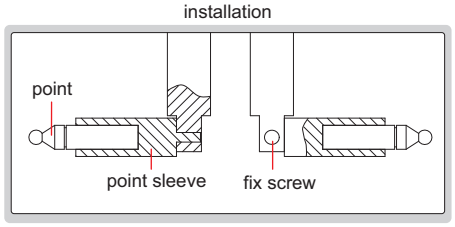

| Code | Diameter (D) | Accuracy of diameter | Material |
|---|---|---|---|
| 1527-T102 | 1/8" (Ø3.175mm) | ±0.005mm | stainless steel |
| 1527-T103 | 3/16" (Ø4.7625mm) | ±0.005mm | stainless steel |
| 1527-T104 | 1/4" (Ø6.35mm) | ±0.005mm | stainless steel |
| 1527-T105 | 3/8" (Ø9.525mm) | ±0.005mm | stainless steel |
| 1527-T106 | 1/2" (Ø12.7mm) | ±0.005mm | stainless steel |

### Point sleeve (optional, supplied in pair)






| Code |
|---|
| 1526-T101 |




### Multifunctional points (optional, supplied in pair)




7392-T1




7392-T2




7392-T3



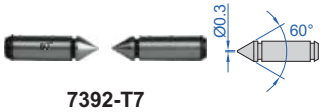

7392-T4




7392-T5



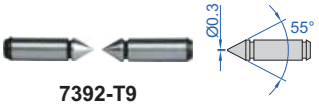

7392-T6




7392-T7




7392-T8




7392-T9

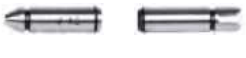
| Measuring range ** |
|---|
| 80-105mm/3.2-4.2" |

**After installing points and point sleeve

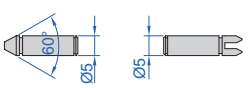
| Code | Type |
|---|---|
| 7392-T1* | flat |
| 7392-T2* | spherical |
| 7392-T3* | spline |
| 7392-T4* | disk |
| 7392-T5* | blade |
| 7392-T6* | knife-edge |
| 7392-T7* | point |
| 7392-T8* | knife-edge |
| 7392-T9* | point |

*It is necessary to use point sleeve (code **1526-T101**) for these points

### Screw thread points (optional, supplied in pair)



7321-T16




| Measuring range ** |
|---|
| 80-105mm/3.2-4.2" |

**After installing points and point sleeve

Internal thread (60° thread angle)

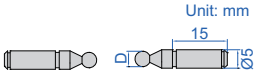
| Code | Pitch |
|---|---|
| 7321-T11* | 0.4-0.5mm/64-48TPI |
| 7321-T12* | 0.6-0.9mm/44-28TPI |
| 7321-T13* | 1-1.75mm/24-14TPI |
| 7321-T14* | 2-3mm/13-9TPI |
| 7321-T15* | 3.5-5mm/8-5TPI |
| 7321-T16* | 5.5-7mm/4.5-3.5TPI |
| 7321-T1S* | 6 pairs/set, including all above points |

*It is necessary to use point sleeve (code **1526-T101**) for these points

### Ball points (optional, supplied in pair)



7391-T5




| Measuring range ** |
|---|
| 80-105mm/3.2-4.2" |

**After installing points and point sleeve

| Code | Ball dia. (D) |
|---|---|
| 7391-T2* | SØ1.5mm |
| 7391-T3* | SØ2.0mm |
| 7391-T4* | SØ2.5mm |
| 7391-T5* | SØ3.0mm |
| 7391-T6* | SØ3.5mm |
| 7391-T7* | SØ4.0mm |
| 7391-T8* | SØ4.5mm |
| 7391-T9* | SØ5.0mm |
| 7391-T10* | SØ6.0mm |

*It is necessary to use point sleeve (code **1526-T101**) for these points

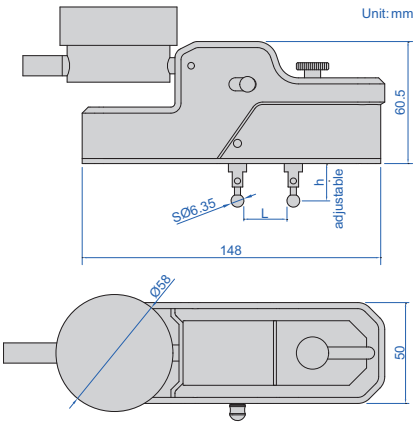
VIDEO

DATA OUTPUT

# DIGITAL EXTERNAL MEASURING GAUGES

- Measure external dimensions
- Resolution: 0.001mm/0.00005"
- Accuracy: 5μm
- Repeatability: 1μm
- Movable point stroke: 5mm/0.02"
- Point height is adjustable, h=2-25mm
- CR2032 battery, automatic power off (time is adjustable)
- Data output






**2934-401**

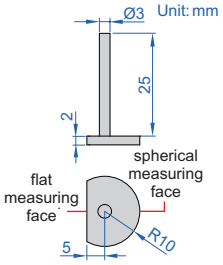


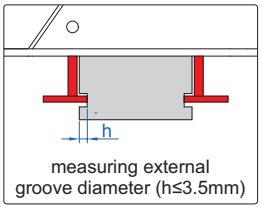
| Code | Measuring range (L)* | Indicator | Data output cable (optional) |
|---|---|---|---|
| **2934-40** | 13-38mm/0.51-1.5" | Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement | **7315-50M** (receiver is needed) page 6, **7214-50M** page 12, **7302-40M** page 21 |
| **2934-401** | 13-38mm/0.51-1.5" | With transmission button and signal light<br>Reading in digital and analog<br>Display can be rotated by 320°<br>Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement, max./min./TIR measurement, tolerance Go and No-Go display | **7315-51** (receiver is needed) page 6, **7214-51** page 12, **7302-40M** page 21 |

*The measuring range will change according to different measuring points

### Disk points (optional, supplied in pair)



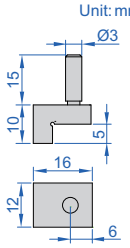


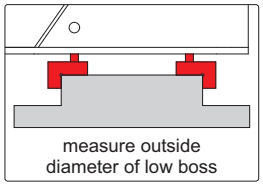




| Code | Measuring range | Material |
|---|---|---|
| **2934-S101** | 10-35mm/0.4-1.4" | stainless steel |

### Flat shoulder points (optional, supplied in pair)



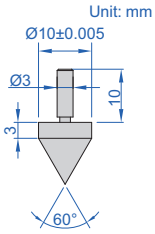


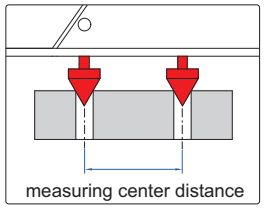




| Code | Measuring range | Material |
|---|---|---|
| **2934-S102** | 30-55mm/1.2-2.2" | stainless steel |

### Conical points (optional, supplied in pair)





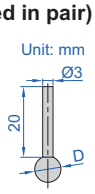



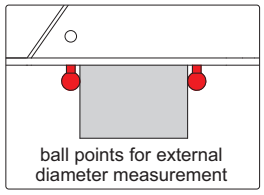

| Code | Measuring range | Material |
|---|---|---|
| **2932-S102** | 20-45mm/0.8-1.8" | stainless steel |

### Ball points (optional, supplied in pair)



**1527-T104**



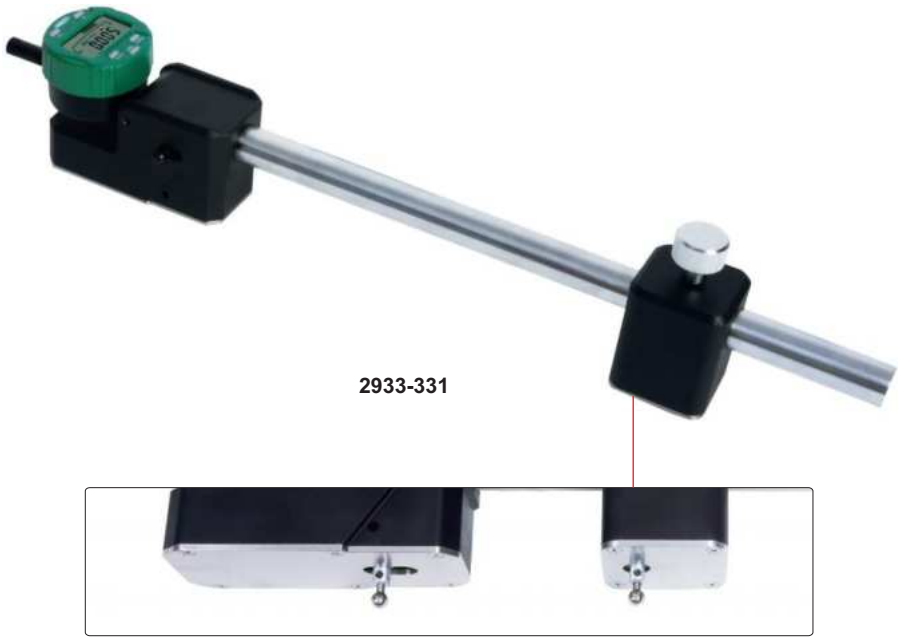

| Code | Diameter (D) | Accuracy of diameter | Material |
|---|---|---|---|
| **1527-T102** | 1/8" (Ø3.175mm) | ±0.005mm | stainless steel |
| **1527-T103** | 3/16" (Ø4.7625mm) | ±0.005mm | stainless steel |
| **1527-T104** | 1/4" (Ø6.35mm) | ±0.005mm | stainless steel |
| **1527-T105** | 3/8" (Ø9.525mm) | ±0.005mm | stainless steel |
| **1527-T106** | 1/2" (Ø12.7mm) | ±0.005mm | stainless steel |

# LARGE RANGE DIGITAL INTERNAL MEASURING GAUGES

DATA OUTPUT

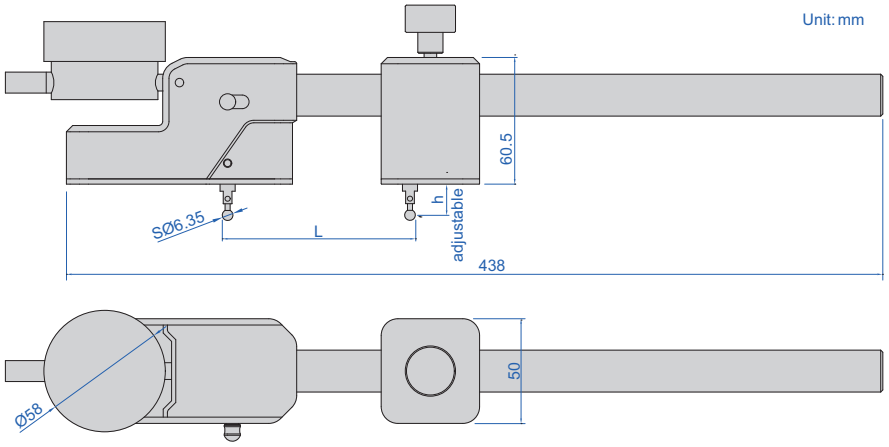
VIDEO





2933-331

- Measure internal dimensions
- Resolution: 0.001mm/0.00005"
- Accuracy: 5μm
- Repeatability: 1μm
- Movable point stroke: 5mm/0.02"
- Point height is adjustable, h=2-25mm
- CR2032 battery, automatic power off (time is adjustable)
- Data output



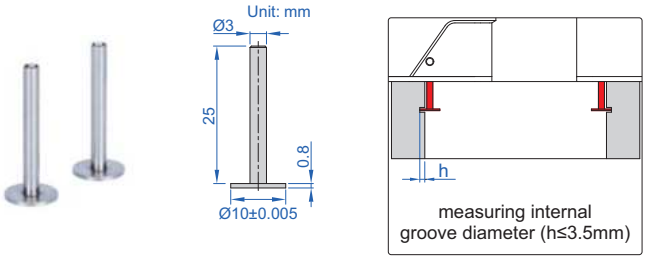

| Code | Measuring range (L)* | Indicator | Data output cable (optional) |
|---|---|---|---|
| **2933-330** | 48-330mm/1.89-13" | Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement | **7315-50M** (receiver is needed) page 6, **7214-50M** page 12, **7302-40M** page 21 |
| **2933-331** | 48-330mm/1.89-13" | With transmission button and signal light<br>Reading in digital and analog<br>Display can be rotated by 320°<br>Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement, max./min./TIR measurement, tolerance Go and No-Go display | **7315-51** (receiver is needed) page 6, **7214-51** page 12, **7302-40M** page 21 |

*The measuring range will change according to different measuring points

To be continued

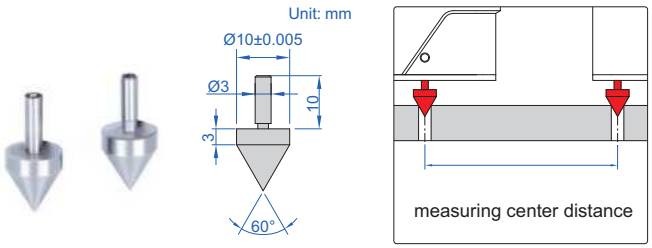
Continued from previous page

### Disk points (optional, supplied in pair)



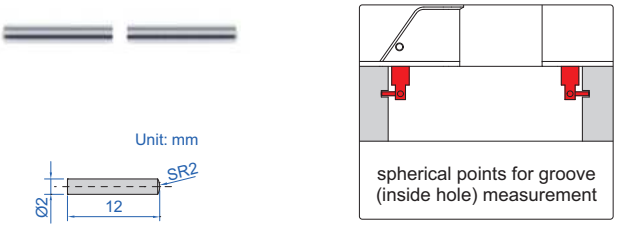

| Code | Measuring range | Material |
|---|---|---|
| **2932-S101** | 52-330mm/2.05-13" | stainless steel |

### Conical points (optional, supplied in pair)



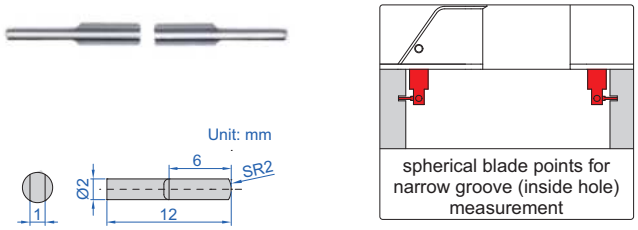

| Code | Measuring range | Material |
|---|---|---|
| **2932-S102** | 42-320mm/1.65-12.6" | stainless steel |

### Spherical points (optional, supplied in pair)



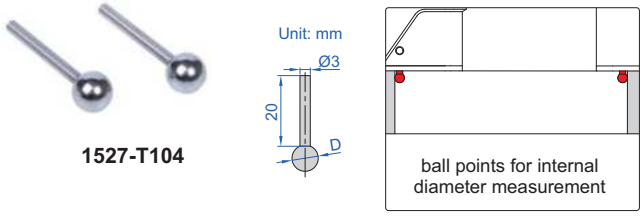

| Code | Measuring range | Material |
|---|---|---|
| **2932-S103** | 55-330mm/2.16-13" | stainless steel |

### Spherical blade points (optional, supplied in pair)




| Code | Measuring range | Material |
|---|---|---|
| **2932-S104** | 55-330mm/2.16-13" | stainless steel |

### Ball points (optional, supplied in pair)

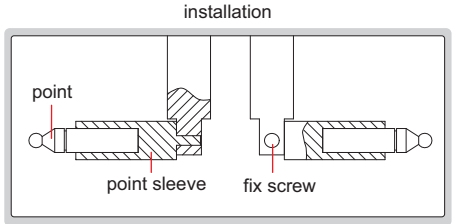



| Code | Diameter (D) | Accuracy of diameter | Material |
|---|---|---|---|
| **1527-T102** | 1/8" (Ø3.175mm) | ±0.005mm | stainless steel |
| **1527-T103** | 3/16" (Ø4.7625mm) | ±0.005mm | stainless steel |
| **1527-T104** | 1/4" (Ø6.35mm) | ±0.005mm | stainless steel |
| **1527-T105** | 3/8" (Ø9.525mm) | ±0.005mm | stainless steel |
| **1527-T106** | 1/2" (Ø12.7mm) | ±0.005mm | stainless steel |

### Point sleeve (optional, supplied in pair)




| Code |
|---|
| **1526-T101** |




To be continued

Continued from previous page

**Multifunctional points (optional, supplied in pair)**




7392-T1




7392-T2




7392-T3



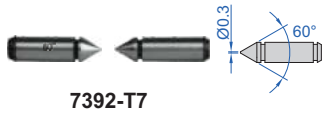

7392-T4




7392-T5



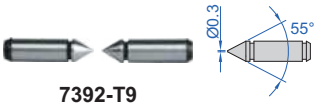

7392-T6




7392-T7




7392-T8




7392-T9

| Measuring range ** |
|---|
| 100-370mm/3.94-14.5" |

**After installing points and point sleeve

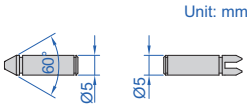
| Code | Type |
|---|---|
| 7392-T1* | flat |
| 7392-T2* | spherical |
| 7392-T3* | spline |
| 7392-T4* | disk |
| 7392-T5* | blade |
| 7392-T6* | knife-edge |
| 7392-T7* | point |
| 7392-T8* | knife-edge |
| 7392-T9* | point |

*It is necessary to use point sleeve (code **1526-T101**) for these points

**Screw thread points (optional, supplied in pair)**



7321-T16




| Measuring range ** |
|---|
| 100-370mm/3.94-14.5" |

**After installing points and point sleeve

**Internal thread (60° thread angle)**

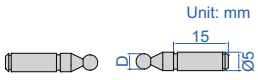
| Code | Pitch |
|---|---|
| 7321-T11* | 0.4-0.5mm/64-48TPI |
| 7321-T12* | 0.6-0.9mm/44-28TPI |
| 7321-T13* | 1-1.75mm/24-14TPI |
| 7321-T14* | 2-3mm/13-9TPI |
| 7321-T15* | 3.5-5mm/8-5TPI |
| 7321-T16* | 5.5-7mm/4.5-3.5TPI |
| 7321-T1S* | 6 pairs/set, including all above points |

*It is necessary to use point sleeve (code **1526-T101**) for these points

**Ball points (optional, supplied in pair)**



7391-T5




| Measuring range ** |
|---|
| 100-370mm/3.94-14.5" |

**After installing points and point sleeve

| Code | Ball dia. (D) |
|---|---|
| 7391-T2* | SØ1.5mm |
| 7391-T3* | SØ2.0mm |
| 7391-T4* | SØ2.5mm |
| 7391-T5* | SØ3.0mm |
| 7391-T6* | SØ3.5mm |
| 7391-T7* | SØ4.0mm |
| 7391-T8* | SØ4.5mm |
| 7391-T9* | SØ5.0mm |
| 7391-T10* | SØ6.0mm |

*It is necessary to use point sleeve (code **1526-T101**) for these points

## LARGE RANGE DIGITAL EXTERNAL MEASURING GAUGES

DATA OUTPUT

VIDEO

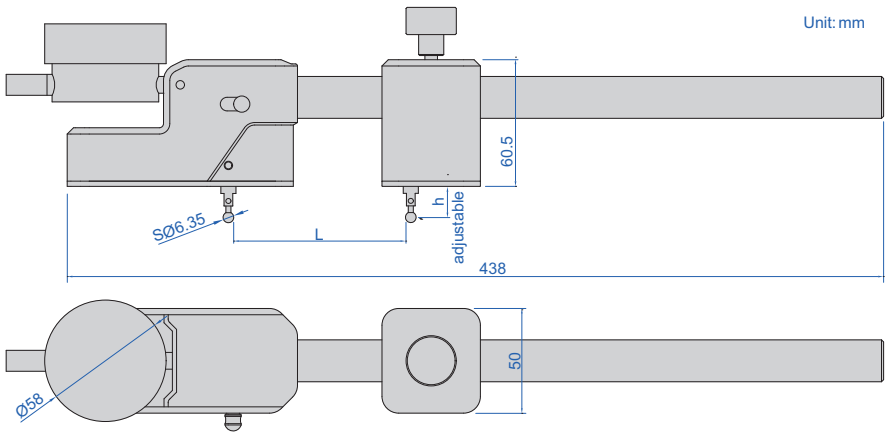


2935-321

- Measure external dimensions
- Resolution: 0.001mm/0.00005"
- Accuracy: 5μm
- Repeatability: 1μm
- Movable point stroke: 5mm/0.02"
- Point height is adjustable, h=2-25mm
- CR2032 battery, automatic power off (time is adjustable)
- Data output

To be continued

Continued from previous page



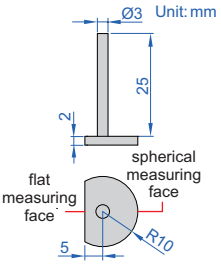


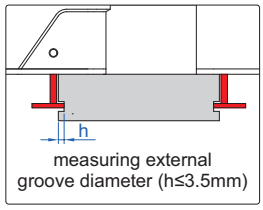

| Code | Measuring range (L)* | Indicator | Data output cable (optional) |
|---|---|---|---|
| **2935-320** | 35-320mm/1.4-12.6" | Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement | **7315-50M** (receiver is needed) page 6, **7214-50M** page 12, **7302-40M** page 21 |
| **2935-321** | 35-320mm/1.4-12.6" | With transmission button and signal light<br>Reading in digital and analog<br>Display can be rotated by 320°<br>Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement, max./min./TIR measurement, tolerance Go and No-Go display | **7315-51** (receiver is needed) page 6, **7214-51** page 12, **7302-40M** page 21 |

*The measuring range will change according to different measuring points

### Disk points (optional, supplied in pair)



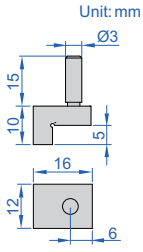


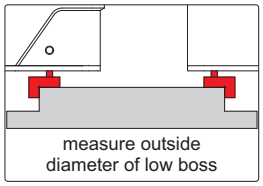




| Code | Measuring range | Material |
|---|---|---|
| **2934-S101** | 32-320mm/1.26-12.6" | stainless steel |

### Flat shoulder points (optional, supplied in pair)



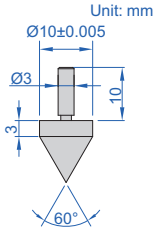


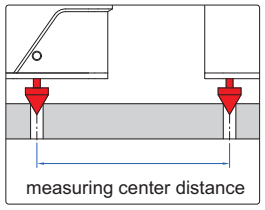




| Code | Measuring range | Material |
|---|---|---|
| **2934-S102** | 52-320mm/2.05-12.6" | stainless steel |

### Conical points (optional, supplied in pair)





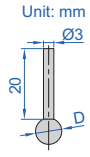



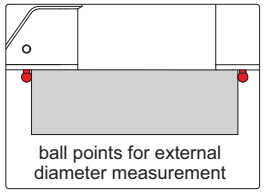

| Code | Measuring range | Material |
|---|---|---|
| **2932-S102** | 42-320mm/1.65-12.6" | stainless steel |

### Ball points (optional, supplied in pair)



**1527-T104**



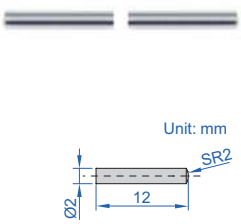

| Code | Diameter (D) | Accuracy of diameter | Material |
|---|---|---|---|
| **1527-T102** | 1/8" (Ø3.175mm) | ±0.005mm | stainless steel |
| **1527-T103** | 3/16" (Ø4.7625mm) | ±0.005mm | stainless steel |
| **1527-T104** | 1/4" (Ø6.35mm) | ±0.005mm | stainless steel |
| **1527-T105** | 3/8" (Ø9.525mm) | ±0.005mm | stainless steel |
| **1527-T106** | 1/2" (Ø12.7mm) | ±0.005mm | stainless steel |

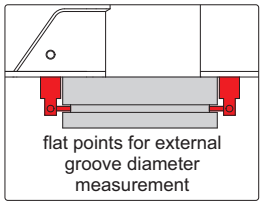
To be continued

Continued from previous page



### Spherical/flat points (optional, supplied in pair)

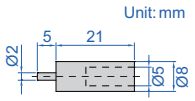


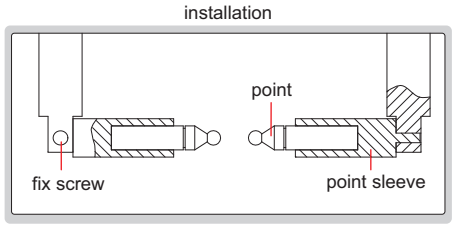




| Code | Measuring range | Material |
|---|---|---|
| 2932-S103 | 30-320mm/1.2-12.6" | stainless steel |

### Point sleeve (optional, supplied in pair)






| Code |
|---|
| 1526-T101 |

### Multifunctional points (optional, supplied in pair)




7392-T1




7392-T2




7392-T3



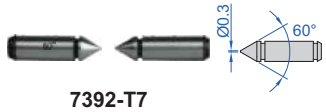

7392-T4




7392-T5



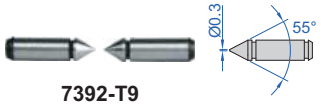

7392-T6




7392-T7




7392-T8




7392-T9

| Measuring range ** |
|---|
| 0-300mm/0-11.8" |

**After installing points and point sleeve

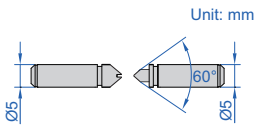
| Code | Type |
|---|---|
| 7392-T1* | flat |
| 7392-T2* | spherical |
| 7392-T3* | spline |
| 7392-T4* | disk |
| 7392-T5* | blade |
| 7392-T6* | knife-edge |
| 7392-T7* | point |
| 7392-T8* | knife-edge |
| 7392-T9* | point |

*It is necessary to use point sleeve (code **1526-T101**) for these points

### Screw thread points (optional, supplied in pair)



7381-T16




| Measuring range ** |
|---|
| 0-300mm/0-11.8" |

**After installing points and point sleeve

External thread (60° thread angle)

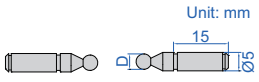
| Code | Pitch |
|---|---|
| 7381-T11* | 0.4-0.5mm/64-48TPI |
| 7381-T12* | 0.6-0.9mm/44-28TPI |
| 7381-T13* | 1-1.75mm/24-14TPI |
| 7381-T14* | 2-3mm/13-9TPI |
| 7381-T15* | 3.5-5mm/8-5TPI |
| 7381-T16* | 5.5-7mm/4.5-3.5TPI |
| 7381-TS* | 6 pairs/set, including all above points |

*It is necessary to use point sleeve (code **1526-T101**) for these points

### Ball points (optional, supplied in pair)



7391-T5




| Measuring range ** |
|---|
| 0-300mm/0-11.8" |

**After installing points and point sleeve

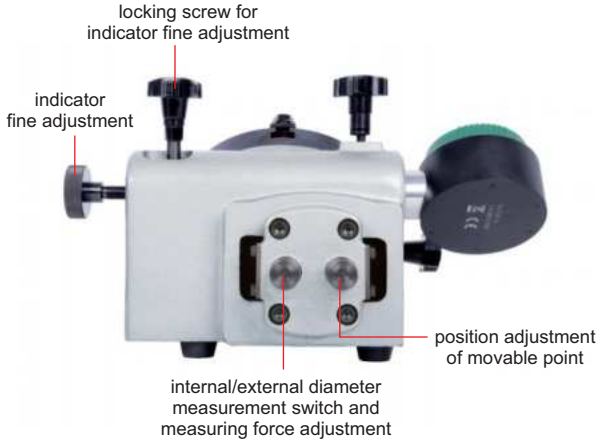
| Code | Ball dia. (D) |
|---|---|
| 7391-T2* | SØ1.5mm |
| 7391-T3* | SØ2.0mm |
| 7391-T4* | SØ2.5mm |
| 7391-T5* | SØ3.0mm |
| 7391-T6* | SØ3.5mm |
| 7391-T7* | SØ4.0mm |
| 7391-T8* | SØ4.5mm |
| 7391-T9* | SØ5.0mm |
| 7391-T10* | SØ6.0mm |

*It is necessary to use point sleeve (code **1526-T101**) for these points

# INTERNAL AND EXTERNAL DIAMETER COMPARISON INSTRUMENT

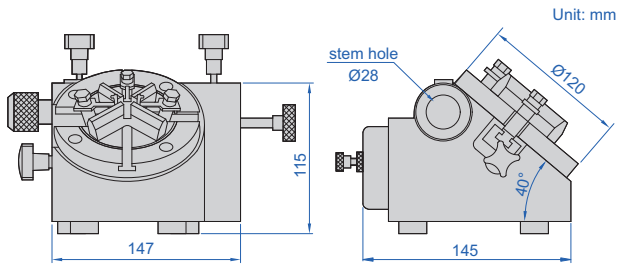
VIDEO



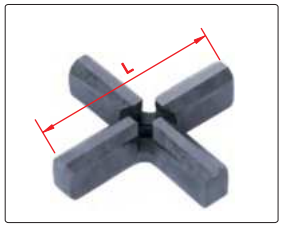

- Measure internal/external diameter, variation and taper
- Total range of movable point: 2mm,
  effective range of movable point: ±0.1mm
- Groove probes and disc probes are included
- Optional accessory: Ø28mm/Ø8mm bush (code **6843-B8**),
  cross table, 0.001mm digital/dial indicators,
  high precision digital indicators (code **2140-6**, **2140-6WL**)

Unit: mm




| Code | Applicable holding stem | Range of internal diameter | Range of external diameter | Accuracy | Repeatability |
|---|---|---|---|---|---|
| **6844-100** | Ø28mm | 20-100mm/0.8-3.9" | 15-80mm/0.6-3.1" | ±0.001mm | 0.001mm |

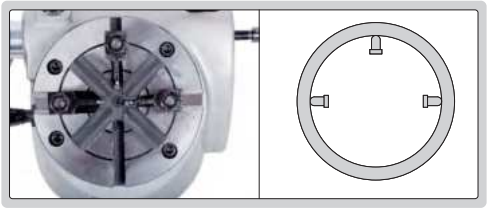
cross table (working with groove probes)




disc probes (included)



groove probes to measure small internal diameter and internal groove diameter



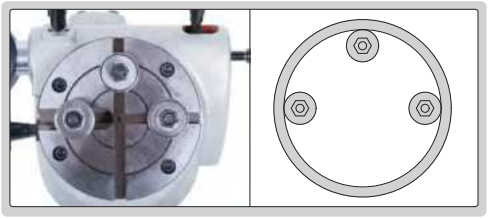
groove probe (included)



**Cross table**

| Code | L | Remark |
|---|---|---|
| **6844-T40** | 40mm | included |
| **6844-T80** | 80mm | **optional** |
| **6844-T100** | 100mm | **optional** |

disc probes to measure large internal diameter



**Ø28mm/Ø8mm bush (optional)**

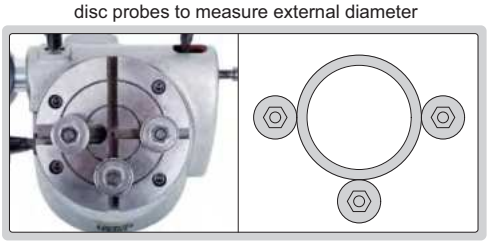


| Code |
|---|
| **6843-B8** |

application

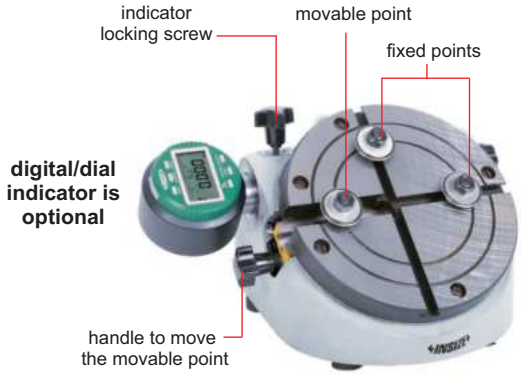


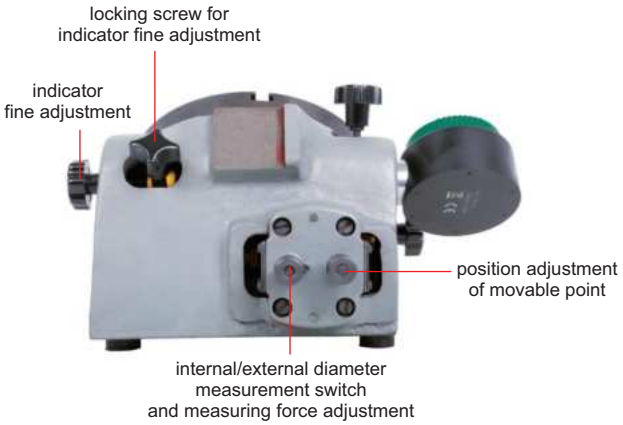

disc probes to measure external diameter



# INTERNAL AND EXTERNAL DIAMETER COMPARISON INSTRUMENT

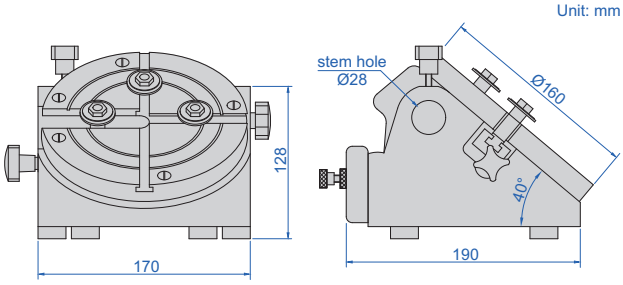
VIDEO



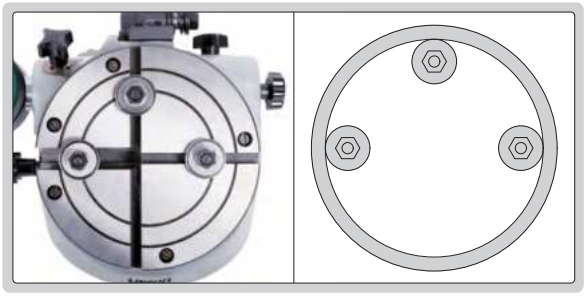




- Measure internal/external diameter, variation and taper
- Total range of movable point: 2mm,
  effective range of movable point: ±0.1mm
- Optional accessory: Ø28mm/Ø8mm bush (code **6843-B8**),
  0.001mm digital/dial indicators,
  high precision digital indicators (code **2140-6**, **2140-6WL**)

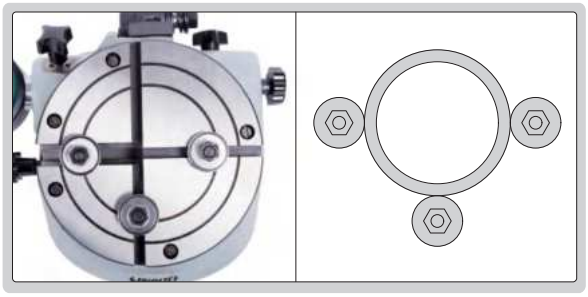
Unit: mm




internal diameter measurement



external diameter measurement



| Code | Applicable holding stem | Range of internal diameter | Range of external diameter | Accuracy | Repeatability |
|---|---|---|---|---|---|
| **6843-140** | Ø28mm | 50-140mm/2-5.5" | 30-120mm/1.2-4.7" | ±0.001mm | 0.001mm |

**Ø28mm/Ø8mm bush (optional)**



| Code |
|---|
| **6843-B8** |

application

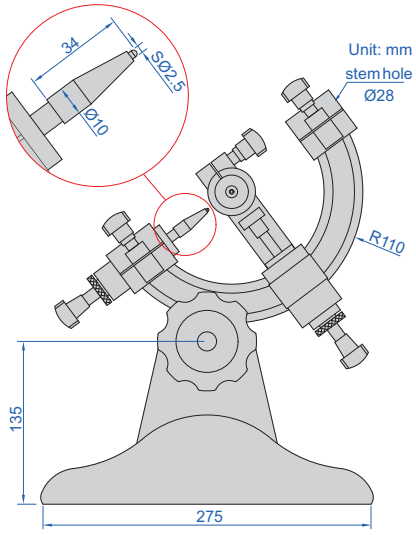


# OUTSIDE DIAMETER MEASURING STAND

VIDEO




6847-50




- To measure diameter and roundness of cylinders and steel balls
- Supplied with measuring base (code **6847-A100**)
- Optional accessory: Ø28mm/Ø8mm bush (code **6843-B8**), 0.001mm digital/dial indicators, high precision digital indicators (code **2140-6**, **2140-6WL**), gauge blocks (**4101** series, for zero setting of cylinders), custom plug gauges (for zero setting of cylinders), ceramic standard balls (**4190** series, for zero setting of steel balls)

| Code | Range of outside diameter | Accuracy | Repeatability |
|---|---|---|---|
| **6847-50** | 1.5-50mm/0.06-2" | ±0.001mm | 0.0005mm |

**Measuring base**

| Code | Diameter | Remark |
|---|---|---|
| **6847-A10** | 10mm | **optional** |
| **6847-A20** | 20mm | **optional** |
| **6847-A30** | 30mm | **optional** |
| **6847-A40** | 40mm | **optional** |
| **6847-A50** | 50mm | **optional** |
| **6847-A60** | 60mm | **optional** |
| **6847-A70** | 70mm | **optional** |
| **6847-A75** | 75mm | **optional** |
| **6847-A80** | 80mm | **optional** |
| **6847-A90** | 90mm | **optional** |
| **6847-A100** | 100mm | included |

**Ø28mm/Ø8mm bush (optional)**



| Code |
|---|
| **6843-B8** |

application



# 06 MICROMETERS



Digital Micrometers/Snap Gauges
Page 129-132



Digital Micrometers
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Outside Micrometers
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Large Outside Micrometers
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Limit Micrometers
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Indicating Micrometers
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Micrometers With Dial Indicator
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Groove Micrometers
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3-Wires
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Screw Thread Micrometers
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Gear Tooth Micrometers
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Point Micrometers
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Gear Root Diameter Micrometers
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Blade Micrometers
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Crimp Height Micrometers
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Spline Micrometers
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Sheet Metal Micrometers
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Universal Micrometers
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Caliper Type Micrometers
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Jaw Type Micrometers
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Force Detectors
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Micrometer Inspection
Gauge Block Sets
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Micrometer Stands
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Micrometer Setting
Standards
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Micrometer Lapping
Machines
Page 191-192



Micrometer Heads
Page 192-196

# HIGH PRECISION DIGITAL MICROMETERS/SNAP GAUGES

ONE TURN OF SLEEVE MAKES 10MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM

MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

IP65 WATERPROOF

DATA OUTPUT

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

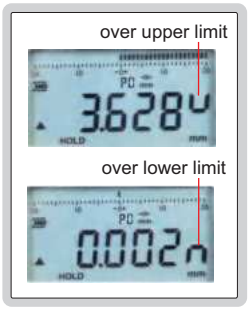
ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

NON-ROTATING SPINDLE

INSPECTION CERTIFICATE

VIDEO

alarm when over tolerance



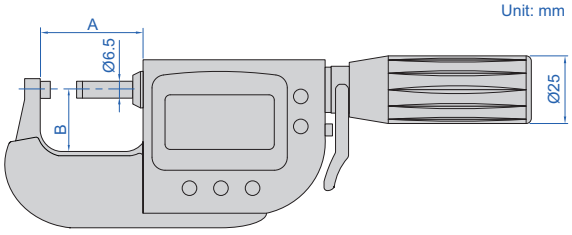

wireless receiver
**2134-R1, 2134-R2 (optional)**






**3359-25**

Unit: mm




- Absolute encoder, the original data remains after power off
- Resolution: 0.0001mm/0.00001"
- One turn of sleeve makes 10mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Carbide measuring faces
- Measuring force 5-10N
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch
- Power: rechargeable battery, for 24 hours continuous working

**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Accuracy | Repeatability | Measuring faces | | A | B |
|---|---|---|---|---|---|---|---|
| | | | | flatness | parallelism | | |
| **3359-25*** | 0-25mm/0-1" | ±0.5μm | 0.3μm | 0.3μm | 0.6μm | 38mm | 24mm |

**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Repeatability | Measuring faces | | A | B |
|---|---|---|---|---|---|---|---|
| | | | | flatness | parallelism | | |
| **3359-25WL*** | 0-25mm/0-1" | ±0.5μm | 0.3μm | 0.3μm | 0.6μm | 38mm | 24mm |

*Supplied with manufacturer inspection certificate

# DIGITAL MICROMETERS/SNAP GAUGES (BASIC TYPE)

ONE TURN OF SLEEVE MAKES 10MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM

MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

IP65 WATERPROOF

DATA OUTPUT

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

NON-ROTATING SPINDLE

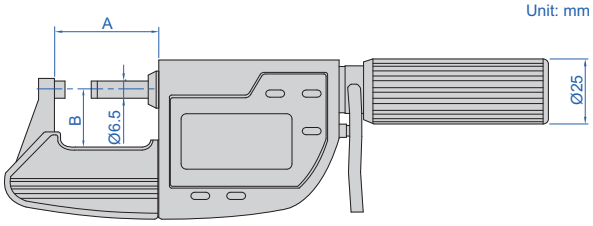
INSPECTION CERTIFICATE

POPULAR MODEL

VIDEO

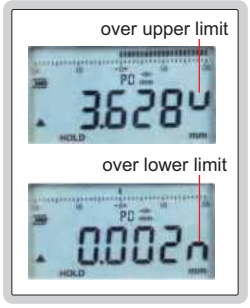



Unit: mm




**3358-25**

alarm when over tolerance




wireless receiver **2134-R1, 2134-R2 (optional)**



- Absolute encoder, the original data remains after power off
- Resolution: 0.001mm/0.00005"
- One turn of sleeve makes 10mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Carbide measuring faces
- Measuring force 5-10N
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch
- Supplied with gauge blocks for zero setting (except 0-25mm/0-1")
- Power: rechargeable battery, for 24 hours continuous working

**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Accuracy | Repeatability | Measuring faces | | A | B |
|---|---|---|---|---|---|---|---|
| | | | | flatness | parallelism | | |
| **3358-25** * | 0-25mm/0-1" | 2μm | 1μm | 0.5μm | 1.2μm | 38mm | 24mm |
| **3358-50** * | 25-50mm/1-2" | 2μm | 1μm | 0.5μm | 1.2μm | 64mm | 32.5mm |
| **3358-75** * | 50-75mm/2-3" | 3μm | 1μm | 0.5μm | 1.8μm | 89mm | 46mm |
| **3358-100** * | 75-100mm/3-4" | 3μm | 1μm | 0.5μm | 1.8μm | 114mm | 60mm |

**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Repeatability | Measuring faces | | A | B |
|---|---|---|---|---|---|---|---|
| | | | | flatness | parallelism | | |
| **3358-25WL** * | 0-25mm/0-1" | 2μm | 1μm | 0.5μm | 1.2μm | 38mm | 24mm |
| **3358-50WL** * | 25-50mm/1-2" | 2μm | 1μm | 0.5μm | 1.2μm | 64mm | 32.5mm |
| **3358-75WL** * | 50-75mm/2-3" | 3μm | 1μm | 0.5μm | 1.8μm | 89mm | 46mm |
| **3358-100WL** * | 75-100mm/3-4" | 3μm | 1μm | 0.5μm | 1.8μm | 114mm | 60mm |

*Supplied with manufacturer inspection certificate

# DIGITAL MICROMETERS/SNAP GAUGES

ONE TURN OF SLEEVE MAKES 5MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM

MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

IP65 WATERPROOF

DATA OUTPUT

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

NON-ROTATING SPINDLE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

INSPECTION CERTIFICATE

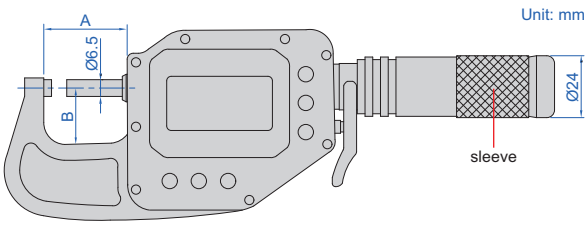
VIDEO






**3350-25**

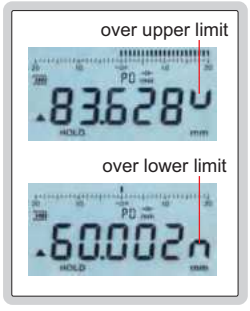
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0002mm/0.00001"
  0.001mm/0.00005"
  0.01mm/0.0005"
- One turn of sleeve makes 5mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Linear ball bearings for ten million times use
- Carbide measuring faces
- Measuring force 5-10N
  Customizable measuring force range 2-12N
  Attention: small measuring force will reduce the dustproof and waterproof level
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch, adjust resolution
- Supplied with gauge blocks for zero setting (except 0-25mm/0-1")
- Power: rechargeable battery, for 24 hours continuous working




**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Accuracy | Repeatability | Measuring faces | | A | B |
|---|---|---|---|---|---|---|---|
| | | | | flatness | parallelism | | |
| **3350-25*** | 0-25mm/0-1" | 1.4μm | 0.6μm | 0.5μm | 1μm | 38mm | 24mm |
| **3350-50*** | 25-50mm/1-2" | 1.6μm | 1μm | 0.5μm | 1μm | 63mm | 28mm |
| **3350-75*** | 50-75mm/2-3" | 1.8μm | 1μm | 0.5μm | 1μm | 88mm | 45mm |
| **3350-100*** | 75-100mm/3-3.95" | 2μm | 1μm | 0.5μm | 1μm | 113mm | 57mm |

alarm when over tolerance




**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Repeatability | Measuring faces | | A | B |
|---|---|---|---|---|---|---|---|
| | | | | flatness | parallelism | | |
| **3350-25WL*** | 0-25mm/0-1" | 1.4μm | 0.6μm | 0.5μm | 1μm | 38mm | 24mm |
| **3350-50WL*** | 25-50mm/1-2" | 1.6μm | 1μm | 0.5μm | 1μm | 63mm | 28mm |
| **3350-75WL*** | 50-75mm/2-3" | 1.8μm | 1μm | 0.5μm | 1μm | 88mm | 45mm |
| **3350-100WL*** | 75-100mm/3-3.95" | 2μm | 1μm | 0.5μm | 1μm | 113mm | 57mm |

wireless receiver
**2134-R1, 2134-R2 (optional)**



*Supplied with manufacturer inspection certificate

# DIGITAL MICROMETERS/SNAP GAUGES

**IP65** WATERPROOF

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

VIDEO

ONE TURN OF SLEEVE MAKES 5MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

NON-ROTATING SPINDLE

DATA OUTPUT

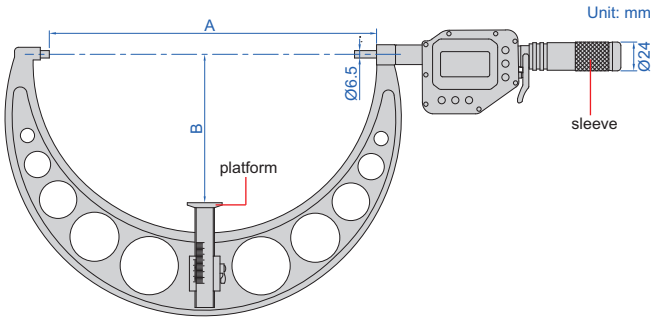
MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

INSPECTION CERTIFICATE




**3351-275**

- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0002mm/0.00001"
  (when the reading exceeds 100mm, the resolution is automatically switched to 0.001mm)
  0.001mm/0.00005"
  0.01mm/0.0005
- One turn of sleeve makes 5mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Linear ball bearings for ten million times use
- Carbide measuring faces
- Measuring force 5-10N
  Customizable measuring force range 2-12N
  Attention: small measuring force will reduce the dustproof and waterproof level
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch, adjust resolution
- Supplied with gauge blocks for zero setting
- Power: rechargeable battery, for 24 hours continuous working



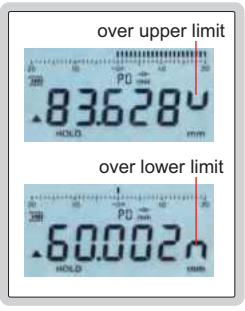

gauge blocks for zero setting (included)



**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Accuracy | Repeatability | Measuring faces | | A | B |
|---|---|---|---|---|---|---|---|
| | | | | flatness | parallelism | | |
| **3351-125*** | 100-125mm/4-5" | 3μm | 1μm | 0.5μm | 2μm | 128mm | 62.5mm |
| **3351-150*** | 125-150mm/5-6" | 3μm | 1μm | 0.5μm | 2μm | 153mm | 75mm |
| **3351-175*** | 150-175mm/6-7" | 4μm | 1μm | 0.5μm | 2.5μm | 178mm | 87.5mm |
| **3351-200*** | 175-200mm/7-8" | 4μm | 1μm | 0.5μm | 2.5μm | 203mm | 100mm |
| **3351-225*** | 200-225mm/8-9" | 5μm | 1μm | 0.5μm | 3μm | 228mm | 112.5mm |
| **3351-250*** | 225-250mm/9-10" | 5μm | 1μm | 0.5μm | 3μm | 253mm | 125mm |
| **3351-275*** | 250-275mm/10-11" | 6μm | 1μm | 0.5μm | 3.5μm | 278mm | 137.5mm |
| **3351-300*** | 275-300mm/11-12" | 6μm | 1μm | 0.5μm | 3.5μm | 303mm | 150mm |

alarm when over tolerance




**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Repeatability | Measuring faces | | A | B |
|---|---|---|---|---|---|---|---|
| | | | | flatness | parallelism | | |
| **3351-125WL*** | 100-125mm/4-5" | 3μm | 1μm | 0.5μm | 2μm | 128mm | 62.5mm |
| **3351-150WL*** | 125-150mm/5-6" | 3μm | 1μm | 0.5μm | 2μm | 153mm | 75mm |
| **3351-175WL*** | 150-175mm/6-7" | 4μm | 1μm | 0.5μm | 2.5μm | 178mm | 87.5mm |
| **3351-200WL*** | 175-200mm/7-8" | 4μm | 1μm | 0.5μm | 2.5μm | 203mm | 100mm |
| **3351-225WL*** | 200-225mm/8-9" | 5μm | 1μm | 0.5μm | 3μm | 228mm | 112.5mm |
| **3351-250WL*** | 225-250mm/9-10" | 5μm | 1μm | 0.5μm | 3μm | 253mm | 125mm |
| **3351-275WL*** | 250-275mm/10-11" | 6μm | 1μm | 0.5μm | 3.5μm | 278mm | 137.5mm |
| **3351-300WL*** | 275-300mm/11-12" | 6μm | 1μm | 0.5μm | 3.5μm | 303mm | 150mm |

wireless receiver
**2134-R1, 2134-R2 (optional)**



*Supplied with manufacturer inspection certificate

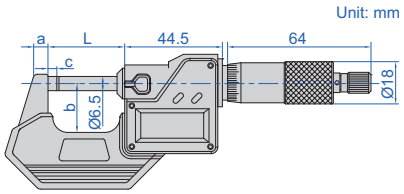
# WATERPROOF DIGITAL OUTSIDE MICROMETERS (WITH DATA OUTPUT)

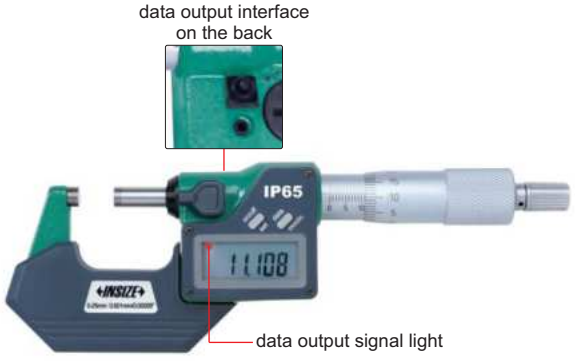
POPULAR MODEL

DATA OUTPUT

IP65 WATERPROOF

INSPECTION CERTIFICATE



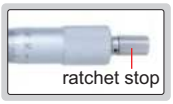

3101-25A

- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Automatic power off
- Carbide measuring faces
- Supplied with spherical anvil
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20

6

**Metric/Inch type (ratchet stop)** (mm)

| Code | Range | Resolution | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|---|
| **3101-25A*** | 0-25mm/0-1" | 0.001mm/0.00005" | ±2μm | 34.5 | 6 | 25 | 3 |
| **3101-50A*** | 25-50mm/1-2" | 0.001mm/0.00005" | ±2μm | 59.5 | 8 | 32 | 3 |
| **3101-75A*** | 50-75mm/2-3" | 0.001mm/0.00005" | ±3μm | 84.5 | 8 | 44.5 | 3 |
| **3101-100A*** | 75-100mm/3-4" | 0.001mm/0.00005" | ±3μm | 109.5 | 8 | 57 | 3 |
| **3101-125A** | 100-125mm/4-5" | 0.001mm/0.00005" | ±3μm | 135 | 10 | 70 | 3 |
| **3101-150A** | 125-150mm/5-6" | 0.001mm/0.00005" | ±3μm | 160.5 | 10 | 82 | 3 |
| **3101-175A** | 150-175mm/6-7" | 0.001mm/0.00005" | ±4μm | 186 | 12 | 94.5 | 5.5 |
| **3101-200A** | 175-200mm/7-8" | 0.001mm/0.00005" | ±4μm | 211.5 | 12 | 107 | 5.5 |
| **3101-225A** | 200-225mm/8-9" | 0.001mm/0.00005" | ±4μm | 236 | 23 | 129.5 | 5.5 |
| **3101-250A** | 225-250mm/9-10" | 0.001mm/0.00005" | ±4μm | 261.5 | 23 | 142.5 | 5.5 |
| **3101-275A** | 250-275mm/10-11" | 0.001mm/0.0001" | ±5μm | 287 | 23 | 155 | 5.5 |
| **3101-300A** | 275-300mm/11-12" | 0.001mm/0.0001" | ±5μm | 312.5 | 23 | 167.5 | 5.5 |

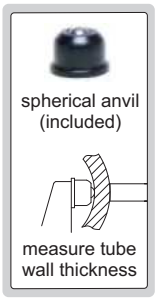






**Metric/Inch type (friction thimble)** (mm)

| Code | Range | Resolution | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|---|
| **3101-25FA*** | 0-25mm/0-1" | 0.001mm/0.00005" | ±2μm | 34.5 | 6 | 25 | 3 |




**Metric type (ratchet stop)** (mm)

| Code | Range | Resolution | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|---|
| **3101-25AJ*** | 0-25mm | 0.001mm | ±2μm | 34.5 | 6 | 25 | 3 |
| **3101-50AJ*** | 25-50mm | 0.001mm | ±2μm | 59.5 | 8 | 32 | 3 |
| **3101-75AJ*** | 50-75mm | 0.001mm | ±3μm | 84.5 | 8 | 44.5 | 3 |
| **3101-100AJ*** | 75-100mm | 0.001mm | ±3μm | 109.5 | 8 | 57 | 3 |

**Set (ratchet stop type)**

| Code | Range | Micrometers included | Packaging |
|---|---|---|---|
| **3101-753A*** | 0-75mm/0-3" | 3101-25A, 3101-50A, 3101-75A | blow mould case |
| **3101-1004A*** | 0-100mm/0-4" | 3101-25A, 3101-50A, 3101-75A, 3101-100A | blow mould case |
| **3101-1506A** | 0-150mm/0-6" | 3101-25A, 3101-50A, 3101-75A, 3101-100A, 3101-125A, 3101-150A | aluminum box |
| **3101-3006A** | 150-300mm/6-12" | 3101-175A, 3101-200A, 3101-225A, 3101-250A, 3101-275A, 3101-300A | aluminum box |

*Supplied with manufacturer inspection certificate



3101-753A



3101-1506A



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IP65 WATERPROOF

# WATERPROOF DIGITAL OUTSIDE MICROMETERS (WITHOUT DATA OUTPUT)

ATTENTION: NO DATA OUTPUT

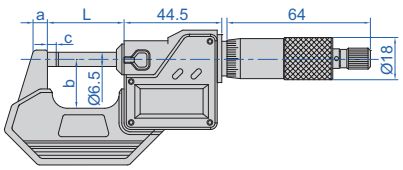
INSPECTION CERTIFICATE




**3108-25A**

- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- No data output
- Automatic power off
- Carbide measuring faces
- Supplied with spherical anvil
- Setting standards are included (except 0-25mm/0-1")

Unit: mm

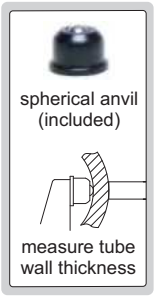





**Ratchet stop type** (mm)

| Code | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|
| **3108-25A*** | 0-25mm/0-1" | ±2μm | 34.5 | 6 | 25 | 3 |
| **3108-50A*** | 25-50mm/1-2" | ±2μm | 59.5 | 8 | 32 | 3 |
| **3108-75A*** | 50-75mm/2-3" | ±3μm | 84.5 | 8 | 44.5 | 3 |
| **3108-100A*** | 75-100mm/3-4" | ±3μm | 109.5 | 8 | 57 | 3 |
| **3108-125A** | 100-125mm/4-5" | ±3μm | 135 | 10 | 70 | 3 |
| **3108-150A** | 125-150mm/5-6" | ±3μm | 160.5 | 10 | 82 | 3 |
| **3108-175A** | 150-175mm/6-7" | ±4μm | 186 | 12 | 94.5 | 5.5 |
| **3108-200A** | 175-200mm/7-8" | ±4μm | 211.5 | 12 | 107 | 5.5 |




**Friction thimble type** (mm)

| Code | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|
| **3108-25FA*** | 0-25mm/0-1" | ±2μm | 34.5 | 6 | 25 | 3 |






**3108-753A**



**3108-1506A**

**Set**

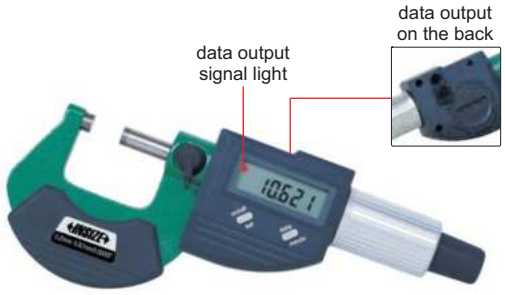
| Code | Range | Micrometers included | Packaging |
|---|---|---|---|
| **3108-753A*** | 0-75mm/0-3" | 3108-25A, 3108-50A, 3108-75A | blow mould case |
| **3108-1004A*** | 0-100mm/0-4" | 3108-25A, 3108-50A, 3108-75A, 3108-100A | blow mould case |
| **3108-1506A** | 0-150mm/0-6" | 3108-25A, 3108-50A, 3108-75A, 3108-100A, 3108-125A, 3108-150A | aluminum box |

*Supplied with manufacturer inspection certificate

# DIGITAL OUTSIDE MICROMETERS (BASIC TYPE, WITH DATA OUTPUT)

INSPECTION CERTIFICATE

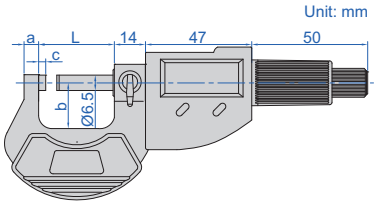
DATA OUTPUT




**3102-25**

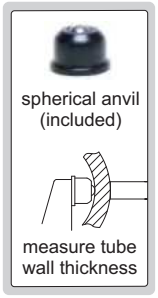


- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, data transmit
- Automatic power off
- Carbide measuring faces
- Friction thimble
- Supplied with spherical anvil
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-30** (receiver is needed) page 5,
  bluetooth transmitter code **7214-30** page 11,
  data output cable code **7302-30** page 20




**Individual** **(mm)**

| Code | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|
| **3102-25** * | 0-25mm/0-1" | ±2μm | 32 | 6 | 24 | 3 |
| **3102-50** * | 25-50mm/1-2" | ±2μm | 57 | 8 | 32 | 3 |
| **3102-75** * | 50-75mm/2-3" | ±3μm | 82 | 8 | 45 | 3 |
| **3102-100** * | 75-100mm/3-4" | ±3μm | 107 | 10 | 57 | 3 |
| **3102-125** | 100-125mm/4-5" | ±3μm | 133 | 10 | 70 | 3 |
| **3102-150** | 125-150mm/5-6" | ±3μm | 158 | 10 | 82 | 3 |
| **3102-175** | 150-175mm/6-7" | ±4μm | 183 | 12 | 95 | 5.5 |
| **3102-200** | 175-200mm/7-8" | ±4μm | 209 | 12 | 107 | 5.5 |









**3102-753A**



**3102-1506A**

**Set**

| Code | Range | Micrometers included | Packaging |
|---|---|---|---|
| **3102-753A** * | 0-75mm/0-3" | 3102-25, 3102-50, 3102-75 | blow mould case |
| **3102-1004A** * | 0-100mm/0-4" | 3102-25, 3102-50, 3102-75, 3102-100 | blow mould case |
| **3102-1506A** | 0-150mm/0-6" | 3102-25, 3102-50, 3102-75, 3102-100, 3102-125, 3102-150 | aluminum box |

*Supplied with manufacturer inspection certificate



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## DIGITAL OUTSIDE MICROMETERS (BASIC TYPE, WITHOUT DATA OUTPUT)

POPULAR MODEL

INSPECTION CERTIFICATE

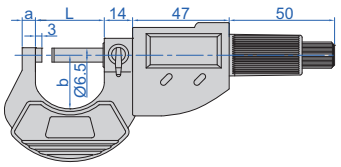
ATTENTION: NO DATA OUTPUT

- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, ABS/INC
- No data output
- Automatic power off
- Carbide measuring faces
- Friction thimble
- Supplied with spherical anvil
- Setting standards are included (except 0-25mm/0-1")



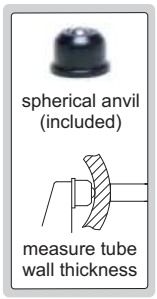
3109-25A

Unit: mm




**Individual**

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3109-25A*** | 0-25mm/0-1" | ±2μm | 32mm | 6mm | 28mm |
| **3109-50A*** | 25-50mm/1-2" | ±2μm | 57mm | 8mm | 37mm |
| **3109-75A*** | 50-75mm/2-3" | ±3μm | 82mm | 8mm | 50mm |
| **3109-100A*** | 75-100mm/3-4" | ±3μm | 107mm | 10mm | 61mm |
| **3109-125A** | 100-125mm/4-5" | ±3μm | 132mm | 10mm | 73mm |
| **3109-150A** | 125-150mm/5-6" | ±3μm | 157mm | 10mm | 85mm |
| **3109-175A** | 150-175mm/6-7" | ±4μm | 182mm | 20mm | 104mm |
| **3109-200A** | 175-200mm/7-8" | ±4μm | 207mm | 20mm | 117mm |
| **3109-225A** | 200-225mm/8-9" | ±4μm | 234mm | 20mm | 130mm |
| **3109-250A** | 225-250mm/9-10" | ±4μm | 260mm | 20mm | 143mm |
| **3109-275A** | 250-275mm/10-11" | ±5μm | 285mm | 20mm | 155mm |
| **3109-300A** | 275-300mm/11-12" | ±5μm | 310mm | 20mm | 168mm |







**Set**

| Code | Range | Micrometers included | Packaging |
|---|---|---|---|
| **3109-753A*** | 0-75mm/0-3" | 3109-25A, 3109-50A, 3109-75A | blow mould case |
| **3109-1004A*** | 0-100mm/0-4" | 3109-25A, 3109-50A, 3109-75A, 3109-100A | blow mould case |
| **3109-1506A** | 0-150mm/0-6" | 3109-25A, 3109-50A, 3109-75A, 3109-100A, 3109-125A, 3109-150A | aluminum box |
| **3109-3006A** | 150-300mm/6-12" | 3109-175A, 3109-200A, 3109-225A, 3109-250A, 3109-275A, 3109-300A | aluminum box |

*Supplied with manufacturer inspection certificate



3109-753A



3109-1506A

## DIGITAL VERTICAL MICROMETERS

DATA OUTPUT

IP65 WATERPROOF

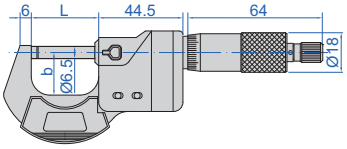
INSPECTION CERTIFICATE

- Measure the thickness of plates for easy reading
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- Automatic power off
- Carbide spindle tip
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-30** (receiver is needed) page 5,
  bluetooth transmitter code **7214-30** page 11,
  data output cable code **7302-30** page 20



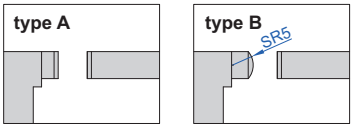
3565-25A

Unit: mm




| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3565-25A*** | 0-25mm/0-1" | A | ±2μm | 34.5mm | 25mm |
| **3565-50A*** | 25-50mm/1-2" | A | ±2μm | 59.5mm | 32mm |
| **3565-25BA*** | 0-25mm/0-1" | B | ±2μm | 34.5mm | 25mm |
| **3565-50BA*** | 25-50mm/1-2" | B | ±2μm | 59.5mm | 32mm |

*Supplied with manufacturer inspection certificate



## OUTSIDE MICROMETERS

INSIZE PLUS
MADE IN EUROPE

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

INSPECTION CERTIFICATE

- Carbide measuring faces
- Graduation: 0.01mm
- Meet DIN863-1
- Friction thimble
- Optional accessory: setting standards (code **7386**)

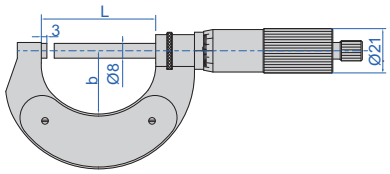
| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3701-25A*** | 0-25mm | 4μm | 37mm | 24mm |
| **3701-50A*** | 25-50mm | 4μm | 62mm | 34mm |
| **3701-75A*** | 50-75mm | 5μm | 87mm | 46mm |
| **3701-100A*** | 75-100mm | 5μm | 112mm | 60mm |
| **3701-125A*** | 100-125mm | 6μm | 139mm | 72mm |
| **3701-150A*** | 125-150mm | 6μm | 164mm | 85mm |
| **3701-175A*** | 150-175mm | 7μm | 190mm | 97mm |
| **3701-200A*** | 175-200mm | 7μm | 215mm | 110mm |
| **3701-225A*** | 200-225mm | 8μm | 240mm | 122mm |
| **3701-250A*** | 225-250mm | 8μm | 264mm | 135mm |
| **3701-275A*** | 250-275mm | 9μm | 290mm | 148mm |
| **3701-300A*** | 275-300mm | 9μm | 315mm | 160mm |

*Supplied with manufacturer inspection certificate




**3701-25A**

Unit: mm




## OUTSIDE MICROMETERS WITH 50mm RANGE

INSIZE PLUS
MADE IN EUROPE

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

LIGHT WEIGHT

- Graduation 0.01mm
- Ratchet stop
- One turn of sleeve makes 1mm spindle feed
- Carbide measuring faces
- Optional accessory: setting standards (code **7386**)

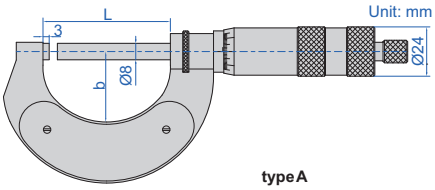
**(mm)**

| Code | Range | Type | Accuracy | L | b | Weight |
|---|---|---|---|---|---|---|
| **3682-50** | 0-50mm | A | 4μm | 62 | 34 | 0.46kg |
| **3682-100** | 50-100mm | A | 5μm | 112 | 60 | 0.62kg |
| **3682-150** | 100-150mm | A | 6μm | 164 | 85 | 0.78kg |
| **3682-200** | 150-200mm | A | 7μm | 215 | 110 | 1.03kg |
| **3682-250** | 200-250mm | A | 8μm | 264 | 135 | 1.25kg |
| **3682-300** | 250-300mm | A | 9μm | 315 | 160 | 1.45kg |
| **3682-350** | 300-350mm | B | 10μm | 370 | 190 | 1.50kg |
| **3682-400** | 350-400mm | B | 11μm | 430 | 220 | 1.80kg |
| **3682-450** | 400-450mm | B | 12μm | 475 | 250 | 2.15kg |
| **3682-500** | 450-500mm | B | 13μm | 530 | 273 | 2.30kg |
| **3682-550** | 500-550mm | B | 14μm | 570 | 291 | 2.40kg |
| **3682-600** | 550-600mm | B | 14μm | 630 | 323 | 3.00kg |
| **3682-650** | 600-650mm | B | 16μm | 675 | 351 | 3.30kg |
| **3682-700** | 650-700mm | B | 16μm | 730 | 378 | 3.70kg |
| **3682-750** | 700-750mm | B | 18μm | 785 | 401 | 3.90kg |
| **3682-800** | 750-800mm | B | 18μm | 830 | 423 | 4.10kg |
| **3682-850** | 800-850mm | B | 20μm | 885 | 440 | 4.30kg |
| **3682-900** | 850-900mm | B | 20μm | 930 | 473 | 4.90kg |
| **3682-950** | 900-950mm | B | 22μm | 980 | 503 | 5.80kg |
| **3682-1000** | 950-1000mm | B | 22μm | 1030 | 520 | 6.10kg |



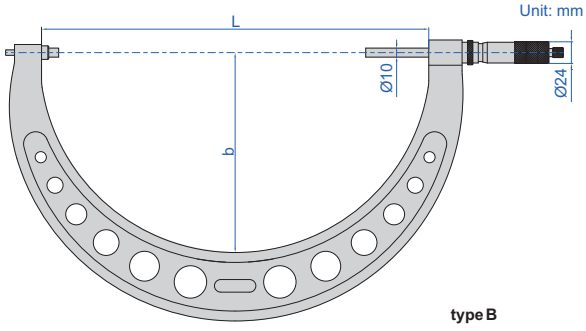

**3682-50**

Unit: mm




**type A**

Unit: mm




**type B**

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

## OUTSIDE MICROMETERS (GRADUATION 0.005mm)

INSIZE PLUS
MADE IN EUROPE

- Graduation 0.005mm
- Friction thimble
- One turn of sleeve makes 0.5mm spindle feed
- Carbide measuring faces
- Optional accessory: setting standards (code **7386**)

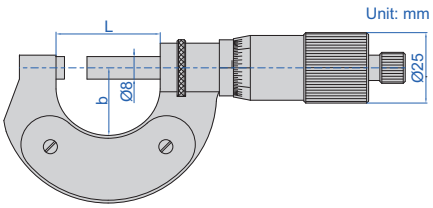



**3681-25**



(mm)

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3681-25** | 0-25mm | 4μm | 37 | 24 |
| **3681-50** | 25-50mm | 4μm | 62 | 34 |
| **3681-75** | 50-75mm | 5μm | 87 | 46 |
| **3681-100** | 75-100mm | 5μm | 112 | 60 |
| **3681-125** | 100-125mm | 6μm | 139 | 72 |
| **3681-150** | 125-150mm | 6μm | 164 | 85 |
| **3681-175** | 150-175mm | 7μm | 190 | 97 |
| **3681-200** | 175-200mm | 7μm | 215 | 110 |
| **3681-225** | 200-225mm | 8μm | 240 | 122 |
| **3681-250** | 225-250mm | 8μm | 264 | 135 |
| **3681-275** | 250-275mm | 9μm | 290 | 148 |
| **3681-300** | 275-300mm | 9μm | 315 | 160 |




INSPECTION CERTIFICATE

## OUTSIDE MICROMETERS

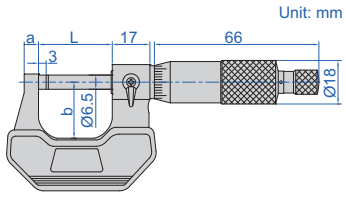
- Graduation 0.01mm
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm)



**3202-25A**

**Individual**

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3202-25A*** | 0-25mm | 4μm | 32mm | 6mm | 24mm |
| **3202-50A*** | 25-50mm | 4μm | 57mm | 8mm | 32mm |
| **3202-75A*** | 50-75mm | 5μm | 82mm | 8mm | 45mm |
| **3202-100A*** | 75-100mm | 5μm | 107mm | 8mm | 57mm |
| **3202-125A** | 100-125mm | 6μm | 133mm | 8mm | 70mm |
| **3202-150A** | 125-150mm | 6μm | 125mm | 8mm | 82mm |
| **3202-175A** | 150-175mm | 7μm | 183mm | 8mm | 95mm |
| **3202-200A** | 175-200mm | 7μm | 209mm | 8mm | 107mm |




**Set**

| Code | Range | Micrometers included |
|---|---|---|
| **3202-753A*** | 0-75mm | 3202-25A, 3202-50A, 3202-75A |
| **3202-1004A*** | 0-100mm | 3202-25A, 3202-50A, 3202-75A, 3202-100A |
| **3202-1506A** | 0-150mm | 3202-25A, 3202-50A, 3202-75A, 3202-100A 3202-125A, 3202-150A |

*Supplied with manufacturer inspection certificate

# OUTSIDE MICROMETERS

POPULAR MODEL

INSPECTION CERTIFICATE





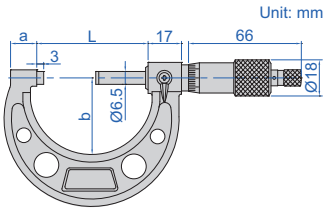

3203-25A



3203-50A






- Graduation: metric 0.01mm
  inch 0.0001"
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm and 0-1")

**Metric (ratchet stop type)**

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3203-25A*** | 0-25mm | ±2μm | 32mm | 9mm | 28mm |
| **3203-50A*** | 25-50mm | ±2μm | 57mm | 14mm | 38mm |
| **3203-75A*** | 50-75mm | ±2μm | 82mm | 15mm | 49mm |
| **3203-100A*** | 75-100mm | ±3μm | 107mm | 15mm | 60mm |
| **3203-125A** | 100-125mm | ±3μm | 133mm | 16.5mm | 73mm |
| **3203-150A** | 125-150mm | ±3μm | 158mm | 16.5mm | 85mm |
| **3203-175A** | 150-175mm | ±4μm | 183mm | 19.4mm | 104mm |
| **3203-200A** | 175-200mm | ±4μm | 209mm | 19.4mm | 117mm |
| **3203-225A** | 200-225mm | ±4μm | 234mm | 19.4mm | 130mm |
| **3203-250A** | 225-250mm | ±5μm | 260mm | 19.4mm | 142mm |
| **3203-275A** | 250-275mm | ±5μm | 285mm | 19.4mm | 155mm |
| **3203-300A** | 275-300mm | ±5μm | 310mm | 19.4mm | 168mm |

**Inch (ratchet stop type)**

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3203-1A*** | 0-1" | ±0.0001" | 1.260" | 0.354" | 1.102" |
| **3203-2A*** | 1-2" | ±0.0001" | 2.244" | 0.551" | 1.496" |
| **3203-3A*** | 2-3" | ±0.0001" | 3.228" | 0.591" | 1.929" |
| **3203-4A*** | 3-4" | ±0.00015" | 4.213" | 0.591" | 2.362" |
| **3203-5A*** | 4-5" | ±0.00015" | 5.236" | 0.650" | 2.874" |
| **3203-6A*** | 5-6" | ±0.00015" | 6.220" | 0.650" | 3.346" |
| **3203-7A** | 6-7" | ±0.0002" | 7.205" | 0.764" | 4.094" |
| **3203-8A** | 7-8" | ±0.0002" | 8.228" | 0.764" | 4.606" |
| **3203-9A** | 8-9" | ±0.0002" | 9.213" | 0.764" | 5.118" |
| **3203-10A** | 9-10" | ±0.00025" | 10.236" | 0.764" | 5.591" |
| **3203-11A** | 10-11" | ±0.00025" | 11.220" | 0.764" | 6.102" |
| **3203-12A** | 11-12" | ±0.00025" | 12.205" | 0.764" | 6.614" |



**3203-1004A**



**3203-3006A**

**Metric micrometer set (ratchet stop type)**

| Code | Range | Micrometers included | Packaging |
|---|---|---|---|
| **3203-753A*** | 0-75mm | 3203-25A, 3203-50A, 3203-75A | blow mould case |
| **3203-1004A*** | 0-100mm | 3203-25A, 3203-50A, 3203-75A, 3203-100A | blow mould case |
| **3203-1506A** | 0-150mm | 3203-25A, 3203-50A, 3203-75A, 3203-100A, 3203-125A, 3203-150A | blow mould case |
| **3203-3006A** | 150-300mm | 3203-175A, 3203-200A, 3203-225A, 3203-250A, 3203-275A, 3203-300A | aluminum box |
| **3203-3012A** | 0-300mm | 3203-25A, 3203-50A, 3203-75A, 3203-100A, 3203-125A, 3203-150A 3203-175A, 3203-200A, 3203-225A, 3203-250A, 3203-275A, 3203-300A | aluminum box |

To be continued

Continued from previous page

**Inch micrometer set (ratchet stop type)**

| Code | Range | Micrometers included | Packaging |
|---|---|---|---|
| **3203-33A*** | 0-3" | 3203-1A, 3203-2A, 3203-3A | blow mould case |
| **3203-44A*** | 0-4" | 3203-1A, 3203-2A, 3203-3A, 3203-4A | blow mould case |
| **3203-66A*** | 0-6" | 3203-1A, 3203-2A, 3203-3A, 3203-4A, 3203-5A, 3203-6A | blow mould case |
| **3203-126A** | 6-12" | 3203-7A, 3203-8A, 3203-9A, 3203-10A, 3203-11A, 3203-12A | aluminum box |
| **3203-1212A** | 0-12" | 3203-1A, 3203-2A, 3203-3A, 3203-4A, 3203-5A, 3203-6A, 3203-7A, 3203-8A, 3203-9A, 3203-10A, 3203-11A, 3203-12A | aluminum box |

**Inch (friction thimble type)**

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3203-1FA*** | 0-1" | ±0.0001" | 1.260" | 0.354" | 1.102" |
| **3203-2FA*** | 1-2" | ±0.0001" | 2.244" | 0.551" | 1.496" |
| **3203-3FA*** | 2-3" | ±0.0001" | 3.228" | 0.591" | 1.929" |
| **3203-4FA*** | 3-4" | ±0.00015" | 4.213" | 0.591" | 2.362" |
| **3203-5FA*** | 4-5" | ±0.00015" | 5.236" | 0.650" | 2.874" |
| **3203-6FA*** | 5-6" | ±0.00015" | 6.220" | 0.650" | 3.346" |
| **3203-7FA** | 6-7" | ±0.0002" | 7.205" | 0.764" | 4.094" |
| **3203-8FA** | 7-8" | ±0.0002" | 8.228" | 0.764" | 4.606" |
| **3203-9FA** | 8-9" | ±0.0002" | 9.213" | 0.764" | 5.118" |
| **3203-10FA** | 9-10" | ±0.00025" | 10.236" | 0.764" | 5.591" |
| **3203-11FA** | 10-11" | ±0.00025" | 11.220" | 0.764" | 6.102" |
| **3203-12FA** | 11-12" | ±0.00025" | 12.205" | 0.764" | 6.614" |

*Supplied with manufacturer inspection certificate



INSPECTION CERTIFICATE

## 1μm GRADUATION OUTSIDE MICROMETERS

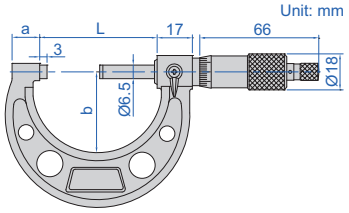
- Graduation 0.001mm
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm)



3210-25A

**Ratchet stop type** (mm)

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3210-25A*** | 0-25mm | 4μm | 32 | 9 | 28 |
| **3210-50A*** | 25-50mm | 4μm | 57 | 14 | 38 |
| **3210-75A*** | 50-75mm | 5μm | 82 | 15 | 49 |
| **3210-100A*** | 75-100mm | 5μm | 107 | 15 | 60 |
| **3210-125A** | 100-125mm | 6μm | 133 | 16.5 | 73 |
| **3210-150A** | 125-150mm | 6μm | 158 | 16.5 | 85 |
| **3210-175A** | 150-175mm | 7μm | 183 | 19.4 | 104 |
| **3210-200A** | 175-200mm | 7μm | 209 | 19.4 | 117 |




**Friction thimble type** (mm)

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3210-25FA*** | 0-25mm | 4μm | 32 | 9 | 28 |
| **3210-50FA*** | 25-50mm | 4μm | 57 | 14 | 38 |

**Micrometer set (ratchet stop type)**

| Code | Range | Micrometers included |
|---|---|---|
| **3210-753A*** | 0-75mm | 3210-25A, 3210-50A, 3210-75A |
| **3210-1004A*** | 0-100mm | 3210-25A, 3210-50A, 3210-75A, 3210-100A |
| **3210-1506A** | 0-150mm | 3210-25A, 3210-50A, 3210-75A, 3210-100A, 3210-125A, 3210-150A |

*Supplied with manufacturer inspection certificate






## OUTSIDE MICROMETERS WITH COUNTER

INSPECTION CERTIFICATE

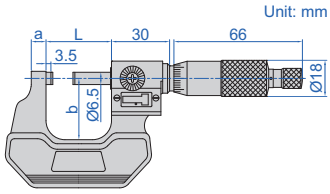


3400-25

- Counter resolution: 0.01mm
- Thimble graduation: 0.01mm
- Carbide measuring faces
- Meet DIN863-1
- Ratchet stop
- Supplied with setting standards (except 0-25mm)



| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3400-25** * | 0-25mm | 4μm | 32mm | 6mm | 26mm |
| **3400-50** * | 25-50mm | 4μm | 57mm | 8mm | 32mm |
| **3400-75** * | 50-75mm | 5μm | 82mm | 8mm | 44.5mm |
| **3400-100** * | 75-100mm | 5μm | 107mm | 8mm | 57mm |
| **3400-125** | 100-125mm | 6μm | 132.4mm | 17mm | 71.8mm |
| **3400-150** | 125-150mm | 6μm | 157.8mm | 17mm | 84mm |
| **3400-175** | 150-175mm | 7μm | 185mm | 20mm | 98.5mm |
| **3400-200** | 175-200mm | 7μm | 210.4mm | 20mm | 111mm |
| **3400-225** | 200-225mm | 8μm | 236mm | 20mm | 124mm |
| **3400-250** | 225-250mm | 8μm | 261mm | 20mm | 136.5mm |
| **3400-275** | 250-275mm | 9μm | 287mm | 20mm | 149mm |
| **3400-300** | 275-300mm | 9μm | 312mm | 20mm | 162mm |




*Supplied with manufacturer inspection certificate

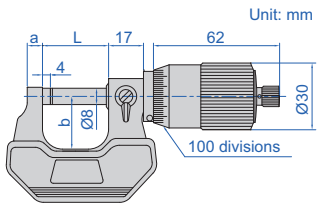
## QUICK FEEDING OUTSIDE MICROMETERS



3208-25B

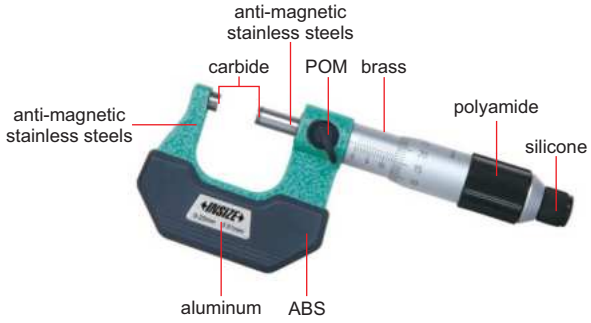
- Graduation 0.01mm
- 1mm feeding of each turn
- Friction thimble
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm)

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3208-25B** | 0-25mm | 4μm | 32mm | 6mm | 24mm |
| **3208-50B** | 25-50mm | 4μm | 57mm | 8mm | 32mm |
| **3208-75B** | 50-75mm | 5μm | 82mm | 8mm | 45mm |
| **3208-100B** | 75-100mm | 5μm | 107mm | 8mm | 57mm |
| **3208-125B** | 100-125mm | 6μm | 133mm | 8mm | 70mm |
| **3208-150B** | 125-150mm | 6μm | 158mm | 8mm | 82mm |
| **3208-175B** | 150-175mm | 7μm | 183mm | 8mm | 95mm |
| **3208-200B** | 175-200mm | 7μm | 209mm | 8mm | 107mm |



## NON MAGNETIC MICROMETERS

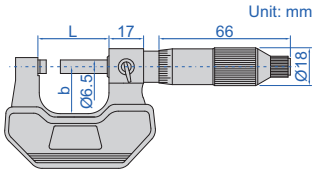
- Suitable for magnetic materials
- Graduation: 0.01mm
- Non magnetic carbide measuring faces
- Ratchet stop



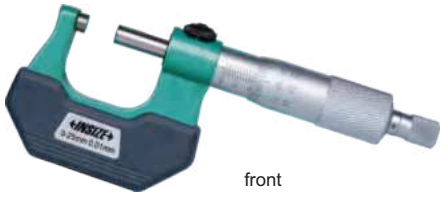

**3231-25A**



| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3231-25A** | 0-25mm | 4μm | 32mm | 24mm |
| **3231-50A** | 25-50mm | 4μm | 57mm | 32mm |
| **3231-75A** | 50-75mm | 5μm | 82mm | 45mm |
| **3231-100A** | 75-100mm | 5μm | 105mm | 57mm |




## OUTSIDE MICROMETERS FOR LEFT OR RIGHT HANDERS



front

- Graduation 0.01mm
- Graduations on two sides
- Ratchet stop
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm)

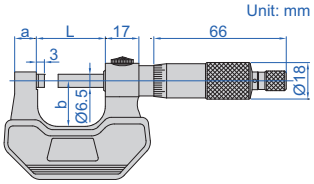


back

**3236-25B**

**(mm)**

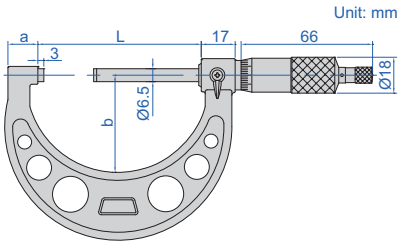
| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3236-25B** | 0-25mm | 4μm | 32 | 6 | 24 |
| **3236-50B** | 25-50mm | 4μm | 57 | 8 | 32 |
| **3236-75B** | 50-75mm | 5μm | 82 | 8 | 45 |
| **3236-100B** | 75-100mm | 5μm | 107 | 8 | 57 |
| **3236-125B** | 100-125mm | 6μm | 133 | 8 | 70 |
| **3236-150B** | 125-150mm | 6μm | 158 | 8 | 82 |
| **3236-175B** | 150-175mm | 7μm | 183 | 8 | 95 |
| **3236-200B** | 175-200mm | 7μm | 209 | 8 | 107 |



## LONG SPINDLE OUTSIDE MICROMETERS



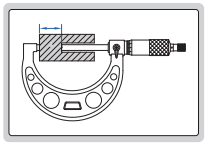
3209-25

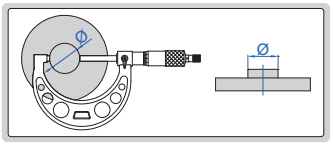



- Graduation 0.01mm
- Carbide measuring faces
- Meet DIN863-1
- Ratchet stop
- Supplied with setting standards (except 0-25mm)

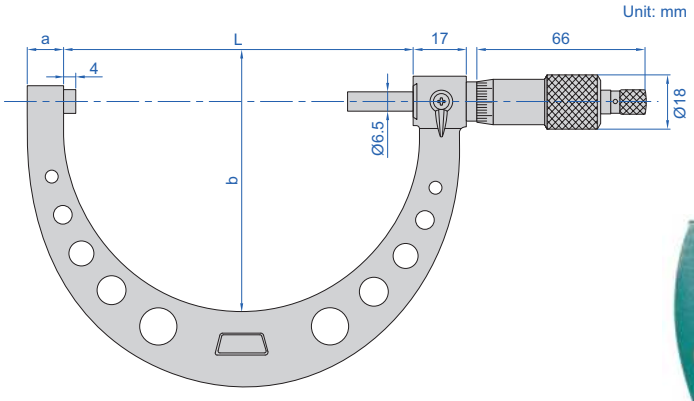


| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| 3209-25 | 0-25mm | 4μm | 57mm | 14mm | 38mm |
| 3209-50 | 25-50mm | 4μm | 82mm | 15mm | 49mm |
| 3209-75 | 50-75mm | 5μm | 107mm | 15mm | 60mm |
| 3209-100 | 75-100mm | 5μm | 133mm | 16.5mm | 73mm |






## OUTSIDE MICROMETERS (STEEL PLATE FRAME)







3216-425

- Graduation: 0.01mm
- Carbide measuring faces
- Meet DIN863-1
- Ratchet stop
- Supplied with setting standards

(mm)

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| 3216-325 | 300-325mm | 10μm | 338 | 20 | 176 |
| 3216-350 | 325-350mm | 10μm | 364 | 20 | 192 |
| 3216-375 | 350-375mm | 11μm | 389 | 20 | 202 |
| 3216-400 | 375-400mm | 11μm | 414 | 20 | 217 |
| 3216-425 | 400-425mm | 12μm | 440 | 20 | 226 |
| 3216-450 | 425-450mm | 12μm | 465 | 20 | 241 |
| 3216-475 | 450-475mm | 13μm | 491 | 20 | 255 |
| 3216-500 | 475-500mm | 13μm | 516 | 20 | 268 |



setting standard (included)

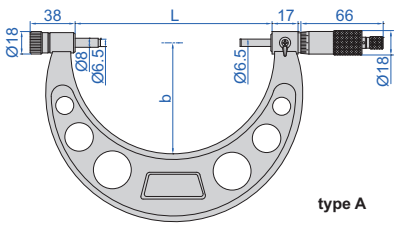
# OUTSIDE MICROMETERS WITH INTERCHANGEABLE ANVILS




**3206-150A**

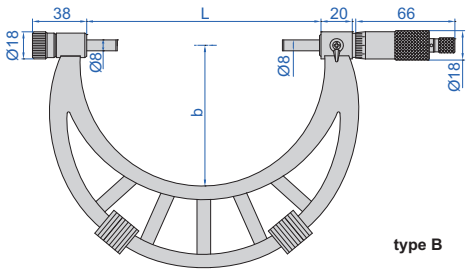



**3206-400**



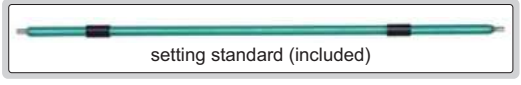

type A

Unit: mm

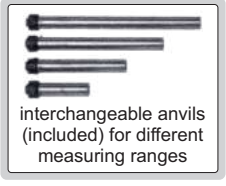



type B

- Graduation 0.01mm
- Ratchet stop
- Meet DIN863-3
- Carbide measuring faces
- Supplied with setting standards



setting standard (included)



interchangeable anvils (included) for different measuring ranges

**(mm)**

| Code | Range | Type | Accuracy | L | b | Setting standard (included) |
|---|---|---|---|---|---|---|
| **3206-50A** | 0-50mm | A | 4μm | 58 | 35 | 25 |
| **3206-100A** | 0-100mm | A | 5μm | 108 | 57 | 25, 50, 75 |
| **3206-150A** | 0-150mm | A | 6μm | 158 | 82 | 25, 50, 75, 100, 125 |
| **3206-151A** | 50-150mm | A | 6μm | 158 | 82 | 50, 75, 100, 125 |
| **3206-200A** | 100-200mm | A | 7μm | 208 | 114 | 100, 125, 150, 175 |
| **3206-300A** | 150-300mm | A | 9μm | 308 | 165 | 150, 175, 200, 225, 250, 275 |
| **3206-301A** | 200-300mm | A | 9μm | 308 | 165 | 200, 225, 250, 275 |
| **3206-400** | 300-400mm | B | 11μm | 409 | 224 | 325, 375 |
| **3206-500** | 400-500mm | B | 13μm | 509 | 275 | 425, 475 |
| **3206-600** | 500-600mm | B | 14μm | 609 | 321 | 525, 575 |
| **3206-700** | 600-700mm | B | 16μm | 709 | 371 | 625, 675 |
| **3206-800** | 700-800mm | B | 18μm | 809 | 426 | 725, 775 |
| **3206-900** | 800-900mm | B | 20μm | 909 | 476 | 825, 875 |
| **3206-1000** | 900-1000mm | B | 22μm | 1009 | 576 | 925, 975 |

# DIGITAL OUTSIDE MICROMETERS WITH INTERCHANGEABLE ANVILS

IP65 WATERPROOF

DATA OUTPUT



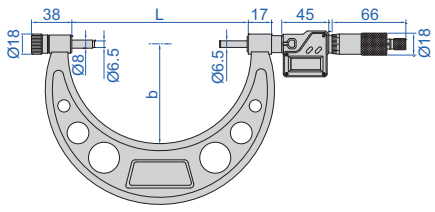



3506-100A



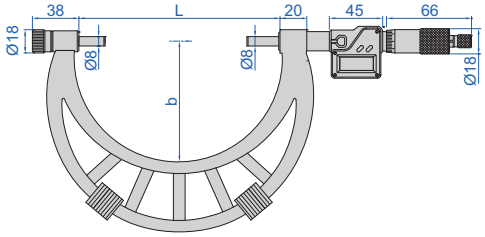

3506-400A

Unit: mm



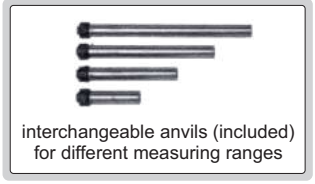

type A

Unit: mm




type B

- Resolution 0.001mm/0.0001" (resolution of **3506-100A** and **3506-150A** is 0.001mm/0.00005")
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: wireless transmitter code **7315-31** (receiver is needed) page 6, bluetooth transmitter code **7214-31** page 12, data output cable code **7302-31** page 20



interchangeable anvils (included) for different measuring ranges



setting standard (included)

**(mm)**

| Code | Range | Type | Accuracy | L | b | Setting standard (included) |
|---|---|---|---|---|---|---|
| **3506-100A** | 0-100mm/0-4" | A | ±5μm | 105 | 57 | 25, 50, 75 |
| **3506-150A** | 0-150mm/0-6" | A | ±6μm | 155 | 82 | 25, 50, 75, 100, 125 |
| **3506-300A** | 150-300mm/6-12" | A | ±8μm | 305 | 165 | 150, 175, 200, 225, 250, 275 |
| **3506-301A** | 200-300mm/8-12" | A | ±8μm | 305 | 165 | 200, 225, 250, 275 |
| **3506-400A** | 300-400mm/12-16" | B | ±9μm | 405 | 224 | 325, 375 |
| **3506-500A** | 400-500mm/16-20" | B | ±11μm | 505 | 275 | 425, 475 |
| **3506-600A** | 500-600mm/20-24" | B | ±12μm | 605 | 321 | 525, 575 |
| **3506-700A** | 600-700mm/24-28" | B | ±13μm | 705 | 371 | 625, 675 |
| **3506-800A** | 700-800mm/28-32" | B | ±15μm | 805 | 426 | 725, 775 |
| **3506-900A** | 800-900mm/32-36" | B | ±16μm | 905 | 476 | 825, 875 |
| **3506-1000A** | 900-1000mm/36-40" | B | ±17μm | 1005 | 576 | 925, 975 |

# OUTSIDE MICROMETERS WITH INTERCHANGEABLE ANVILS

INSIZE PLUS
MADE IN EUROPE

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

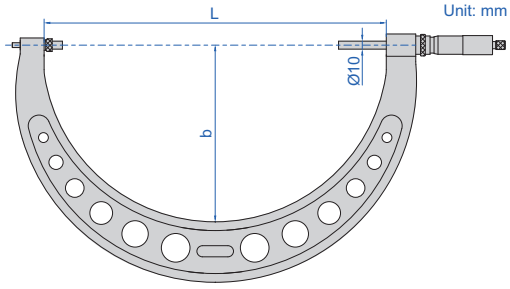
LIGHT WEIGHT

QUICK MEASUREMENT
ONE TURN OF SLEEVE OR RATCHET STOP MAKES 1MM SPINDLE FEED





3675-300




interchangeable anvil (included)
for different measuring ranges



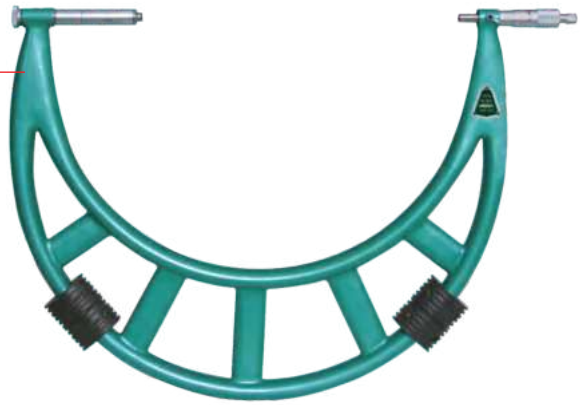
- Graduation 0.01mm
- Ratchet stop
- Meet DIN863-3
- Carbide measuring faces
- Light weight
- Optional accessory: setting standards (code **7386**)

(mm)

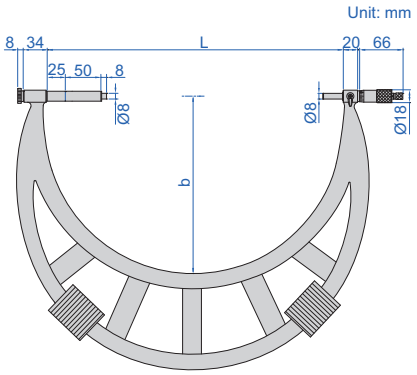
| Code | Range | Accuracy | L | b | Weight |
|---|---|---|---|---|---|
| **3675-200** | 100-200mm | 6μm | 240 | 122 | 1.2kg |
| **3675-300** | 200-300mm | 6μm | 325 | 165 | 1.5kg |
| **3675-400** | 300-400mm | 7μm | 430 | 220 | 1.9kg |
| **3675-500** | 400-500mm | 8μm | 530 | 273 | 2.4kg |
| **3675-600** | 500-600mm | 9μm | 630 | 323 | 3.1kg |
| **3675-700** | 600-700mm | 9μm | 730 | 378 | 3.8kg |
| **3675-800** | 700-800mm | 9μm | 830 | 423 | 4.2kg |
| **3675-900** | 800-900mm | 10μm | 930 | 473 | 5kg |
| **3675-1000** | 900-1000mm | 10μm | 1030 | 520 | 6.2kg |
| **3675-1100** | 1000-1100mm | 11μm | 1135 | 585 | 7.6kg |
| **3675-1200** | 1100-1200mm | 11μm | 1230 | 635 | 8.6kg |
| **3675-1300** | 1200-1300mm | 12μm | 1335 | 685 | 9.7kg |
| **3675-1400** | 1300-1400mm | 12μm | 1430 | 735 | 11.3kg |
| **3675-1500** | 1400-1500mm | 13μm | 1530 | 780 | 12.5kg |
| **3675-1600** | 1500-1600mm | 18μm | 1660 | 840 | 13.6kg |
| **3675-1700** | 1600-1700mm | 19μm | 1765 | 890 | 14.9kg |
| **3675-1800** | 1700-1800mm | 20μm | 1870 | 940 | 16.2kg |
| **3675-1900** | 1800-1900mm | 21μm | 1970 | 1000 | 17.5kg |
| **3675-2000** | 1900-2000mm | 22μm | 2075 | 1055 | 18.8kg |

# OUTSIDE MICROMETERS WITH EXTENSION ANVIL COLLAR






3205-400

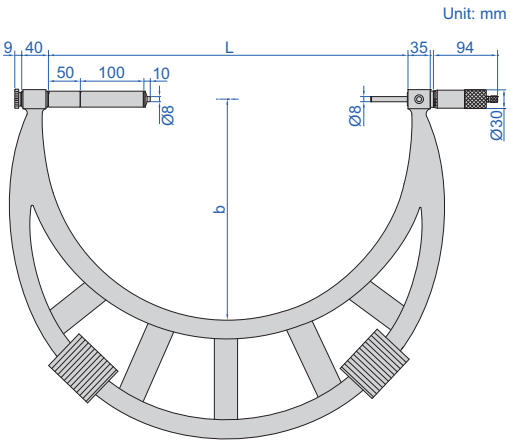



type A



adjust collars for different measuring ranges




type B

- Graduation 0.01mm
- Adjust collars for different measuring ranges
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards

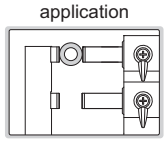
(mm)

| Code | Range | Type | Accuracy | L | b | Setting standard (included) |
|---|---|---|---|---|---|---|
| **3205-400** | 300-400mm | A | 11μm | 410 | 250 | 325, 375 |
| **3205-500** | 400-500mm | A | 13μm | 510 | 295 | 425, 475 |
| **3205-600** | 500-600mm | A | 14μm | 610 | 345 | 525, 575 |
| **3205-700** | 600-700mm | A | 16μm | 710 | 395 | 625, 675 |
| **3205-800** | 700-800mm | A | 18μm | 810 | 445 | 725, 775, |
| **3205-900** | 800-900mm | A | 20μm | 910 | 495 | 825, 875 |
| **3205-1000** | 900-1000mm | A | 22μm | 1010 | 545 | 925, 975 |
| **3205-1200** | 1000-1200mm | B | 22μm | 1210 | 645 | 1050, 1150 |
| **3205-1400** | 1200-1400mm | B | 24μm | 1410 | 745 | 1250, 1350 |
| **3205-1600** | 1400-1600mm | B | 28μm | 1610 | 845 | 1450, 1550 |
| **3205-1800** | 1600-1800mm | B | 31μm | 1810 | 945 | 1650, 1750 |
| **3205-2000** | 1800-2000mm | B | 34μm | 2010 | 1045 | 1850, 1950 |

## LIMIT MICROMETERS

- Used as Go/No-Go gauge by setting upper and lower limits
- Graduation 0.002mm
- Carbide measuring faces
- Supplied with setting standard (except 0-25mm)

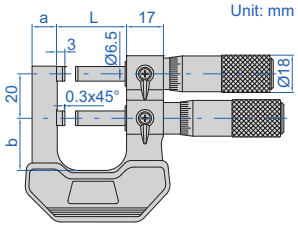
application





**3235-25A**

Unit: mm




| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3235-25A** | 0-25mm | 4µm | 32mm | 12mm | 24mm |
| **3235-50A** | 25-50mm | 4µm | 57mm | 15mm | 32mm |

**ATTENTION: SETTING STANDARDS ARE NOT INCLUDED**

INSPECTION CERTIFICATE

## INDICATING MICROMETERS

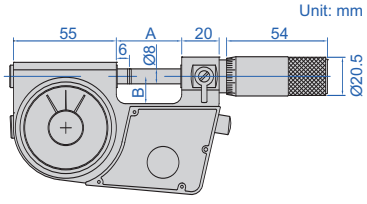
INSIZE PLUS
MADE IN EUROPE

- Meet DIN863-3
- Carbide measuring faces
- Measuring force 5-10N
- Dial can be adjusted
- Optional accessory: gauge blocks grade 0 (**4101-A** series), for zero setting



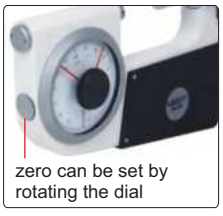
**3333-25**

Unit: mm




**(mm)**

| Code | Micrometer head | | | Dial indicator | | | A | B |
|---|---|---|---|---|---|---|---|---|
| | range | graduation | accuracy | range | graduation | accuracy | | |
| **3333-25*** | 0-25mm | 0.01mm | 4µm | ±0.07mm | 1µm | ±1µm | 35.5 | 15 |
| **3333-252*** | 0-25mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 35.5 | 15 |
| **3333-50*** | 25-50mm | 0.01mm | 4µm | ±0.07mm | 1µm | ±1µm | 60.5 | 25 |
| **3333-502*** | 25-50mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 60.5 | 25 |
| **3333-75*** | 50-75mm | 0.01mm | 4µm | ±0.07mm | 1µm | ±1µm | 88 | 37.5 |
| **3333-752*** | 50-75mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 88 | 37.5 |
| **3333-100*** | 75-100mm | 0.01mm | 4µm | ±0.07mm | 1µm | ±1µm | 111 | 50 |
| **3333-1002*** | 75-100mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 111 | 50 |
| **3333-125*** | 100-125mm | 0.01mm | 4µm | ±0.07mm | 1µm | ±1µm | 136 | 62.5 |
| **3333-1252*** | 100-125mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 136 | 62.5 |
| **3333-150*** | 125-150mm | 0.01mm | 4µm | ±0.07mm | 1µm | ±1µm | 161 | 75 |
| **3333-1502*** | 125-150mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 161 | 75 |
| **3333-175*** | 150-175mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 186 | 88 |
| **3333-200*** | 175-200mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 211 | 101 |
| **3333-225*** | 200-225mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 236 | 113 |
| **3333-250*** | 225-250mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 261 | 126 |
| **3333-275*** | 250-275mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 286 | 138 |
| **3333-300*** | 275-300mm | 0.01mm | 4µm | ±0.14mm | 2µm | ±2µm | 311 | 151 |



zero can be set by rotating the dial

*Supplied with manufacturer inspection certificate

# BLUETOOTH DIGITAL INDICATING MICROMETERS

**IP54** WATERPROOF

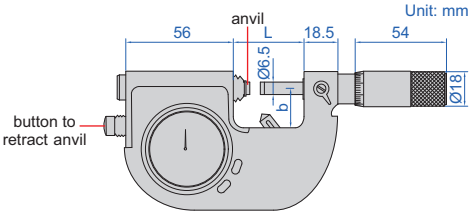
BUILT-IN BLUETOOTH

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

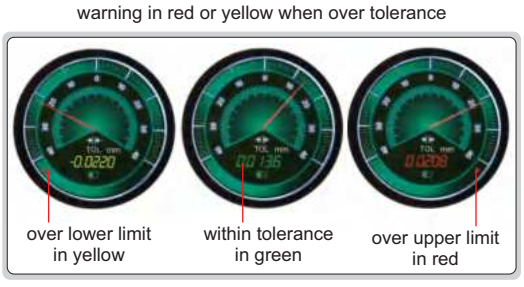



**3507-25**






- Meet DIN863-3
- Absolute encoder, the original data remains after power off
- Measuring stroke of anvil: 3mm
- Reading in digital and analog
- Button function: on/off, zero setting, mm/inch, tolerance, display setting, bluetooth, signal mode setting, data output
- Android and iPhone APP, USB type-C cable are included
- Carbide measuring faces
- Power: rechargeable Li-battery, for 20 hours continuous working (bluetooth transmission reduces working hours)
- Optional accessory: gauge blocks grade 0 (**4101-A** series), for zero setting





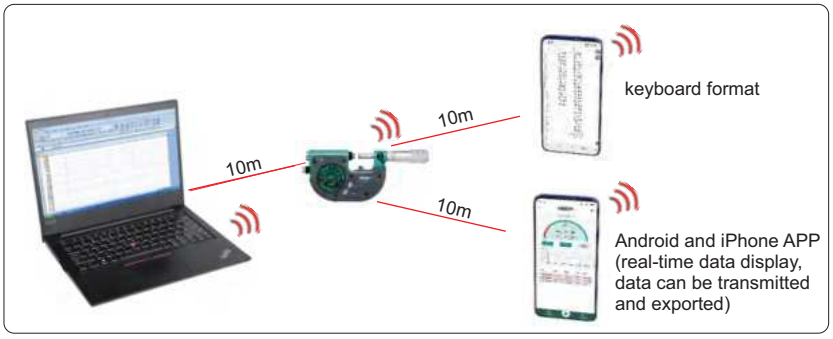


**(mm)**

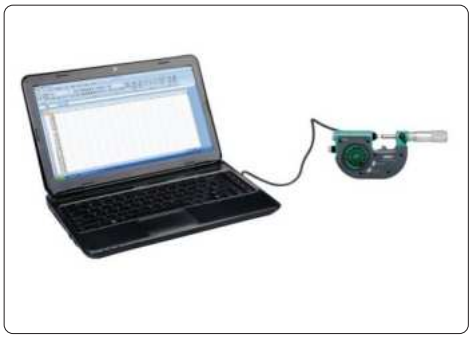
| Code | Micrometer head | | | Digital indicator | | | Repeatability | L | b | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | range | graduation | accuracy | range | resolution | accuracy | | | | |
| **3507-25** | 0-25mm | 0.002mm | 3μm | ±0.04mm | 0.1μm | ±1μm | 0.3μm | 35.5 | 15 | includes charge pal |
| **3507-50** | 25-50mm | 0.002mm | 3μm | ±0.04mm | 0.1μm | ±1μm | 0.3μm | 60.5 | 25 | includes charge pal |
| **3507-75** | 50-75mm | 0.002mm | 3μm | ±0.04mm | 0.1μm | ±1μm | 0.3μm | 86 | 37.5 | includes charge pal |
| **3507-100** | 75-100mm | 0.002mm | 3μm | ±0.04mm | 0.1μm | ±1μm | 0.3μm | 111 | 50 | includes charge pal |
| **3507-25B** | 0-25mm | 0.002mm | 3μm | ±0.04mm | 0.2μm | ±1μm | 0.3μm | 35.5 | 15 | — |
| **3507-50B** | 25-50mm | 0.002mm | 3μm | ±0.04mm | 0.2μm | ±1μm | 0.3μm | 60.5 | 25 | — |
| **3507-75B** | 50-75mm | 0.002mm | 3μm | ±0.04mm | 0.2μm | ±1μm | 0.3μm | 86 | 37.5 | — |
| **3507-100B** | 75-100mm | 0.002mm | 3μm | ±0.04mm | 0.2μm | ±1μm | 0.3μm | 111 | 50 | — |

**Data output**

| | | | |
|---|---|---|---|
| **Data output with bluetooth (transmission distance is 10 meters)** | keyboard format | data can be transmitted to Excel, Word, txt, etc. | single transmission |
| | virtual com port | data can be transmitted to Android and iPhone APP | real-time display, data can be transmitted and exported |
| **Data output with USB cable (cable length 1.8 meters)** | keyboard format | data can be transmitted to Excel, Word, txt, etc. | single transmission |
| | virtual com port | data can be transmitted to serial communication software | single transmission |




data output with bluetooth (included)



data output with USB cable (included)

**IP54** WATERPROOF

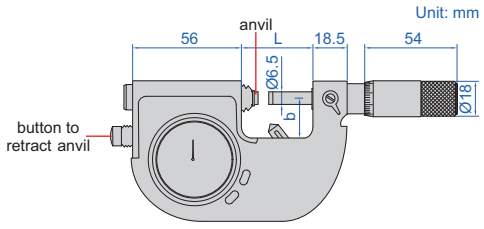
ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

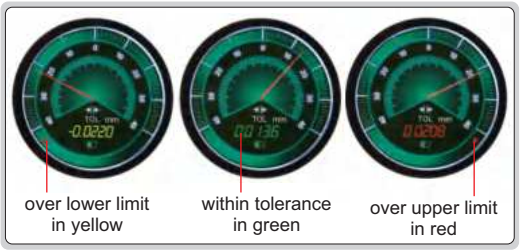
# DIGITAL INDICATING MICROMETERS (WITHOUT DATA OUTPUT)



**3508-25**




warning in red or yellow when over tolerance




- Meet DIN863-3
- Absolute encoder, the original data remains after power off
- Measuring stroke of anvil: 3mm
- Reading in digital and analog
- Button function: on/off, zero setting, mm/inch, tolerance, display setting
- Carbide measuring faces
- Power: rechargeable Li-battery, for 20 hours continuous working
- Optional accessory: gauge blocks grade 0 (**4101-A** series), for zero setting

**(mm)**

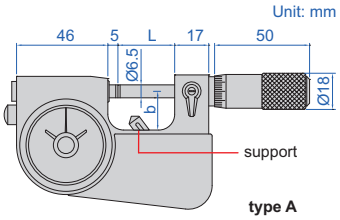
| Code | Micrometer head | | | Digital indicator | | | Repeatability | L | b |
|---|---|---|---|---|---|---|---|---|---|
| | range | graduation | accuracy | range | resolution | accuracy | | | |
| **3508-25** | 0-25mm | 0.002mm | 3μm | ±0.04mm | 0.2μm | ±1μm | 0.3μm | 35.5 | 15 |
| **3508-50** | 25-50mm | 0.002mm | 3μm | ±0.04mm | 0.2μm | ±1μm | 0.3μm | 60.5 | 25 |
| **3508-75** | 50-75mm | 0.002mm | 3μm | ±0.04mm | 0.2μm | ±1μm | 0.3μm | 86 | 37.5 |
| **3508-100** | 75-100mm | 0.002mm | 3μm | ±0.04mm | 0.2μm | ±1μm | 0.3μm | 111 | 50 |
| **3508-25B** | 0-25mm | 0.002mm | 3μm | ±0.04mm | 0.5μm | ±1μm | 0.3μm | 35.5 | 15 |
| **3508-50B** | 25-50mm | 0.002mm | 3μm | ±0.04mm | 0.5μm | ±1μm | 0.3μm | 60.5 | 25 |
| **3508-75B** | 50-75mm | 0.002mm | 3μm | ±0.04mm | 0.5μm | ±1μm | 0.3μm | 86 | 37.5 |
| **3508-100B** | 75-100mm | 0.002mm | 3μm | ±0.04mm | 0.5μm | ±1μm | 0.3μm | 111 | 50 |

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

# INDICATING MICROMETERS

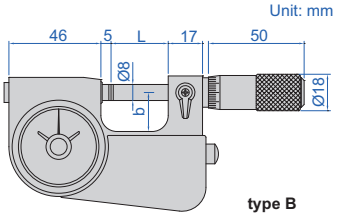


**3332-25**






**3332-25B**




- Meet DIN863-3
- Micrometer head graduation: 0.002mm
- Dial indicator: range ±0.04mm, graduation 0.001mm, accuracy 0.001mm
- Carbide measuring faces
- Optional accessory: gauge blocks grade 0 (**4101-A** series), for zero setting

**(mm)**

| Code | Micrometer head range | Micrometer head accuracy | Type | L | b | Remark |
|---|---|---|---|---|---|---|
| **3332-25** | 0-25mm | 4μm | A | 28.5 | 19 | with support |
| **3332-50** | 25-50mm | 4μm | A | 53.5 | 30 | with support |
| **3332-75** | 50-75mm | 5μm | A | 78.5 | 45 | without support |
| **3332-100** | 75-100mm | 5μm | A | 103.5 | 57 | without support |
| **3332-25B** | 0-25mm | 4μm | B | 28.5 | 19 | without support |

## MICROMETERS WITH DIAL INDICATOR

INSIZE PLUS
MADE IN EUROPE

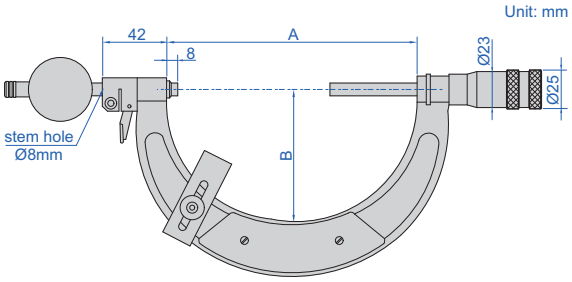
ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

INSPECTION CERTIFICATE

digital indicator is optional




3346-25




(mm)

| Code | Micrometer head range | Micrometer head graduation | Micrometer head accuracy | A | B |
|---|---|---|---|---|---|
| **3346-25*** | 0-25mm | 5µm | 4µm | 37 | 24 |
| **3346-50*** | 25-50mm | 5µm | 4µm | 62 | 34 |
| **3346-75*** | 50-75mm | 5µm | 5µm | 87 | 46 |
| **3346-100*** | 75-100mm | 5µm | 5µm | 112 | 60 |
| **3346-150*** | 100-150mm | 5µm | 6µm | 164 | 85 |
| **3346-200*** | 150-200mm | 5µm | 7µm | 215 | 110 |
| **3346-250*** | 200-250mm | 5µm | 8µm | 264 | 135 |
| **3346-300*** | 250-300mm | 5µm | 9µm | 315 | 160 |

* Supplied with manufacturer inspection certificate

- Anvil retracting range: 2.5mm
- Carbide measuring faces
- Parallelism of measuring faces: 1µm
- Optional accessory: dial indicator (code **2890-1F**), digital indicator, gauge blocks grade 1 (**4101-B** series), for zero setting

## MICROMETERS WITH DIAL INDICATOR

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

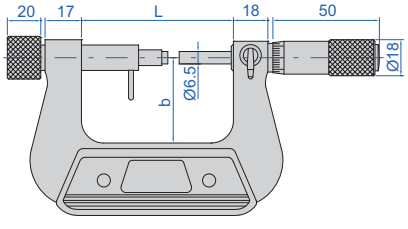
- Meet DIN863-3
- Micrometer head graduation 0.01mm
- Anvil retracting range: 8mm
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)
- Optional accessory: dial indicators (graduation 0.01mm), digital indicators (resolution 0.01mm/0.0005")



digital indicator is optional

3331-25A

| Code | Micrometer head range | Micrometer head accuracy | L | b |
|---|---|---|---|---|
| **3331-25A** | 0-25mm | 4µm | 67mm | 38mm |
| **3331-50A** | 25-50mm | 4µm | 92.4mm | 50mm |
| **3331-75A** | 50-75mm | 5µm | 117.6mm | 62mm |
| **3331-100A** | 75-100mm | 5µm | 143mm | 70mm |
| **3331-125A** | 100-125mm | 6µm | 168.2mm | 82mm |
| **3331-150A** | 125-150mm | 6µm | 192mm | 94.5mm |
| **3331-175A** | 150-175mm | 7µm | 217mm | 107mm |






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ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

LIGHT WEIGHT

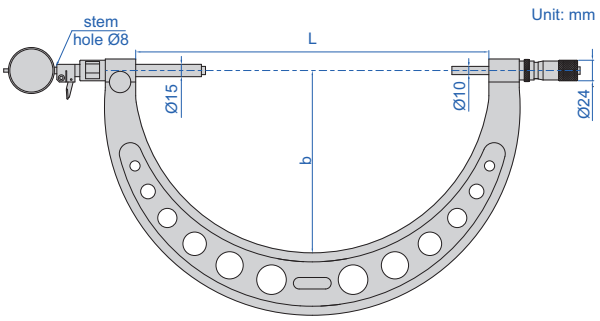
# MICROMETERS WITH DIAL INDICATOR

INSIZE PLUS
MADE IN EUROPE



**digital indicator is optional**




**3685-300**

- Graduation 0.01mm
- Anvil with vernier graduation, convenient adjustment for different measuring ranges
- Meet DIN863-3
- Carbide measuring faces
- Anvil retracting range: 2.5mm
- Optional accessory: dial/digital indicators, setting standards (code **7386**)

anvil with vernier graduation,
can be adjusted for different measuring ranges



**Range 100mm** **(mm)**

| Code | Range | Micrometer head accuracy | L | b | Weight |
|---|---|---|---|---|---|
| **3685-300** | 200-300mm | 6μm | 320 | 165 | 1.7kg |
| **3685-400** | 300-400mm | 7μm | 430 | 220 | 2.1kg |
| **3685-500** | 400-500mm | 8μm | 530 | 273 | 2.6kg |
| **3685-600** | 500-600mm | 9μm | 630 | 323 | 3.3kg |
| **3685-700** | 600-700mm | 9μm | 730 | 378 | 4.0kg |
| **3685-800** | 700-800mm | 9μm | 830 | 423 | 4.4kg |
| **3685-900** | 800-900mm | 10μm | 930 | 473 | 5.2kg |
| **3685-1000** | 900-1000mm | 10μm | 1030 | 520 | 6.4kg |

**Range 200mm** **(mm)**

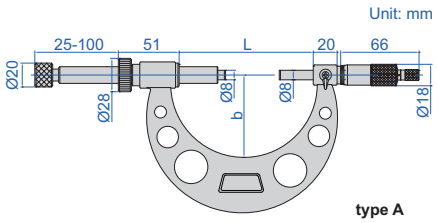
| Code | Range | Micrometer head accuracy | L | b | Weight |
|---|---|---|---|---|---|
| **3685-402** | 200-400mm | 7μm | 430 | 220 | 2.2kg |
| **3685-602** | 400-600mm | 9μm | 630 | 323 | 3.4kg |
| **3685-802** | 600-800mm | 9μm | 830 | 423 | 4.5kg |
| **3685-1002** | 800-1000mm | 10μm | 1030 | 520 | 6.5kg |
| **3685-1202** | 1000-1200mm | 11μm | 1230 | 635 | 8.9kg |
| **3685-1402** | 1200-1400mm | 12μm | 1430 | 735 | 11.6kg |
| **3685-1602** | 1400-1600mm | 18μm | 1660 | 840 | 13.9kg |
| **3685-1802** | 1600-1800mm | 20μm | 1870 | 940 | 16.5kg |
| **3685-2002** | 1800-2000mm | 22μm | 2075 | 1055 | 19.1kg |

## MICROMETERS WITH DIAL INDICATOR

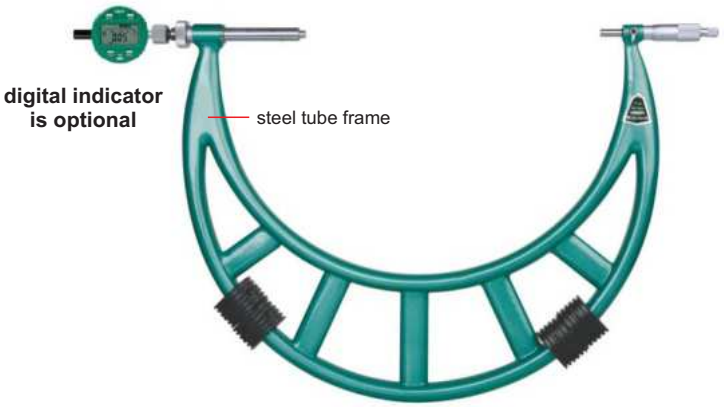
**ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS**



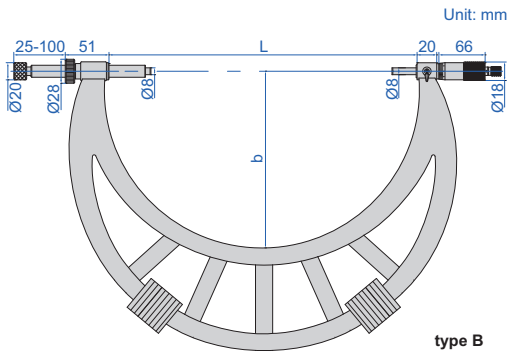

**3296-100A**




type A




**3296-400A**




type B

(mm)

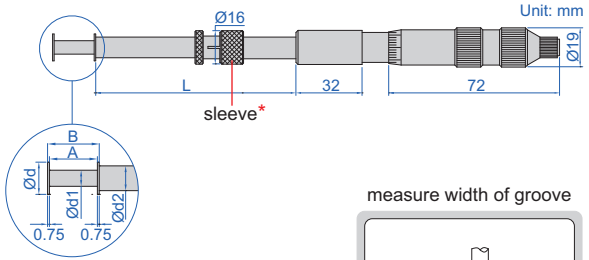
| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3296-100A** | 0-100mm | A | 6μm | 115 | 68 |
| **3296-200A** | 100-200mm | A | 7μm | 215 | 120 |
| **3296-300A** | 200-300mm | A | 8μm | 315 | 170 |
| **3296-400A** | 300-400mm | B | 9μm | 415 | 225 |
| **3296-500A** | 400-500mm | B | 10μm | 515 | 275 |
| **3296-600A** | 500-600mm | B | 11μm | 615 | 325 |
| **3296-700A** | 600-700mm | B | 12μm | 715 | 375 |
| **3296-800A** | 700-800mm | B | 13μm | 815 | 430 |
| **3296-900A** | 800-900mm | B | 14μm | 915 | 480 |
| **3296-1000A** | 900-1000mm | B | 15μm | 1015 | 530 |

- Meet DIN863-3
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: dial indicators (graduation 0.01mm) digital indicators (resolution 0.01mm/0.0005")

## GROOVE MICROMETERS



**3287-50B**



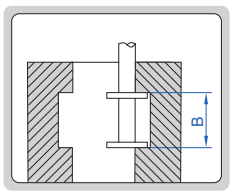

- Measure width of grooves inside bores
- Graduation 0.01mm
- Two graduations for inside and outside measurements
- Non-rotating spindle
- Two-directional ratchet stop

(mm)

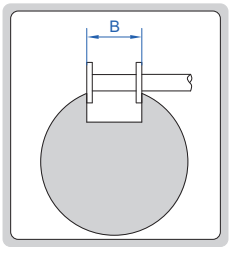
| Code | Range (outside A) | Range (inside B) | Accuracy | L | Ød | Ød1 | Ød2 |
|---|---|---|---|---|---|---|---|
| **3287-25B** | 0-25mm | 1.6-26.5mm | 10μm | 120 | 13 | 6.5 | 10 |
| **3287-50B** | 25-50mm | 26.5-51.5mm | 10μm | 120 | 13 | 6.5 | 10 |
| **3287-75B** | 50-75mm | 51.5-76.5mm | 10μm | 120 | 13 | 6.5 | 10 |
| **3287-100B** | 75-100mm | 76.5-101.5mm | 10μm | 120 | 13 | 6.5 | 10 |
| **3287-125B** | 100-125mm | 101.5-126.5mm | 15μm | 120 | 13 | 6.5 | 10 |
| **3287-150B** | 125-150mm | 126.5-151.5mm | 15μm | 120 | 13 | 6.5 | 10 |
| **3287-251B*** | 0-25mm | 1.6-26.5mm | 10μm | 90 | 6.5 | 3 | 5 |

***3287-251B** does not have sleeve

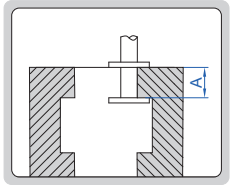
measure width of groove




measure width of keyway




measure position of groove



VIDEO

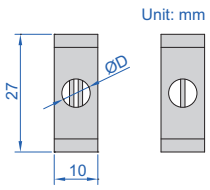
INSPECTION CERTIFICATE

## 3-WIRES

- Used with standard outside micrometers to measure pitch diameter of screw threads
- Diameter accuracy: ±0.5μm
- Cylindricity: 1μm
- Hardness: HRC60
- Supplied with manufacturer inspection certificate
- Scope of application: outside diameter of thread ≤50mm




7382-19




application



**For outside micrometers with spindle Ø6.35mm (ØD)**

| Code | Pin gauge diameter | Applicable pitch |
|---|---|---|
| 7382-11 | Ø0.170mm | 0.2mm, 0.25mm, 0.3mm |
| 7382-12 | Ø0.195mm | 0.35mm |
| 7382-13 | Ø0.220mm | 0.4mm |
| 7382-14 | Ø0.250mm | 0.45mm |
| 7382-15 | Ø0.290mm | 0.5mm |
| 7382-16 | Ø0.335mm | 0.6mm |
| 7382-17 | Ø0.390mm | 0.7mm |
| 7382-18 | Ø0.455mm | 0.75mm, 0.8mm |
| 7382-19 | Ø0.530mm | 0.9mm |
| 7382-110 | Ø0.620mm | 1.0mm |
| 7382-111 | Ø0.725mm | 1.25mm |
| 7382-112 | Ø0.895mm | 1.5mm |
| 7382-113 | Ø1.100mm | 1.75mm, 2.0mm |
| 7382-114 | Ø1.350mm | 2.5mm |
| 7382-115 | Ø1.650mm | 3.0mm |
| 7382-116 | Ø2.050mm | 3.5mm |
| 7382-117 | Ø2.550mm | 4mm, 4.5mm |
| 7382-118 | Ø3.200mm | 5mm, 5.5mm, 6mm |
| 7382-1S | 18 pairs/set, including all above 3-wires | |

**For outside micrometers with spindle Ø6.50mm (ØD)**

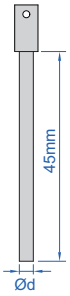
| Code | Pin gauge diameter | Applicable pitch |
|---|---|---|
| 7382-21 | Ø0.170mm | 0.2mm, 0.25mm, 0.3mm |
| 7382-22 | Ø0.195mm | 0.35mm |
| 7382-23 | Ø0.220mm | 0.4mm |
| 7382-24 | Ø0.250mm | 0.45mm |
| 7382-25 | Ø0.290mm | 0.5mm |
| 7382-26 | Ø0.335mm | 0.6mm |
| 7382-27 | Ø0.390mm | 0.7mm |
| 7382-28 | Ø0.455mm | 0.75mm, 0.8mm |
| 7382-29 | Ø0.530mm | 0.9mm |
| 7382-210 | Ø0.620mm | 1.0mm |
| 7382-211 | Ø0.725mm | 1.25mm |
| 7382-212 | Ø0.895mm | 1.5mm |
| 7382-213 | Ø1.100mm | 1.75mm, 2.0mm |
| 7382-214 | Ø1.350mm | 2.5mm |
| 7382-215 | Ø1.650mm | 3.0mm |
| 7382-216 | Ø2.050mm | 3.5mm |
| 7382-217 | Ø2.550mm | 4mm, 4.5mm |
| 7382-218 | Ø3.200mm | 5mm, 5.5mm, 6mm |
| 7382-2S | 18 pairs/set, including all above 3-wires | |

6

INSPECTION CERTIFICATE

## 3-WIRES

CUSTOMIZABLE DIAMETER Ød






7394-75A

- Ød≤0.3mm, made of alloy steel, hardness HRC60; Ød>0.3mm, made of carbide, hardness HRA90
- Diameter accuracy: ±0.5μm
- Cylindricity: ±0.5μm
- Supplied with manufacturer inspection certificate

| Code | Diameter (Ød) | Applicable pitch |
|---|---|---|
| 7394-60A* | 0.170mm | 0.2mm, 0.25mm, 0.3mm |
| 7394-61A* | 0.195mm | 0.35mm |
| 7394-62A* | 0.220mm | 0.4mm |
| 7394-63A* | 0.250mm | 0.45mm |
| 7394-64A* | 0.290mm | 0.5mm |
| 7394-65A | 0.335mm | 0.6mm |
| 7394-66A | 0.390mm | 0.7mm |
| 7394-67A | 0.455mm | 0.75mm, 0.8mm |
| 7394-68A | 0.530mm | 0.9mm |
| 7394-69A | 0.620mm | 1.0mm |
| 7394-70A | 0.725mm | 1.25mm |
| 7394-71A | 0.895mm | 1.5mm |
| 7394-72A | 1.100mm | 1.75mm, 2.0mm |
| 7394-73A | 1.350mm | 2.5mm |
| 7394-74A | 1.650mm | 3.0mm |
| 7394-75A | 2.050mm | 3.5mm |
| 7394-76A | 2.550mm | 4mm, 4.5mm |
| 7394-77A | 3.200mm | 5mm, 5.5mm, 6mm |

*Made of alloy steel

# EXTERNAL SCREW THREAD MICROMETERS

INSIZE PLUS
MADE IN EUROPE

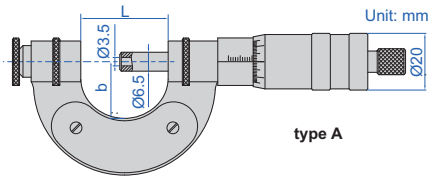
INSPECTION CERTIFICATE



tips are optional



3680-50

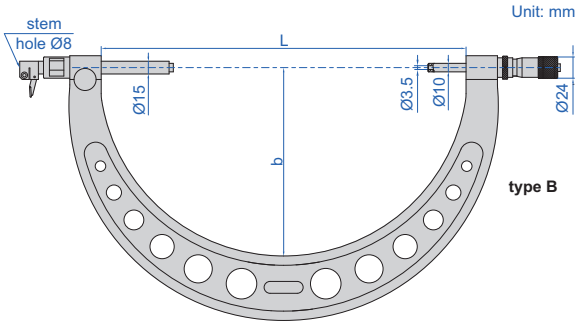



tips are optional

digital indicator is optional



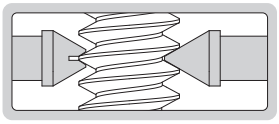
3680-4001




- Measure pitch diameter of screw threads
- Graduation 0.01mm
- Optional accessory: setting standards (code **7384**), external tread tips (code **7390**), dial/digital indicators (only for type B)

**Type A (ratchet stop)** **(mm)**

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3680-25*** | 0-25mm | 4μm | 37 | 24 |
| **3680-50*** | 25-50mm | 4μm | 62 | 34 |
| **3680-75*** | 50-75mm | 4μm | 87 | 46 |
| **3680-100*** | 75-100mm | 4μm | 112 | 60 |
| **3680-125*** | 100-125mm | 5μm | 139 | 72 |
| **3680-150*** | 125-150mm | 5μm | 164 | 85 |
| **3680-200*** | 150-200mm | 7μm | 215 | 110 |
| **3680-250*** | 200-250mm | 7μm | 264 | 135 |
| **3680-300*** | 250-300mm | 7μm | 315 | 160 |



**Type B (without ratchet stop)** **(mm)**

| Code | Range | Left anvil retracting sroke | Micrometer head accuracy | L | b |
|---|---|---|---|---|---|
| **3680-3001*** | 200-300mm | 2.5mm | 6μm | 320 | 165 |
| **3680-4001*** | 300-400mm | 2.5mm | 7μm | 430 | 220 |
| **3680-5001*** | 400-500mm | 2.5mm | 8μm | 530 | 273 |
| **3680-6001*** | 500-600mm | 2.5mm | 9μm | 630 | 323 |
| **3680-7001*** | 600-700mm | 2.5mm | 9μm | 730 | 378 |
| **3680-8001*** | 700-800mm | 2.5mm | 9μm | 830 | 423 |
| **3680-9001*** | 800-900mm | 2.5mm | 10μm | 930 | 473 |
| **3680-10001*** | 900-1000mm | 2.5mm | 10μm | 1030 | 520 |
| **3680-4002*** | 200-400mm | 2.5mm | 7μm | 430 | 220 |
| **3680-6002*** | 400-600mm | 2.5mm | 9μm | 630 | 323 |
| **3680-8002*** | 600-800mm | 2.5mm | 9μm | 830 | 423 |
| **3680-10002*** | 800-1000mm | 2.5mm | 10μm | 1030 | 520 |
| **3680-12002*** | 1000-1200mm | 2.5mm | 11μm | 1230 | 635 |
| **3680-14002*** | 1200-1400mm | 2.5mm | 12μm | 1430 | 735 |
| **3680-16002*** | 1400-1600mm | 2.5mm | 18μm | 1660 | 840 |
| **3680-18002*** | 1600-1800mm | 2.5mm | 20μm | 1870 | 940 |
| **3680-20002*** | 1800-2000mm | 2.5mm | 22μm | 2075 | 1055 |

*Supplied with manufacturer inspection certificate

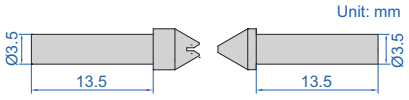
# MEASURING TIPS FOR EXTERNAL SCREW THREAD MICROMETERS

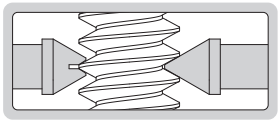
INSIZE PLUS
MADE IN EUROPE

- Supplied in pair
- Made of hardened steel
- Suitable for **3680** series micrometers




**7390-T104**



**60° thread angle**

| Code | Pitch |
|---|---|
| **7390-T101** | 0.35-0.5mm/72-48TPI |
| **7390-T102** | 0.6-0.8mm/44-32TPI |
| **7390-T103** | 0.9-1.25mm/28-18TPI |
| **7390-T104** | 1.5-2mm/16-11TPI |
| **7390-T105** | 2.5-3.5mm/10-7TPI |
| **7390-T106** | 4-6mm/6-4TPI |

**55° thread angle**

| Code | Pitch |
|---|---|
| **7390-T201** | 60-48TPI |
| **7390-T202** | 40-32TPI |
| **7390-T203** | 28-22TPI |
| **7390-T204** | 20-16TPI |
| **7390-T205** | 14-11TPI |
| **7390-T206** | 10-7TPI |
| **7390-T207** | 6-4TPI |

**30° thread angle**

| Code | Pitch |
|---|---|
| **7390-T301** | 1.5mm |
| **7390-T302** | 2mm |
| **7390-T303** | 3mm |
| **7390-T304** | 4mm |
| **7390-T305** | 5-6mm |
| **7390-T306** | 7-8mm |
| **7390-T307** | 9-10mm |
| **7390-T308** | 12-14mm |



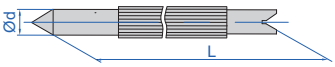
# SETTING STANDARDS FOR EXTERNAL SCREW THREAD MICROMETERS

INSIZE PLUS
MADE IN EUROPE

**ATTENTION: WHEN PITCH <0.4MM OR >63.5TPI, SETTING STANDARDS CANNOT BE USED TO SET ZERO, A CALIBRATED WORK PIECE CAN BE USED INSTEAD**

**TIPS FOR TRAPEZOIDAL, ACME THREAD ARE ALSO AVAILABLE**






**7384-A100**

- Made of hardened steel
- Deviation (difference between the ordered size and the size marked on the setting standard when supplied): ±20μm
  For example, the ordered size is 25mm, the size marked on the setting standard when supplied may be 25.015mm

**60° thread angle** (mm)

| Code | L | Ød | Accuracy |
|---|---|---|---|
| **7384-A25** | 25 | 7.8 | ±2.5μm |
| **7384-A50** | 50 | 7.8 | ±3μm |
| **7384-A75** | 75 | 7.8 | ±3.5μm |
| **7384-A100** | 100 | 7.8 | ±4μm |
| **7384-A125** | 125 | 7.8 | ±4.5μm |
| **7384-A150** | 150 | 7.8 | ±5μm |
| **7384-A175** | 175 | 7.8 | ±5.5μm |
| **7384-A200** | 200 | 7.8 | ±6μm |
| **7384-A225** | 225 | 10 | ±6.5μm |
| **7384-A250** | 250 | 10 | ±7μm |
| **7384-A275** | 275 | 10 | ±7.5μm |
| **7384-A300** | 300 | 10 | ±8μm |

**55° thread angle** (mm)

| Code | L | Ød | Accuracy |
|---|---|---|---|
| **7384-B25** | 25 | 7.8 | ±2.5μm |
| **7384-B50** | 50 | 7.8 | ±3μm |
| **7384-B75** | 75 | 7.8 | ±3.5μm |
| **7384-B100** | 100 | 7.8 | ±4μm |
| **7384-B125** | 125 | 7.8 | ±4.5μm |
| **7384-B150** | 150 | 7.8 | ±5μm |
| **7384-B175** | 175 | 7.8 | ±5.5μm |
| **7384-B200** | 200 | 7.8 | ±6μm |
| **7384-B225** | 225 | 10 | ±6.5μm |
| **7384-B250** | 250 | 10 | ±7μm |
| **7384-B275** | 275 | 10 | ±7.5μm |
| **7384-B300** | 300 | 10 | ±8μm |

# SCREW THREAD MICROMETERS

NON-ROTATING SPINDLE

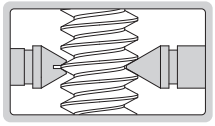


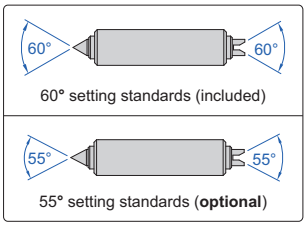

**3281-25A**
(measuring tips are optional)



**3281-S25**
(measuring tips are included)

- Measure pitch diameter of screw threads
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with 60° setting standards (except 0-25mm)
- Optional accessory: 55° setting standards






**Measuring tips are optional** (mm)

| Code | Range | L | b | 55° setting standard (optional) |
|---|---|---|---|---|
| **3281-25A** | 0-25mm | 42 | 26 | – |
| **3281-50A** | 25-50mm | 67 | 38 | **3281-SP1** |
| **3281-75A** | 50-75mm | 92 | 50 | **3281-SP2** |
| **3281-100A** | 75-100mm | 117.6 | 62 | **3281-SP3** |
| **3281-125A** | 100-125mm | 143 | 70 | **3281-SP4** |
| **3281-150A** | 125-150mm | 168.2 | 82 | **3281-SP5** |
| **3281-175A** | 150-175mm | 192 | 94.5 | **3281-SP6** |
| **3281-200A** | 175-200mm | 217 | 107 | **3281-SP7** |
| **3281-225A** | 200-225mm | 242 | 130 | **3281-SP8** |
| **3281-250A** | 225-250mm | 267 | 142 | **3281-SP9** |
| **3281-275A** | 250-275mm | 291 | 155 | **3281-SP10** |
| **3281-300A** | 275-300mm | 317 | 167 | **3281-SP11** |

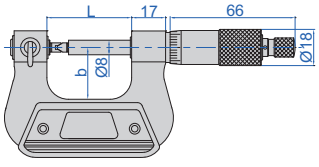
**Measuring tips are included** (mm)

| Code | Range | L | b | Measuring tips (included) | 55° setting standard (optional) |
|---|---|---|---|---|---|
| **3281-S25** | 0-25mm | 42 | 26 | 6 pairs of measuring tips: metric and unified thread (60° thread angle) 0.4-0.5mm/64-48TPI, 0.6-0.9mm/44-28TPI, 1-1.75mm/24-14TPI, 2-3mm/13-9TPI, 3.5-5mm/8-5TPI, 5.5-7mm/4.5-3.5TPI | – |
| **3281-S50** | 25-50mm | 67 | 38 | | **3281-SP1** |
| **3281-S75** | 50-75mm | 92 | 50 | | **3281-SP2** |
| **3281-S100** | 75-100mm | 117.6 | 62 | | **3281-SP3** |
| **3281-S125** | 100-125mm | 143 | 70 | | **3281-SP4** |
| **3281-S150** | 125-150mm | 168.2 | 82 | | **3281-SP5** |
| **3281-S175** | 150-175mm | 192 | 94.5 | | **3281-SP6** |
| **3281-S200** | 175-200mm | 217 | 107 | | **3281-SP7** |
| **3281-S225** | 200-225mm | 242 | 130 | | **3281-SP8** |
| **3281-S250** | 225-250mm | 267 | 142 | | **3281-SP9** |
| **3281-S275** | 250-275mm | 291 | 155 | | **3281-SP10** |
| **3281-S300** | 275-300mm | 317 | 167 | | **3281-SP11** |

**accuracy of micrometers with tips** (mm)

| Pitch | Range | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0-25 | 25-50 | 50-75 | 75-100 | 100-125 | 125-200 | 200-225 | 225-300 |
| **0.4~0.5** | ±0.01 | - | - | - | - | - | - | - |
| **0.6~0.8** | ±0.01 | ±0.013 | - | - | - | - | - | - |
| **1~1.25** | ±0.012 | ±0.015 | ±0.017 | ±0.017 | - | - | - | - |
| **1.5~2.0** | ±0.014 | ±0.017 | ±0.019 | ±0.019 | ±0.020 | ±0.023 | ±0.025 | ±0.028 |
| **2.5~3.5** | ±0.016 | ±0.019 | ±0.021 | ±0.021 | ±0.023 | ±0.025 | ±0.028 | ±0.031 |
| **4.0~7.0** | - | ±0.021 | ±0.023 | ±0.023 | ±0.025 | ±0.028 | ±0.031 | ±0.033 |

Unit: mm






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DATA OUTPUT | NON-ROTATING SPINDLE

# DIGITAL SCREW THREAD MICROMETERS

optional



**3581-25A**
(measuring tips are optional)



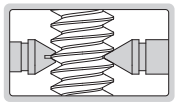
**3581-S25**
(measuring tips are included)

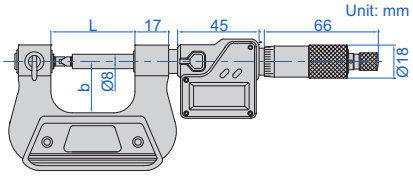


**Measuring tips are optional** (mm)

| Code | Range | L | b | 55° setting standard (optional) |
|---|---|---|---|---|
| **3581-25A** | 0-25mm/0-1" | 42 | 26 | – |
| **3581-50A** | 25-50mm/1-2" | 67 | 38 | **3281-SP1** |
| **3581-75A** | 50-75mm/2-3" | 92 | 50 | **3281-SP2** |
| **3581-100A** | 75-100mm/3-4" | 117.6 | 62 | **3281-SP3** |
| **3581-125A** | 100-125mm/4-5" | 143 | 70 | **3281-SP4** |
| **3581-150A** | 125-150mm/5-6" | 168.2 | 82 | **3281-SP5** |
| **3581-175A** | 150-175mm/6-7" | 192 | 94.5 | **3281-SP6** |
| **3581-200A** | 175-200mm/7-8" | 217 | 107 | **3281-SP7** |
| **3581-225A** | 200-225mm/8-9" | 242 | 130 | **3281-SP8** |
| **3581-250A** | 225-250mm/9-10" | 267 | 142 | **3281-SP9** |
| **3581-275A** | 250-275mm/10-11" | 291 | 155 | **3281-SP10** |
| **3581-300A** | 275-300mm/11-12" | 317 | 167 | **3281-SP11** |

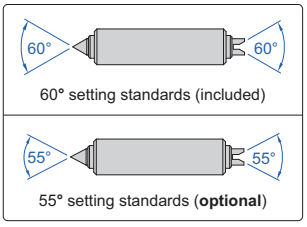
- Measure pitch diameter of screw threads
- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Non-rotating spindle
- Ratchet stop
- Supplied with 60° setting standards (except 0-25mm/0-1")
- Optional accessory: 55° setting standards,
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20






**Measuring tips are included** (mm)

| Code | Range | L | b | Measuring tips (included) | 55° setting standard (optional) |
|---|---|---|---|---|---|
| **3581-S25** | 0-25mm/0-1" | 42 | 26 | 6 pairs of measuring tips: metric and unified thread (60° thread angle) 0.4-0.5mm/64-48TPI, 0.6-0.9mm/44-28TPI, 1-1.75mm/24-14TPI, 2-3mm/13-9TPI, 3.5-5mm/8-5TPI, 5.5-7mm/4.5-3.5TPI | – |
| **3581-S50** | 25-50mm/1-2" | 67 | 38 | | **3281-SP1** |
| **3581-S75** | 50-75mm/2-3" | 92 | 50 | | **3281-SP2** |
| **3581-S100** | 75-100mm/3-4" | 117.6 | 62 | | **3281-SP3** |
| **3581-S125** | 100-125mm/4-5" | 143 | 70 | | **3281-SP4** |
| **3581-S150** | 125-150mm/5-6" | 168.2 | 82 | | **3281-SP5** |
| **3581-S175** | 150-175mm/6-7" | 192 | 94.5 | | **3281-SP6** |
| **3581-S200** | 175-200mm/7-8" | 217 | 107 | | **3281-SP7** |
| **3581-S225** | 200-225mm/8-9" | 242 | 130 | | **3281-SP8** |
| **3581-S250** | 225-250mm/9-10" | 267 | 142 | | **3281-SP9** |
| **3581-S275** | 250-275mm/10-11" | 291 | 155 | | **3281-SP10** |
| **3581-S300** | 275-300mm/11-12" | 317 | 167 | | **3281-SP11** |



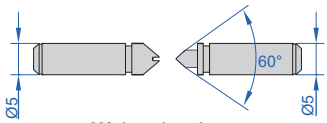

**accuracy of micrometers with tips** (mm)

| Pitch | Range | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0-25 | 25-50 | 50-75 | 75-100 | 100-125 | 125-200 | 200-225 | 225-300 |
| **0.4~0.5** | ±0.01 | - | - | - | - | - | - | - |
| **0.6~0.8** | ±0.01 | ±0.013 | - | - | - | - | - | - |
| **1~1.25** | ±0.012 | ±0.015 | ±0.017 | ±0.017 | - | - | - | - |
| **1.5~2.0** | ±0.014 | ±0.017 | ±0.019 | ±0.019 | ±0.020 | ±0.023 | ±0.025 | ±0.028 |
| **2.5~3.5** | ±0.016 | ±0.019 | ±0.021 | ±0.021 | ±0.023 | ±0.025 | ±0.028 | ±0.031 |
| **4.0~7.0** | - | ±0.021 | ±0.023 | ±0.023 | ±0.025 | ±0.028 | ±0.031 | ±0.033 |

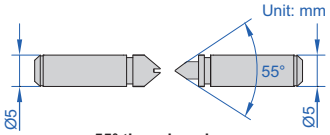


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# MEASURING TIPS FOR SCREW THREAD MICROMETERS




60° thread angle




55° thread angle



7381-T13

- Supplied in pair
- Suitable for **3281, 3581** series micrometers

**Metric and unified thread (60° thread angle)**

| Code | Pitch |
|---|---|
| **7381-T11** | 0.4-0.5mm/64-48TPI |
| **7381-T12** | 0.6-0.9mm/44-28TPI |
| **7381-T13** | 1-1.75mm/24-14TPI |
| **7381-T14** | 2-3mm/13-9TPI |
| **7381-T15** | 3.5-5mm/8-5TPI |
| **7381-T16** | 5.5-7mm/4.5-3.5TPI |
| **7381-TS** | 6 pairs/set, including all above tips |

**Whitworth thread (55° thread angle)**

| Code | Pitch |
|---|---|
| **7381-T21** | 60-48TPI |
| **7381-T22** | 48-40TPI |
| **7381-T23** | 40-32TPI |
| **7381-T24** | 32-24TPI |
| **7381-T25** | 24-18TPI |
| **7381-T26** | 18-14TPI |
| **7381-T27** | 14-10TPI |
| **7381-T28** | 10-7TPI |
| **7381-T29** | 7-4.5TPI |
| **7381-T210** | 4.5-3.5TPI |
| **7381-T2S** | 10 pairs/set, including all above tips |

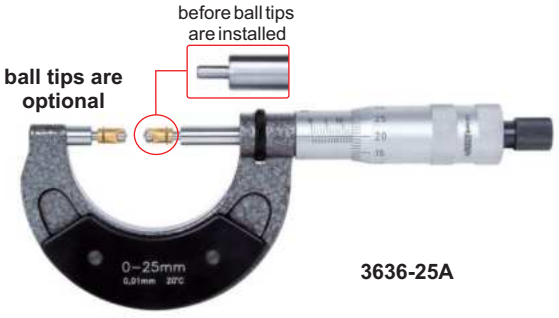


# EXTERNAL GEAR TOOTH MICROMETERS

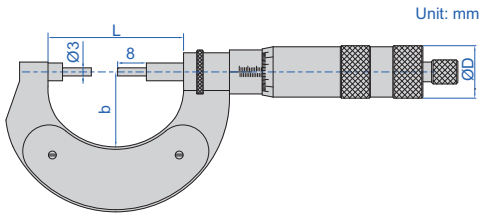
INSIZE PLUS
MADE IN EUROPE

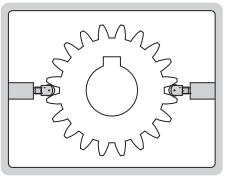
INSPECTION CERTIFICATE

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED




3636-25A



- Meet DIN863-3
- Measure over-pin diameter of gears
- Graduation 0.01mm
- Ratchet stop
- Optional accessory: ball tips (code **7383**), setting standards (code **7386**)

(mm)

| Code | Range | Accuracy | L | b | ØD |
|---|---|---|---|---|---|
| **3636-25A*** | 0-25mm | 3μm | 62 | 34 | 20 |
| **3636-50A*** | 25-50mm | 3μm | 87 | 46 | 20 |
| **3636-75A*** | 50-75mm | 4μm | 112 | 60 | 20 |
| **3636-100A*** | 75-100mm | 4μm | 139 | 72 | 20 |
| **3636-125A*** | 100-125mm | 5μm | 164 | 85 | 20 |
| **3636-150A*** | 125-150mm | 5μm | 190 | 97 | 20 |
| **3636-175A*** | 150-175mm | 5μm | 215 | 110 | 20 |
| **3636-200A*** | 175-200mm | 5μm | 240 | 122 | 20 |

(mm)

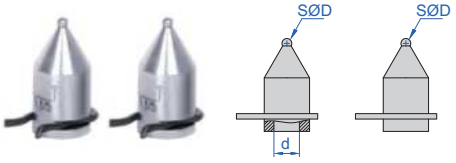
| Code | Range | Accuracy | L | b | ØD |
|---|---|---|---|---|---|
| **3636-225A*** | 200-225mm | 6μm | 264 | 135 | 20 |
| **3636-250A*** | 225-250mm | 6μm | 290 | 148 | 20 |
| **3636-300A*** | 250-300mm | 6μm | 325 | 165 | 24 |
| **3636-350A*** | 300-350mm | 7μm | 370 | 190 | 24 |
| **3636-400A*** | 350-400mm | 7μm | 430 | 220 | 24 |
| **3636-450A*** | 400-450mm | 8μm | 475 | 250 | 24 |
| **3636-500A*** | 450-500mm | 8μm | 530 | 273 | 24 |
| **3636-550A*** | 500-550mm | 9μm | 570 | 291 | 24 |
| **3636-600A*** | 550-600mm | 9μm | 630 | 323 | 24 |

*Supplied with manufacturer inspection certificate

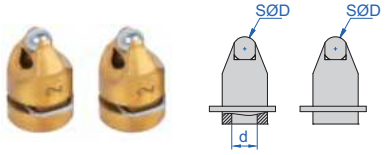
BALL TIPS DIAMETER SØD CAN BE CUSTOMIZED

# BALL TIPS FOR GEAR TOOTH MICROMETERS

INSIZE PLUS MADE IN EUROPE




7383-1 type A




7383-2 type B

- Supplied in pair
- Made of hardened steel
- Suitable for **3636, 3638, 3678** series micrometeres

| Code | Ball dia. (SØD) | d | Accuracy | Type |
|---|---|---|---|---|
| **7383-1** | SØ1mm | Ø3mm | ±1μm | A |
| **7383-1D5** | SØ1.5mm | Ø3mm | ±1μm | B |
| **7383-1D75** | SØ1.75mm | Ø3mm | ±1μm | B |
| **7383-2** | SØ2mm | Ø3mm | ±1μm | B |
| **7383-2D25** | SØ2.25mm | Ø3mm | ±1μm | B |
| **7383-2D5** | SØ2.5mm | Ø3mm | ±1μm | B |
| **7383-3** | SØ3mm | Ø3mm | ±1μm | B |
| **7383-3D5** | SØ3.5mm | Ø3mm | ±1μm | B |
| **7383-4** | SØ4mm | Ø3mm | ±1μm | B |
| **7383-4D5** | SØ4.5mm | Ø3mm | ±1μm | B |
| **7383-5** | SØ5mm | Ø3mm | ±1μm | B |
| **7383-5D5** | SØ5.5mm | Ø3mm | ±1μm | B |
| **7383-6** | SØ6mm | Ø3mm | ±1μm | B |

| Code | Ball dia. (SØD) | d | Accuracy | Type |
|---|---|---|---|---|
| **7383-6D5** | SØ6.5mm | Ø3mm | ±1μm | B |
| **7383-7** | SØ7mm | Ø3mm | ±1μm | B |
| **7383-7D5** | SØ7.5mm | Ø3mm | ±1μm | B |
| **7383-8** | SØ8mm | Ø3mm | ±1μm | B |
| **7383-9** | SØ9mm | Ø3mm | ±1μm | B |
| **7383-10** | SØ10mm | Ø3mm | ±1μm | B |
| **7383-10D5** | SØ10.5mm | Ø3mm | ±1.5μm | B |
| **7383-11** | SØ11mm | Ø3mm | ±1.5μm | B |
| **7383-12** | SØ12mm | Ø3mm | ±1.5μm | B |
| **7383-13** | SØ13mm | Ø3mm | ±1.5μm | B |
| **7383-14** | SØ14mm | Ø3mm | ±1.5μm | B |
| **7383-15** | SØ15mm | Ø3mm | ±1.5μm | B |
| **7383-16** | SØ16mm | Ø3mm | ±1.5μm | B |

# GEAR TOOTH MICROMETERS

- Meet DIN863-3
- Measure over-pin diameter of gears
- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards (except 0-25mm)
- Optional accessory: ball tips (code **7391**)

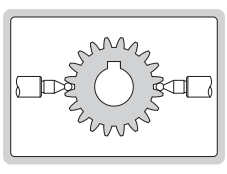
**ball tips are optional**



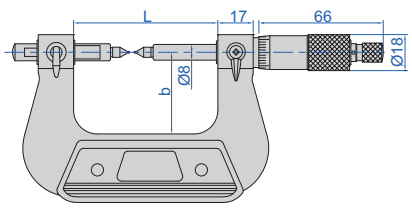

3291-25

(mm)

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3291-25** | 0-25mm | 4μm | 67 | 38 |
| **3291-50** | 25-50mm | 4μm | 92.4 | 50 |
| **3291-75** | 50-75mm | 5μm | 117.6 | 62 |
| **3291-100** | 75-100mm | 5μm | 143 | 70 |
| **3291-125** | 100-125mm | 6μm | 168.2 | 82 |
| **3291-150** | 125-150mm | 6μm | 192 | 94.5 |
| **3291-175** | 150-175mm | 7μm | 217 | 107 |
| **3291-200** | 175-200mm | 7μm | 242 | 130 |
| **3291-225** | 200-225mm | 8μm | 267 | 142.5 |
| **3291-250** | 225-250mm | 8μm | 292 | 155 |
| **3291-275** | 250-275mm | 9μm | 317 | 167.5 |



Unit: mm



# DIGITAL GEAR TOOTH MICROMETERS

IP65 WATERPROOF

DATA OUTPUT

**ball tips are optional**

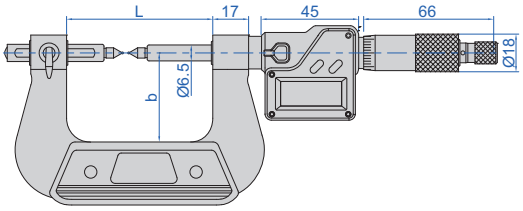



**3591-25A**



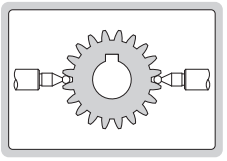
- Measure over-pin diameter of gears
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: ball tips (code **7391**), wireless transmitter code **7315-31** (receiver is needed) page 6, bluetooth transmitter code **7214-31** page 12, data output cable code **7302-31** page 20

Unit: mm




**(mm)**

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3591-25A** | 0-25mm/0-1" | ±4μm | 67 | 38 |
| **3591-50A** | 25-50mm/1-2" | ±4μm | 92.4 | 50 |
| **3591-75A** | 50-75mm/2-3" | ±5μm | 117.6 | 62 |
| **3591-100A** | 75-100mm/3-4" | ±5μm | 143 | 70 |
| **3591-125A** | 100-125mm/4-5" | ±6μm | 168.2 | 82 |
| **3591-150A** | 125-150mm/5-6" | ±6μm | 192 | 94.5 |
| **3591-175A** | 150-175mm/6-7" | ±7μm | 217 | 107 |
| **3591-200A** | 175-200mm/7-8" | ±7μm | 242 | 130 |
| **3591-225A** | 200-225mm/8-9" | ±8μm | 267 | 142.5 |
| **3591-250A** | 225-250mm/9-10" | ±8μm | 292 | 155 |
| **3591-275A** | 250-275mm/10-11" | ±9μm | 317 | 167.5 |



# BALL TIPS FOR GEAR TOOTH MICROMETERS

BALL TIPS DIAMETER SØD CAN BE CUSTOMIZED WITH SIZES BETWEEN 1.50-6.00MM



**7391-T5**

- Supplied in pair
- Suitable for **3291, 3591** series micrometers

| Code | Ball dia. (D) |
|---|---|
| **7391-T2** | SØ1.5mm |
| **7391-T3** | SØ2.0mm |
| **7391-T4** | SØ2.5mm |
| **7391-T5** | SØ3.0mm |

| Code | Ball dia. (D) |
|---|---|
| **7391-T6** | SØ3.5mm |
| **7391-T7** | SØ4.0mm |
| **7391-T8** | SØ4.5mm |
| **7391-T9** | SØ5.0mm |
| **7391-T10** | SØ6.0mm |

Unit: mm



ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

INSPECTION CERTIFICATE

## POINT MICROMETERS

INSIZE PLUS
MADE IN EUROPE

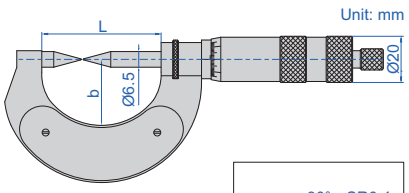
(mm)

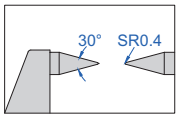
| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3659-25A*** | 0-25mm | 4µm | 62 | 34 |
| **3659-50A*** | 25-50mm | 4µm | 87 | 46 |
| **3659-75A*** | 50-75mm | 5µm | 112 | 60 |
| **3659-100A*** | 75-100mm | 5µm | 139 | 72 |
| **3659-125A*** | 100-125mm | 6µm | 164 | 85 |
| **3659-150A*** | 125-150mm | 6µm | 190 | 97 |
| **3659-175A*** | 150-175mm | 7µm | 215 | 110 |
| **3659-200A*** | 175-200mm | 7µm | 240 | 122 |
| **3659-225A*** | 200-225mm | 8µm | 264 | 135 |
| **3659-250A*** | 225-250mm | 8µm | 290 | 148 |

*Supplied with manufacturer inspection certificate




**3659-25A**




- Measure the web thickness of drills, small grooves and keyways
- Graduation: 0.01mm
- Ratchet stop
- Carbide tips
- Optional accessory: setting standards (code **7386**)

6

## POINT MICROMETERS

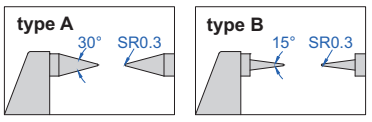
- Measure the web thickness of drills, small grooves and keyways
- Graduation 0.01mm
- Ratchet stop
- Carbide tips
- Supplied with setting standards (except 0-25mm)

(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3230-25A** | 0-25mm | A | 4µm | 57 | 32 |
| **3230-50A** | 25-50mm | A | 4µm | 82 | 44.5 |
| **3230-75A** | 50-75mm | A | 5µm | 107 | 57 |
| **3230-100A** | 75-100mm | A | 5µm | 132.6 | 69.5 |
| **3230-25BA** | 0-25mm | B | 4µm | 57 | 32 |
| **3230-50BA** | 25-50mm | B | 4µm | 82 | 44.5 |
| **3230-75BA** | 50-75mm | B | 5µm | 107 | 57 |
| **3230-100BA** | 75-100mm | B | 5µm | 132.6 | 69.5 |

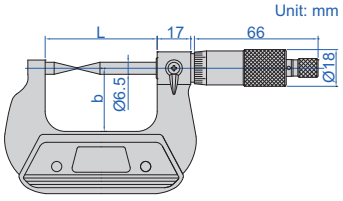


**3230-25A**










## DIGITAL POINT MICROMETERS

- Measure the web thickness of drills, small grooves and keyways
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide tips
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20

DATA OUTPUT

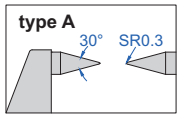
IP65 WATERPROOF

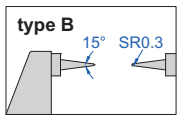


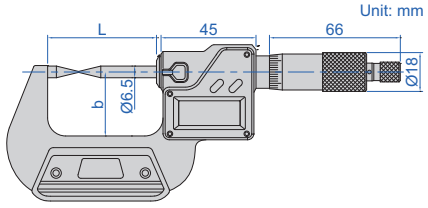

**3530-25A**

(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3530-25A** | 0-25mm/0-1" | A | ±4µm | 57 | 32 |
| **3530-50A** | 25-50mm/1-2" | A | ±4µm | 82 | 44.5 |
| **3530-75A** | 50-75mm/2-3" | A | ±5µm | 107 | 57 |
| **3530-100A** | 75-100mm/3-4" | A | ±5µm | 132.6 | 69.5 |
| **3530-25BA** | 0-25mm/0-1" | B | ±4µm | 57 | 32 |
| **3530-50BA** | 25-50mm/1-2" | B | ±4µm | 82 | 44.5 |
| **3530-75BA** | 50-75mm/2-3" | B | ±5µm | 107 | 57 |
| **3530-100BA** | 75-100mm/3-4" | B | ±5µm | 132.6 | 69.5 |



# DIGITAL POINT MICROMETERS/SNAP GAUGES

ONE TURN OF SLEEVE MAKES 5MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

NON-ROTATING SPINDLE

DATA OUTPUT

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

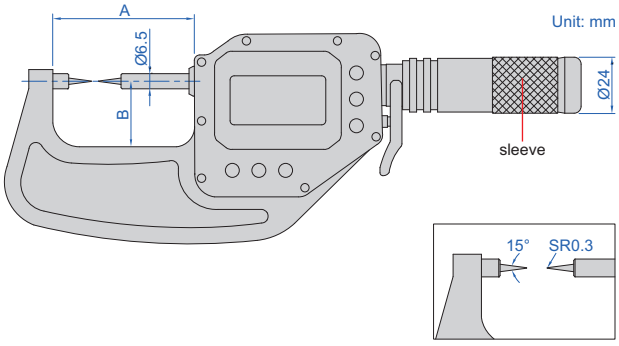
IP65 WATERPROOF

INSPECTION CERTIFICATE

VIDEO

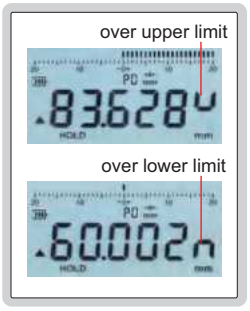



3354-25




- Measure the web thickness of drills, small grooves and keyways
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0002mm/0.00001"
  0.001mm/0.00005"
  0.01mm/0.0005"
- One turn of sleeve makes 5mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Linear ball bearings for ten million times use
- Carbide spindle and anvil
- Measuring force 7-10N
  Customizable measuring force range 2-12N
  Attention: small measuring force will reduce the dustproof and waterproof level
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch, adjust resolution
- Supplied with gauge blocks for zero setting (except 0-25mm/0-1")
- Power: rechargeable battery, for 24 hours continuous working

alarm when over tolerance




wireless receiver
**2134-R1, 2134-R2 (optional)**



**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Accuracy | Repeatability | A | B |
|---|---|---|---|---|---|
| **3354-25*** | 0-25mm/0-1" | 2μm | 1μm | 63mm | 25mm |
| **3354-50*** | 25-50mm/1-2" | 2μm | 1μm | 88mm | 42mm |
| **3354-75*** | 50-75mm/2-3" | 2μm | 1μm | 113mm | 56mm |

**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Repeatability | A | B |
|---|---|---|---|---|---|
| **3354-25WL*** | 0-25mm/0-1" | 2μm | 1μm | 63mm | 25mm |
| **3354-50WL*** | 25-50mm/1-2" | 2μm | 1μm | 88mm | 42mm |
| **3354-75WL*** | 50-75mm/2-3" | 2μm | 1μm | 113mm | 56mm |

*Supplied with manufacturer inspection certificate

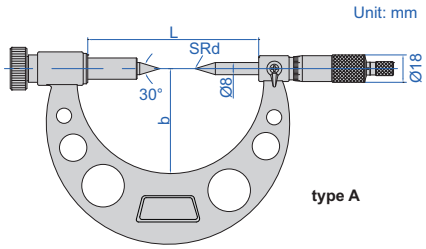


info@insz.sk | +421 944 367 573 | www.insz.sk

# GEAR ROOT DIAMETER MICROMETERS




**3297-100**



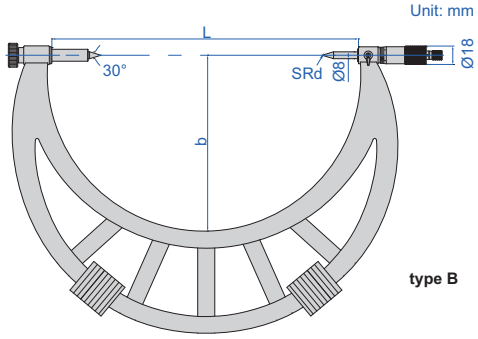

- Measure diameter of gear root circle
- Graduation 0.01mm
- Ratchet stop
- Meet DIN863-3
- Carbide measuring faces
- Supplied with setting standards




**3297-300**

(mm)

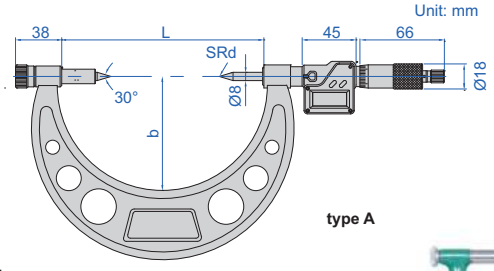
| Code | Range | Type | Accuracy | L | b | SRd |
|---|---|---|---|---|---|---|
| **3297-100** | 5-100mm | A | 5μm | 137 | 72 | 0.4 |
| **3297-200** | 100-200mm | A | 7μm | 237 | 129 | 0.5 |
| **3297-300** | 200-300mm | B | 9μm | 414 | 225 | 0.7 |
| **3297-400** | 300-400mm | B | 11μm | 514 | 275 | 0.7 |
| **3297-500** | 400-500mm | B | 13μm | 614 | 325 | 0.7 |
| **3297-600** | 500-600mm | B | 15μm | 714 | 375 | 0.7 |
| **3297-700** | 600-700mm | B | 16μm | 814 | 425 | 0.7 |
| **3297-800** | 700-800mm | B | 18μm | 914 | 475 | 0.7 |
| **3297-900** | 800-900mm | B | 20μm | 1014 | 525 | 0.7 |




# DIGITAL GEAR ROOT DIAMETER MICROMETERS

**IP65**
WATERPROOF

DATA OUTPUT







**3597-100**

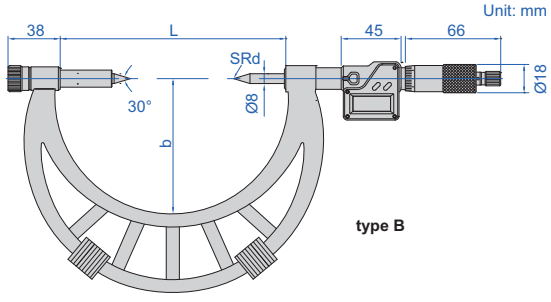



**3597-300**

- Measure diameter of gear root circle
- Resolution 0.001mm/0.0001" (resolution of **3597-100** and **3597-200** is 0.001mm/0.00005")
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20

(mm)

| Code | Range | Type | Accuracy | L | b | SRd |
|---|---|---|---|---|---|---|
| **3597-100** | 5-100mm | A | 3μm | 137 | 72 | 0.4 |
| **3597-200** | 100-200mm | A | 4μm | 237 | 129 | 0.5 |
| **3597-300** | 200-300mm | B | 5μm | 414 | 225 | 0.7 |
| **3597-400** | 300-400mm | B | 6μm | 514 | 275 | 0.7 |
| **3597-500** | 400-500mm | B | 7μm | 614 | 325 | 0.7 |
| **3597-600** | 500-600mm | B | 8μm | 714 | 375 | 0.7 |
| **3597-700** | 600-700mm | B | 8μm | 814 | 425 | 0.7 |
| **3597-800** | 700-800mm | B | 9μm | 914 | 475 | 0.7 |
| **3597-900** | 800-900mm | B | 10μm | 1014 | 525 | 0.7 |



# BLADE MICROMETERS

INSIZE PLUS
MADE IN EUROPE

INSPECTION CERTIFICATE

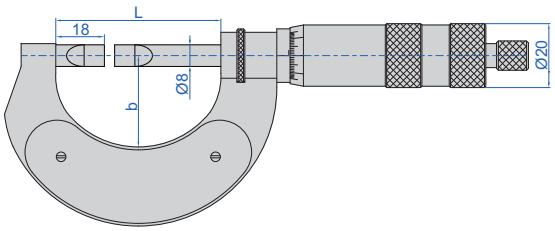
ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

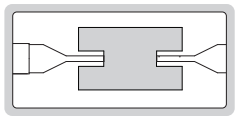


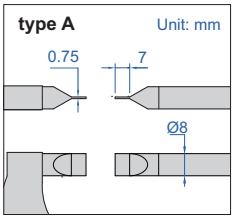


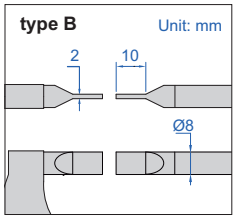

3650-25A

Unit: mm






- Meet DIN863-3
- Graduation 0.01mm
- Force: 5-10N
- Optional accessory: setting standards (code **7386**)

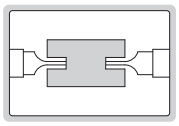
**(mm)**

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3650-25A*** | 0-25mm | A | 4μm | 62 | 34 |
| **3650-50A*** | 25-50mm | A | 4μm | 87 | 46 |
| **3650-75A*** | 50-75mm | B | 5μm | 112 | 60 |
| **3650-100A*** | 75-100mm | B | 5μm | 139 | 72 |
| **3650-125A*** | 100-125mm | B | 6μm | 164 | 85 |
| **3650-150A*** | 125-150mm | B | 6μm | 190 | 97 |
| **3650-175A*** | 150-175mm | B | 7μm | 215 | 110 |
| **3650-200A*** | 175-200mm | B | 7μm | 240 | 122 |
| **3650-225A*** | 200-225mm | B | 8μm | 264 | 135 |
| **3650-250A*** | 225-250mm | B | 8μm | 290 | 148 |
| **3650-275A*** | 250-275mm | B | 9μm | 315 | 160 |
| **3650-300A*** | 275-300mm | B | 9μm | 340 | 174 |

*Supplied with manufacturer inspection certificate

# BLADE MICROMETERS

NON-ROTATING SPINDLE

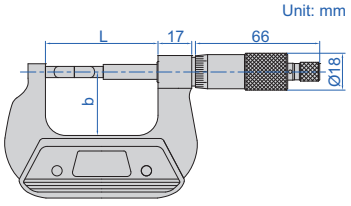


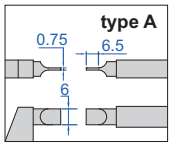
- Meet DIN863-3
- Measure the groove diameter of shafts and keyways
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with setting standards (except 0-25mm)

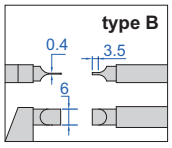


3232-25A

Unit: mm




**Type A** (mm)

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3232-25A** | 0-25mm | 4μm | 57 | 32 |
| **3232-50A** | 25-50mm | 4μm | 82 | 44.5 |
| **3232-75A** | 50-75mm | 5μm | 107 | 57 |
| **3232-100A** | 75-100mm | 5μm | 132.6 | 69.5 |
| **3232-125A** | 100-125mm | 6μm | 158 | 82 |
| **3232-150A** | 125-150mm | 6μm | 183.4 | 94.5 |
| **3232-175A** | 150-175mm | 7μm | 208.8 | 107 |
| **3232-200A** | 175-200mm | 7μm | 234.2 | 129.6 |
| **3232-225A** | 200-225mm | 8μm | 259.6 | 142.3 |
| **3232-250A** | 225-250mm | 8μm | 285 | 155 |
| **3232-275A** | 250-275mm | 9μm | 310.4 | 167.7 |
| **3232-300A** | 275-300mm | 9μm | 336.5 | 177.8 |

**Type B** (mm)

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3232-25BA** | 0-25mm | 4μm | 57 | 32 |
| **3232-50BA** | 25-50mm | 4μm | 82 | 44.5 |
| **3232-75BA** | 50-75mm | 5μm | 107 | 57 |
| **3232-100BA** | 75-100mm | 5μm | 132.6 | 69.5 |
| **3232-125BA** | 100-125mm | 6μm | 158 | 82 |
| **3232-150BA** | 125-150mm | 6μm | 183.4 | 94.5 |
| **3232-175BA** | 150-175mm | 7μm | 208.8 | 107 |
| **3232-200BA** | 175-200mm | 7μm | 234.2 | 129.6 |
| **3232-225BA** | 200-225mm | 8μm | 259.6 | 142.3 |
| **3232-250BA** | 225-250mm | 8μm | 285 | 155 |
| **3232-275BA** | 250-275mm | 9μm | 310.4 | 167.7 |
| **3232-300BA** | 275-300mm | 9μm | 336.5 | 177.8 |

# DIGITAL BLADE MICROMETERS

- Measure the groove diameter of shafts and keyways
- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20

DATA OUTPUT

NON-ROTATING SPINDLE

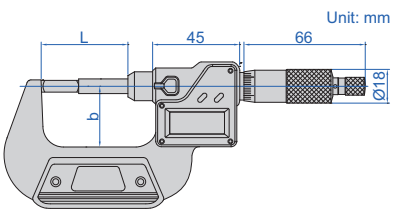


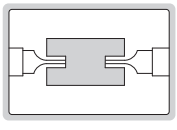
3532-25A

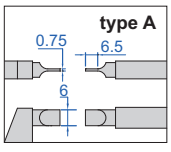
(mm)

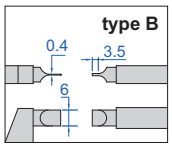
| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3532-25A** | 0-25mm/0-1" | A | ±4μm | 57 | 32 |
| **3532-50A** | 25-50mm/1-2" | A | ±4μm | 82 | 44.5 |
| **3532-75A** | 50-75mm/2-3" | A | ±5μm | 107 | 57 |
| **3532-100A** | 75-100mm/3-4" | A | ±5μm | 132.6 | 69.5 |
| **3532-125A** | 100-125mm/4-5" | A | ±6μm | 158 | 82 |
| **3532-150A** | 125-150mm/5-6" | A | ±6μm | 183.4 | 94.5 |
| **3532-175A** | 150-175mm/6-7" | A | ±7μm | 208.8 | 107 |
| **3532-25BA** | 0-25mm/0-1" | B | ±4μm | 57 | 32 |
| **3532-50BA** | 25-50mm/1-2" | B | ±4μm | 82 | 44.5 |
| **3532-75BA** | 50-75mm/2-3" | B | ±5μm | 107 | 57 |
| **3532-100BA** | 75-100mm/3-4" | B | ±5μm | 132.6 | 69.5 |
| **3532-125BA** | 100-125mm/4-5" | B | ±6μm | 158 | 82 |
| **3532-150BA** | 125-150mm/5-6" | B | ±6μm | 183.4 | 94.5 |
| **3532-175BA** | 150-175mm/6-7" | B | ±7μm | 208.8 | 107 |

Unit: mm





# DIGITAL BLADE MICROMETERS/SNAP GAUGES

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

IP65 WATERPROOF

DATA OUTPUT

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

NON-ROTATING SPINDLE

ONE TURN OF SLEEVE MAKES 5MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM

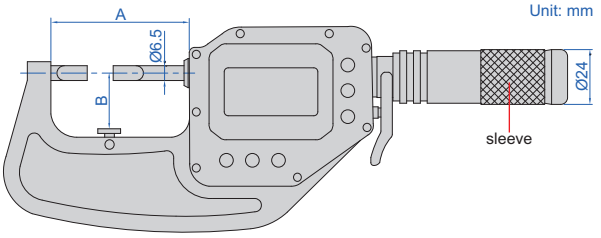


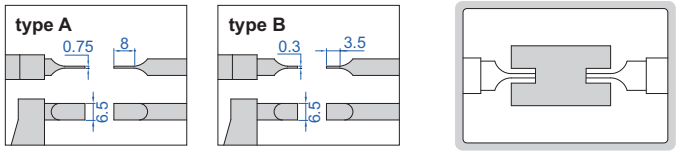

3352-25A

VIDEO

INSPECTION CERTIFICATE

- Measure the groove diameter of shafts and keyways
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0002mm/0.00001"
  0.001mm/0.00005"
  0.01mm/0.0005"
- One turn of sleeve makes 5mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Linear ball bearings for ten million times use
- Carbide spindle and anvil
- Measuring force 7-10N
  Customizable measuring force range 2-12N
  Attention: small measuring force will reduce the dustproof and waterproof level
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch, adjust resolution
- Supplied with gauge blocks for zero setting (except 0-25mm/0-1")
- Power: rechargeable battery, for 24 hours continuous working

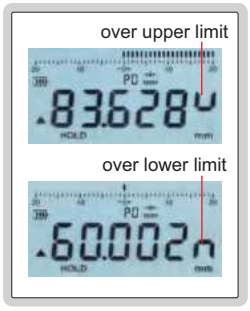



**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Type | Accuracy | Repeatability | A | B |
|---|---|---|---|---|---|---|
| **3352-25A*** | 0-25mm/0-1" | A | 2µm | 1µm | 63mm | 25mm |
| **3352-50A*** | 25-50mm/1-2" | A | 2µm | 1µm | 88mm | 42mm |
| **3352-75A*** | 50-75mm/2-3" | A | 2µm | 1µm | 113mm | 56mm |
| **3352-25B*** | 0-25mm/0-1" | B | 2µm | 1µm | 63mm | 25mm |
| **3352-50B*** | 25-50mm/1-2" | B | 2µm | 1µm | 88mm | 42mm |
| **3352-75B*** | 50-75mm/2-3" | B | 2µm | 1µm | 113mm | 56mm |

alarm when over tolerance




**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Type | Accuracy | Repeatability | A | B |
|---|---|---|---|---|---|---|
| **3352-25AWL*** | 0-25mm/0-1" | A | 2µm | 1µm | 63mm | 25mm |
| **3352-50AWL*** | 25-50mm/1-2" | A | 2µm | 1µm | 88mm | 42mm |
| **3352-75AWL*** | 50-75mm/2-3" | A | 2µm | 1µm | 113mm | 56mm |
| **3352-25BWL*** | 0-25mm/0-1" | B | 2µm | 1µm | 63mm | 25mm |
| **3352-50BWL*** | 25-50mm/1-2" | B | 2µm | 1µm | 88mm | 42mm |
| **3352-75BWL*** | 50-75mm/2-3" | B | 2µm | 1µm | 113mm | 56mm |

wireless receiver
**2134-R1, 2134-R2 (optional)**



*Supplied with manufacturer inspection certificate



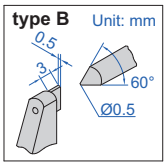
info@insz.sk | +421 944 367 573 | www.insz.sk

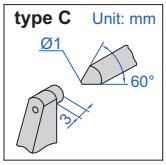
## CRIMP HEIGHT MICROMETERS

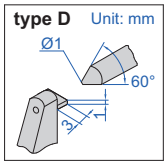
RELATIVE PRODUCT: DIGITAL CRIMP HEIGHT CALIPER (CODE 1165-150A)

- Measure the height of crimp contact
- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards (except 0-25mm)





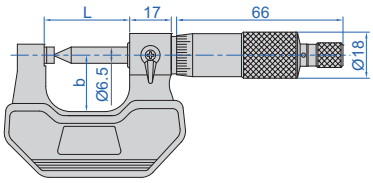






3266-25BA

Unit: mm




(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3266-25BA** | 0-25mm | B | 4µm | 34 | 24 |
| **3266-25CA** | 0-25mm | C | 4µm | 34 | 24 |
| **3266-50CA** | 25-50mm | C | 4µm | 59 | 32 |
| **3266-75CA** | 50-75mm | C | 5µm | 85 | 45 |
| **3266-100CA** | 75-100mm | C | 5µm | 110 | 57 |
| **3266-25DA** | 0-25mm | D | 4µm | 34 | 24 |

6

## DIGITAL CRIMP HEIGHT MICROMETERS

DATA OUTPUT

IP65 WATERPROOF

RELATIVE PRODUCT: DIGITAL CRIMP HEIGHT CALIPER (CODE 1165-150A)

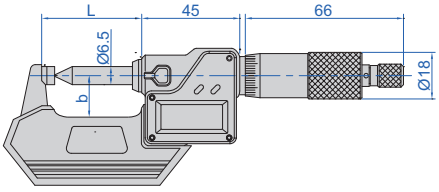





3566-25BA

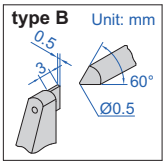
- Measure the height of crimp contact
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20

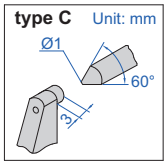
Unit: mm

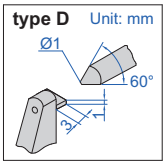



(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3566-25BA** | 0-25mm/0-1" | B | ±4µm | 34.5 | 25 |
| **3566-25CA** | 0-25mm/0-1" | C | ±4µm | 34.5 | 25 |
| **3566-50CA** | 25-50mm/1-2" | C | ±4µm | 59.5 | 32 |
| **3566-75CA** | 50-75mm/2-3" | C | ±5µm | 84.5 | 44.5 |
| **3566-100CA** | 75-100mm/3-4" | C | ±5µm | 109.5 | 57 |
| **3566-25DA** | 0-25mm/0-1" | D | ±4µm | 34.5 | 25 |




## SPLINE MICROMETERS

INSPECTION CERTIFICATE

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

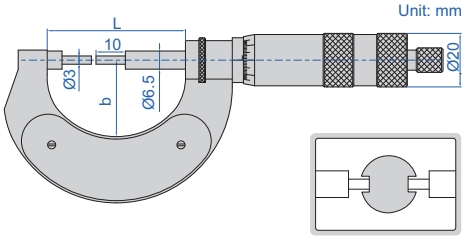
INSIZE PLUS MADE IN EUROPE




3658-25

- Meet DIN863-3
- Measure splined shafts, slots and keyways
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Optional accessory:
  setting standards (code **7386**)

Unit: mm




(mm)

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3658-25*** | 0-25mm | 4µm | 62 | 34 |
| **3658-50*** | 25-50mm | 4µm | 87 | 46 |
| **3658-75*** | 50-75mm | 5µm | 112 | 60 |
| **3658-100*** | 75-100mm | 5µm | 139 | 72 |
| **3658-125*** | 100-125mm | 6µm | 164 | 85 |
| **3658-150*** | 125-150mm | 6µm | 190 | 97 |
| **3658-175*** | 150-175mm | 7µm | 215 | 110 |
| **3658-200*** | 175-200mm | 7µm | 240 | 122 |
| **3658-225*** | 200-225mm | 8µm | 264 | 135 |
| **3658-250*** | 225-250mm | 8µm | 290 | 148 |

*Supplied with manufacturer inspection certificate

## SPLINE MICROMETERS

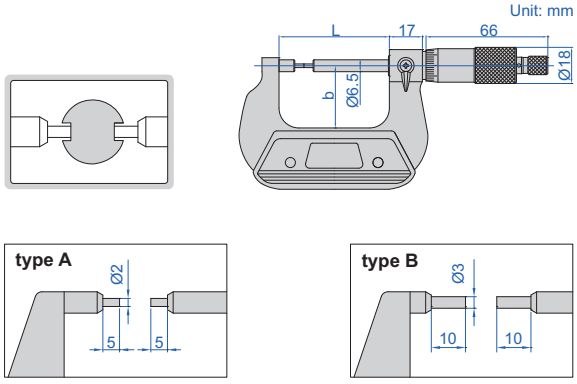
- Meet DIN863-3
- Measure splined shafts, slots and keyways
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)



3233-25BA

(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3233-25A** | 0-25mm | A | 4μm | 57 | 32 |
| **3233-50A** | 25-50mm | A | 4μm | 82 | 44.5 |
| **3233-75A** | 50-75mm | A | 5μm | 107 | 57 |
| **3233-100A** | 75-100mm | A | 5μm | 132.6 | 69.5 |
| **3233-125A** | 100-125mm | A | 6μm | 158 | 82 |
| **3233-150A** | 125-150mm | A | 6μm | 183.4 | 94.5 |
| **3233-175A** | 150-175mm | A | 7μm | 208.8 | 107 |
| **3233-25BA** | 0-25mm | B | 4μm | 57 | 32 |
| **3233-50BA** | 25-50mm | B | 4μm | 82 | 44.5 |
| **3233-75BA** | 50-75mm | B | 5μm | 107 | 57 |
| **3233-100BA** | 75-100mm | B | 5μm | 132.6 | 69.5 |
| **3233-125BA** | 100-125mm | B | 6μm | 158 | 82 |
| **3233-150BA** | 125-150mm | B | 6μm | 183.4 | 94.5 |
| **3233-175BA** | 150-175mm | B | 7μm | 208.8 | 107 |




## DIGITAL SPLINE MICROMETERS

IP65 WATERPROOF

DATA OUTPUT

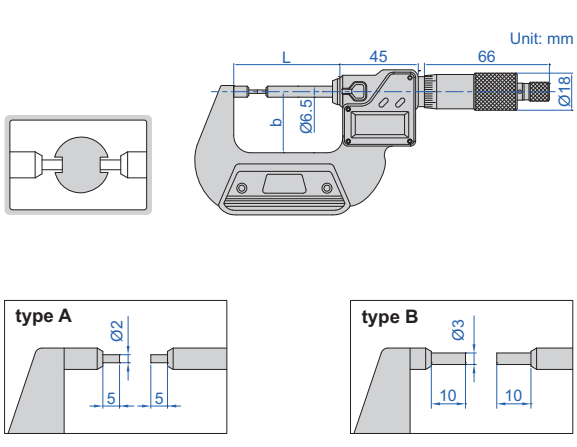
- Measure splined shafts, slots and keyways
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20




3533-25BA

(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3533-25A** | 0-25mm/0-1" | A | ±4μm | 57 | 32 |
| **3533-50A** | 25-50mm/1-2" | A | ±4μm | 82 | 44.5 |
| **3533-75A** | 50-75mm/2-3" | A | ±5μm | 107 | 57 |
| **3533-100A** | 75-100mm/3-4" | A | ±5μm | 132.6 | 69.5 |
| **3533-125A** | 100-125mm/4-5" | A | ±6μm | 158 | 82 |
| **3533-150A** | 125-150mm/5-6" | A | ±6μm | 183.4 | 94.5 |
| **3533-175A** | 150-175mm/6-7" | A | ±7μm | 208.8 | 107 |
| **3533-25BA** | 0-25mm/0-1" | B | ±4μm | 57 | 32 |
| **3533-50BA** | 25-50mm/1-2" | B | ±4μm | 82 | 44.5 |
| **3533-75BA** | 50-75mm/2-3" | B | ±5μm | 107 | 57 |
| **3533-100BA** | 75-100mm/3-4" | B | ±5μm | 132.6 | 69.5 |
| **3533-125BA** | 100-125mm/4-5" | B | ±6μm | 158 | 82 |
| **3533-150BA** | 125-150mm/5-6" | B | ±6μm | 183.4 | 94.5 |
| **3533-175BA** | 150-175mm/6-7" | B | ±7μm | 208.8 | 107 |



# DIGITAL SPLINE MICROMETERS/SNAP GAUGES

ONE TURN OF SLEEVE MAKES 5MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM

MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

NON-ROTATING SPINDLE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

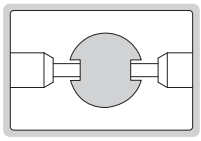
IP65 WATERPROOF

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO

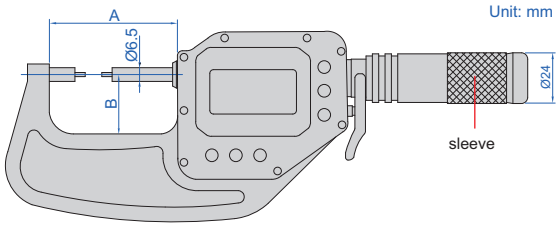


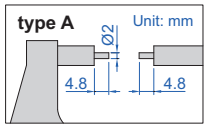


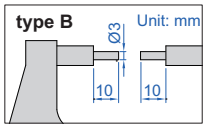



- Measure splined shafts, slots and keyways
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0002mm/0.00001"
  0.001mm/0.00005"
  0.01mm/0.0005"
- One turn of sleeve makes 5mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Linear ball bearings for ten million times use
- Carbide spindle and anvil
- Measuring force 7-10N
  Customizable measuring force range 2-12N
  Attention: small measuring force will reduce the dustproof and waterproof level
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch, adjust resolution
- Supplied with gauge blocks for zero setting (except 0-25mm/0-1")
- Power: rechargeable battery, for 24 hours continuous working

**3356-25**



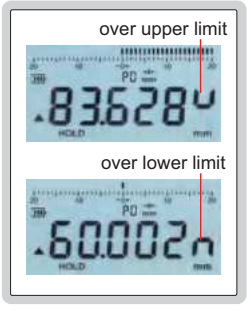




**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Accuracy | Type | Repeatability | A | B |
|---|---|---|---|---|---|---|
| **3356-25** * | 0-25mm/0-1" | 2μm | A | 1μm | 63mm | 25mm |
| **3356-50** * | 25-50mm/1-2" | 2μm | A | 1μm | 88mm | 42mm |
| **3356-75** * | 50-75mm/2-3" | 2μm | A | 1μm | 113mm | 56mm |
| **3356-25B** * | 0-25mm/0-1" | 2μm | B | 1μm | 63mm | 25mm |
| **3356-50B** * | 25-50mm/1-2" | 2μm | B | 1μm | 88mm | 42mm |
| **3356-75B** * | 50-75mm/2-3" | 2μm | B | 1μm | 113mm | 56mm |

alarm when over tolerance




**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Type | Repeatability | A | B |
|---|---|---|---|---|---|---|
| **3356-25WL** * | 0-25mm/0-1" | 2μm | A | 1μm | 63mm | 25mm |
| **3356-50WL** * | 25-50mm/1-2" | 2μm | A | 1μm | 88mm | 42mm |
| **3356-75WL** * | 50-75mm/2-3" | 2μm | A | 1μm | 113mm | 56mm |
| **3356-25BWL** * | 0-25mm/0-1" | 2μm | B | 1μm | 63mm | 25mm |
| **3356-50BWL** * | 25-50mm/1-2" | 2μm | B | 1μm | 88mm | 42mm |
| **3356-75BWL** * | 50-75mm/2-3" | 2μm | B | 1μm | 113mm | 56mm |

wireless receiver
**2134-R1, 2134-R2 (optional)**



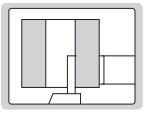
*Supplied with manufacturer inspection certificate

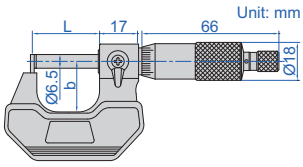
## CYLINDRICAL ANVIL TUBE MICROMETERS

- Measure wall thickness of tubes
- Graduation 0.01mm
- Ratchet stop
- Carbide spindle tip
- Supplied with setting standards (except 0-25mm)



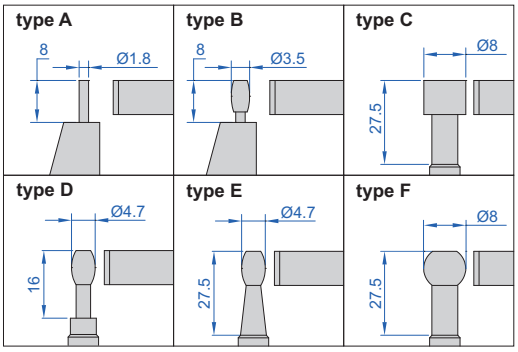
3261-25A






(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| 3261-25A | 0-25mm | A | 6μm | 36 | 25 |
| 3261-50A | 25-50mm | A | 6μm | 61 | 32 |
| 3261-25BA | 0-25mm | B | 6μm | 36 | 25 |
| 3261-50BA | 25-50mm | B | 6μm | 61 | 32 |
| 3261-25CA | 0-25mm | C | 6μm | 36 | 25 |
| 3261-50CA | 25-50mm | C | 6μm | 61 | 32 |
| 3261-25DA | 0-25mm | D | 6μm | 36 | 25 |
| 3261-50DA | 25-50mm | D | 6μm | 61 | 32 |
| 3261-25EA | 0-25mm | E | 6μm | 36 | 25 |
| 3261-50EA | 25-50mm | E | 6μm | 61 | 32 |
| 3261-25FA | 0-25mm | F | 6μm | 36 | 25 |
| 3261-50FA | 25-50mm | F | 6μm | 61 | 32 |




## DIGITAL CYLINDRICAL ANVIL TUBE MICROMETERS

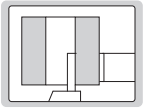
IP65 WATERPROOF

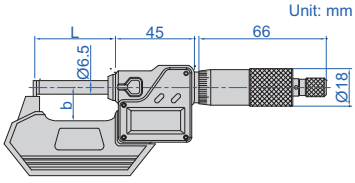
DATA OUTPUT

- Measure wall thickness of tubes
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide spindle tip
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20



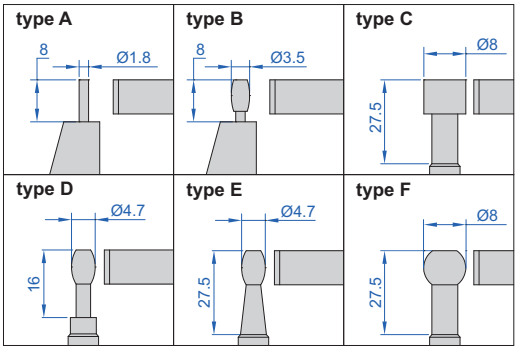

3561-25A






(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| 3561-25A | 0-25mm/0-1" | A | ±6μm | 36 | 25 |
| 3561-50A | 25-50mm/1-2" | A | ±6μm | 61 | 32 |
| 3561-25BA | 0-25mm/0-1" | B | ±6μm | 36 | 25 |
| 3561-50BA | 25-50mm/1-2" | B | ±6μm | 61 | 32 |
| 3561-25CA | 0-25mm/0-1" | C | ±6μm | 36 | 25 |
| 3561-50CA | 25-50mm/1-2" | C | ±6μm | 61 | 32 |
| 3561-25DA | 0-25mm/0-1" | D | ±6μm | 36 | 25 |
| 3561-50DA | 25-50mm/1-2" | D | ±6μm | 61 | 32 |
| 3561-25EA | 0-25mm/0-1" | E | ±6μm | 36 | 25 |
| 3561-50EA | 25-50mm/1-2" | E | ±6μm | 61 | 32 |
| 3561-25FA | 0-25mm/0-1" | F | ±6μm | 36 | 25 |
| 3561-50FA | 25-50mm/1-2" | F | ±6μm | 61 | 32 |



## SPHERICAL ANVIL TUBE MICROMETERS

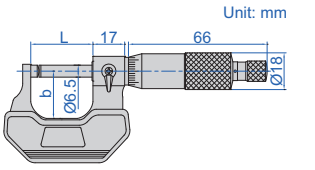
- Meet DIN863-3
- Measure wall thickness of tubes
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)

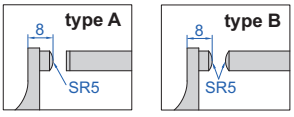


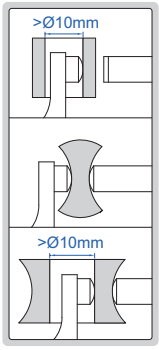
3260-25A

(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3260-25A** | 0-25mm | A | 4μm | 32 | 24 |
| **3260-50A** | 25-50mm | A | 4μm | 57 | 32 |
| **3260-75A** | 50-75mm | A | 5μm | 82 | 44.5 |
| **3260-100A** | 75-100mm | A | 5μm | 107 | 57 |
| **3260-25SA** | 0-25mm | B | 4μm | 32 | 24 |
| **3260-50SA** | 25-50mm | B | 4μm | 57 | 32 |
| **3260-75SA** | 50-75mm | B | 5μm | 82 | 44.5 |
| **3260-100SA** | 75-100mm | B | 5μm | 107 | 57 |




6

IP65 WATERPROOF

DATA OUTPUT

## DIGITAL SPHERICAL ANVIL TUBE MICROMETERS

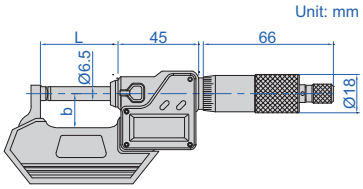


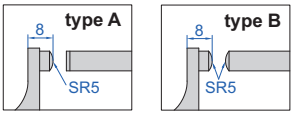

3560-25A

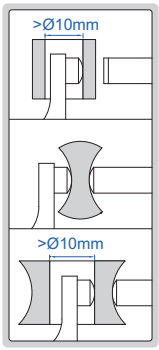
- Measure wall thickness of tubes
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20

(mm)

| Code | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|
| **3560-25A** | 0-25mm/0-1" | A | ±4μm | 32 | 24 |
| **3560-50A** | 25-50mm/1-2" | A | ±4μm | 57 | 32 |
| **3560-75A** | 50-75mm/2-3" | A | ±5μm | 82 | 44.5 |
| **3560-100A** | 75-100mm/3-4" | A | ±5μm | 107 | 57 |
| **3560-25SA** | 0-25mm/0-1" | B | ±4μm | 32 | 24 |
| **3560-50SA** | 25-50mm/1-2" | B | ±4μm | 57 | 32 |
| **3560-75SA** | 50-75mm/2-3" | B | ±5μm | 82 | 44.5 |
| **3560-100SA** | 75-100mm/3-4" | B | ±5μm | 107 | 57 |



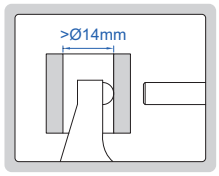



# DIGITAL SPHERICAL ANVIL TUBE MICROMETERS/SNAP GAUGES

**IP65** WATERPROOF | NON-ROTATING SPINDLE | ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF | ONE TURN OF SLEEVE MAKES 5MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM | MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

INSPECTION CERTIFICATE | ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING | DATA OUTPUT

VIDEO

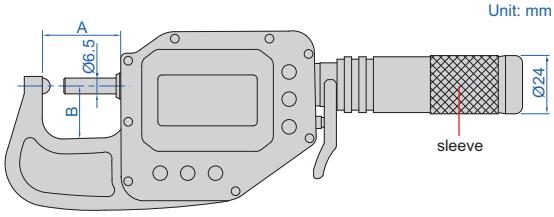


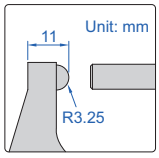




**3355-25**

- Measure wall thickness of tubes
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0002mm/0.00001"
  0.001mm/0.00005"
  0.01mm/0.0005"
- One turn of sleeve makes 5mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Linear ball bearings for ten million times use
- Carbide spindle and anvil
- Measuring force 7-10N
  Customizable measuring force range 2-12N
  Attention: small measuring force will reduce the dustproof and waterproof level
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch, adjust resolution
- Supplied with gauge blocks for zero setting (except 0-25mm/0-1")
- Power: rechargeable battery, for 24 hours continuous working

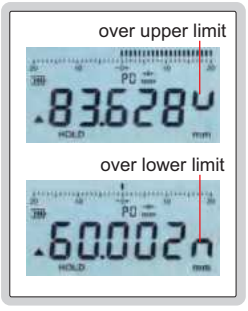



**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Accuracy | Repeatability | A | B |
|---|---|---|---|---|---|
| **3355-25** * | 0-25mm/0-1" | 2μm | 1μm | 38mm | 24mm |
| **3355-50** * | 25-50mm/1-2" | 2μm | 1μm | 63mm | 25mm |
| **3355-75** * | 50-75mm/2-3" | 2μm | 1μm | 88mm | 42mm |
| **3355-100** * | 75-100mm/3-3.95" | 2μm | 1μm | 113mm | 56mm |

alarm when over tolerance




**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Repeatability | A | B |
|---|---|---|---|---|---|
| **3355-25WL*** | 0-25mm/0-1" | 2μm | 1μm | 38mm | 24mm |
| **3355-50WL*** | 25-50mm/1-2" | 2μm | 1μm | 63mm | 25mm |
| **3355-75WL*** | 50-75mm/2-3" | 2μm | 1μm | 88mm | 42mm |
| **3355-100WL*** | 75-100mm/3-3.95" | 2μm | 1μm | 113mm | 56mm |

wireless receiver
**2134-R1, 2134-R2 (optional)**



*Supplied with manufacturer inspection certificate



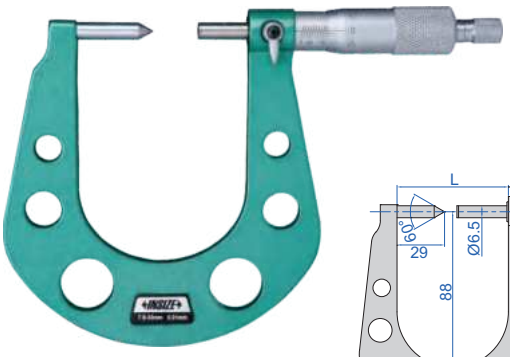
info@insz.sk | +421 944 367 573 | www.insz.sk

## DISK BRAKE MICROMETERS

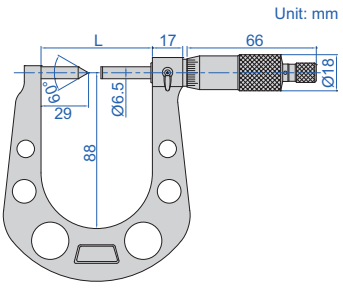
**RELATIVE PRODUCT: DIGITAL DISK BRAKE AND PAD CALIPER DIGITAL DRUM BRAKE CALIPER (CODE 1162-125A, 1167-150A, 1168-300A)**

- Measure thickness of disk brakes
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards





3288-33A




| Code | Range | Accuracy | L |
|---|---|---|---|
| **3288-33A** | 7.6-33mm | 5µm | 64.5mm |
| **3288-50A** | 25-50mm | 5µm | 82mm |

## DIGITAL DISK BRAKE MICROMETERS

**RELATIVE PRODUCT: DIGITAL DISK BRAKE AND PAD CALIPER DIGITAL DRUM BRAKE CALIPER (CODE 1162-125A, 1167-150A, 1168-300A)**

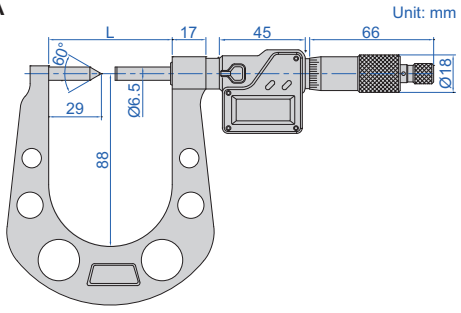
**IP65** WATERPROOF

DATA OUTPUT

- Measure thickness of disk brakes
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: wireless transmitter code **7315-31** (receiver is needed) page 6, bluetooth transmitter code **7214-31** page 12, data output cable code **7302-31** page 20




3588-33A




| Code | Range | Accuracy | L |
|---|---|---|---|
| **3588-33A** | 7.6-33mm/0.3-1.3" | ±5µm | 64.5mm |
| **3588-50A** | 25-50mm/1-2" | ±5µm | 82mm |

## SHEET METAL MICROMETERS

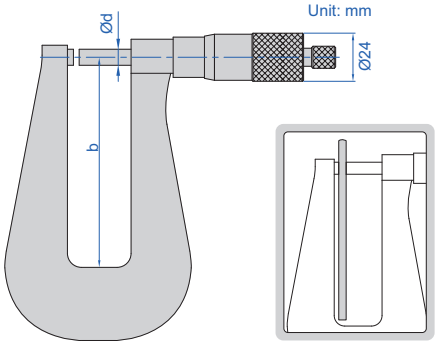
**ATTENTION: SETTING STANDARDS ARE NOT INCLUDED**

INSIZE PLUS MADE IN EUROPE

- Deep frame suitable for sheet metal, paper and plastic
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Optional accessory: setting standards (code **7386**)



3653-252A




**(mm)**

| Code | Range | Accuracy | b | Ød |
|---|---|---|---|---|
| **3653-251A** | 0-25mm | 4µm | 50 | 6.5 |
| **3653-252A** | 0-25mm | 5µm | 100 | 8 |
| **3653-253A** | 0-25mm | 6µm | 150 | 6.5 |
| **3653-254A** | 0-25mm | 8µm | 250 | 6.5 |
| **3653-501A** | 25-50mm | 4µm | 50 | 8 |
| **3653-502A** | 0-50mm | 4µm | 50 | 8 |
| **3653-503A** | 0-50mm | 5µm | 100 | 8 |
| **3653-100A** | 50-100mm | 5µm | 100 | 8 |

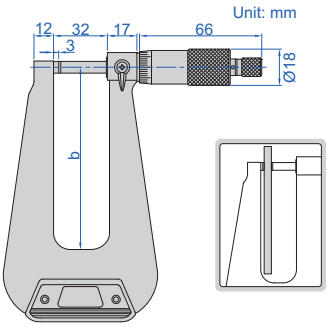
## SHEET METAL MICROMETERS

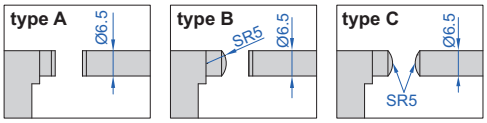
- Deep frame suitable for sheet metal, paper and plastic
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces

| Code | Range | Type | Accuracy | b |
|---|---|---|---|---|
| **3239-253** | 0-25mm | A | 7μm | 155mm |
| **3239-253F** | 0-25mm | B | 7μm | 155mm |
| **3239-254F** | 0-25mm | B | 10μm | 310mm |
| **3239-253S** | 0-25mm | C | 7μm | 155mm |



**3239-253**



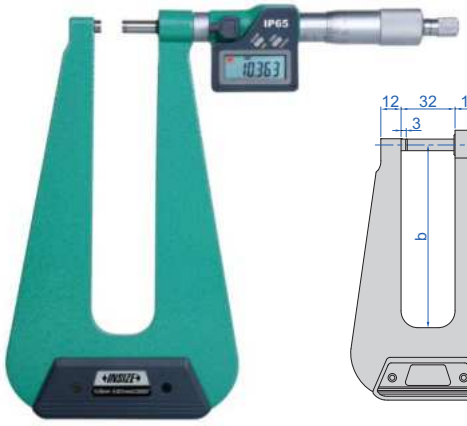

## DIGITAL SHEET METAL MICROMETERS

DATA OUTPUT

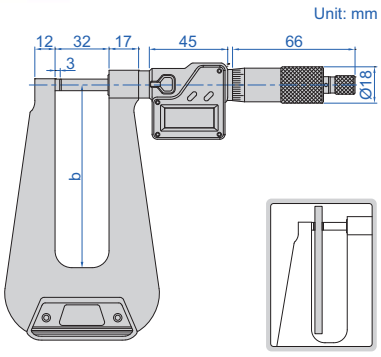
IP65 WATERPROOF

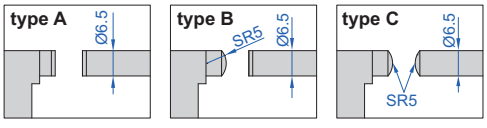
- Deep frame suitable for sheet metal, paper and plastic
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide measuring faces
- Optional accessory: wireless transmitter code **7315-31** (receiver is needed) page 6, bluetooth transmitter code **7214-31** page 12, data output cable code **7302-31** page 20

| Code | Range | Type | Accuracy | b |
|---|---|---|---|---|
| **3539-253A** | 0-25mm/0-1" | A | ±7μm | 155mm |
| **3539-253FA** | 0-25mm/0-1" | B | ±7μm | 155mm |
| **3539-254FA** | 0-25mm/0-1" | B | ±10μm | 310mm |
| **3539-253SA** | 0-25mm/0-1" | C | ±7μm | 155mm |



**3539-253A**



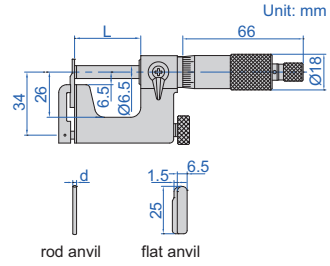

## INTERCHANGEABLE ANVIL MICROMETERS

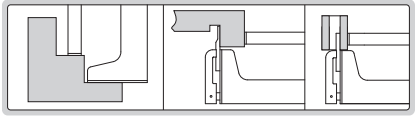
- Measure tube thickness, shoulder edge distance, rivet head height, etc.
- Supplied with flat anvil and rod anvil
- Graduation 0.01mm
- Ratchet stop
- Carbide spindle tip
- Setting standards are included (except 0-25mm)

| Code | Range | Accuracy | L | d |
|---|---|---|---|---|
| **3262-25A** | 0-25mm | 4μm | 28.5mm | Ø3mm |
| **3262-50A** | 25-50mm | 4μm | 53.5mm | Ø5mm |



**3262-25A**



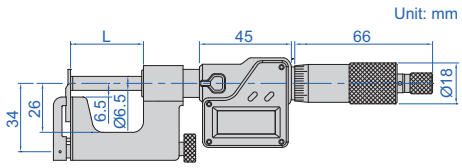
## DIGITAL INTERCHANGEABLE ANVIL MICROMETERS

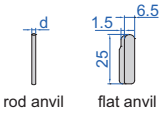
IP65 WATERPROOF | DATA OUTPUT

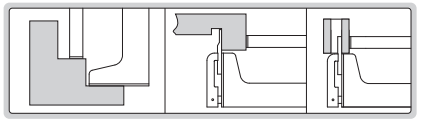
- Measure tube thickness, shoulder edge distance, rivet head height, etc.
- Supplied with flat anvil and rod anvil
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide spindle tip
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20




**3562-25A**

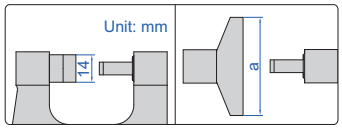


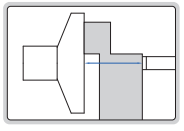
| Code | Range | Accuracy | L | d |
|---|---|---|---|---|
| **3562-25A** | 0-25mm/0-1" | ±4μm | 28.5mm | Ø3mm |
| **3562-50A** | 25-50mm/1-2" | ±4μm | 53.5mm | Ø5mm |

## LARGE ANVIL MICROMETERS

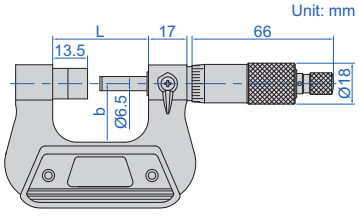





**3234-25A**

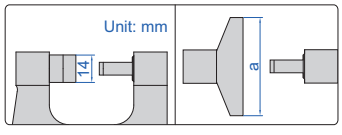


- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards (except 0-25mm)




| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3234-25A** | 0-25mm | 4μm | 42mm | 50mm | 26mm |
| **3234-50A** | 25-50mm | 4μm | 67mm | 60mm | 38mm |

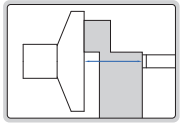
## DIGITAL LARGE ANVIL MICROMETERS



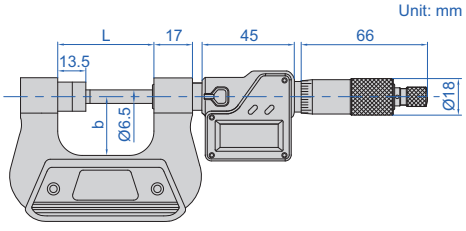

DATA OUTPUT | IP65 WATERPROOF



**3534-25A**



- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20



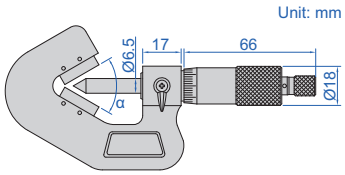

| Code | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|
| **3534-25A** | 0-25mm/0-1" | ±4μm | 42mm | 50mm | 26mm |
| **3534-50A** | 25-50mm/1-2" | ±4μm | 67mm | 60mm | 38mm |

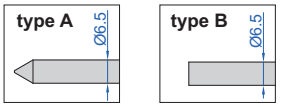
## V-ANVIL MICROMETERS

- Measure the diameter of parts or cutting tools with odd grooves, such as taps, reamers and end mills
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards



3290-153A




| Code | Range | Flutes | Accuracy | α | Type |
|---|---|---|---|---|---|
| **3290-153A** | 1-15mm | 3 | 4µm | 60° | A |
| **3290-203A** | 5-20mm | 3 | 4µm | 60° | B |
| **3290-353A** | 20-35mm | 3 | 5µm | 60° | B |
| **3290-503A** | 35-50mm | 3 | 5µm | 60° | B |
| **3290-653A** | 50-65mm | 3 | 6µm | 60° | B |
| **3290-803A** | 65-80mm | 3 | 6µm | 60° | B |
| **3290-953A** | 80-95mm | 3 | 7µm | 60° | B |
| **3290-255A** | 5-25mm | 5 | 4µm | 108° | B |

| Code | Range | Flutes | Accuracy | α | Type |
|---|---|---|---|---|---|
| **3290-455A** | 25-45mm | 5 | 5µm | 108° | B |
| **3290-655A** | 45-65mm | 5 | 6µm | 108° | B |
| **3290-855A** | 65-85mm | 5 | 7µm | 108° | B |
| **3290-1055A** | 85-105mm | 5 | 8µm | 108° | B |
| **3290-257A** | 5-25mm | 7 | 4µm | 128°34'17" | B |
| **3290-457A** | 25-45mm | 7 | 5µm | 128°34'17" | B |
| **3290-657A** | 45-65mm | 7 | 6µm | 128°34'17" | B |
| **3290-857A** | 65-85mm | 7 | 7µm | 128°34'17" | B |

## DIGITAL V-ANVIL MICROMETERS

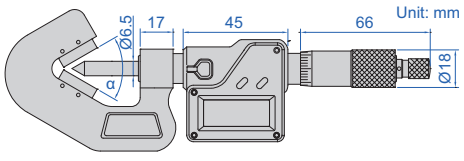
**IP65** WATERPROOF

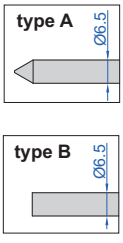
DATA OUTPUT

- Measure the diameter of parts or cutting tools with odd grooves, such as taps, reamers and end mills
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20




**3590-153A**




| Code | Range | Flutes | Accuracy | α | Type |
|---|---|---|---|---|---|
| **3590-153A** | 1-15mm/0.04-0.6" | 3 | ±4µm | 60° | A |
| **3590-203A** | 5-20mm/0.2-0.8" | 3 | ±4µm | 60° | B |
| **3590-353A** | 20-35mm/0.8-1.4" | 3 | ±5µm | 60° | B |
| **3590-503A** | 35-50mm/1.4-2.0" | 3 | ±5µm | 60° | B |
| **3590-653A** | 50-65mm/2.0-2.6" | 3 | ±6µm | 60° | B |
| **3590-803A** | 65-80mm/2.6-3.2" | 3 | ±6µm | 60° | B |
| **3590-953A** | 80-95mm/3.2-3.6" | 3 | ±6µm | 60° | B |
| **3590-255A** | 5-25mm/0.2-1.0" | 5 | ±4µm | 108° | B |

| Code | Range | Flutes | Accuracy | α | Type |
|---|---|---|---|---|---|
| **3590-455A** | 25-45mm/1.0-1.8" | 5 | ±5µm | 108° | B |
| **3590-655A** | 45-65mm/1.8-2.6" | 5 | ±6µm | 108° | B |
| **3590-855A** | 65-85mm/2.6-3.4" | 5 | ±6µm | 108° | B |
| **3590-1055A** | 85-105mm/3.4-4.2" | 5 | ±6µm | 108° | B |
| **3590-257A** | 5-25mm/0.2-1.0" | 7 | ±4µm | 128°34'17" | B |
| **3590-457A** | 25-45mm/1.0-1.8" | 7 | ±4µm | 128°34'17" | B |
| **3590-657A** | 45-65mm/1.8-2.6" | 7 | ±5µm | 128°34'17" | B |
| **3590-857A** | 65-85mm/2.6-3.4" | 7 | ±5µm | 128°34'17" | B |



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NON-ROTATING SPINDLE

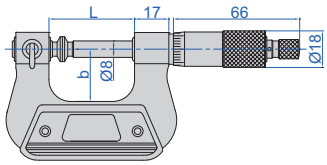
## NON-ROTATING SPINDLE UNIVERSAL MICROMETERS



**3280-25A**

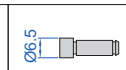
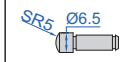
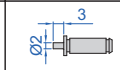
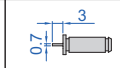
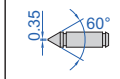
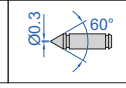
- Meet DIN863-3
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with 7 pairs of anvil/spindle tip
- Setting standards are included (except 0-25mm)
- Optional accessory: 55° anvil/spindle tip (code **3280-SP1** and **3280-SP2**)

Unit: mm

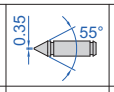
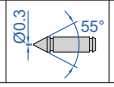



| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3280-25A** | 0-25mm | 4μm | 42mm | 26mm |
| **3280-50A** | 25-50mm | 4μm | 67mm | 38mm |
| **3280-75A** | 50-75mm | 5μm | 92mm | 50mm |
| **3280-100A** | 75-100mm | 5μm | 118mm | 62mm |
| **3280-125A** | 100-125mm | 6μm | 143mm | 70mm |
| **3280-150A** | 125-150mm | 6μm | 168mm | 82mm |
| **3280-175A** | 150-175mm | 7μm | 192mm | 95mm |
| **3280-200A** | 175-200mm | 7μm | 217mm | 107mm |

Anvil/spindle tip (included) Unit: mm

| | | |
|---|---|---|
| Flat |  |  |
| Spherical |  |  |
| Spline |  |  |
| Disk |  |  |
| Blade |  |  |
| Knife-edge |  |  |
| Point |  |  |

55° anvil/spindle tip (**optional**) Unit: mm

| | | |
|---|---|---|
| Code **3280-SP1** Knife-edge |  |  |
| Code **3280-SP2** Point |  |  |

NON-ROTATING SPINDLE

DATA OUTPUT

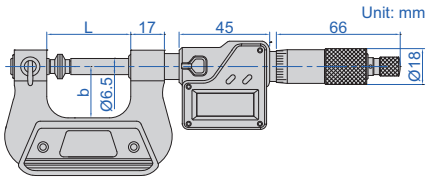
## DIGITAL UNIVERSAL MICROMETERS



**3580-25A**

- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Supplied with 7 pairs of anvil/spindle tip
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory: 55° anvil/spindle tip code **3280-SP1** and **3280-SP2**, wireless transmitter code **7315-31** (receiver is needed) page 6, bluetooth transmitter code **7214-31** page 12, data output cable code **7302-31** page 20

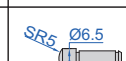
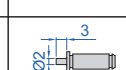
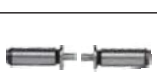
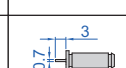
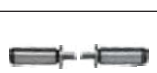
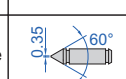
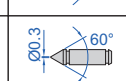
Unit: mm



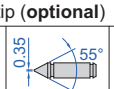
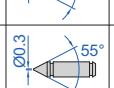

(mm)

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3580-25A** | 0-25mm/0-1" | ±4μm | 42 | 26 |
| **3580-50A** | 25-50mm/1-2" | ±4μm | 67 | 38 |
| **3580-75A** | 50-75mm/2-3" | ±5μm | 92 | 50 |
| **3580-100A** | 75-100mm/3-4" | ±5μm | 118 | 62 |
| **3580-125A** | 100-125mm/4-5" | ±6μm | 143 | 70 |
| **3580-150A** | 125-150mm/5-6" | ±6μm | 168 | 82 |
| **3580-175A** | 150-175mm/6-7" | ±7μm | 192 | 95 |
| **3580-200A** | 175-200mm/7-8" | ±7μm | 217 | 107 |

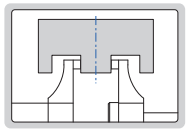
Anvil/spindle tip (included) Unit: mm

| | | |
|---|---|---|
| Flat |  |  |
| Spherical |  |  |
| Spline |  |  |
| Disk |  |  |
| Blade |  |  |
| Knife-edge |  |  |
| Point |  |  |

55° anvil/spindle tip (**optional**) Unit: mm

| | | |
|---|---|---|
| Code **3280-SP1** Knife-edge |  |  |
| Code **3280-SP2** Point |  |  |

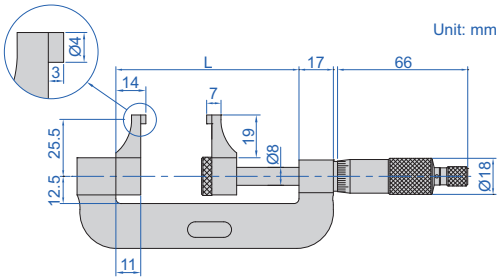
## CALIPER TYPE MICROMETERS





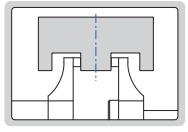
3238-25

- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)




| Code | Range | Accuracy | L |
|---|---|---|---|
| 3238-25 | 0-25mm | 10μm | 56mm |
| 3238-50 | 25-50mm | 10μm | 81mm |
| 3238-75 | 50-75mm | 11μm | 106mm |
| 3238-100 | 75-100mm | 11μm | 131mm |

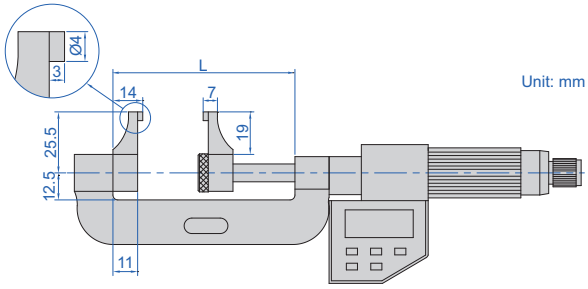
## DIGITAL CALIPER TYPE MICROMETERS





3538-25

- Resolution: 0.001mm/0.00005"
- Non-rotating spindle
- Buttons: on/off, data set, mm/in, ABS/INC
- Data output
- Automatic power off
- Ratchet friction thimble
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm/0-1")




| Code | Range | Accuracy | L |
|---|---|---|---|
| 3538-25 | 0-25mm/0-1" | ±10μm | 56mm |
| 3538-50 | 25-50mm/1-2" | ±10μm | 81mm |
| 3538-75 | 50-75mm/2-3" | ±11μm | 106mm |
| 3538-100 | 75-100mm/3-4" | ±11μm | 131mm |



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NON-ROTATING SPINDLE

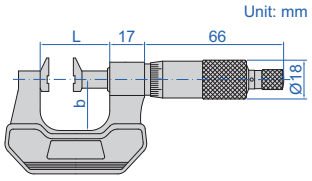
## JAW TYPE MICROMETERS

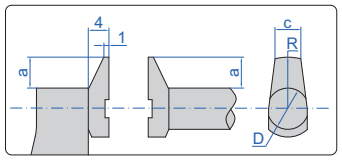


3283-25A

- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with setting standards (except 0-25mm)

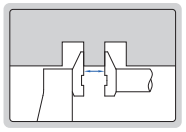
Unit: mm

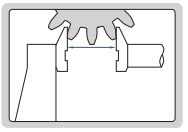



(mm)

| Code | Range | Accuracy | L | a | b | c | R | D |
|---|---|---|---|---|---|---|---|---|
| **3283-25A** | 0-25mm | 4μm | 34 | 6 | 24 | 5 | 10 | 8 |
| **3283-50A** | 25-50mm | 4μm | 59 | 6 | 32 | 5 | 10 | 8 |
| **3283-75A** | 50-75mm | 5μm | 85 | 6 | 45 | 5 | 10 | 8 |
| **3283-100A** | 75-100mm | 5μm | 110 | 6 | 57 | 5 | 10 | 8 |
| **3283-125A** | 100-125mm | 6μm | 138 | 9 | 70 | 8 | 15 | 12 |
| **3283-150A** | 125-150mm | 6μm | 163 | 9 | 82 | 8 | 15 | 12 |
| **3283-175A** | 150-175mm | 7μm | 188 | 9 | 95 | 8 | 15 | 12 |
| **3283-200A** | 175-200mm | 7μm | 214 | 9 | 107 | 8 | 15 | 12 |





6

DATA OUTPUT

NON-ROTATING SPINDLE

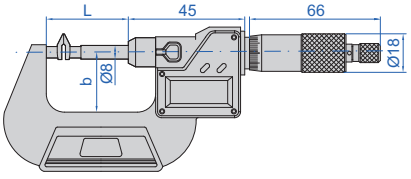
## DIGITAL JAW TYPE MICROMETERS

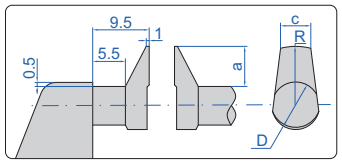


3583-25A

- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20

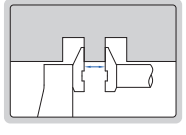
Unit: mm

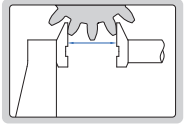



(mm)

| Code | Range | Accuracy | L | a | b | c | R | D |
|---|---|---|---|---|---|---|---|---|
| **3583-25A** | 0-25mm/0-1" | ±4μm | 43 | 6.5 | 32 | 5 | 10 | 8 |
| **3583-50A** | 25-50mm/1-2" | ±4μm | 85 | 6.5 | 44.5 | 5 | 10 | 8 |
| **3583-75A** | 50-75mm/2-3" | ±5μm | 110 | 6.5 | 57 | 5 | 10 | 8 |
| **3583-100A** | 75-100mm/3-4" | ±5μm | 135 | 6.5 | 70 | 5 | 10 | 8 |
| **3583-125A** | 100-125mm/4-5" | ±6μm | 160 | 11.5 | 86 | 8 | 15 | 12 |
| **3583-150A** | 125-150mm/5-6" | ±6μm | 186 | 11.5 | 94.5 | 8 | 15 | 12 |
| **3583-175A** | 150-175mm/6-7" | ±7μm | 211 | 11.5 | 107 | 8 | 15 | 12 |
| **3583-200A** | 175-200mm/7-8" | ±7μm | 236 | 11.5 | 120 | 8 | 15 | 12 |





# DISK INDICATING MICROMETERS

INSIZE PLUS
MADE IN EUROPE

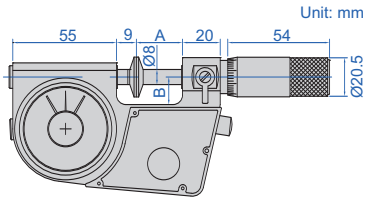
INSPECTION CERTIFICATE

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED






**3338-20**

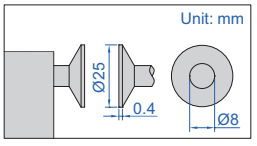


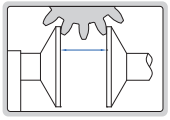

- Meet DIN863-3
- Suitable for measuring the common normal length of spur and helical gears
- Carbide measuring faces
- Measuring force 5-10N
- Optional accessory: gauge blocks grade 0 (**4101-A** series), for zero setting

6

**(mm)**

| Code | Micrometer head | | | Dial indicator | | | A | B |
|---|---|---|---|---|---|---|---|---|
| | range | graduation | accuracy | range | graduation | accuracy | | |
| **3338-201*** | 0-20mm | 0.01mm | 4μm | ±0.07mm | 1μm | 2μm | 26 | 15 |
| **3338-20*** | 0-20mm | 0.01mm | 4μm | ±0.14mm | 2μm | 4μm | 26 | 15 |
| **3338-451*** | 20-45mm | 0.01mm | 4μm | ±0.07mm | 1μm | 2μm | 51.5 | 25 |
| **3338-45*** | 20-45mm | 0.01mm | 4μm | ±0.14mm | 2μm | 4μm | 51.5 | 25 |
| **3338-701*** | 45-70mm | 0.01mm | 4μm | ±0.07mm | 1μm | 2μm | 76.5 | 37 |
| **3338-70*** | 45-70mm | 0.01mm | 4μm | ±0.14mm | 2μm | 4μm | 76.5 | 37 |
| **3338-951*** | 70-95mm | 0.01mm | 4μm | ±0.07mm | 1μm | 2μm | 101.5 | 52.5 |
| **3338-95*** | 70-95mm | 0.01mm | 4μm | ±0.14mm | 2μm | 4μm | 101.5 | 52.5 |
| **3338-120*** | 95-120mm | 0.01mm | 4μm | ±0.14mm | 2μm | 2μm | 126.5 | 65 |
| **3338-145*** | 120-145mm | 0.01mm | 4μm | ±0.14mm | 2μm | 4μm | 126.5 | 77.5 |



*Supplied with manufacturer inspection certificate

# DISK MICROMETERS

INSIZE PLUS
MADE IN EUROPE

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

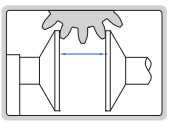
- Graduation: 0.01mm
- Ratchet stop
- One turn of sleeve makes 0.5mm spindle feed
- Optional accessory: setting standards (code **7386**)

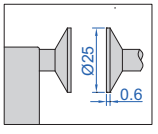


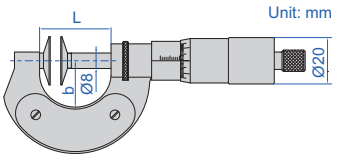

**3676-25**

**(mm)**

| Code | Range | Accuracy | L | b |
|---|---|---|---|---|
| **3676-25** | 0-25mm | 4μm | 37 | 24 |
| **3676-50** | 25-50mm | 4μm | 62 | 34 |
| **3676-75** | 50-75mm | 5μm | 87 | 46 |
| **3676-100** | 75-100mm | 5μm | 112 | 60 |
| **3676-125** | 100-125mm | 6μm | 139 | 72 |
| **3676-150** | 125-150mm | 6μm | 164 | 85 |
| **3676-175** | 150-175mm | 7μm | 190 | 97 |
| **3676-200** | 175-200mm | 7μm | 215 | 110 |
| **3676-225** | 200-225mm | 8μm | 240 | 122 |
| **3676-250** | 225-250mm | 8μm | 264 | 135 |
| **3676-275** | 250-275mm | 9μm | 290 | 148 |
| **3676-300** | 275-300mm | 9μm | 315 | 160 |





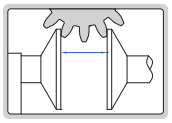



ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

LIGHT WEIGHT

# LARGE RANGE DISK MICROMETERS

INSIZE PLUS
MADE IN EUROPE





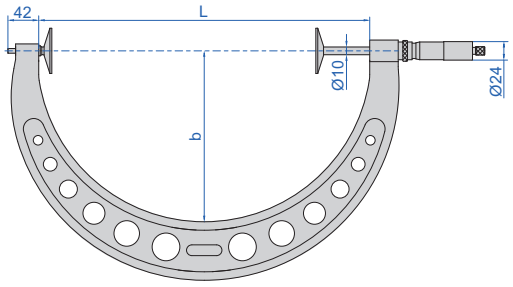
- Graduation: 0.01mm
- Ratchet stop
- Quick measurement, one turn of sleeve makes 1mm spindle feed
- Light weight
- Optional accessory: setting standards (code **7386**)

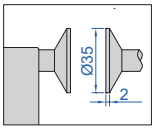
**3677-350**

(mm)

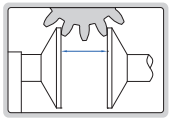
| Code | Range | Accuracy | L | b | Weight |
|---|---|---|---|---|---|
| **3677-350** | 300-350mm | 8μm | 370 | 190 | 1.65kg |
| **3677-400** | 350-400mm | 8μm | 430 | 220 | 1.95kg |
| **3677-450** | 400-450mm | 9μm | 475 | 250 | 2.30kg |
| **3677-500** | 450-500mm | 9μm | 530 | 273 | 2.45kg |
| **3677-550** | 500-550mm | 10μm | 570 | 291 | 2.55kg |
| **3677-600** | 550-600mm | 10μm | 630 | 323 | 3.15kg |
| **3677-650** | 600-650mm | 10μm | 675 | 351 | 3.45kg |
| **3677-700** | 650-700mm | 10μm | 730 | 378 | 3.85kg |
| **3677-750** | 700-750mm | 10μm | 785 | 401 | 4.05kg |
| **3677-800** | 750-800mm | 10μm | 830 | 423 | 4.25kg |
| **3677-850** | 800-850mm | 11μm | 885 | 440 | 4.45kg |
| **3677-900** | 850-900mm | 11μm | 930 | 473 | 5.05kg |
| **3677-950** | 900-950mm | 11μm | 980 | 503 | 5.95kg |
| **3677-1000** | 950-1000mm | 11μm | 1030 | 520 | 6.25kg |

Unit: mm




# DISK MICROMETERS

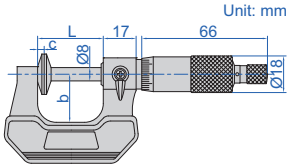




**3282-25**

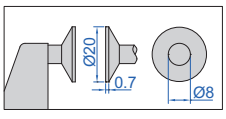
- Measure root tangent length of gear
- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards

Unit: mm




(mm)

| Code | Range | Accuracy | Parallelism | L | b | c |
|---|---|---|---|---|---|---|
| **3282-25** | 0-25mm | 4μm | 5μm | 34 | 24 | 3.3 |
| **3282-50** | 25-50mm | 4μm | 5μm | 59 | 32 | 3.3 |
| **3282-75** | 50-75mm | 5μm | 5μm | 85 | 45 | 3.3 |
| **3282-100** | 75-100mm | 5μm | 5μm | 110 | 57 | 3.3 |

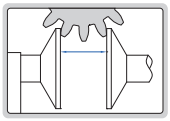


## NON-ROTATING SPINDLE DISK MICROMETERS

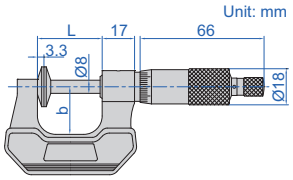
NON-ROTATING SPINDLE



3294-25

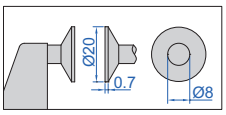


- Measure root tangent length of gear
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with setting standards




(mm)

| Code | Range | Accuracy | Parallelism | L | b |
|---|---|---|---|---|---|
| **3294-25** | 0-25mm | 4μm | 5μm | 34 | 24 |
| **3294-50** | 25-50mm | 4μm | 5μm | 59 | 32 |
| **3294-75** | 50-75mm | 5μm | 5μm | 85 | 45 |
| **3294-100** | 75-100mm | 5μm | 5μm | 110 | 57 |



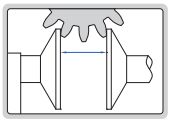

## DIGITAL NON-ROTATING SPINDLE DISK MICROMETERS

DATA OUTPUT

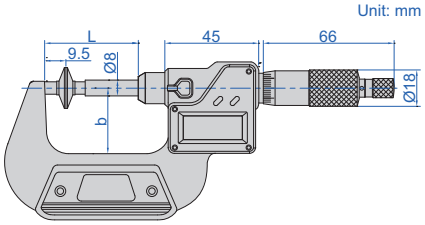
NON-ROTATING SPINDLE



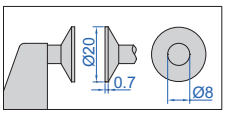
3594-25A



- Measure root tangent length of gear
- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Supplied with setting standards
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20




| Code | Range | Accuracy | Parallelism | L | b |
|---|---|---|---|---|---|
| **3594-25A** | 0-25mm/0-1" | ±4μm | 5μm | 43mm | 32mm |
| **3594-50A** | 25-50mm/1-2" | ±4μm | 5μm | 68mm | 44.5mm |
| **3594-75A** | 50-75mm/2-3" | ±5μm | 5μm | 93mm | 57mm |
| **3594-100A** | 75-100mm/3-4" | ±5μm | 5μm | 118.5mm | 70mm |



# DIGITAL DISK MICROMETERS/SNAP GAUGES

DATA OUTPUT | NON-ROTATING SPINDLE | ONE TURN OF SLEEVE MAKES 5MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM | ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF | MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

IP65 WATERPROOF

VIDEO

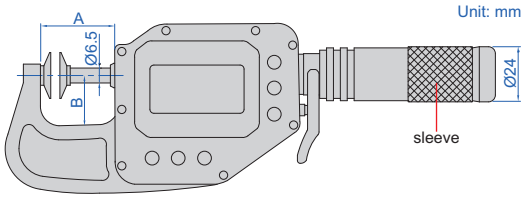
INSPECTION CERTIFICATE

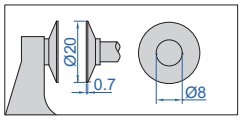


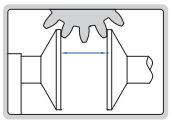

**3353-25**



- Measure root tangent length of gear
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0002mm/0.00001"
  0.001mm/0.00005"
  0.01mm/0.0005"
- One turn of sleeve makes 5mm spindle feed
- Measurement accuracy is not affected by the use of sleeve
- Press the fork, the spindle retracts 3mm
- Linear ball bearings for ten million times use
- Carbide spindle and anvil
- Measuring force 7-10N
  Customizable measuring force range 2-12N
  Attention: small measuring force will reduce the dustproof and waterproof level
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, zero, mm/inch, adjust resolution
- Supplied with gauge blocks for zero setting
- Power: rechargeable battery, for 24 hours continuous working



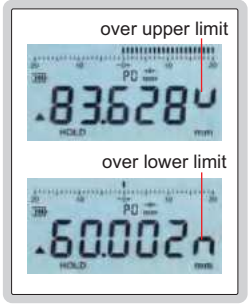



**With data interface**
Optional accessory:
wireless transmitter code **7315-3350** (receiver is needed) page 7
data output cable (keyboard format) code **7302-3350** page 21

| Code | Range | Accuracy | Repeatability | Parallelism | A | B |
|---|---|---|---|---|---|---|
| **3353-25** * | 0-25mm/0-1" | 4μm | 1μm | 4μm | 38mm | 24mm |
| **3353-50** * | 25-50mm/1-2" | 4μm | 1μm | 4μm | 63mm | 25mm |
| **3353-75** * | 50-75mm/2-3" | 5μm | 1μm | 5μm | 88mm | 42mm |
| **3353-100** * | 75-100mm/3-3.95" | 5μm | 1μm | 5μm | 113mm | 56mm |

alarm when over tolerance




**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Repeatability | Parallelism | A | B |
|---|---|---|---|---|---|---|
| **3353-25WL** * | 0-25mm/0-1" | 4μm | 1μm | 4μm | 38mm | 24mm |
| **3353-50WL** * | 25-50mm/1-2" | 4μm | 1μm | 4μm | 63mm | 25mm |
| **3353-75WL** * | 50-75mm/2-3" | 5μm | 1μm | 5μm | 88mm | 42mm |
| **3353-100WL** * | 75-100mm/3-3.95" | 5μm | 1μm | 5μm | 113mm | 56mm |

wireless receiver
**2134-R1, 2134-R2 (optional)**



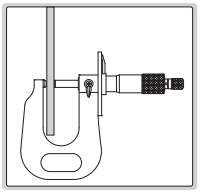
*Supplied with manufacturer inspection certificate

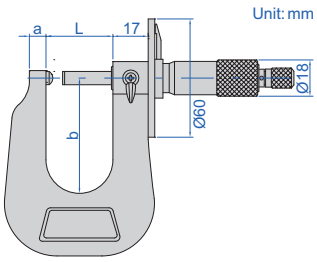
## SHEET METAL MICROMETERS

- Meet DIN863-3
- Measure thickness of sheet metal, paper, plastic and rubber parts
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces



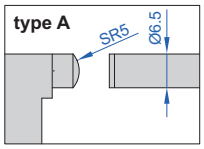
3263-25A

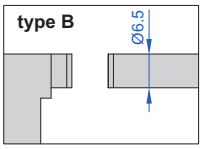





(mm)

| Code | Range | Type | Accuracy | L | a | b |
|---|---|---|---|---|---|---|
| 3263-15A | 0-15mm | A | 4μm | 22 | 8 | 50 |
| 3263-25A | 0-25mm | A | 4μm | 32 | 8 | 50 |
| 3263-50A | 0-50mm | A | 5μm | 57 | 12 | 100 |
| 3263-15B | 0-15mm | B | 4μm | 22 | 8 | 50 |
| 3263-25B | 0-25mm | B | 4μm | 32 | 8 | 50 |
| 3263-50B | 0-50mm | B | 5μm | 57 | 12 | 100 |




## MICROMETERS FOR HOT PLATE

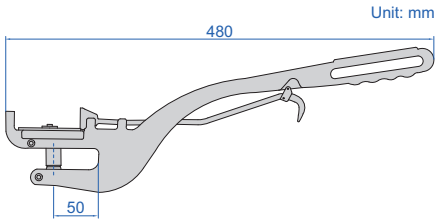
VIDEO

- Measure thickness of hot rolling sheet metal
- Carbide measuring faces
- Supplied with setting standard (except 0-15mm)



3264-15

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 3264-15 | 0-15mm | 0.05mm | 0.05mm |
| 3264-30 | 15-30mm | 0.05mm | 0.05mm |
| 3264-45 | 30-45mm | 0.05mm | 0.05mm |
| 3264-60 | 45-60mm | 0.05mm | 0.05mm |
| 3264-75 | 60-75mm | 0.05mm | 0.05mm |
| 3264-90 | 75-90mm | 0.05mm | 0.05mm |
| 3264-105 | 90-105mm | 0.05mm | 0.05mm |




## HUB MICROMETERS

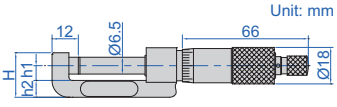
- Meet DIN863-3
- Measure hub thickness and shoulder inside a bore
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)

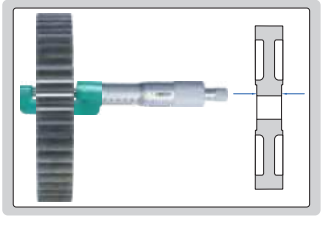


3292-25

(mm)

| Code | Range | Accuracy | h1 | h2 | H |
|---|---|---|---|---|---|
| 3292-25 | 0-25mm | 4μm | 6 | 9 | 18.7 |
| 3292-50 | 25-50mm | 4μm | 6.5 | 11 | 21.2 |
| 3292-75 | 50-75mm | 5μm | 6.5 | 11 | 21.2 |
| 3292-100 | 75-100mm | 5μm | 6.5 | 11 | 21.2 |





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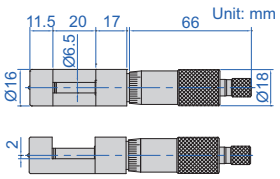
## WIRE MICROMETER

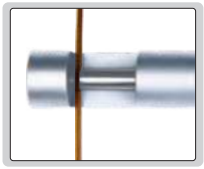
- Meet DIN863-3
- Measure diameter of wires and small balls
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces



**3285-10**

| Code | Range | Accuracy |
|---|---|---|
| **3285-10** | 0-10mm | 4μm |

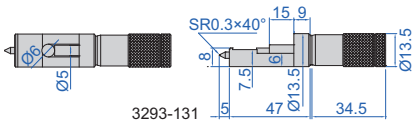


## CAN SEAM MICROMETERS

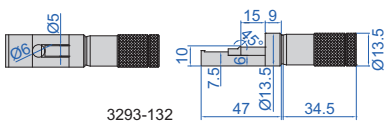


**3293-131**



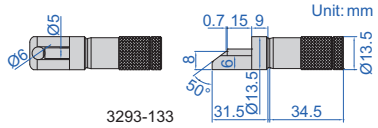



**3293-132**



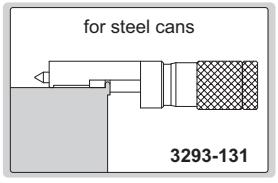


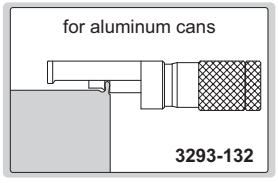

**3293-133**

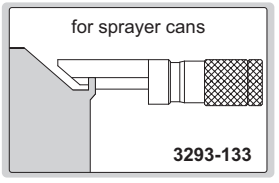



- Measure the width, height and depth of can seams
- Graduation 0.01mm

| Code | Range | Accuracy |
|---|---|---|
| **3293-131** | 0-13mm | 4μm |
| **3293-132** | 0-13mm | 4μm |
| **3293-133** | 0-13mm | 4μm |



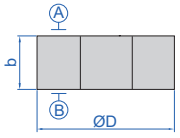

## OPTICAL PARALLELS

- Check the flatness and parallelism of measuring faces of micrometer
- Flatness of A and B: 0.1μm
- Parallelism between A and B: 0.6μm

| Code | Parallels included (b) | ØD | Applicable micrometer |
|---|---|---|---|
| **4184-41A** | 15.62mm, 15.75mm, 15.87mm, 16.00mm | 30mm | 0-25mm |
| **4184-42A** | 40.62mm, 40.75mm, 40.87mm, 41.00mm | 30mm | 25-50mm |
| **4184-43B** | 65.62mm, 65.75mm, 65.87mm, 66.00mm | 40mm | 50-75mm |
| **4184-44B** | 90.62mm, 90.75mm, 90.87mm, 91.00mm | 50mm | 75-100mm |



**4184-41A**




## PARALLELISM INSPECT DEVICES FOR OUTSIDE MICROMETERS

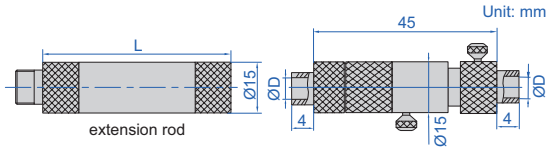
VIDEO

MEASURING TIPS DIAMETER ØD CAN BE CUSTOMIZED

- Check parallelism of outside micrometers
- Simple structure, wide measuring range, high reliability
- Stainless steel measuring tips and extension rod
- Supplied with two kinds of measuring tips



**4199-1000**




| Code | Range | Measuring tips dia. (ØD) | Extension rod (L) |
|---|---|---|---|
| **4199-1000** | 50-1000mm | 6.5mm, 8mm | 15mm, 25mm, 50mm, 100mm (3 pcs), 150mm, 200mm (2 pcs) |
| **4199-2000** | 50-2000mm | 6.5mm, 8mm | 15mm, 25mm, 50mm, 100mm (3 pcs), 150mm, 200mm (7 pcs) |

# MEASURING TOOLS DYNAMOMETERS

VIDEO

- It can be used for measuring force of micrometers, depth micrometers, dial test indicators, inside micrometers, indicators, micrometer heads and optical instruments (optical meters, contact interferometers) and other force measure ment verification
- High precision, wide application, reliable structure, easy to operate



ISF-DGD15



**SPECIFICATION**

| Code | ISF-DGD15 | ISF-DGD50 |
|---|---|---|
| Measuring range | 0~15N | 0~50N |
| Resolution | 0.01N | |
| Accuracy | <4N: ±0.01N; ≥4N: ±0.5% | |
| Dimension | 230×220×310mm | |
| Weight | 10kg | |

**STANDARD DELIVERY**

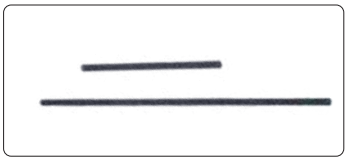
| | |
|---|---|
| Main unit | 1 pc |
| Disk | 1 pc |
| Rod | 2 pcs |
| Clamping disk | 1 pc |



clamping disk (included)



disk (included)



rod (included)



check the measuring force of micrometers



check the measuring force of dial indicators



check the measuring force of dial test indicators



check the measuring force of indicating micrometers



check the measuring force of bore gauges



check the measuring force of calipers



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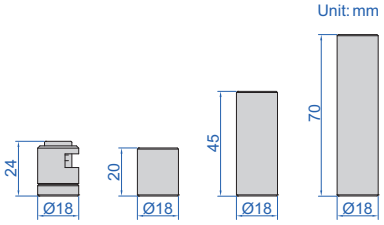
## MICROMETER MEASURING FORCE DETECTOR

- For outside micrometers 0-25mm/0-1", 25-50mm/1-2", 50-75mm/2-3" and 75-100mm/3-4"



6315

| Code | Measuring force |
|---|---|
| 6315 | 5-12N |






REFER TO PAGE 356 FOR DETAILS

## MICROMETER INSPECTION GAUGE BLOCK SETS



4107-10



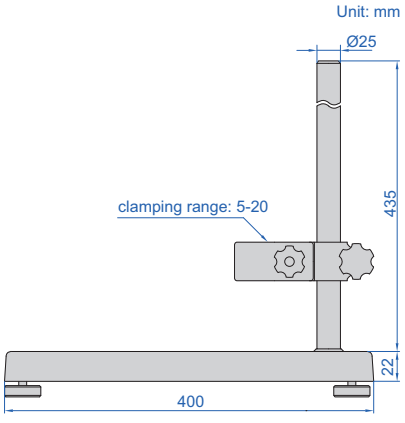
4160-10

## MICROMETER STAND





6302



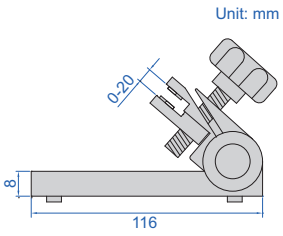

| Code |
|---|
| 6302 |

- Suitable for 100-300mm outside micrometers (except **3675** series)

## MICROMETER STAND



6300






| Code |
|---|
| 6300 |

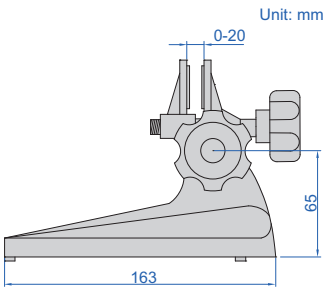
- Suitable for outside micrometers up to 100mm

## MICROMETER STAND

- Suitable for outside micrometers up to 100mm

| Code |
|---|
| 6301 |



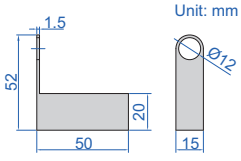





6301

- Suitable for inside micrometers





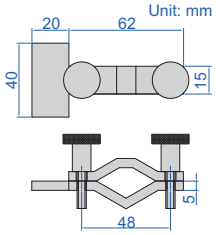



6301-1

| Code | Description | Applicable products |
|---|---|---|
| 6301-1 | clamp for inside micrometers | all sizes of **3220** series |

- Suitable for three points internal micrometers








6301-2

| Code | Description | Applicable products |
|---|---|---|
| 6301-2 | clamp for three points internal micrometers | up to 100mm of **3127** and **3227** series |



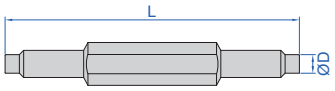
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# MICROMETER SETTING STANDARDS

INSIZE PLUS
MADE IN EUROPE




7386-100




- Suitable for outside micrometers

| Code | Length (L) | Accuracy | ØD |
|---|---|---|---|
| 7386-25 | 25mm | ±1.25μm | 6.5mm |
| 7386-50 | 50mm | ±1.25μm | 6.5mm |
| 7386-75 | 75mm | ±1.5μm | 6.5mm |
| 7386-100 | 100mm | ±2μm | 6.5mm |
| 7386-125 | 125mm | ±2.5μm | 6.5mm |
| 7386-150 | 150mm | ±2.5μm | 6.5mm |
| 7386-175 | 175mm | ±2.5μm | 6.5mm |
| 7386-200 | 200mm | ±3μm | 6.5mm |
| 7386-225 | 225mm | ±3μm | 6.5mm |
| 7386-250 | 250mm | ±3μm | 6.5mm |
| 7386-275 | 275mm | ±3μm | 6.5mm |
| 7386-300 | 300mm | ±3μm | 10mm |
| 7386-325 | 325mm | ±3.5μm | 10mm |
| 7386-350 | 350mm | ±3.5μm | 10mm |
| 7386-375 | 375mm | ±3.5μm | 10mm |
| 7386-400 | 400mm | ±3.5μm | 10mm |

| Code | Length (L) | Accuracy | ØD |
|---|---|---|---|
| 7386-425 | 425mm | ±3.5μm | 10mm |
| 7386-450 | 450mm | ±3.5μm | 10mm |
| 7386-475 | 475mm | ±3.5μm | 10mm |
| 7386-500 | 500mm | ±3.5μm | 10mm |
| 7386-525 | 525mm | ±3.5μm | 10mm |
| 7386-550 | 550mm | ±3.5μm | 10mm |
| 7386-575 | 575mm | ±3.5μm | 10mm |
| 7386-600 | 600mm | ±3.5μm | 10mm |
| 7386-625 | 625mm | ±4μm | 10mm |
| 7386-650 | 650mm | ±4μm | 10mm |
| 7386-675 | 675mm | ±4μm | 10mm |
| 7386-700 | 700mm | ±4μm | 10mm |
| 7386-725 | 725mm | ±4μm | 10mm |
| 7386-750 | 750mm | ±4μm | 10mm |
| 7386-775 | 775mm | ±4μm | 10mm |
| 7386-800 | 800mm | ±4μm | 10mm |
| 7386-825 | 825mm | ±4μm | 10mm |

| Code | Length (L) | Accuracy | ØD |
|---|---|---|---|
| 7386-850 | 850mm | ±4μm | 10mm |
| 7386-875 | 875mm | ±4μm | 10mm |
| 7386-900 | 900mm | ±5μm | 10mm |
| 7386-925 | 925mm | ±5μm | 10mm |
| 7386-950 | 950mm | ±5μm | 10mm |
| 7386-975 | 975mm | ±5μm | 10mm |
| 7386-1000 | 1000mm | ±5μm | 10mm |
| 7386-1050 | 1050mm | ±5μm | 10mm |
| 7386-1150 | 1150mm | ±6μm | 10mm |
| 7386-1250 | 1250mm | ±7μm | 10mm |
| 7386-1350 | 1350mm | ±7μm | 10mm |
| 7386-1450 | 1450mm | ±7μm | 10mm |
| 7386-1550 | 1550mm | ±9μm | 10mm |
| 7386-1650 | 1650mm | ±10μm | 10mm |
| 7386-1750 | 1750mm | ±10μm | 10mm |
| 7386-1850 | 1850mm | ±11μm | 10mm |
| 7386-1950 | 1950mm | ±12μm | 10mm |



# MICROMETER SETTING STANDARDS




6310-100

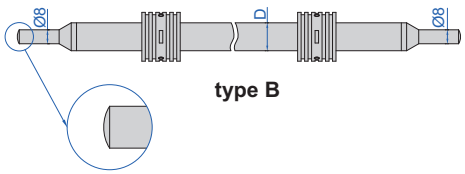



type A



6310-300

Unit: mm




type B

(mm)

| Code | Length | Type | Accuracy | D |
|---|---|---|---|---|
| 6310-25 | 25 | A | ±1.5μm | Ø7 |
| 6310-50 | 50 | A | ±2μm | Ø7 |
| 6310-75 | 75 | A | ±2.5μm | Ø7 |
| 6310-100 | 100 | A | ±3μm | Ø8 |
| 6310-125 | 125 | A | ±3.5μm | Ø8 |
| 6310-150 | 150 | A | ±4μm | Ø8 |
| 6310-175 | 175 | A | ±4.5μm | Ø8 |
| 6310-200 | 200 | A | ±5μm | Ø8 |
| 6310-225 | 225 | A | ±5.5μm | Ø8 |
| 6310-250 | 250 | A | ±6μm | Ø8 |
| 6310-275 | 275 | A | ±6.5μm | Ø8 |
| 6310-300 | 300 | B | ±7μm | Ø16 |
| 6310-325 | 325 | B | ±7.5μm | Ø16 |
| 6310-350 | 350 | B | ±8μm | Ø16 |
| 6310-375 | 375 | B | ±8.5μm | Ø16 |

(mm)

| Code | Length | Type | Accuracy | D |
|---|---|---|---|---|
| 6310-400 | 400 | B | ±9μm | Ø16 |
| 6310-425 | 425 | B | ±9.5μm | Ø16 |
| 6310-450 | 450 | B | ±10μm | Ø16 |
| 6310-475 | 475 | B | ±10.5μm | Ø16 |
| 6310-500 | 500 | B | ±11μm | Ø16 |
| 6310-525 | 525 | B | ±11.5μm | Ø16 |
| 6310-575 | 575 | B | ±12.5μm | Ø16 |
| 6310-625 | 625 | B | ±13.5μm | Ø16 |
| 6310-675 | 675 | B | ±14.5μm | Ø16 |
| 6310-725 | 725 | B | ±15.5μm | Ø16 |
| 6310-775 | 775 | B | ±16.5μm | Ø16 |
| 6310-825 | 825 | B | ±17.5μm | Ø16 |
| 6310-875 | 875 | B | ±18.5μm | Ø16 |
| 6310-925 | 925 | B | ±19.5μm | Ø16 |
| 6310-975 | 975 | B | ±20.5μm | Ø16 |

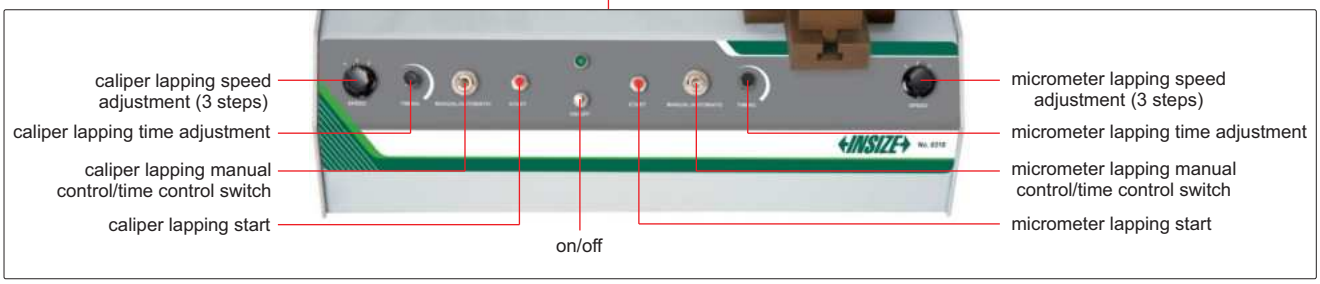
(mm)

| Code | Length | Type | Accuracy | D |
|---|---|---|---|---|
| 6310-1050 | 1050 | B | ±22μm | Ø23 |
| 6310-1150 | 1150 | B | ±24μm | Ø23 |
| 6310-1250 | 1250 | B | ±26μm | Ø23 |
| 6310-1350 | 1350 | B | ±28μm | Ø23 |
| 6310-1450 | 1450 | B | ±30μm | Ø23 |
| 6310-1550 | 1550 | B | ±32μm | Ø23 |
| 6310-1650 | 1650 | B | ±34μm | Ø23 |
| 6310-1750 | 1750 | B | ±36μm | Ø23 |
| 6310-1850 | 1850 | B | ±38μm | Ø23 |
| 6310-1950 | 1950 | B | ±40μm | Ø23 |

# CALIPER/MICROMETER LAPPING MACHINE
# CODE 6318

VIDEO






lapping measuring surfaces of caliper lower jaws



lapping measuring surfaces of outside micrometer



- For lapping measuring surfaces of caliper lower jaws and outside micrometers
- Suitable for 0-300mm range calipers and 0-100mm range outside micrometers
- Supplied with lapping block and diamond paste for calipers
- Lapping blocks for micrometers are optional, diamond paste is included
- Optional accessory: micrometer lapping blocks

caliper lapping block (included)



micrometer lapping blocks (code: **6307-1**, **optional**)



**SPECIFICATION**

| | |
|---|---|
| **Power supply** | 220V, 50/60Hz |
| **Dimension (L×W×H)** | 430×400×210mm |
| **Weight** | 28kg |

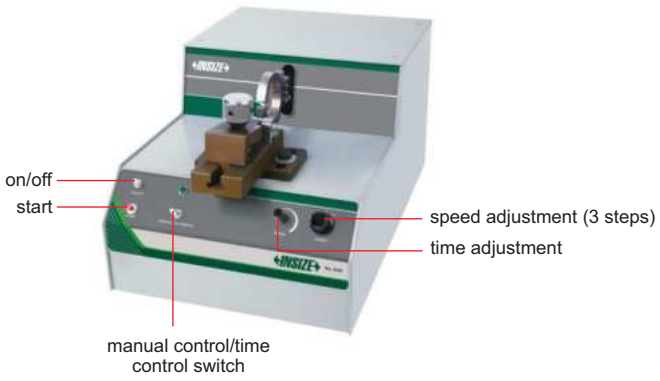
**MICROMETER LAPPING BLOCKS (optional)**

| Code | For micrometer | Remark |
|---|---|---|
| **6307-1** | 0~25mm | includes 4 lapping blocks |
| **6307-2** | 25~50mm | includes 4 lapping blocks |
| **6307-3** | 50~75mm | includes 4 lapping blocks |
| **6307-4** | 75~100mm | includes 4 lapping blocks |

VIDEO

# MICROMETER LAPPING MACHINE CODE 6307

- Used for lapping micrometer measuring surfaces
- Suitable for 0~100mm outside micrometers
- Supplied with diamond paste
- Optional accessory: micrometer lapping blocks




**SPECIFICATION**

| | |
|---|---|
| **Power supply** | 220V, 50/60Hz |
| **Dimension (L×W×H)** | 360×230×210mm |
| **Weight** | 15kg |

**MICROMETER LAPPING BLOCKS (optional)**

| Code | For micrometer | Remark |
|---|---|---|
| **6307-1** | 0~25mm | includes 4 lapping blocks |
| **6307-2** | 25~50mm | includes 4 lapping blocks |
| **6307-3** | 50~75mm | includes 4 lapping blocks |
| **6307-4** | 75~100mm | includes 4 lapping blocks |

micrometer lapping blocks (code: **6307-1**, **optional**)





IP65 WATERPROOF

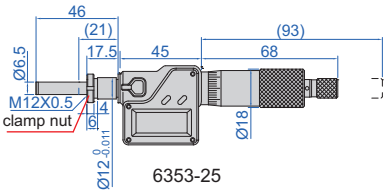
DATA OUTPUT

# DIGITAL MICROMETER HEADS

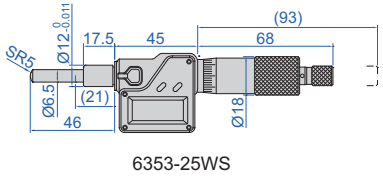
- Resolution: 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output, automatic power off
- Ratchet stop
- Optional accessory:
  wireless transmitter code **7315-31** (receiver is needed) page 6,
  bluetooth transmitter code **7214-31** page 12,
  data output cable code **7302-31** page 20




**6353-25W**

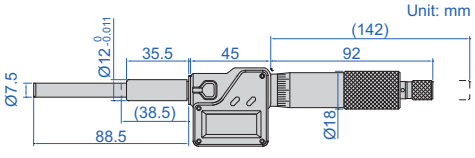



6353-25

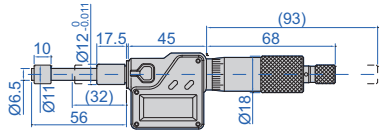



6353-25WS

Unit: mm




6353-50W




6354-25W

**Rotating spindle**

| Code | Range | Stem | Spindle tip | Accuracy |
|---|---|---|---|---|
| **6353-25** | 0-25mm/0-1" | with clamp nut | flat (carbide) | ±2μm |
| **6353-25W** | 0-25mm/0-1" | plain | flat (carbide) | ±2μm |
| **6353-25S** | 0-25mm/0-1" | with clamp nut | spherical (SR5) | ±2μm |
| **6353-25WS** | 0-25mm/0-1" | plain | spherical (SR5) | ±2μm |
| **6353-50W** | 0-50mm/0-2" | plain | flat (carbide) | ±4μm |

**Non-rotating spindle**

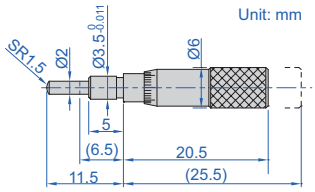
| Code | Range | Stem | Spindle tip | Accuracy |
|---|---|---|---|---|
| **6354-25W** | 0-25mm/0-1" | plain | flat | ±2μm |

## SMALL MICROMETER HEAD

- Graduation: 0.02mm



6372-5WS




| Code | Range | Stem | Spindle tip | Accuracy |
|---|---|---|---|---|
| 6372-5WS | 0-5mm | plain | spherical (SR1.5) | 5μm |

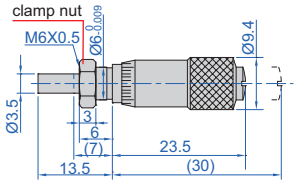
## SMALL MICROMETER HEADS

6

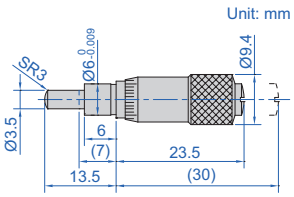
- Range: 0-6.5mm
- Graduation: 0.01mm
- Accuracy: 5μm



6385-65W




6385-65



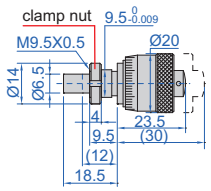

6385-65WS

| Code | Stem | Spindle tip |
|---|---|---|
| 6385-65 | with clamp nut | flat |
| 6385-65W | plain | flat |
| 6385-65S | with clamp nut | spherical (SR3) |
| 6385-65WS | plain | spherical (SR3) |

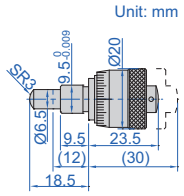
## LARGE THIMBLE MICROMETER HEADS



6373-65



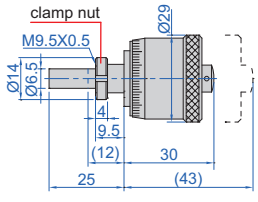

6373-65



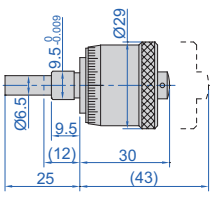

6373-65WS



6373-13




6373-13




6373-13W

| Code | Range | Stem | Spindle tip |
|---|---|---|---|
| 6373-65 | 0-6.5mm | with clamp nut | flat |
| 6373-65W | 0-6.5mm | plain | flat |
| 6373-65S | 0-6.5mm | with clamp nut | spherical (SR3) |
| 6373-65WS | 0-6.5mm | plain | spherical (SR3) |
| 6373-13 | 0-13mm | with clamp nut | flat |
| 6373-13W | 0-13mm | plain | flat |

- Meet DIN863-2
- Large thimble diameter for easy reading
- Graduation: 0.01mm
- Accuracy: 3μm

## MICROMETER HEADS WITH ZERO ADJUSTABLE THIMBLE

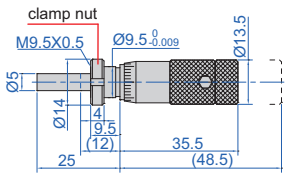
- Meet DIN863-2
- Range: 0-13mm
- Graduation: 0.01mm
- Accuracy: 3μm
- The thimble can be set to zero at any position



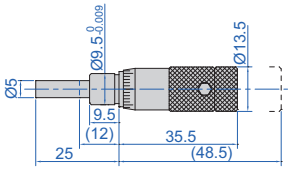
**6384-13W**

| Code | Stem | Spindle tip |
|---|---|---|
| **6384-13** | with clamp nut | flat |
| **6384-13W** | plain | flat |

Unit: mm



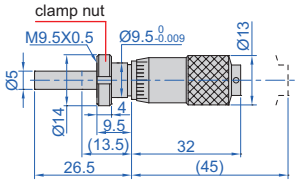

6384-13




6384-13W

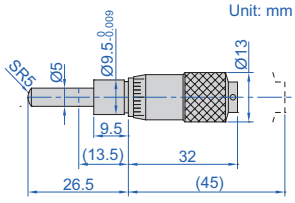


## MICROMETER HEADS




6386-13

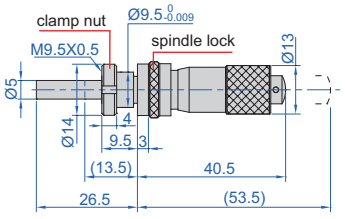
Unit: mm



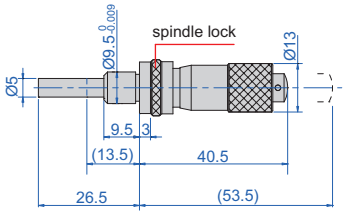

6386-13WS



**6386-13W**




6386-13P




6386-13WP



**6386-13P**

| Code | Range | Stem | Spindle tip | Remark | Accuracy |
|---|---|---|---|---|---|
| **6386-13** | 0-13mm | with clamp nut | flat | | 3μm |
| **6386-13W** | 0-13mm | plain | flat | | 3μm |
| **6386-13S** | 0-13mm | with clamp nut | spherical (SR5) | | 3μm |
| **6386-13WS** | 0-13mm | plain | spherical (SR5) | | 3μm |
| **6386-13P** | 0-13mm | with clamp nut | flat | with spindle lock | 3μm |
| **6386-13WP** | 0-13mm | plain | flat | with spindle lock | 3μm |

- Meet DIN863-2
- Graduation: 0.01mm

## MICROMETER HEADS

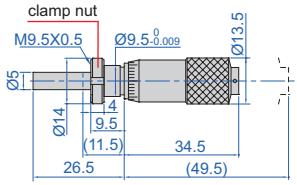
- Meet DIN863-2
- Graduation: 0.01mm
- Accuracy: 3μm



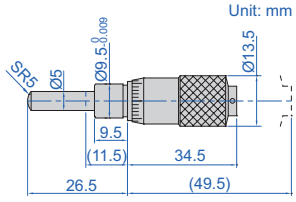
**6387-15WS**

| Code | Range | Stem | Spindle tip |
|---|---|---|---|
| **6387-15** | 0-15mm | with clamp nut | flat |
| **6387-15W** | 0-15mm | plain | flat |
| **6387-15S** | 0-15mm | with clamp nut | spherical (SR5) |
| **6387-15WS** | 0-15mm | plain | spherical (SR5) |

Unit: mm




6387-15

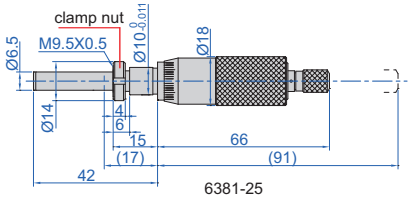



6387-15WS

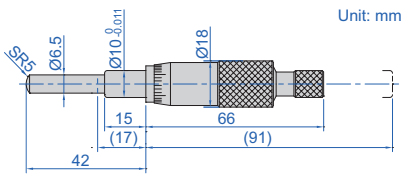
## MICROMETER HEADS



6381-25



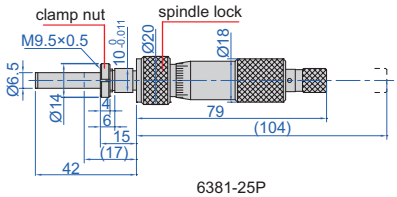

6381-25



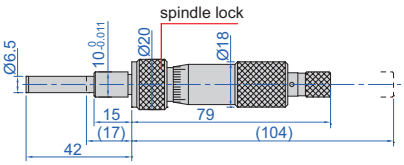

6381-25WS



6381-25P




6381-25P




6381-25WP

- Meet DIN863-2
- Graduation: 0.01mm
- Ratchet stop

| Code | Range | Stem | Spindle tip | Remark | Accuracy |
|---|---|---|---|---|---|
| **6381-25** | 0-25mm | with clamp nut | flat (carbide) | | 3μm |
| **6381-25W** | 0-25mm | plain | flat (carbide) | | 3μm |
| **6381-25S** | 0-25mm | with clamp nut | spherical (SR5) | | 3μm |
| **6381-25WS** | 0-25mm | plain | spherical (SR5) | | 3μm |
| **6381-25P** | 0-25mm | with clamp nut | flat (carbide) | with spindle lock | 3μm |
| **6381-25WP** | 0-25mm | plain | flat (carbide) | with spindle lock | 3μm |

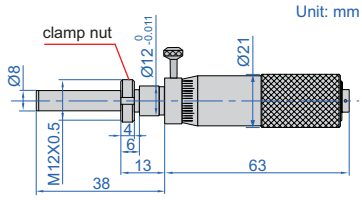
## MICROMETER HEADS

NON-ROTATING SPINDLE

- Non-rotating spindle
- One turn of sleeve makes 0.05mm spindle feed
- Carbide measuring faces



6389-1A



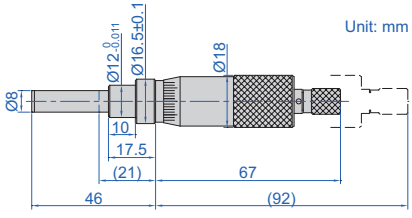

| Code | Range | Graduation | Accuracy | |
|---|---|---|---|---|
| | | | full range | within 0.05mm |
| **6389-1A** | 0-2.5mm | 0.001mm | 5μm | 1.5μm |
| **6389-2A** | 0-2.5mm | 0.001mm | 7μm | 3μm |

## NON-ROTATING SPINDLE MICROMETER HEAD

- Meet DIN863-2
- Graduation: 0.01mm
- Ratchet stop
- Non-rotating spindle



6377-25W




| Code | Range | Stem | Spindle tip | Accuracy |
|---|---|---|---|---|
| **6377-25W** | 0-25mm | plain | flat (carbide) | 3μm |

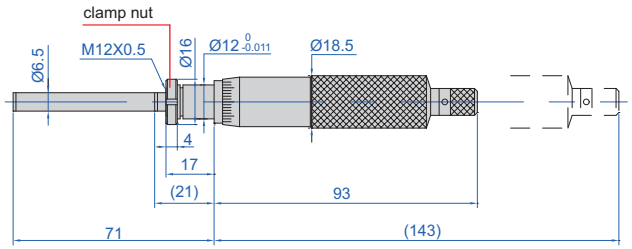


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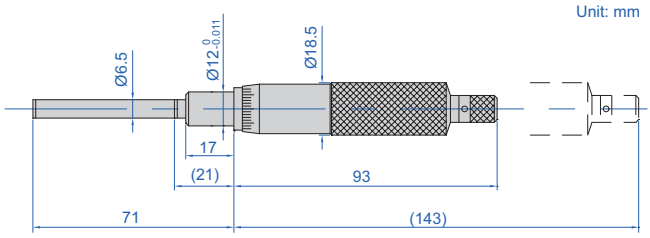
## LARGE MICROMETER HEADS



**6388-50AW**




6388-50A




6388-50AW

- Graduation: 0.01mm
- Ratchet stop

| Code | Range | Stem | Spindle tip | Accuracy |
|---|---|---|---|---|
| **6388-50A** | 0-50mm | with clamp nut | flat (carbide) | 5μm |
| **6388-50AW** | 0-50mm | plain | flat (carbide) | 5μm |

## QUICK SPINDLE FEEDING MICROMETER HEADS



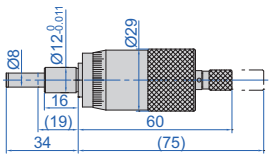
**6375-15W**



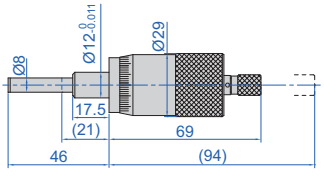
**6375-25W**



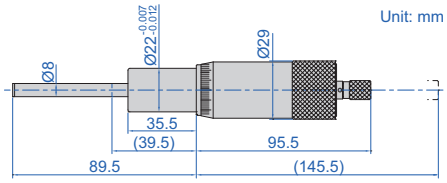
**6375-50W**




6375-15W




6375-25W




6375-50W

- Micrometers up to 25mm meet DIN863-2
- Graduation: 0.01mm
- Quick spindle feed of 1mm/rev.
- Ratchet stop

| Code | Range | Stem | Spindle tip | Accuracy |
|---|---|---|---|---|
| **6375-15W** | 0-15mm | plain | flat (carbide) | 3μm |
| **6375-25W** | 0-25mm | plain | flat (carbide) | 3μm |
| **6375-50W** | 0-50mm | plain | flat (carbide) | 5μm |

# 07 BORE DIAMETER AND CIRCUMFERENCE MEASURING TOOLS



Inside Micrometers
Page 198-199



Inside Micrometers
Page 199-206



Three Points Internal Micrometers
Page 207-211



Pistol Grip Three Points Bore Gauges
Page 212



Bore Plug Gauges
Page 213-214



Bore Gauges
Page 215-226



Carbon Fiber Bore Gauges
Page 225



Bore Gauge Setters
Page 227



Internal Chamfer Gauges
Page 228



Telescoping Gauge Sets
Page 228-229



Circumference Meters
Page 230-231



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VIDEO

INSPECTION CERTIFICATE

# INSIDE MICROMETERS

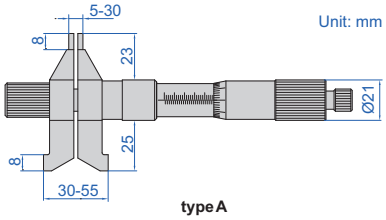
INSIZE PLUS
MADE IN EUROPE



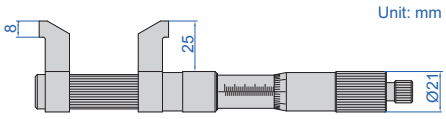
3679-55



3679-75




type A




type B

for type A, the upper jaws and lower jaws can be set zero separately



- Graduation: 0.01mm
- Carbide measuring faces
- Ratchet stop
- Optional accessory: setting ring (code **6312**), caliper/height gauge checker (code **6884**)

| Code | Range | Type | Accuracy |
|---|---|---|---|
| **3679-55** * | 5-55mm | A | 4µm |
| **3679-75** * | 50-75mm | B | 5µm |
| **3679-100** * | 75-100mm | B | 6µm |
| **3679-125** * | 100-125mm | B | 7µm |
| **3679-150** * | 125-150mm | B | 8µm |
| **3679-175** * | 150-175mm | B | 9µm |
| **3679-200** * | 175-200mm | B | 9µm |
| **3679-225** * | 200-225mm | B | 10µm |
| **3679-250** * | 225-250mm | B | 10µm |
| **3679-275** * | 250-275mm | B | 12µm |
| **3679-300** * | 275-300mm | B | 12µm |

*Supplied with manufacturer inspection certificate

| Code | Range | Type | Accuracy |
|---|---|---|---|
| **3679-325** * | 300-325mm | B | 15µm |
| **3679-350** * | 325-350mm | B | 15µm |
| **3679-375** * | 350-375mm | B | 16µm |
| **3679-400** * | 375-400mm | B | 16µm |
| **3679-425** * | 400-425mm | B | 17µm |
| **3679-450** * | 425-450mm | B | 17µm |
| **3679-475** * | 450-475mm | B | 18µm |
| **3679-500** * | 475-500mm | B | 18µm |
| **3679-525** * | 500-525mm | B | 19µm |
| **3679-550** * | 525-550mm | B | 19µm |
| **3679-575** * | 550-575mm | B | 20µm |
| **3679-600** * | 575-600mm | B | 20µm |

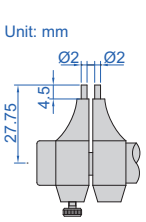
**ATTENTION: LOW PARALLELISM OF TWO MEASURING FACES**

# INSIDE MICROMETERS (ECONOMIC TYPE)

micrometer stand with clamp **(optional)**



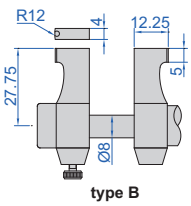
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Optional accessory: setting ring (code **6312**), micrometer stand and clamp (code **6301** and **6301-1**)



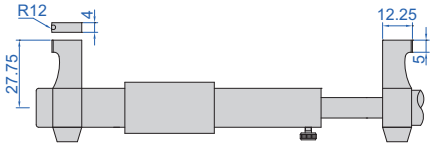

type A



3220-50




type B




type C

| Code | Range | Type | Setting ring | Accuracy |
|---|---|---|---|---|
| **3220-30** | 5-30mm | A | 5mm (included) | 7µm |
| **3220-50** | 25-50mm | B | 25mm (included) | 8µm |
| **3220-75** | 50-75mm | B | 50mm **(optional)** | 9µm |
| **3220-100** | 75-100mm | C | 75mm **(optional)** | 10µm |

## DIGITAL INSIDE MICROMETERS (ECONOMIC TYPE)

DATA OUTPUT

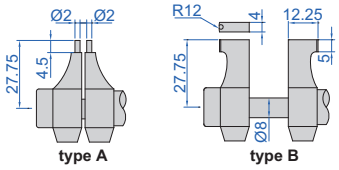
ATTENTION: LOW PARALLELISM OF TWO MEASURING FACES

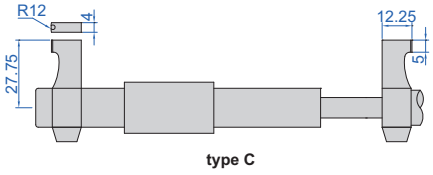
- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Carbide measuring faces
- Optional accessory: wireless transmitter code **7315-31** (receiver is needed) page 6, bluetooth transmitter code **7214-31** page 12, data output cable code **7302-31** page 20, setting ring (code **6312**)



**3520-30**

Unit: mm




| Code | Range | Type | Setting ring | Accuracy |
|---|---|---|---|---|
| **3520-30** | 5-30mm/0.2-1.2" | A | 5mm (included) | ±5µm |
| **3520-50** | 25-50mm/1-2" | B | 25mm (included) | ±6µm |
| **3520-75** | 50-75mm/2-3" | B | 50mm **(optional)** | ±7µm |
| **3520-100** | 75-100mm/3-4" | C | 75mm **(optional)** | ±8µm |

## INTERNAL GEAR TOOTH MICROMETERS

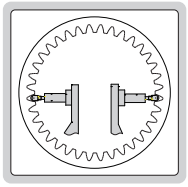
INSIZE PLUS MADE IN EUROPE

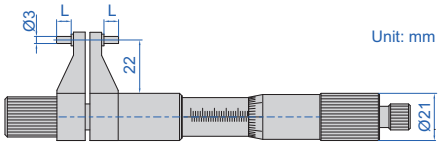
INSPECTION CERTIFICATE

- Measure over-pin diameter of gears
- Graduation: 0.01mm
- Ratchet stop
- Optional accessory: ball tips (code **7383**)




**3678-50**






| Code | Range | Accuracy | L |
|---|---|---|---|
| **3678-50*** | 25-50mm | 4µm | 6mm |
| **3678-75*** | 50-75mm | 5µm | 8mm |

*Supplied with manufacturer inspection certificate

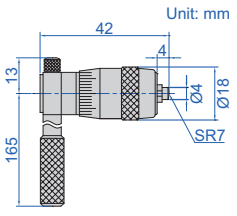
## TUBULAR INSIDE MICROMETERS

- Graduation 0.01mm
- Accuracy: (6+L/50)µm
  L=maximum measuring length (mm)
- Optional accessory: setting ring (code **6312**), gauge block accessory (code **6881**), cylinder gauge block (code **4001**), caliper/height gauge checker (code **6884**)



**3221-200**

| Code | Range | Travel of micrometer head | Extension rods |
|---|---|---|---|
| **3221-32** | 25-32mm | 7mm | — |
| **3221-50** | 25-50mm | 7mm | 2 pcs |
| **3221-63** | 50-63mm | 13mm | — |
| **3221-200** | 50-200mm | 13mm | 6 pcs |
| **3221-300** | 50-300mm | 13mm | 10 pcs |
| **3221-225** | 200-225mm | 25mm | — |
| **3221-500** | 200-500mm | 25mm | 3 pcs |
| **3221-1000** | 200-1000mm | 25mm | 8 pcs |




application

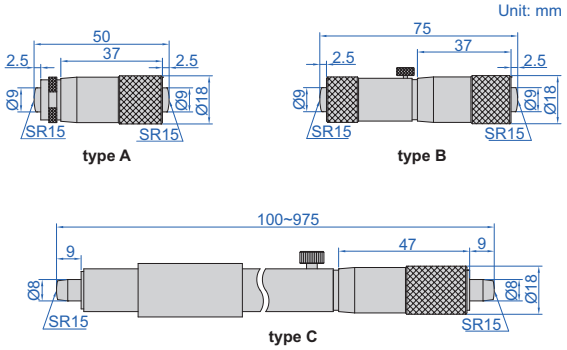


# TUBULAR INSIDE MICROMETERS

- Micrometers up to 500mm meet DIN863-4
- Graduation 0.01mm
- Carbide measuring faces
- Optional accessory: gauge block accessory (code **6881**), cylinder gauge block (code **4001**), caliper/height gauge checker (code **6884**)



**3229-225**



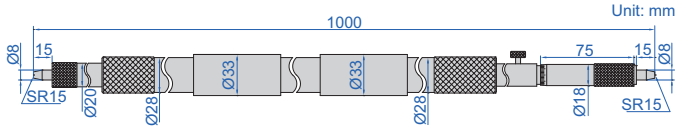

| Code | Range | Type | Accuracy |
|---|---|---|---|
| **3229-75** | 50-75mm | A | 5μm |
| **3229-100** | 75-100mm | B | 5μm |
| **3229-125** | 100-125mm | C | 6μm |
| **3229-150** | 125-150mm | C | 6μm |
| **3229-175** | 150-175mm | C | 7μm |
| **3229-200** | 175-200mm | C | 7μm |
| **3229-225** | 200-225mm | C | 8μm |
| **3229-250** | 225-250mm | C | 8μm |
| **3229-275** | 250-275mm | C | 9μm |
| **3229-300** | 275-300mm | C | 9μm |
| **3229-325** | 300-325mm | C | 9μm |
| **3229-350** | 325-350mm | C | 9μm |
| **3229-375** | 350-375mm | C | 10μm |
| **3229-400** | 375-400mm | C | 10μm |
| **3229-425** | 400-425mm | C | 10μm |
| **3229-450** | 425-450mm | C | 10μm |
| **3229-475** | 450-475mm | C | 11μm |
| **3229-500** | 475-500mm | C | 11μm |
| **3229-525** | 500-525mm | C | 11μm |
| **3229-550** | 525-550mm | C | 11μm |
| **3229-575** | 550-575mm | C | 11μm |
| **3229-600** | 575-600mm | C | 12μm |
| **3229-625** | 600-625mm | C | 12μm |
| **3229-650** | 625-650mm | C | 12μm |
| **3229-675** | 650-675mm | C | 13μm |
| **3229-700** | 675-700mm | C | 13μm |

| Code | Range | Type | Accuracy |
|---|---|---|---|
| **3229-725** | 700-725mm | C | 13μm |
| **3229-750** | 725-750mm | C | 14μm |
| **3229-775** | 750-775mm | C | 14μm |
| **3229-800** | 775-800mm | C | 14μm |
| **3229-825** | 800-825mm | C | 15μm |
| **3229-850** | 825-850mm | C | 15μm |
| **3229-875** | 850-875mm | C | 15μm |
| **3229-900** | 875-900mm | C | 16μm |
| **3229-925** | 900-925mm | C | 16μm |
| **3229-950** | 925-950mm | C | 16μm |
| **3229-975** | 950-975mm | C | 17μm |
| **3229-1000** | 975-1000mm | C | 17μm |

# TUBULAR INSIDE MICROMETERS



**3224-2000**




| Code | Range | Extension rods |
|---|---|---|
| **3224-2000** | 1000-2000mm | 50mm, 100mm (2 pcs), 200mm, 500mm |
| **3224-3000** | 1000-3000mm | 50mm, 100mm (2 pcs), 200mm, 500mm, 1000mm |
| **3224-4000** | 1000-4000mm | 50mm, 100mm (2 pcs), 200mm, 500mm, 1000mm (2 pcs) |
| **3224-5000** | 1000-5000mm | 50mm, 100mm (2 pcs), 200mm, 500mm, 1000mm (3 pcs) |

- Micrometer head: 1000-1050mm
- Graduation 0.01mm
- Accuracy: (7+n+L/50)μm
  n=number of rods
  L=maximum measuring length (mm)
- Travel of micrometer head 50mm
- Carbide measuring faces

# TUBULAR INSIDE MICROMETERS

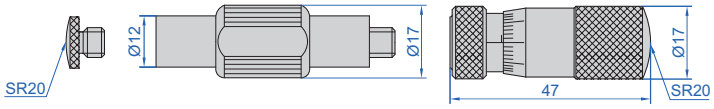
INSIZE PLUS
MADE IN EUROPE




**3684-100**

- Micrometer head: 50-75mm
- Graduation: 0.01mm
- Carbide measuring faces

Unit: mm




| Code | Range | Accuracy | Travel of micrometer head | Extension rods |
|---|---|---|---|---|
| **3684-75** | 50-75mm | 5μm | 25mm | — |
| **3684-100** | 50-100mm | 5μm | 25mm | 25mm |
| **3684-150** | 50-150mm | 6μm | 25mm | 25mm, 50mm |
| **3684-250** | 50-250mm | 8μm | 25mm | 25mm, 50mm, 100mm |
| **3684-300** | 50-300mm | 9μm | 25mm | 25mm, 50mm (2 pcs), 100mm |
| **3684-350** | 50-350mm | 10μm | 25mm | 25mm, 50mm, 100mm (2 pcs) |
| **3684-450** | 50-450mm | 10μm | 25mm | 25mm, 50mm, 100mm, 200mm |
| **3684-650** | 50-650mm | 12μm | 25mm | 25mm, 50mm, 100mm, 200mm (2 pcs) |
| **3684-850** | 50-850mm | 15μm | 25mm | 25mm, 50mm, 100mm, 200mm, 400mm |
| **3684-1250** | 50-1250mm | 20μm | 25mm | 25mm, 50mm, 100mm, 200mm, 400mm (2 pcs) |
| **3684-1450** | 50-1450mm | 22μm | 25mm | 25mm, 50mm, 100mm, 200mm, 400mm, 600mm |

7

# TUBULAR INSIDE MICROMETERS

INSIZE PLUS
MADE IN EUROPE

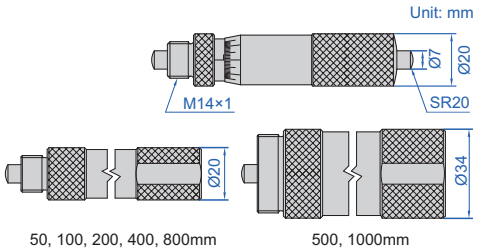
**heat insulation extension rods**



**3683-200**

- Micrometer head: 100-150mm
- Graduation: 0.01mm
- Carbide measuring faces
- Heat insulation extension rods

Unit: mm



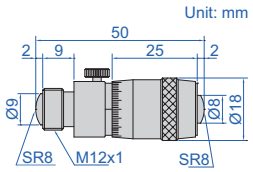

| Code | Range | Accuracy | Travel of micrometer head | Heat insulation extension rods |
|---|---|---|---|---|
| **3683-150** | 100-150mm | 6μm | 50mm | — |
| **3683-200** | 100-200mm | 7μm | 50mm | 50mm |
| **3683-300** | 100-300mm | 9μm | 50mm | 50mm, 100mm |
| **3683-500** | 100-500mm | 13μm | 50mm | 50mm, 100mm, 200mm |
| **3683-900** | 100-900mm | 16μm | 50mm | 50mm, 100mm, 200mm, 400mm |
| **3683-1300** | 100-1300mm | 22μm | 50mm | 50mm, 100mm, 200mm, 400mm (2 pcs) |
| **3683-1700** | 100-1700mm | 27μm | 50mm | 50mm, 100mm, 200mm, 400mm, 800mm |
| **3683-2000** | 100-2000mm | 32μm | 50mm | 50mm, 100mm, 200mm (2 pcs), 500mm, 1000mm |
| **3683-2100** | 100-2100mm | 32μm | 50mm | 50mm, 100mm, 200mm, 400mm (2 pcs), 800mm |
| **3683-2500** | 100-2500mm | 40μm | 50mm | 50mm, 100mm, 200mm, 400mm, 800mm (2 pcs) |
| **3683-3000** | 100-3000mm | 50μm | 50mm | 50mm, 100mm, 200mm (2 pcs), 500mm, 1000mm (2 pcs) |
| **3683-4000** | 100-4000mm | 60μm | 50mm | 50mm, 100mm, 200mm (2 pcs), 500mm, 1000mm (3 pcs) |
| **3683-5000** | 100-5000mm | 72μm | 50mm | 50mm, 100mm, 200mm (2 pcs), 500mm, 1000mm (4 pcs) |
| **3683-6000** | 100-6000mm | 90μm | 50mm | 50mm, 100mm, 200mm (2 pcs), 500mm, 1000mm (5 pcs) |

## TUBULAR INSIDE MICROMETERS

- Micrometer head: 50-63mm
- Graduation 0.01mm
- Accuracy: (3+n+L/50)μm
  n=number of rods
  L=maximum measuring length (mm)
- Supplied with setting standards
- Carbide measuring faces



3222-150




| Code | Range | Travel of micrometer head | Extension rods |
|---|---|---|---|
| **3222-63** | 50-63mm | 13mm | — |
| **3222-150** | 50-150mm | 13mm | 13mm, 25mm, 50mm |
| **3222-300** | 50-300mm | 13mm | 13mm, 25mm, 50mm (2 pcs), 100mm |
| **3222-500** | 50-500mm | 13mm | 13mm, 25mm, 50mm (2 pcs), 100mm, 200mm |
| **3222-600** | 50-600mm | 13mm | 13mm, 25mm, 50mm, 100mm, 150mm, 200mm |
| **3222-1000** | 50-1000mm | 13mm | 13mm, 25mm, 50mm (2 pcs), 100mm, 200mm (2 pcs), 300mm |
| **3222-1500** | 50-1500mm | 13mm | 13mm, 25mm, 50mm (2 pcs), 100mm, 200mm (3 pcs), 300mm (2 pcs) |



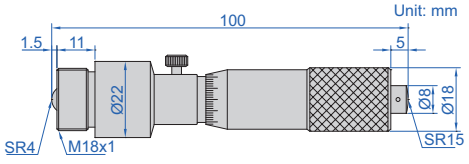
## TUBULAR INSIDE MICROMETERS

- Micrometer head: 100-125mm
- Graduation 0.01mm
- Accuracy: (3+n+L/50)μm
  n=number of rods
  L=maximum measuring length (mm)
- Travel of micrometer head 25mm
- Supplied with setting standards
- Carbide measuring faces



3225-500

| Code | Range | Extension rods |
|---|---|---|
| **3225-125** | 100-125mm | — |
| **3225-500** | 100-500mm | 25mm, 50mm, 100mm, 200mm |
| **3225-900** | 100-900mm | 25mm, 50mm, 100mm, 200mm, 400mm |
| **3225-1300** | 100-1300mm | 25mm, 50mm, 100mm, 200mm, 400mm (2 pcs) |
| **3225-1700** | 100-1700mm | 25mm, 50mm, 100mm, 200mm, 400mm (3 pcs) |
| **3225-2100** | 100-2100mm | 25mm, 50mm, 100mm, 200mm, 400mm (4 pcs) |



# DIGITAL TUBULAR INSIDE MICROMETERS

IP65 WATERPROOF

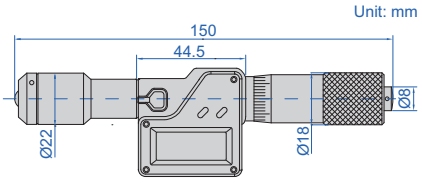
DATA OUTPUT

- Micrometer head: 150-175mm
- Resolution: 0.001mm/0.00005"
- Accuracy: (3+n+L/50)µm
  n=number of rods
  L=maximum measuring length (mm)
- Carbide measuring faces
- Diameter of extension rods is 22mm
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Supplied with setting standards
- Optional accessory: wireless transmitter code **7315-31** (receiver is needed) page 6, bluetooth transmitter code **7214-31** page 12, data output cable code **7302-31** page 20



3521-1000

Unit: mm




7

| Code | Range | Travel of micrometer head | Extension rods |
|---|---|---|---|
| **3521-175** | 150-175mm | 25mm | — |
| **3521-1000** | 150-1000mm | 25mm | 25mm, 50mm (2 pcs), 100mm, 200mm, 400mm |
| **3521-1500** | 150-1500mm | 25mm | 25mm, 50mm (2 pcs), 100mm (2 pcs), 200mm, 400mm (2 pcs) |
| **3521-2000** | 150-2000mm | 25mm | 25mm, 50mm (2 pcs), 100mm, 200mm (2 pcs), 400mm (3 pcs) |

# TUBULAR INSIDE MICROMETERS

INSIZE PLUS
MADE IN EUROPE

- Carbide measuring faces for micrometer head and extension rods
- Points of extension rods are spring loaded
- Optional accessory:
  gauge block accessory (code **6881**),
  cylinder gauge block (code **4001**),
  caliper/height gauge checker (code **6884**)



3634-1300

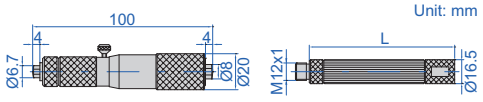
**Micrometer head**

| Range | Graduation | Accuracy | Weight |
|---|---|---|---|
| 100-125mm | 0.01mm | ±4µm | 154g |

**Extension rods**

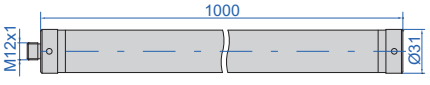
| Length (L) | Accuracy | Weight | Material |
|---|---|---|---|
| 25mm | ±1.25µm | 37g | steel |
| 50mm | ±1.25µm | 65g | steel |
| 100mm | ±2µm | 113g | steel |
| 200mm | ±3.5µm | 208g | steel |
| 400mm | ±4.5µm | 402g | steel |
| 1000mm | ±7.5µm | 909g | carbon fiber |

Unit: mm




micrometer head

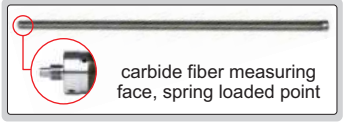
extension rods (25-400mm)




1m extension rod

| Code | Range | Extension rods |
|---|---|---|
| **3634-350** | 100-350mm | 25mm, 200mm |
| **3634-500** | 100-500mm | 25mm, 50mm, 100mm, 200mm |
| **3634-1300** | 100-1300mm | 25mm, 50mm, 100mm, 200mm, 400mm (2 pcs) |
| **3634-1500** | 100-1500mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm (2 pcs) |
| **3634-2100** | 100-2100mm | 25mm, 50mm, 100mm, 200mm, 400mm (4 pcs) |
| **3634-3100** | 100-3100mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (2 pcs) |
| **3634-4100** | 100-4100mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (3 pcs) |
| **3634-5100** | 100-5100mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (4 pcs) |
| **3634-6100** | 100-6100mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (5 pcs) |

1m carbon fiber extension rod, light weight, no deform



DATA OUTPUT

SPRING LOADED MEASURING POINT

VIDEO

NON-ROTATING SPINDLE

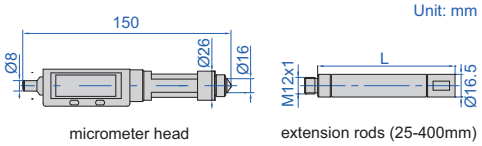
# DIGITAL NON-ROTATING SPINDLE INSIDE MICROMETERS

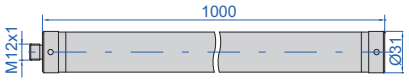
INSIZE PLUS
MADE IN EUROPE



3635-950

Unit: mm

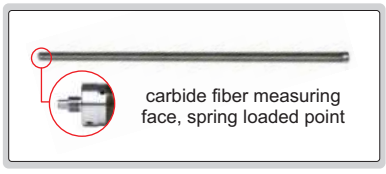


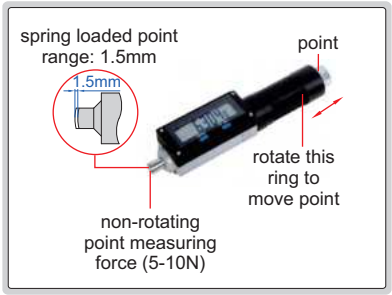

7

- Carbide measuring faces for micrometer head and extension rods
- Points of extension rods are spring loaded
- Data output
- Button function: mm/inch, max./min. value tracking, preset value, hold, on/off, zero
- CR2032 battery, automatic power off, turn the sleeve to turn on
- Optional accessory: wireless transmitter code **7315-80** (receiver is needed) page 7, data output cable code **7302-80**, gauge block accessory (code **6881**), cylinder gauge block (code **4001**), caliper/height gauge checker (code **6884**)

1m carbon fiber extension rod, light weight, no deform




non-rotating spindle, spring loaded point and max./min. value tracking make it easy to find the right measuring position




**Extension rods**

| Length (L) | Accuracy | Weight | Material |
|---|---|---|---|
| 25mm | ±1.25μm | 37g | steel |
| 50mm | ±1.25μm | 65g | steel |
| 100mm | ±2μm | 113g | steel |
| 200mm | ±3.5μm | 208g | steel |
| 400mm | ±4.5μm | 402g | steel |
| 1000mm | ±7.5μm | 909g | carbon fiber |

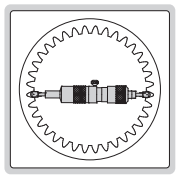
**Micrometer head**

| Range | Resolution | Accuracy | Repeatability | Measuring force | Weight |
|---|---|---|---|---|---|
| 150-180mm/6-7" | 0.001mm/0.00005"<br>0.01mm/0.0005"<br>0.0005mm/0.00002"<br>(switchable) | ±4μm | 1μm | 5-10N | 275g |

| Code | Range | Extension rods |
|---|---|---|
| **3635-350** | 150-350mm/6-14" | 25mm, 50mm, 100mm |
| **3635-550** | 150-550mm/6-22" | 25mm, 50mm, 100mm, 200mm |
| **3635-950** | 150-950mm/6-38" | 25mm, 50mm, 100mm, 200mm, 400mm |
| **3635-1550** | 150-1550mm/6-62" | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm (2 pcs) |
| **3635-2150** | 150-2150mm/6-86" | 25mm, 50mm, 100mm, 200mm, 400mm (4 pcs) |
| **3635-3150** | 150-3150mm/6-126" | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (2 pcs) |
| **3635-4150** | 150-4150mm/6-166" | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (3 pcs) |
| **3635-5150** | 150-5150mm/6-206" | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (4 pcs) |
| **3635-6150** | 150-6150mm/6-246" | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (5 pcs) |

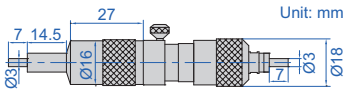
# INTERNAL GEAR TOOTH MICROMETERS

INSIZE PLUS
MADE IN EUROPE

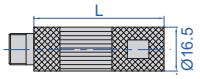





3638-200




micrometer head (100-115mm)




extension rod

- Measure over-pin diameter of gears
- Points of extension rods are spring loaded
- Optional accessory: ball tips (code **7383**)

**Micrometer head**

| Range | Graduation | Accuracy |
|---|---|---|
| 100-115mm | 0.01mm | ±4μm |
| 150-175mm | 0.01mm | ±4μm |

**Extension rod**

| Length (L) | Accuracy |
|---|---|
| 15mm | ±1μm |
| 25mm | ±1.25μm |
| 30mm | ±1.25μm |
| 50mm | ±1.25μm |
| 100mm | ±2μm |
| 200mm | ±3.5μm |
| 400mm | ±4.5μm |

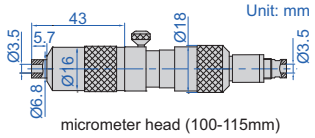
| Code | Range | Micrometer head | Extension rod (L) |
|---|---|---|---|
| **3638-200** | 100-205mm | 100-115mm | 15mm, 25mm, 50mm |
| **3638-500** | 100-505mm | 100-115mm | 15mm, 25mm, 50mm, 100mm, 200mm |
| **3638-900** | 100-905mm | 100-115mm | 15mm, 25mm, 50mm, 100mm, 200mm, 400mm |
| **3638-1100** | 150-1150mm | 150-175mm | 25mm, 50mm, 100mm, 200mm, 200mm, 400mm |

# INTERNAL SCREW THREAD MICROMETERS

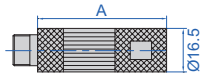
INSIZE PLUS
MADE IN EUROPE



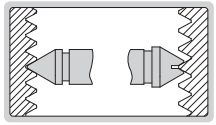

3641-200




micrometer head (100-115mm)




extension rod



- Measure pitch diameter of screw thread
- Points of extension rods are spring loaded
- Optional accessory: measuring tips for internal screw thread micrometer (code **7385**, L=13.5mm)

**Micrometer head**

| Range | Graduation | Accuracy |
|---|---|---|
| 100-115mm | 0.01mm | ±4μm |
| 150-175mm | 0.01mm | ±4μm |

**Extension rod**

| Length (A) | Accuracy |
|---|---|
| 15mm | ±1μm |
| 25mm | ±1.25μm |
| 50mm | ±1.25μm |
| 100mm | ±2μm |
| 200mm | ±3.5μm |
| 400mm | ±4.5μm |

| Code | Range | Micrometer head | Extension rod (A) | Applicable tips |
|---|---|---|---|---|
| **3641-200** | 100-205mm | 100-115mm | 15mm, 25mm, 50mm | stem length L=13.5mm |
| **3641-500** | 100-505mm | 100-115mm | 15mm, 25mm, 50mm, 100mm, 200mm | stem length L=13.5mm |
| **3641-900** | 100-905mm | 100-115mm | 15mm, 25mm, 50mm, 100mm, 200mm, 400mm | stem length L=13.5mm |
| **3641-1100** | 150-1150mm | 150-175mm | 25mm, 50mm, 100mm, 200mm, 200mm, 400mm | stem length L=13.5mm |

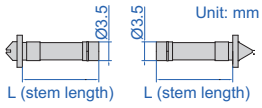
TIPS FOR TRAPEZOIDAL, ACME THREAD ARE ALSO AVAILABLE

# MEASURING TIPS FOR INTERNAL SCREW THREAD MICROMETERS

INSIZE PLUS
MADE IN EUROPE

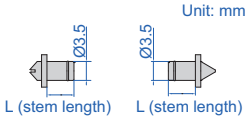
- Supplied in pair
- Made of hardened steel
- Suitable for **3641** series micrometers






**7385-T106A**






**7385-T106B**

**60° thread angle**

| Code | | Applicable pitch (mm) |
|---|---|---|
| L=13.5mm | L=5mm | |
| **7385-T101A** | **7385-T101B** | 0.35 |
| **7385-T102A** | **7385-T102B** | 0.4/0.45 |
| **7385-T103A** | **7385-T103B** | 0.5/0.6 |
| **7385-T104A** | **7385-T104B** | 0.7/0.75/0.8 |
| **7385-T105A** | **7385-T105B** | 1/1.25 |
| **7385-T106A** | **7385-T106B** | 1.5/1.75 |
| **7385-T107A** | **7385-T107B** | 2.0/2.5 |
| **7385-T108A** | **7385-T108B** | 3.0/3.5 |
| **7385-T109A** | **7385-T109B** | 4.0/4.5/5.0 |
| **7385-T110A** | **7385-T110B** | 5.5/6.0 |

**55° thread angle**

| Code | | Applicable pitch (TPI) |
|---|---|---|
| L=13.5mm | L=5mm | |
| **7385-T201A** | **7385-T201B** | 60/48 |
| **7385-T202A** | **7385-T202B** | 40/32 |
| **7385-T203A** | **7385-T203B** | 28/26/24/22 |
| **7385-T204A** | **7385-T204B** | 20/19/18/16 |
| **7385-T205A** | **7385-T205B** | 14/12/11 |
| **7385-T206A** | **7385-T206B** | 10/9/8 |
| **7385-T207A** | **7385-T207B** | 7/6 |
| **7385-T208A** | **7385-T208B** | 5/4.5/4 |
| **7385-T209A** | **7385-T209B** | 3.5/3.25/3/2.875/2.75 |
| **7385-T210A** | **7385-T210B** | 2.625/2.5/2 |

7

# INTERNAL SCREW THREAD MICROMETERS

- Graduation: 0.01mm
- Optional accessory: measuring tips for internal screw thread micrometer (code **7321**)

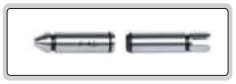


**measuring tips for screw thread (optional)**

**measuring tips for screw thread (optional)**

**3226-1001**

measuring tips for internal screw thread micrometer (**optional**)



| Code | Range |
|---|---|
| **3226-1001** | 75-100mm |
| **3226-1251** | 100-125mm |
| **3226-1501** | 125-150mm |
| **3226-1751** | 150-175mm |
| **3226-2001** | 175-200mm |

| Code | Range |
|---|---|
| **3226-2251** | 200-225mm |
| **3226-2501** | 225-250mm |
| **3226-2751** | 250-275mm |
| **3226-3001** | 275-300mm |

# MEASURING TIPS FOR INTERNAL SCREW THREAD MICROMETERS

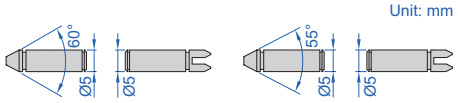
- Supplied in pair
- Suitable for **3226** series micrometers

**Metric and unified screw (60° thread angle)**

| Code | Pitch |
|---|---|
| **7321-T11** | 0.4-0.5mm/64-48TPI |
| **7321-T12** | 0.6-0.9mm/44-28TPI |
| **7321-T13** | 1-1.75mm/24-14TPI |
| **7321-T14** | 2-3mm/13-9TPI |
| **7321-T15** | 3.5-5mm/8-5TPI |
| **7321-T16** | 5.5-7mm /4.5-3.5TPI |
| **7321-T1S** | 6 pairs/set, including all above tips |



**7321-T1S**




**60° thread angle** **55° thread angle**

**Whitworth screw (55° thread angle)**

| Code | Pitch |
|---|---|
| **7321-T21** | 60-48TPI |
| **7321-T22** | 48-40TPI |
| **7321-T23** | 40-32TPI |
| **7321-T24** | 32-24TPI |
| **7321-T25** | 24-18TPI |
| **7321-T26** | 18-14TPI |
| **7321-T27** | 14-10TPI |
| **7321-T28** | 10-7TPI |
| **7321-T29** | 7-4.5TPI |
| **7321-T210** | 4.5-3.5TPI |
| **7321-T2S** | 10 pairs/set, including all above tips |

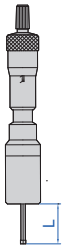
# TWO POINTS/THREE POINTS INTERNAL MICROMETERS

INSPECTION CERTIFICATE





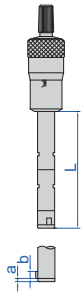
3227-6



**type A**
2-6mm, carbide measuring points two points



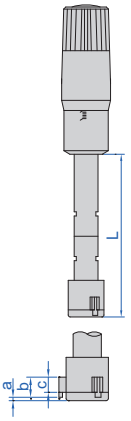
3227-8



**type B**
6-12mm, steel measuring points three points



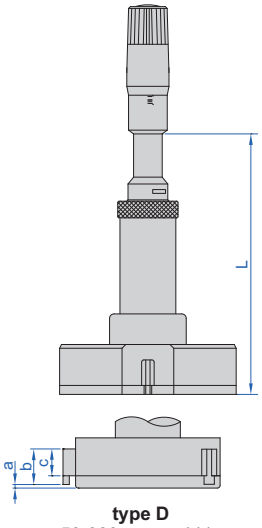
3227-16



**type C**
12-50mm, carbide measuring points three points



3227-125



**type D**
50-300mm, carbide measuring points three points

- Meet DIN863-4
- 2-12mm: graduation 0.001mm
  12-300mm: graduation 0.005mm
- Ratchet stop
- Optional accessory: setting rings (code **6312**), micrometer stand and clamp (code **6301** and **6301-2**)

**Individual** **(mm)**

| Code | Range | Type | Accuracy | Setting ring | Extension rod (included) | L | a | b | c |
|---|---|---|---|---|---|---|---|---|---|
| **3227-2** * | 2-2.5mm | A (two points) | 6µm | Ø2.5 (included) | — | 12 | — | — | — |
| **3227-3** * | 2.5-3mm | A (two points) | 6µm | Ø2.5 (included) | — | 12 | — | — | — |
| **3227-4** * | 3-4mm | A (two points) | 6µm | Ø4 (included) | — | 22 | — | — | — |
| **3227-5** * | 4-5mm | A (two points) | 6µm | Ø5 (included) | — | 22 | — | — | — |
| **3227-6** * | 5-6mm | A (two points) | 6µm | Ø6 (included) | — | 22 | — | — | — |
| **3227-8** * | 6-8mm | B (three points) | 4µm | Ø6 (included) | 100 | 54.5 | 1.5 | 2.5 | — |
| **3227-10** * | 8-10mm | B (three points) | 4µm | Ø8 (included) | 100 | 54.5 | 1.5 | 2.5 | — |
| **3227-12** * | 10-12mm | B (three points) | 4µm | Ø10 (included) | 100 | 54.5 | 1.5 | 2.5 | — |
| **3227-16** * | 12-16mm | C (three points) | 4µm | Ø16 (included) | 150 | 80 | 0.5 | 6 | 4.5 |
| **3227-20** * | 16-20mm | C (three points) | 4µm | Ø16 (included) | 150 | 80 | 0.5 | 6 | 4.5 |
| **3227-25** * | 20-25mm | C (three points) | 4µm | Ø25 (included) | 150 | 90 | 0.5 | 8 | 6 |
| **3227-30** * | 25-30mm | C (three points) | 4µm | Ø25 (included) | 150 | 90 | 0.5 | 8 | 6 |
| **3227-40** * | 30-40mm | C (three points) | 4µm | Ø40 (included) | 150 | 97 | 0.5 | 14 | 12 |
| **3227-50** * | 40-50mm | C (three points) | 5µm | Ø40 (included) | 150 | 97 | 0.5 | 14 | 12 |
| **3227-63** * | 50-63mm | D (three points) | 5µm | Ø62 (included) | 150 | 114 | 0.5 | 17.5 | 14.5 |
| **3227-75** * | 62-75mm | D (three points) | 5µm | Ø62 (included) | 150 | 114 | 0.5 | 17.5 | 14.5 |
| **3227-88** * | 75-88mm | D (three points) | 5µm | Ø87 (included) | 150 | 114 | 0.5 | 17.5 | 14.5 |
| **3227-100** * | 87-100mm | D (three points) | 5µm | Ø87 (included) | 150 | 114 | 0.5 | 17.5 | 14.5 |
| **3227-125** * | 100-125mm | D (three points) | 6µm | **optional** | 150 | 140 | 0.9 | 29 | 25 |
| **3227-150** * | 125-150mm | D (three points) | 6µm | **optional** | 150 | 140 | 0.9 | 29 | 25 |
| **3227-175** * | 150-175mm | D (three points) | 7µm | **optional** | 150 | 140 | 0.9 | 29 | 25 |
| **3227-200** * | 175-200mm | D (three points) | 7µm | **optional** | 150 | 140 | 0.9 | 29 | 25 |
| **3227-225** | 200-225mm | D (three points) | 8µm | **optional** | 150 | 140 | 0.9 | 29 | 25 |
| **3227-250** | 225-250mm | D (three points) | 8µm | **optional** | 150 | 140 | 0.9 | 29 | 25 |
| **3227-275** | 250-275mm | D (three points) | 9µm | **optional** | 150 | 140 | 0.9 | 29 | 25 |
| **3227-300** | 275-300mm | D (three points) | 9µm | **optional** | 150 | 140 | 0.9 | 29 | 25 |

To be continued

Continued from previous page

micrometer stand with clamp **(optional)**



setting ring



2-100mm: included
100-300mm: **optional**

extension rod



included



**3227-504**

**Set**

| Code | Range | Micrometers included | Setting ring (included) | Extension rod (included) |
|---|---|---|---|---|
| **3227-232*** | 2-3mm | 2-2.5mm, 2.5-3mm | Ø2.5mm | — |
| **3227-363*** | 3-6mm | 3-4mm, 4-5mm, 5-6mm | Ø4mm, Ø5mm, Ø6mm | — |
| **3227-123*** | 6-12mm | 6-8mm, 8-10mm, 10-12mm | Ø6mm, Ø8mm, Ø10mm | 100mm |
| **3227-202*** | 12-20mm | 12-16mm, 16-20mm | Ø16mm | 150mm |
| **3227-504*** | 20-50mm | 20-25mm, 25-30mm, 30-40mm, 40-50m | Ø25mm, Ø40mm | 150mm |
| **3227-1004*** | 50-100mm | 50-63mm, 62-75mm, 75-88mm, 87-100mm | Ø62mm, Ø87mm | 150mm |

*Supplied with manufacturer inspection certificate



IP65 WATERPROOF

DATA OUTPUT

## DIGITAL TWO POINTS/THREE POINTS INTERNAL MICROMETERS

INSPECTION CERTIFICATE



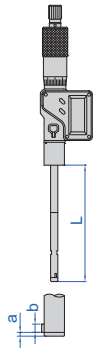
**3127-5**



**type A**
2-6mm, carbide measuring points two points



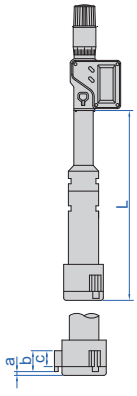
**3127-12**



**type B**
6-12mm, steel measuring points three points



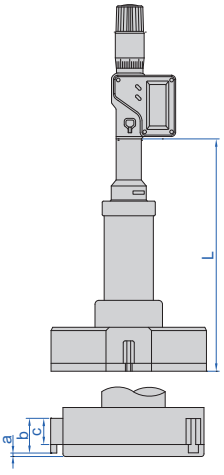
**3127-40**



**type C**
12-50mm, carbide measuring points three points



**3127-125**



**type D**
50-300mm, carbide measuring points three points

- Resolution 0.001mm/0.00005" (resolution of **3127-275** and **3127-300** is 0.001mm/0.0001")
- IP65 dust/waterproof
- Buttons: on/off, set, mm/inch, data transmit
- Data output
- Automatic power off
- Ratchet stop
- Optional accessory: wireless transmitter code **7315-31** (receiver is needed) page 6, bluetooth transmitter code **7214-31** page 12, data output cable code **7302-31** page 20, setting ring (code **6312**), micrometer stand and clamp (code **6301** and **6301-2**)

To be continued

Continued from previous page

micrometer stand with clamp (**optional**)

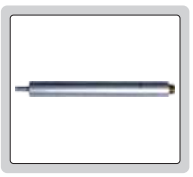


setting ring



2-100mm: included
100-300mm: **optional**

extension rod



included



**3127-202**



**Individual** **(mm)**

| Code | Range | Type | Accuracy | Setting ring | Extension rod (included) | L | a | b | c |
|---|---|---|---|---|---|---|---|---|---|
| **3127-2*** | 2-2.5mm/0.08-0.10" | A (two points) | 6μm | Ø2.5 (included) | — | 12 | — | — | — |
| **3127-3*** | 2.5-3mm/0.10-0.12" | A (two points) | 6μm | Ø2.5 (included) | — | 12 | — | — | — |
| **3127-4*** | 3-4mm/0.12-0.16" | A (two points) | 6μm | Ø4 (included) | — | 22 | — | — | — |
| **3127-5*** | 4-5mm/0.16-0.20" | A (two points) | 6μm | Ø5 (included) | — | 22 | — | — | — |
| **3127-6*** | 5-6mm/0.20-0.24" | A (two points) | 6μm | Ø6 (included) | — | 22 | — | — | — |
| **3127-8*** | 6-8mm/0.24-0.31" | B (three points) | 4μm | Ø6 (included) | 100 | 57 | 1.5 | 2.5 | — |
| **3127-10*** | 8-10mm/0.31-0.39" | B (three points) | 4μm | Ø8 (included) | 100 | 57 | 1.5 | 2.5 | — |
| **3127-12*** | 10-12mm/0.39-0.47" | B (three points) | 4μm | Ø10 (included) | 100 | 57 | 1.5 | 2.5 | — |
| **3127-16*** | 12-16mm/0.47-0.63" | C (three points) | 4μm | Ø16 (included) | 150 | 99 | 0.5 | 6 | 4.5 |
| **3127-20*** | 16-20mm/0.63-0.79" | C (three points) | 4μm | Ø16 (included) | 150 | 99 | 0.5 | 6 | 4.5 |
| **3127-25*** | 20-25mm/0.79-0.98" | C (three points) | 4μm | Ø25 (included) | 150 | 105 | 0.5 | 8 | 6 |
| **3127-30*** | 25-30mm/0.98-1.18" | C (three points) | 4μm | Ø25 (included) | 150 | 105 | 0.5 | 8 | 6 |
| **3127-40*** | 30-40mm/1.18-1.57" | C (three points) | 4μm | Ø40 (included) | 150 | 110 | 0.5 | 14 | 12 |
| **3127-50*** | 40-50mm/1.57-1.97" | C (three points) | 5μm | Ø40 (included) | 150 | 110 | 0.5 | 14 | 12 |
| **3127-63*** | 50-63mm/1.97-2.48" | D (three points) | 5μm | Ø62 (included) | 150 | 127 | 0.5 | 17.5 | 14.5 |
| **3127-75*** | 62-75mm/2.44-2.95" | D (three points) | 5μm | Ø62 (included) | 150 | 127 | 0.5 | 17.5 | 14.5 |
| **3127-88*** | 75-88mm/2.95-3.46" | D (three points) | 5μm | Ø87 (included) | 150 | 127 | 0.5 | 17.5 | 14.5 |
| **3127-100*** | 87-100mm/3.43-3.94" | D (three points) | 5μm | Ø87 (included) | 150 | 127 | 0.5 | 17.5 | 14.5 |
| **3127-125*** | 100-125mm/3.94-4.92" | D (three points) | 6μm | **optional** | 150 | 175 | 0.9 | 29 | 25 |
| **3127-150*** | 125-150mm/4.92-5.91" | D (three points) | 6μm | **optional** | 150 | 175 | 0.9 | 29 | 25 |
| **3127-175*** | 150-175mm/5.91-6.89" | D (three points) | 7μm | **optional** | 150 | 175 | 0.9 | 29 | 25 |
| **3127-200*** | 175-200mm/6.89-7.87" | D (three points) | 7μm | **optional** | 150 | 175 | 0.9 | 29 | 25 |
| **3127-225** | 200-225mm/7.87-8.86" | D (three points) | 8μm | **optional** | 150 | 175 | 0.9 | 29 | 25 |
| **3127-250** | 225-250mm/8.86-9.84" | D (three points) | 8μm | **optional** | 150 | 175 | 0.9 | 29 | 25 |
| **3127-275** | 250-275mm/9.84-10.83" | D (three points) | 9μm | **optional** | 150 | 175 | 0.9 | 29 | 25 |
| **3127-300** | 275-300mm/10.83-11.81" | D (three points) | 9μm | **optional** | 150 | 175 | 0.9 | 29 | 25 |

**Set**

| Code | Range | Micrometers included | Setting ring (included) | Extension rod (included) |
|---|---|---|---|---|
| **3127-232*** | 2-3mm/0.08-0.12" | 2-2.5mm, 2.5-3mm | Ø2.5mm | — |
| **3127-363*** | 3-6mm/0.12-0.24" | 3-4mm, 4-5mm, 5-6mm | Ø4mm, Ø5mm, Ø6mm | — |
| **3127-123*** | 6-12mm/0.24-0.47" | 6-8mm, 8-10mm, 10-12mm | Ø6mm, Ø8mm, Ø10mm | 100mm |
| **3127-202*** | 12-20mm/0.47-0.79" | 12-16mm, 16-20mm | Ø16mm | 150mm |
| **3127-504*** | 20-50mm/0.79-1.97" | 20-25mm, 25-30mm, 30-40mm, 40-50mm | Ø25mm, Ø40mm | 150mm |
| **3127-1004*** | 50-100mm/1.97-3.94" | 50-63mm, 62-75mm, 75-88mm, 87-100mm | Ø62mm, Ø87mm | 150mm |

*Supplied with manufacturer inspection certificate

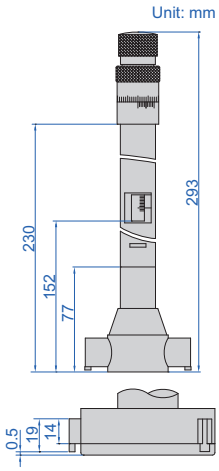
INSPECTION CERTIFICATE

## WIDE RANGE THREE POINTS INTERNAL MICROMETERS

- Meet DIN863-4
- Graduation 0.001mm
- Carbide measuring faces
- Ratchet stop
- Setting rings are included (except 200-300mm)



3228-70




| Code | Range | Accuracy | Setting ring |
|---|---|---|---|
| **3228-70*** | 50-70mm | 5μm | Ø50mm (included) |
| **3228-100*** | 70-100mm | 5μm | Ø70mm (included) |
| **3228-150*** | 100-150mm | 6μm | Ø100mm (included) |
| **3228-250*** | 150-250mm | 8μm | Ø150mm (included) |
| **3228-300*** | 200-300mm | 9μm | Ø200mm (**optional**) |

*Supplied with manufacturer inspection certificate



setting ring



IP54 WATERPROOF

DATA OUTPUT

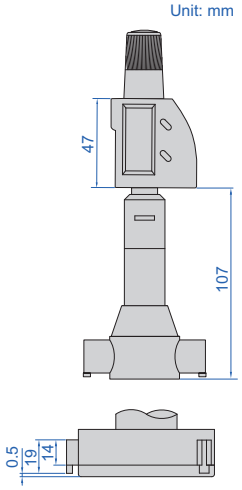
INSPECTION CERTIFICATE

## DIGITAL WIDE RANGE THREE POINTS INTERNAL MICROMETERS

- Meet DIN863-4
- Resolution 0.001mm/0.00005"
  (resolution of **3128-300** is 0.001mm/0.0001")
- IP54 dust/waterproof
- Buttons: on/off, set, mm/inch
- Data output
- Automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with extension rods
- Setting rings are included (except 200-300mm)
- Optional accessory:
  wireless transmitter code **7315-30** (receiver is needed) page 5,
  bluetooth transmitter code **7214-30** page 11,
  data output cable code **7302-30** page 20



3128-150




| Code | Range | Accuracy | Setting ring | Extension rod (included) |
|---|---|---|---|---|
| **3128-70*** | 50-70mm/1.97-2.76" | 5μm | Ø50mm (included) | 150mm |
| **3128-100*** | 70-100mm/2.76-3.94" | 5μm | Ø70mm (included) | 150mm |
| **3128-150*** | 100-150mm/3.94-5.91" | 6μm | Ø100mm (included) | 150mm |
| **3128-250*** | 150-250mm/5.91-9.84" | 8μm | Ø150mm (included) | 150mm |
| **3128-300*** | 200-300mm/7.87-11.81" | 9μm | Ø200mm (**optional**) | 150mm |

*Supplied with manufacturer inspection certificate



setting ring



extension rod (included)

# DIGITAL WIDE RANGE THREE POINTS INTERNAL MICROMETER

IP54 WATERPROOF

DATA OUTPUT

extension rod (included)



50mm replaceable measuring jaws (included)



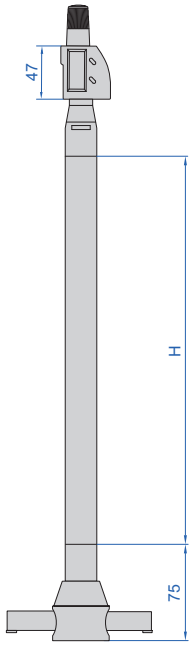
100mm replaceable measuring jaws (included)

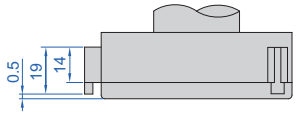




**3621-500**

Unit: mm




- Resolution 0.001mm/0.0001" (resolution is 0.00005" when <10")
- Replaceable measuring jaws, wide measuring range
- Buttons: on/off, set, mm/inch
- Data output
- Automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with extension rods
- Optional accessary:
  setting rings (code **6312-200**, **6312-300**, **6312-400**),
  wireless transmitter code **7315-30** (receiver is needed) page 5,
  bluetooth transmitter code **7214-30** page 11,
  data output cable code **7302-30** page 20

| Code | Range | Accuracy | Measuring jaws (included) | Extension rods H (included) |
|---|---|---|---|---|
| **3621-500** | 200-500mm/7.87-19.69" | (1+L/50) μm* | 50mm (3pcs), 100mm (3pcs) | 150mm, 500mm |

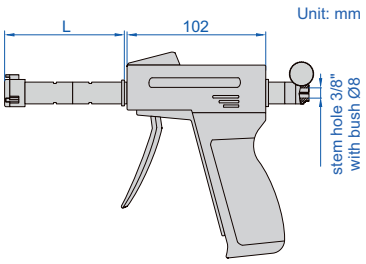
*L=maximum measuring diameter (mm)



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INSPECTION CERTIFICATE

# PISTOL GRIP THREE POINTS BORE GAUGES

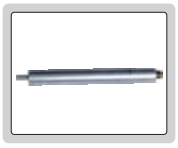



- Optional accessory:
  digital indicators (code **2103-101F**, resolution 0.001mm/0.00005"), setting rings (code **6312**)



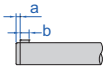
setting ring

6-100mm: included
100-300mm: **optional**



extension rod

included

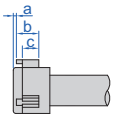



**type A**
6-12mm, steel measuring points



digital indicator is optional

**2124-8**

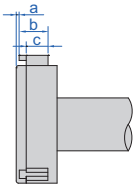



**type B**
12-50mm, carbide measuring points



digital indicator is optional

**2124-25**




**type C**
50-300mm, carbide measuring points



digital indicator is optional

**2124-125**

**Individual** (mm)

| Code | Range | Type | Accuracy (without digital indicator) | Setting ring | Extension rod (included) | L | a | b | c |
|---|---|---|---|---|---|---|---|---|---|
| **2124-8** * | 6-8mm | A | 4µm | Ø6mm (included) | 100mm | 50 | 1.5 | 2.5 | — |
| **2124-10** * | 8-10mm | A | 4µm | Ø8mm (included) | 100mm | 50 | 1.5 | 2.5 | — |
| **2124-12** * | 10-12mm | A | 4µm | Ø10mm (included) | 100mm | 50 | 1.5 | 2.5 | — |
| **2124-16** * | 12-16mm | B | 4µm | Ø16mm (included) | 150mm | 65 | 0.5 | 6 | 4.5 |
| **2124-20** * | 16-20mm | B | 4µm | Ø16mm (included) | 150mm | 65 | 0.5 | 6 | 4.5 |
| **2124-25** * | 20-25mm | B | 4µm | Ø25mm (included) | 150mm | 91 | 0.5 | 8 | 6 |
| **2124-30** * | 25-30mm | B | 4µm | Ø25mm (included) | 150mm | 91 | 0.5 | 8 | 6 |
| **2124-40** * | 30-40mm | B | 4µm | Ø40mm (included) | 150mm | 97 | 0.5 | 14 | 12 |
| **2124-50** * | 40-50mm | B | 5µm | Ø40mm (included) | 150mm | 97 | 0.5 | 14 | 12 |
| **2124-63** * | 50-63mm | C | 5µm | Ø62mm (included) | 150mm | 112 | 0.5 | 17.5 | 14.5 |
| **2124-75** * | 62-75mm | C | 5µm | Ø62mm (included) | 150mm | 112 | 0.5 | 17.5 | 14.5 |
| **2124-88** * | 75-88mm | C | 5µm | Ø87mm (included) | 150mm | 112 | 0.5 | 17.5 | 14.5 |
| **2124-100*** | 87-100mm | C | 5µm | Ø87mm (included) | 150mm | 112 | 0.5 | 17.5 | 14.5 |
| **2124-125*** | 100-125mm | C | 6µm | **optional** | 150mm | 140 | 0.9 | 29 | 25 |
| **2124-150*** | 125-150mm | C | 6µm | **optional** | 150mm | 140 | 0.9 | 29 | 25 |
| **2124-175*** | 150-175mm | C | 7µm | **optional** | 150mm | 140 | 0.9 | 29 | 25 |
| **2124-200*** | 175-200mm | C | 7µm | **optional** | 150mm | 140 | 0.9 | 29 | 25 |
| **2124-225** | 200-225mm | C | 8µm | **optional** | 150mm | 140 | 0.9 | 29 | 25 |
| **2124-250** | 225-250mm | C | 8µm | **optional** | 150mm | 140 | 0.9 | 29 | 25 |
| **2124-275** | 250-275mm | C | 9µm | **optional** | 150mm | 140 | 0.9 | 29 | 25 |
| **2124-300** | 275-300mm | C | 9µm | **optional** | 150mm | 140 | 0.9 | 29 | 25 |

**Set**

| Code | Range | Probes included | Setting ring (included) | Extension rod (included) |
|---|---|---|---|---|
| **2124-S123*** | 6-12mm | 6-8mm, 8-10mm, 10-12mm | Ø6mm, Ø8mm, Ø10mm | 100mm |
| **2124-S202*** | 12-20mm | 12-16mm, 16-20mm | Ø16mm | 150mm |
| **2124-S504*** | 20-50mm | 20-25mm, 25-30mm, 30-40mm, 40-50mm | Ø25mm, Ø40mm | 150mm |
| **2124-S1004*** | 50-100mm | 50-63mm, 62-75mm, 75-88mm, 87-100mm | Ø62mm, Ø87mm | 150mm |



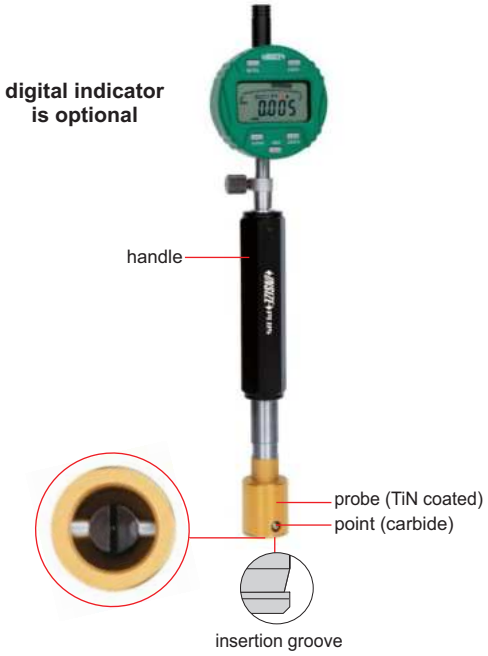
**2124- S504**

*Supplied with manufacturer inspection certificate

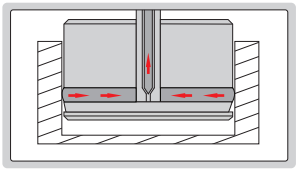
# BORE PLUG GAUGES

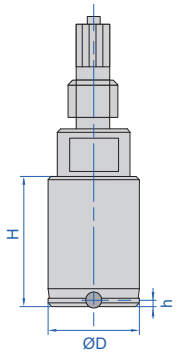
INSIZE PLUS
MADE IN EUROPE

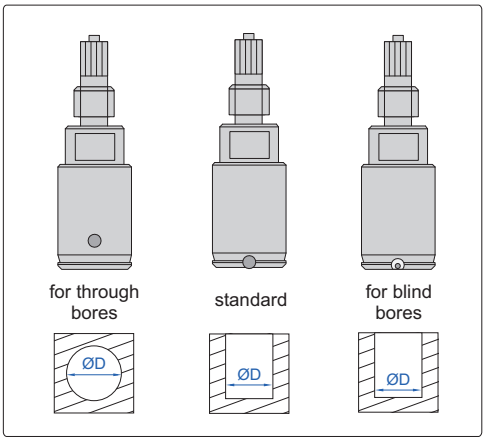





principle of measurement






- TiN coating provides very good hardness (2200 HV), corrosion resistance with outstanding sliding and friction characteristics

**SPECIFICATION OF PROBE** (mm)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Range (ØD)** | | 6-8 * | 8-10 | 10-20 | 20-50 | 50-100 | 100-130 | 130-280 |
| **Travel of point (s)** | | 0.15 | 0.15 | 0.15 | 0.20 | 0.20 | 0.20 | 0.20 |
| **Thread** | | M6×0.75 | | | M10×1 | | | |
| **Height of point (h)** | **for through bores** | 5 | 5 | 5 | 6 | 7.5 | 10 | 10 |
| | **standard** | 1.6 | 1.6 | 1.6 | 2.5 | 2.5 | 2.5 | 2.5 |
| | **for blind bores** | / | / | 0.6 | 1.2 | 1.2 | 1.2 | / |
| **Height of probe (H)** | **for through bores** | 27 | 27 | 27 | 29 | 33.5 | 36 | 36 |
| | **standard** | 23.5 | 23.5 | 23.5 | 25.5 | 28.5 | 28.5 | 28.5 |
| | **for blind bores** | / | / | 23.5 | 25.5 | 28.5 | 28.5 | / |
| **Repeatability** | | 0.001 | | | | | | |

* When measuring range is 6-8mm, we suggest to use Ø7.5mm extension rod;
When measuring range is 6-8mm, it has insertion chamfer for self-centering

To be continued

Continued from previous page






**PROBE**

| Code | Type |
|---|---|
| **4683-NO□□□□** | for through bores |
| **4683-XK□□□□** | standard |
| **4683-SL□□□□** | for blind bores |

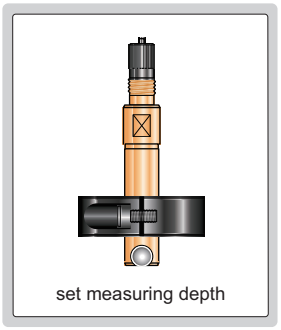
**SETTING RING**

| Code |
|---|
| **6312-□□□□□** |

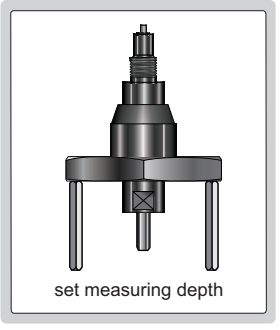
**Ordering examples:**

| Code | Type | Range |
|---|---|---|
| **4683-NO38D10H7** | for through bores | 38.10H7 |

Attention: “D” stands for “.”




**4683-G**




**4683-J**

**DEPTH STOP**

| Code | Applicable for probe |
|---|---|
| **4683-G□□□□□** | 6.0~85mm |
| **4683-J□□□□□** | 28~150mm |

**Ordering examples:**

| Code | Applicable for probe |
|---|---|
| **4683-G22H7** | 22H7 |






**HANDLE**

| Code | Length (L) | Diameter (ØD) | Thread |
|---|---|---|---|
| **4683-HM50S** | 50mm | 8mm | M6×0.75 |
| **4683-HM100S** | 100mm | 8mm | M6×0.75 |
| **4683-HM150S*** | 150mm | 8mm | M6×0.75 |
| **4683-HM60** | 60mm | 15mm | M10×1 |
| **4683-HM150*** | 150mm | 15mm | M10×1 |

* The length 150mm handle is made of temperature-stable steel



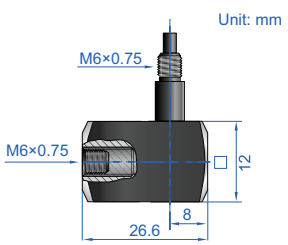

**EXTENSION ROD FOR HANDLE**

| Code | Length (L) | Diameter (ØD) | Thread |
|---|---|---|---|
| **4683-VL65T** | 65mm | 7.5mm | M6×0.75 |
| **4683-VL50S** | 50mm | 8mm | M6×0.75 |
| **4683-VL100S*** | 100mm | 8mm | M6×0.75 |
| **4683-VL150S*** | 150mm | 8mm | M6×0.75 |
| **4683-VL250S*** | 250mm | 8mm | M6×0.75 |
| **4683-VL50** | 50mm | 15mm | M10×1 |
| **4683-VL100*** | 100mm | 15mm | M10×1 |
| **4683-VL150*** | 150mm | 15mm | M10×1 |
| **4683-VL250*** | 250mm | 15mm | M10×1 |

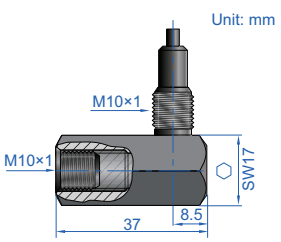
* The length 100mm, 150mm and 250mm are made of temperature-stable steel

**90° ADAPTER**

| Code | Thread |
|---|---|
| **4683-WS1** | M6×0.75 |
| **4683-WS2** | M10×1 |




**4683-WS1**




**4683-WS2**

# PRECISION BORE GAUGES FOR SMALL HOLES (WITHOUT DIAL INDICATOR)



digital indicator is optional



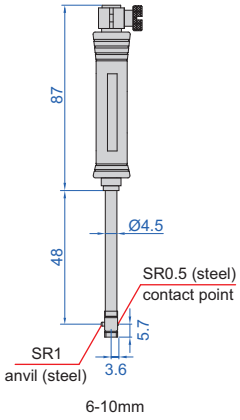
**2284-10**

digital indicator is optional

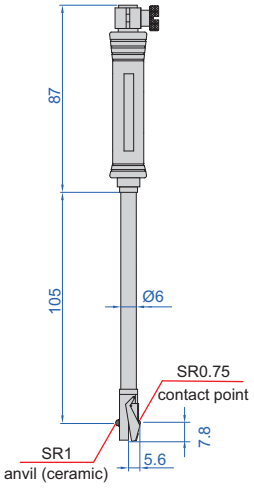



**2284-18**

Unit: mm



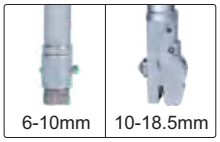

6-10mm




10-18.5mm

- Optional accessory:
  dial indicator, bore gauge setter, setting ring (code **6312**)

| Code | Range | Accuracy (without dial comparator) | Repeatability (without dial comparator) |
|---|---|---|---|
| **2284-10** | 6-10mm | ±0.004mm | 0.0015mm |
| **2284-18** | 10-18.5mm | ±0.004mm | 0.0015mm |



6-10mm | 10-18.5mm

# PRECISION BORE GAUGES FOR SMALL HOLES (WITH DIAL INDICATOR)



**2853-10**

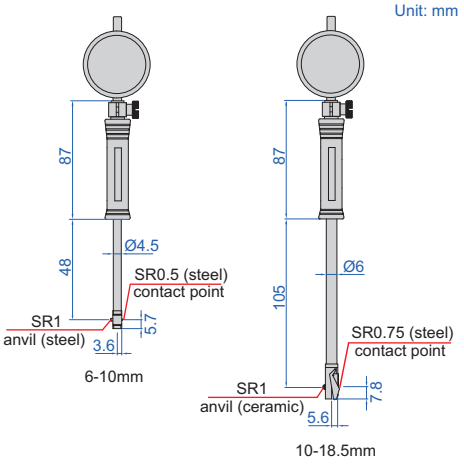


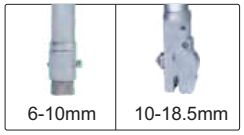

**2153-18**



**2153-18WP**

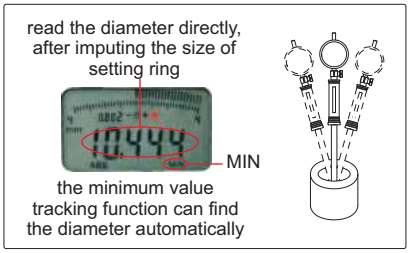
Unit: mm



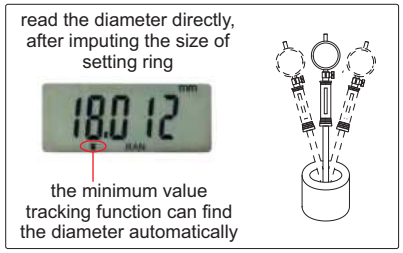




- Optional accessory: setting ring (code **6312**), bore gauge setter

with digital indicator




with waterproof digital indicator




**With dial indicator**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2853-10** | 6-10mm | dial indicator, range 1mm, graduation 0.001mm (code **2313-1FA**) | ±0.007mm | 0.0015mm |
| **2853-18** | 10-18.5mm | | ±0.007mm | 0.0015mm |

**With digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2153-10** | 6-10mm | digital indicator, code **2108-101F**, range 12.7mm/0.5", resolution 0.001mm/0.00005" | ±0.007mm | 0.002mm |
| **2153-18** | 10-18.5mm | | ±0.007mm | 0.002mm |

**With waterproof digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2153-10WP** | 6-10mm | waterproof digital indicator, code **2137-101F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.001mm/0.00005" | ±0.007mm | 0.002mm |
| **2153-18WP** | 10-18.5mm | | ±0.007mm | 0.002mm |

# BORE GAUGES FOR SMALL HOLES (WITH DIAL INDICATOR)

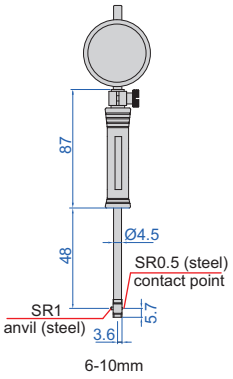
**ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS**



**2852-10**

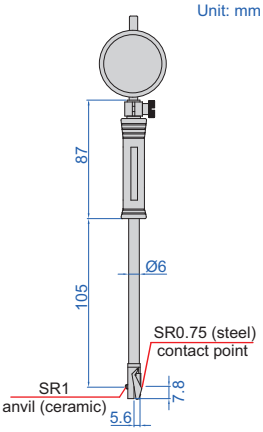



**2152-18** **2152-18WP**

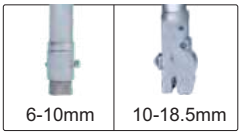



6-10mm

Unit: mm

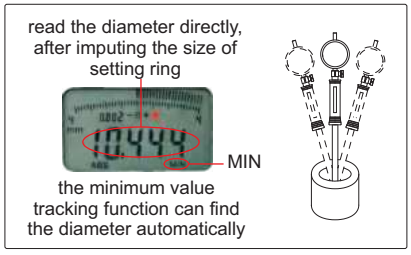



10-18.5mm

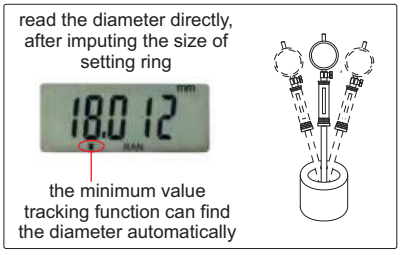



- Optional accessory: setting ring (code **6312**), bore gauge setter

with digital indicator




with waterproof digital indicator




**With dial indicator**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2852-10** | 6-10mm | dial indicator, range 3mm, graduation 0.01mm (code **2311-3F**) | ±0.012mm | 0.003mm |
| **2852-18** | 10-18.5mm | | ±0.012mm | 0.003mm |

**With digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2152-10** | 6-10mm | digital indicator, code **2108-10F**, range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.012mm | 0.003mm |
| **2152-18** | 10-18.5mm | | ±0.012mm | 0.003mm |

**With waterproof digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2152-10WP** | 6-10mm | waterproof digital indicator, code **2137-10F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.012mm | 0.003mm |
| **2152-18WP** | 10-18.5mm | | ±0.012mm | 0.003mm |

# PRECISION BORE GAUGES (WITHOUT DIAL INDICATOR)




**2283-35**

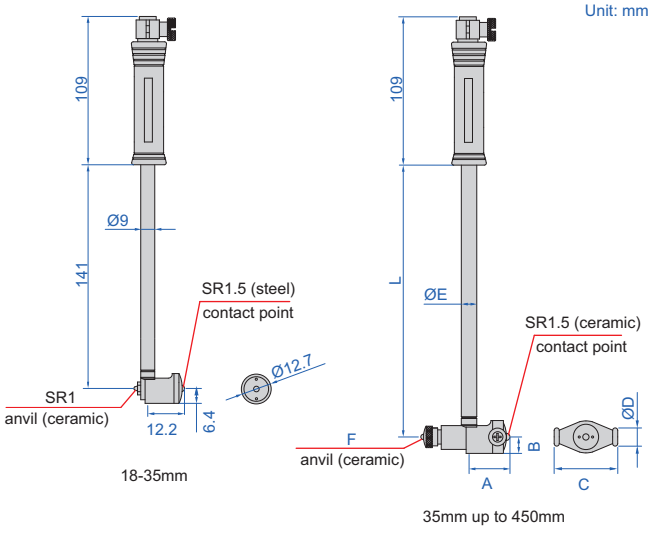



**2283-160**



- Optional accessory: dial indicator, setting ring (code **6312**), bore gauge setter

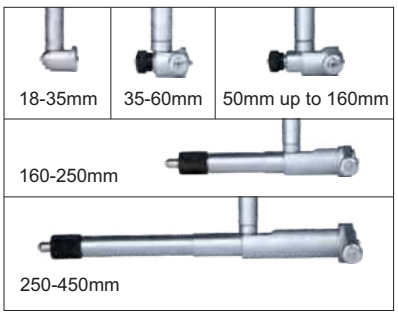
Unit: mm




(mm)

| Range | A | B | C | ØD | ØE | F | L |
|---|---|---|---|---|---|---|---|
| 35-60mm | 22 | 9 | 27 | 13 | 12.8 | SR2 | 141 |
| 50-100mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 50-160mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 100-160mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 160-250mm | 56.5 | 13 | 74.5 | 15 | 14.5 | SR2 | 241 |
| 250-450mm | 86.5 | 15 | 101.5 | 15 | 14.5 | SR2.5 | 241 |

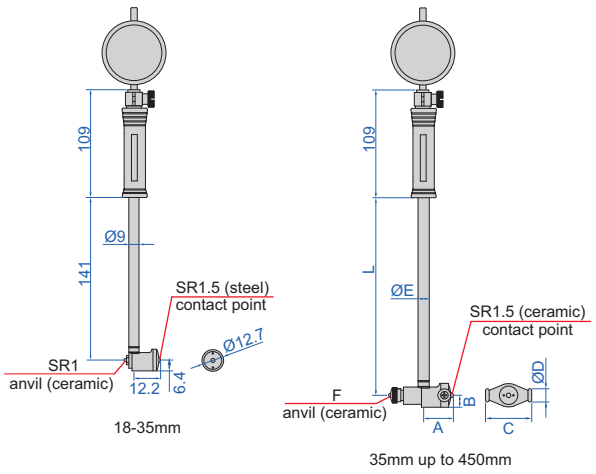
| Code | Range | Accuracy (without dial comparator) | Repeatability (without dial comparator) |
|---|---|---|---|
| **2283-35** | 18-35mm | ±0.004mm | 0.0015mm |
| **2283-60** | 35-60mm | ±0.004mm | 0.0015mm |
| **2283-100** | 50-100mm | ±0.004mm | 0.0015mm |
| **2283-160** | 50-160mm | ±0.004mm | 0.0015mm |
| **2283-161** | 100-160mm | ±0.004mm | 0.0015mm |
| **2283-250** | 160-250mm | ±0.004mm | 0.0015mm |
| **2283-450** | 250-450mm | ±0.004mm | 0.0015mm |



# PRECISION BORE GAUGES (WITH DIAL INDICATOR)



Unit: mm







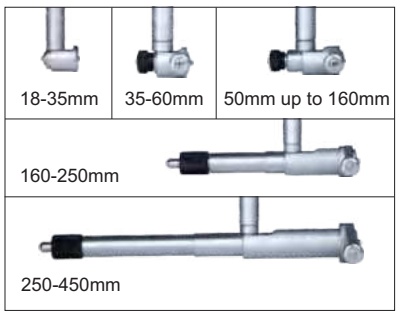
- Optional accessory: setting ring (code **6312**), bore gauge setter

(mm)

| Range | A | B | C | ØD | ØE | F | L |
|---|---|---|---|---|---|---|---|
| 35-60mm | 22 | 9 | 27 | 13 | 12.8 | SR2 | 141 |
| 50-100mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 50-160mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 100-160mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 160-250mm | 56.5 | 13 | 74.5 | 15 | 14.5 | SR2 | 241 |
| 250-450mm | 86.5 | 15 | 101.5 | 15 | 14.5 | SR2.5 | 241 |

**With dial indicator**

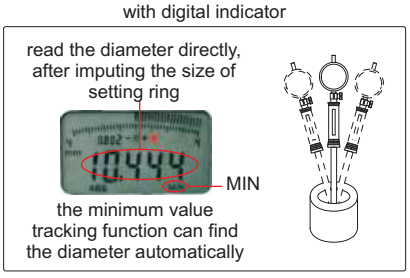
| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2825-35** | 18-35mm | dial indicator, range 1mm, graduation 0.001mm (code **2313-1FA**) | ±0.007mm | 0.0015mm |
| **2825-60** | 35-60mm | | ±0.007mm | 0.0015mm |
| **2825-100** | 50-100mm | | ±0.007mm | 0.0015mm |
| **2825-160** | 50-160mm | | ±0.007mm | 0.0015mm |
| **2825-161** | 100-160mm | | ±0.007mm | 0.0015mm |
| **2825-250** | 160-250mm | | ±0.007mm | 0.0015mm |
| **2825-450** | 250-450mm | | ±0.007mm | 0.0015mm |




**With digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2126-35** | 18-35mm | digital indicator, code **2108-101F**, range 12.7mm/0.5", resolution 0.001mm/0.00005" | ±0.007mm | 0.002mm |
| **2126-60** | 35-60mm | | ±0.007mm | 0.002mm |
| **2126-100** | 50-100mm | | ±0.007mm | 0.002mm |
| **2126-160** | 50-160mm | | ±0.007mm | 0.002mm |
| **2126-161** | 100-160mm | | ±0.007mm | 0.002mm |
| **2126-250** | 160-250mm | | ±0.007mm | 0.002mm |
| **2126-450** | 250-450mm | | ±0.007mm | 0.002mm |

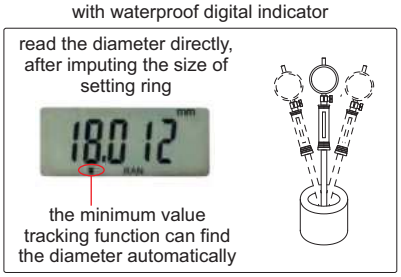
with digital indicator




**With waterproof digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2126-35WP** | 18-35mm | waterproof digital indicator, code **2137-101F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.001mm/0.00005" | ±0.007mm | 0.002mm |
| **2126-60WP** | 35-60mm | | ±0.007mm | 0.002mm |
| **2126-100WP** | 50-100mm | | ±0.007mm | 0.002mm |
| **2126-160WP** | 50-160mm | | ±0.007mm | 0.002mm |
| **2126-161WP** | 100-160mm | | ±0.007mm | 0.002mm |
| **2126-250WP** | 160-250mm | | ±0.007mm | 0.002mm |
| **2126-450WP** | 250-450mm | | ±0.007mm | 0.002mm |

with waterproof digital indicator



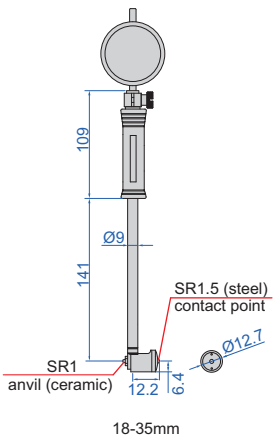
# BORE GAUGES (WITH DIAL INDICATOR)

VIDEO

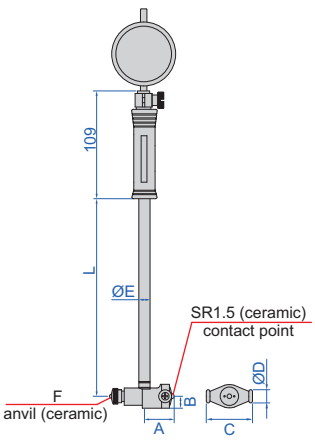
POPULAR MODEL

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

Unit: mm




18-35mm




35mm up to 450mm




2322-160A




2122-35A

2122-35AWP

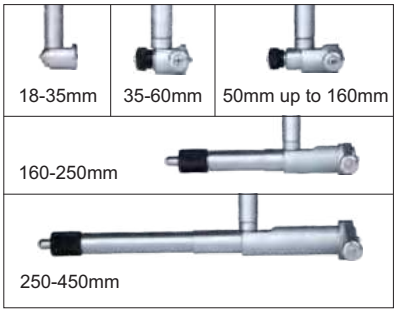
- Optional accessory: setting ring (code **6312**), long handle (code **7351**), bore gauge setter

(mm)

| Range | A | B | C | ØD | ØE | F | L |
|---|---|---|---|---|---|---|---|
| 35-60mm | 22 | 9 | 27 | 13 | 12.8 | SR2 | 141 |
| 50-100mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 50-160mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 100-160mm | 26 | 9 | 35 | 13 | 12.8 | SR2 | 141 |
| 160-250mm | 56.5 | 13 | 74.5 | 15 | 14.5 | SR2 | 241 |
| 250-450mm | 86.5 | 15 | 101.5 | 15 | 14.5 | SR2.5 | 241 |

**With dial indicator**

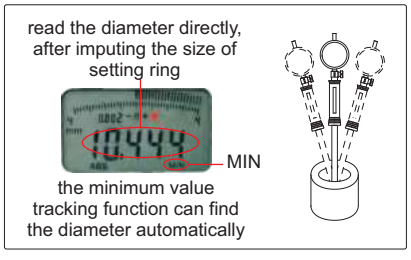
| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2322-35A** | 18-35mm | dial indicator, range 10mm, graduation 0.01mm (code **2308-10FA**) | ±0.015mm | 0.003mm |
| **2322-60A** | 35-60mm | | ±0.018mm | 0.003mm |
| **2322-100A** | 50-100mm | | ±0.018mm | 0.003mm |
| **2322-160A** | 50-160mm | | ±0.018mm | 0.003mm |
| **2322-161A** | 100-160mm | | ±0.018mm | 0.003mm |
| **2322-250A** | 160-250mm | | ±0.018mm | 0.003mm |
| **2322-450A** | 250-450mm | | ±0.018mm | 0.003mm |




**With digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2122-35A** | 18-35mm | digital indicator, code **2108-10F**, range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.015mm | 0.003mm |
| **2122-60A** | 35-60mm | | ±0.018mm | 0.003mm |
| **2122-100A** | 50-100mm | | ±0.018mm | 0.003mm |
| **2122-160A** | 50-160mm | | ±0.018mm | 0.003mm |
| **2122-161A** | 100-160mm | | ±0.018mm | 0.003mm |
| **2122-250A** | 160-250mm | | ±0.018mm | 0.003mm |
| **2122-450A** | 250-450mm | | ±0.018mm | 0.003mm |

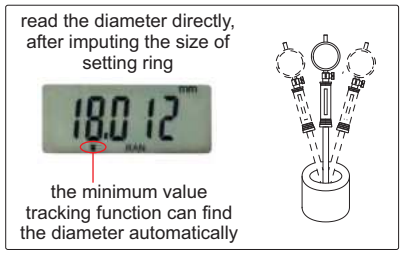
with digital indicator




**With waterproof digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

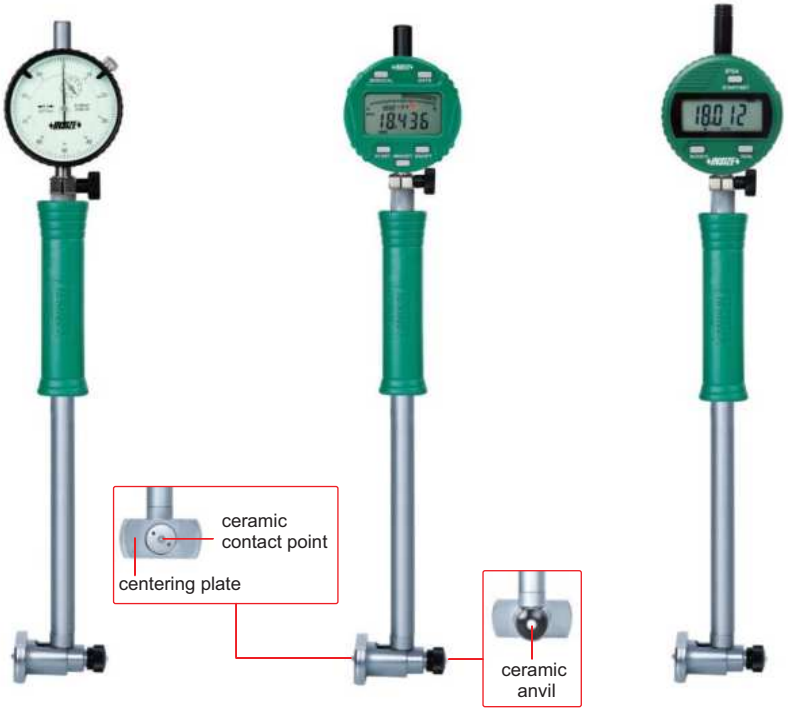
| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2122-35AWP** | 18-35mm | waterproof digital indicator, code **2137-10F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.015mm | 0.003mm |
| **2122-60AWP** | 35-60mm | | ±0.018mm | 0.003mm |
| **2122-100AWP** | 50-100mm | | ±0.018mm | 0.003mm |
| **2122-160AWP** | 50-160mm | | ±0.018mm | 0.003mm |
| **2122-161AWP** | 100-160mm | | ±0.018mm | 0.003mm |
| **2122-250AWP** | 160-250mm | | ±0.018mm | 0.003mm |
| **2122-450AWP** | 250-450mm | | ±0.018mm | 0.003mm |

with waterproof digital indicator

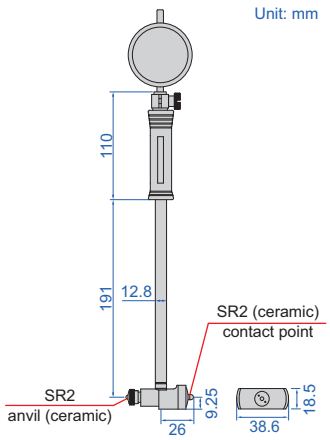


# BORE GAUGES
# (WITH CENTERING PLATE)

**ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS**

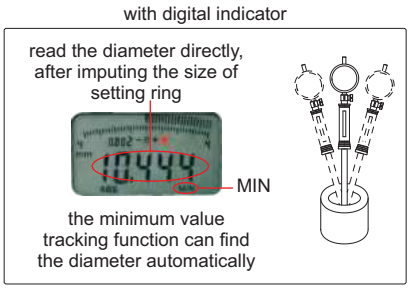


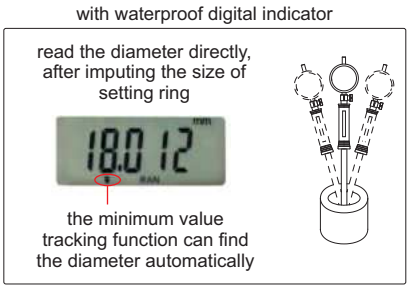

**2530-160** **2130-160** **2130-160WP**




50mm up to 160mm

- Optional accessory: setting ring (code **6312**), long handle (code **7351**), bore gauge setter




**With dial indicator**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2530-100** | 50-100mm | dial indicator, range 10mm, graduation 0.01mm (code **2308-10FA**) | ±0.018mm | 0.003mm |
| **2530-160** | 50-160mm | | ±0.018mm | 0.003mm |
| **2530-161** | 100-160mm | | ±0.018mm | 0.003mm |

**With digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2130-100** | 50-100mm | digital indicator, code **2108-10F**, range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.018mm | 0.003mm |
| **2130-160** | 50-160mm | | ±0.018mm | 0.003mm |
| **2130-161** | 100-160mm | | ±0.018mm | 0.003mm |

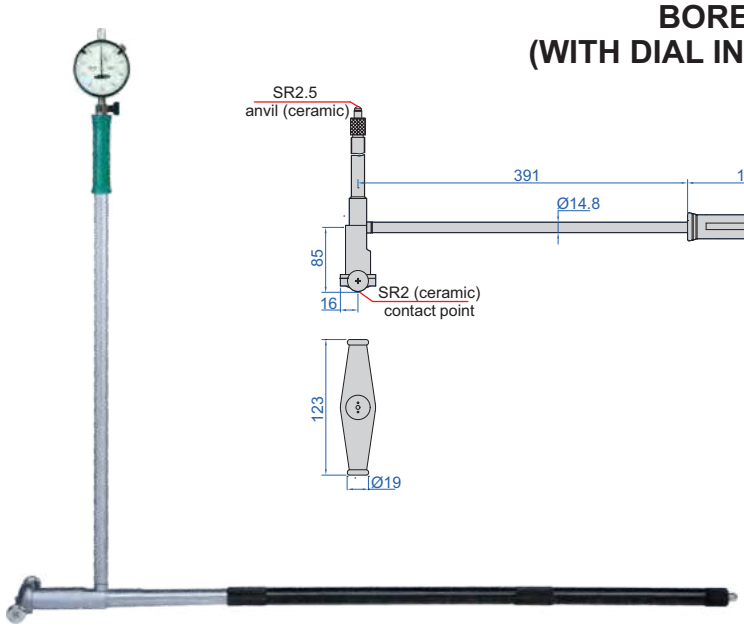
**With waterproof digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2130-100WP** | 50-100mm | waterproof digital indicator, code **2137-10F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.018mm | 0.003mm |
| **2130-160WP** | 50-160mm | | ±0.018mm | 0.003mm |
| **2130-161WP** | 100-160mm | | ±0.018mm | 0.003mm |

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

# BORE GAUGES (WITH DIAL INDICATOR)




2828-800A



**With dial indicator**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2828-800A** | 400-800mm | dial indicator, code **2308-10FA**, range 10mm, graduation 0.01mm | ±0.025mm | 0.003mm |

**With digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2128-800A** | 400-800mm | digital indicator, code **2108-10F**, range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.025mm | 0.003mm |

**With waterproof digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2128-800AWP** | 400-800mm | waterproof digital indicator, code **2137-10F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.025mm | 0.003mm |

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

# BORE GAUGE SETS (WITH DIAL INDICATOR)



2824-S160



2724-S3



2724-S3WP

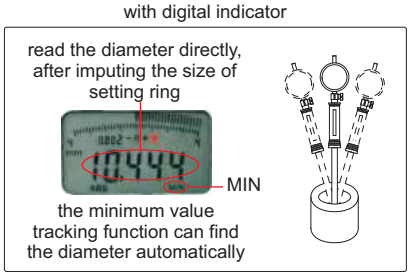
To be continued

Continued from previous page

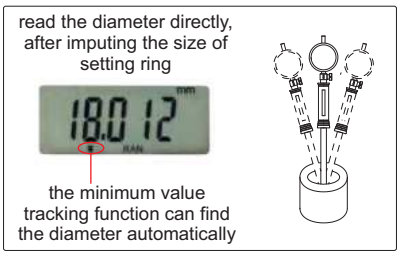
VIDEO

- Optional accessory: setting ring (code **6312**), long handle (code **7351**), bore gauge setter

with digital indicator




with waterproof digital indicator




packaging (code **2824-S3**)





**With dial indicator**

| Code | Range | Indicator | Bore gauges included | Accuracy | Repeatability |
|---|---|---|---|---|---|
| **2824-S160** | 35-160mm | dial indicator, code **2308-10FA**, range 10mm, graduation 0.01mm | ①35-50mm (dial indicator and handle are not included)<br>②50-160mm | 35-50mm ±0.018mm<br>50-160mm ±0.018mm | 0.003mm |
| **2824-S3** | 18-160mm | dial indicator, code **2308-10FA**, range 10mm, graduation 0.01mm | ①18-35mm<br>②35-60mm (dial indicator is not included)<br>③50-160mm (dial indicator is not included) | 18-35mm ±0.015mm<br>35-60mm ±0.018mm<br>50-160mm ±0.018mm | 0.003mm |

**With digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Bore gauges included | Accuracy | Repeatability |
|---|---|---|---|---|---|
| **2724-S160** | 35-160mm | digital indicator, code **2108-10F** range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | ①35-50mm (digital indicator and handle are not included)<br>②50-160mm | 35-50mm ±0.018mm<br>50-160mm ±0.018mm | 0.003mm |
| **2724-S3** | 18-160mm | digital indicator, code **2108-10F** range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | ①18-35mm<br>②35-60mm (digital indicator is not included)<br>③50-160mm (digital indicator is not included) | 18-35mm ±0.015mm<br>35-60mm ±0.018mm<br>50-160mm ±0.018mm | 0.003mm |

**With waterproof digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

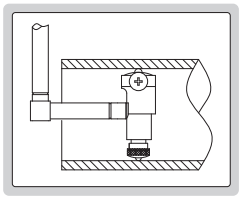
| Code | Range | Indicator | Bore gauges included | Accuracy | Repeatability |
|---|---|---|---|---|---|
| **2724-S160WP** | 35-160mm | waterproof digital indicator, code **2137-10F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ①35-50mm (digital indicator and handle are not included)<br>②50-160mm | 35-50mm ±0.018mm<br>50-160mm ±0.018mm | 0.003mm |
| **2724-S3WP** | 18-160mm | waterproof digital indicator, code **2137-10F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ①18-35mm<br>②35-60mm (digital indicator is not included)<br>③50-160mm (digital indicator is not included) | 18-35mm ±0.015mm<br>35-60mm ±0.018mm<br>50-160mm ±0.018mm | 0.003mm |

# BORE GAUGES (WITH DIAL INDICATOR)

VIDEO

**ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS**

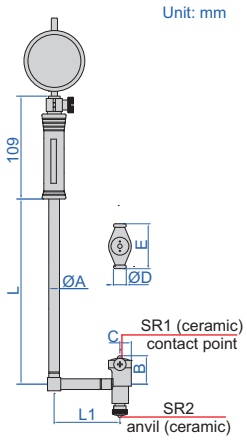
- Optional accessory: setting ring (code **6312**), long handle (code **7351**), bore gauge setter







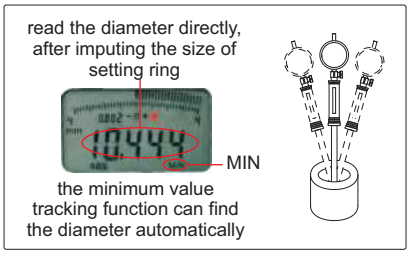

**2827-160A**



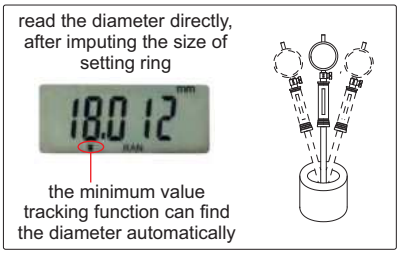

(mm)

| Range | ØA | B | C | ØD | E | L | L1 |
|---|---|---|---|---|---|---|---|
| 35-60mm | 12.8 | 22 | 9 | 13 | 27 | 141 | 75 |
| 50-160mm | 12.8 | 28.5 | 9.2 | 13 | 35 | 141 | 76.2 |
| 160-250mm | 14.5 | 62.0 | 12.7 | 15 | 74.5 | 391 | 100 |
| 250-450mm | 14.5 | 91.5 | 15.0 | 15 | 101.5 | 391 | 100 |

with digital indicator




with waterproof digital indicator




**With dial indicator**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2827-60A** | 35-60mm | dial indicator, code **2308-10FA**, range 10mm, graduation 0.01mm | ±0.018mm | 0.003mm |
| **2827-160A** | 50-160mm | | ±0.018mm | 0.003mm |
| **2827-250A** | 160-250mm | | ±0.018mm | 0.003mm |
| **2827-450A** | 250-450mm | | ±0.018mm | 0.003mm |

**With digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2127-60** | 35-60mm | digial indicator, code **2108-10F,** range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | ±0.018mm | 0.003mm |
| **2127-160** | 50-160mm | | ±0.018mm | 0.003mm |
| **2127-250** | 160-250mm | | ±0.018mm | 0.003mm |
| **2127-450** | 250-450mm | | ±0.018mm | 0.003mm |

**With waterproof digital indicator (optional data output cable: code 7315-51B receiver is needed page 7, 7214-51B page 12, 7302-40M page 21)**

| Code | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|
| **2127-60WP** | 35-60mm | waterproof digital indicator, code **2137-10F**, range 12.7mm/0.5", dust/waterproof IP54, resolution 0.002mm/0.0001" (can switch to 0.01mm/0.0005") | ±0.018mm | 0.003mm |
| **2127-160WP** | 50-160mm | | ±0.018mm | 0.003mm |
| **2127-250WP** | 160-250mm | | ±0.018mm | 0.003mm |
| **2127-450WP** | 250-450mm | | ±0.018mm | 0.003mm |

# CARBON FIBER BORE GAUGES

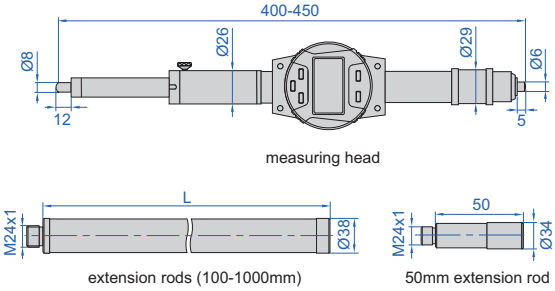
VIDEO

SPRING LOADED MEASURING POINT

CARBON FIBER EXTENSION RODS, LIGHT WEIGHT, NOT EASY TO DEFORM, LOW THERMAL EXPANSION

DATA OUTPUT

Unit: mm




measuring head




extension rods (100-1000mm)

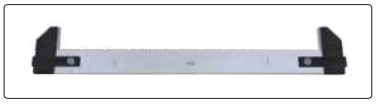
50mm extension rod



**3522-1500**

- Carbon fiber extension rods, light weight, not easy to deform, low thermal expansion
- Carbide measuring faces
- Data output
- Button function: on/off, zero, tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- Supplied with 400mm setting standard
- Optional accessory:
  wireless transmitter code **7315-51** (receiver is needed) page 6,
  bluetooth transmitter code **7214-51** page 12,
  data output cable code **7302-40M** page 21

setting standard (included), used to set the measuring head



**Measuring head**

| Range | Resolution | Accuracy | Repeatability | Weight |
|---|---|---|---|---|
| 400-450mm | 0.001mm/0.00005" | ±6μm | ±3μm | 1kg |

**Extension rods**

| Length (L) | Accuracy | Weight | Material |
|---|---|---|---|
| 50mm | ±2μm | 230g | steel |
| 100mm | ±3μm | 300g | carbon fiber |
| 200mm | ±4.5μm | 390g | carbon fiber |
| 300mm | ±6μm | 470g | carbon fiber |
| 600mm | ±9μm | 730g | carbon fiber |
| 1000mm | ±11μm | 1000g | carbon fiber |

spring loaded point, and max./min. value tracking make it easy to find the right measuring position




| Code | Range | Weight | Extension rods |
|---|---|---|---|
| **3522-1000** | 400-1000mm | 3.8kg | 50mm, 100mm, 200mm, 300mm |
| **3522-1500** | 400-1500mm | 4.5kg | 50mm, 100mm, 200mm, 300mm, 600mm |
| **3522-2000** | 400-2000mm | 5.3kg | 50mm, 100mm, 200mm, 300mm, 600mm (2 pcs) |
| **3522-2400** | 400-2400mm | 6.0kg | 50mm, 100mm, 200mm, 300mm, 600mm (3 pcs) |
| **3522-3400** | 400-3400mm | 6.7kg | 50mm, 100mm, 200mm, 300mm, 600mm (4 pcs) |
| **3522-6400** | 400-6400mm | 9.5kg | 50mm, 100mm, 200mm, 300mm, 600mm, 1000mm (5 pcs) |





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ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

MEASURE DIAMETER OF BORES WITH BARRIER INSIDE

# BORE GAUGE FOR BARRIER INSIDE BORE

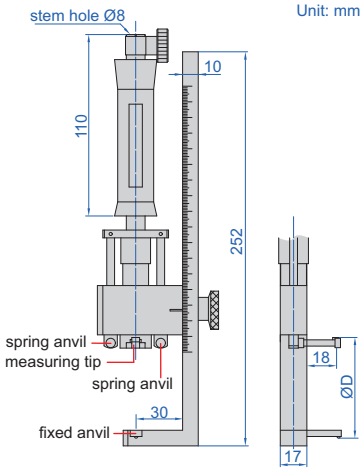
VIDEO

application



digital indicator is optional






2348-210

- Measure diameter of bores with barrier inside
- Optional accessory:
  – 0.01mm graduation dial indicators
  – Setting ring (code **6312**)

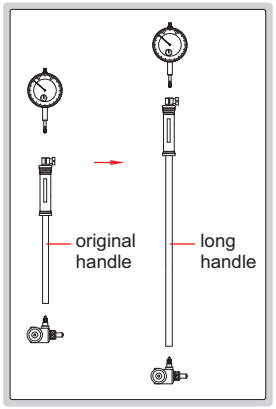
(mm)

| Code | Range ØD | Diameter of barrier Ød | Travel of measuring tip | Accuracy (without dial indicator) | Measuring force |
|---|---|---|---|---|---|
| **2348-210** | 40-210mm | <D-14 (less than 50mm)* | 1.6 | 0.018 | 2N |

*For example:
When measuring size ØD is 40mm, D-14=26mm, so the diameter of barrier should be less than 26mm.
When measuring size ØD is 70mm, D-14=56mm, however it should be less than 50mm,
so the diameter of barrier should be less than 50mm.

# LONG HANDLES

method of use (replace the original handle with long handle)

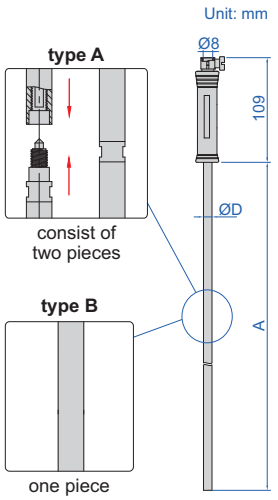



- To assist deep-hole measurement
- Can be used for bore gauges **2322**, **2122**, **2130**, **2530**, **2828**, **2128**, **2824**, **2724**, **2827** and **2127**

| Code | Applicable bore gauges | A | ØD | Type |
|---|---|---|---|---|
| **7351-EX10** | 18-35mm | 475mm | 9mm | B |
| **7351-EX11** | 35-60mm, 50-100mm, 50-160mm, 100-160mm | 475mm | 13mm | |
| **7351-EX12** | | 980mm | 13mm | |
| **7351-EX13** | | 1480mm | 14.5mm | A |
| **7351-EX14** | | 1980mm | 14.5mm | |
| **7351-EX21** | 160-250mm, 250-450mm | 480mm | 14.5mm | B |
| **7351-EX22** | | 980mm | 14.5mm | |
| **7351-EX23** | | 1480mm | 14.5mm | A |
| **7351-EX24** | | 1980mm | 14.5mm | |



7351-EX11



## ANVILS FOR BORE GAUGES

- For bore gauges **2284**, **2853**, **2153**, **2852**, **2152**, **2283**, **2825**, **2126**, **2322**, **2122**, **2530**, **2130**, **2824**, **2724**, **2827** and **2127**



**7350-160**

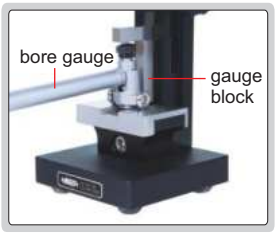
| Code | Applicable bore gauges | Material of measuring face | Quantity per set | Measuring range of anvil (mm) |
|---|---|---|---|---|
| **7350-10** | 6-10mm | steel | 9 pcs | 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10 |
| **7350-18** | 10-18.5mm | ceramic | 9 pcs | 10, 11, 12, 13, 14, 15, 16, 17, 18 |
| **7350-35** | 18-35mm | ceramic | 9 pcs | 18, 20, 22, 24, 26, 28, 30, 32, 34 |
| **7350-60** | 35-60mm | ceramic | 6 pcs | 35, 40, 45, 50, 55, 60 |
| **7350-100** | 50-100mm | ceramic | 11 pcs | 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100 |
| **7350-160** | 50-160mm | ceramic | 12 pcs | 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105 |
| **7350-161** | 100-160mm | ceramic | 12 pcs | 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105 |
| **7350-250** | 160-250mm | ceramic | 5 pcs | 160, 170, 180, 190, 200 |
| **7350-450** | 250-450mm | ceramic | 5 pcs | 250, 260, 270, 280, 290 |

7

## BORE GAUGE SETTERS

VIDEO

application

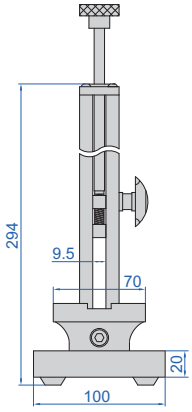



- Vertical and horizontal use
- To be used with gauge blocks



**7353-160**

Unit: mm




horizontal use



gauge blocks for **7353-160**



| Code | Range | Repeatability | Remark |
|---|---|---|---|
| **7353-160** | 0-160mm | 1.2μm | with gauge block set |
| **7353-160W** | 0-160mm | 1.2μm | without gauge block set |

**Gauge block set for 7353-160**

| Blocks per set | Size (mm) | Step (mm) | Quantity | Remark |
|---|---|---|---|---|
| 33 | 1.005 | | 1 pc | grade 2 (ISO3650) |
| | 1.01-1.09 | 0.01 | 9 pcs | |
| | 1.1-1.9 | 0.1 | 9 pcs | |
| | 1-9 | 1 | 9 pcs | |
| | 10-30 | 10 | 3 pcs | |
| | 50 | | 1 pc | |
| | 100 | | 1 pc | |

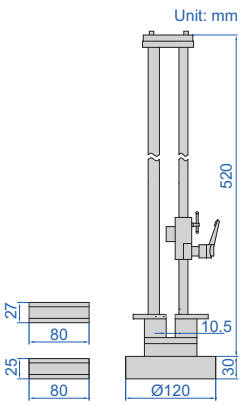
## BORE GAUGE SETTER

VIDEO

- Used together with gauge blocks to set bore gauges

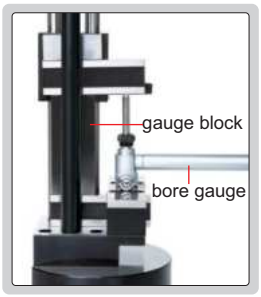
| Code | Setting range |
|---|---|
| **2395-400** | 18-400mm |

Unit: mm




**2395-400**








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INSPECTION CERTIFICATE

DATA OUTPUT

# DIGITAL INTERNAL CHAMFER GAUGES

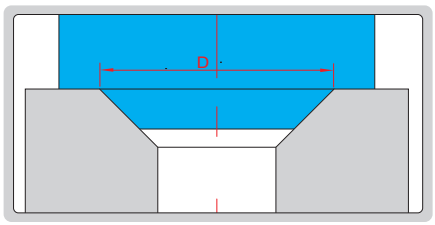
INSIZE PLUS
MADE IN EUROPE

VIDEO



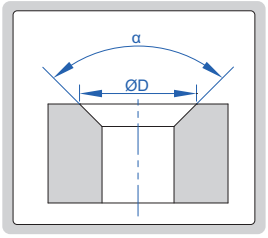
2962-609

measurement principle




- Measure end diameter of chamfer holes
- Resolution: 0.01mm/0.0005"
- Direct read (end diameter), no calculations
- TiN coated, hardness 2200HV, wear/rust-resistant
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21

measure end diameter of chamfer holes




**Chamfer hole angle α=90°**

| Code | Range ØD | α | Accuracy |
|---|---|---|---|
| **2962-209*** | 1-20mm | 90° | ±0.02mm |
| **2962-409*** | 20-40mm | 90° | ±0.02mm |
| **2962-609*** | 40-60mm | 90° | ±0.02mm |
| **2962-809*** | 60-80mm | 90° | ±0.02mm |
| **2962-1009*** | 80-100mm | 90° | ±0.02mm |
| **2962-1209*** | 100-120mm | 90° | ±0.02mm |

**Chamfer hole angle α=127°**

| Code | Range ØD | α | Accuracy |
|---|---|---|---|
| **2962-207*** | 1-20mm | 127° | ±0.02mm |
| **2962-407*** | 20-40mm | 127° | ±0.02mm |
| **2962-607*** | 40-60mm | 127° | ±0.02mm |
| **2962-807*** | 60-80mm | 127° | ±0.02mm |
| **2962-1007*** | 80-100mm | 127° | ±0.02mm |
| **2962-1207*** | 100-120mm | 127° | ±0.02mm |

**Chamfer hole angle α=60°**

| Code | Range ØD | α | Accuracy |
|---|---|---|---|
| **2962-126*** | 1-10mm | 60° | ±0.02mm |
| **2962-216*** | 10-20mm | 60° | ±0.02mm |
| **2962-316*** | 20-30mm | 60° | ±0.02mm |
| **2962-416*** | 30-40mm | 60° | ±0.02mm |
| **2962-516*** | 40-50mm | 60° | ±0.02mm |
| **2962-616*** | 50-60mm | 60° | ±0.02mm |
| **2962-716*** | 60-70mm | 60° | ±0.02mm |
| **2962-816*** | 70-80mm | 60° | ±0.02mm |
| **2962-916*** | 80-90mm | 60° | ±0.02mm |
| **2962-1016*** | 90-100mm | 60° | ±0.02mm |
| **2962-1116*** | 100-110mm | 60° | ±0.02mm |
| **2962-1216*** | 110-120mm | 60° | ±0.02mm |

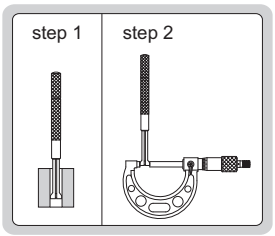
*Supplied with manufacturer inspection certificate

# SMALL HOLE GAUGE SET

- 4 gauges per set
- For small holes,
  slots and grooves, etc.
- Satin chrome finish



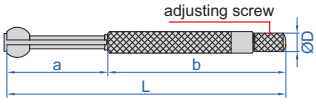
4208-1



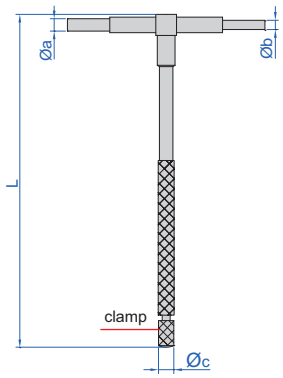

(mm)

| Range | L | a | b | ØD |
|---|---|---|---|---|
| 3-5mm | 76 | 24 | 52 | 5 |
| 5-7.5mm | 79 | 27 | 52 | 5 |
| 7.5-10mm | 88 | 30 | 58 | 6 |
| 10-13mm | 91 | 34 | 58 | 6 |

| Code | Total range | Gauges included |
|---|---|---|
| **4208-1** | 3-13mm | 3-5mm, 5-7.5mm, 7.5-10mm, 10-13mm |

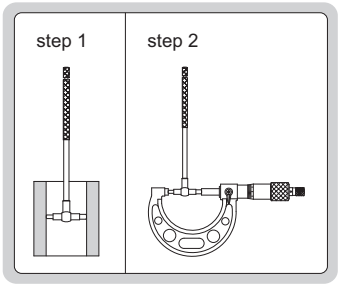


## TELESCOPING GAUGE SET






4206-1




- 6 gauges per set
- For quick measurement of inside diameter of holes and width of slots
- Satin chrome finish

| Code | Total range | Gauges included |
|---|---|---|
| 4206-1 | 8-150mm | 8-12.7mm, 12.7-19mm, 19-32mm, 32-54mm, 54-90mm, 90-150mm |

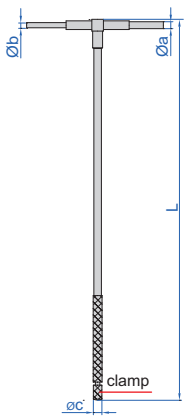
(mm)

| Range | L | Øa | Øb | Øc |
|---|---|---|---|---|
| 8-12.7mm | 115 | 3.9 | 2.9 | 4.7 |
| 12.7-19mm | 115 | 5.3 | 3.8 | 4.7 |
| 19-32mm | 115 | 5.3 | 3.8 | 4.7 |
| 32-54mm | 137 | 7.6 | 6.1 | 6.2 |
| 54-90mm | 137 | 7.6 | 6.1 | 6.2 |
| 90-150mm | 137 | 7.6 | 6.1 | 6.2 |

7

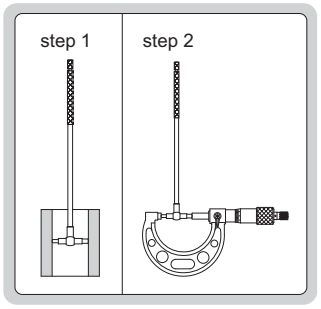
## LONG HANDLE TELESCOPING GAUGES

- For quick measurement of inside diameter of deep holes and width of slots
- Satin chrome finish






4209-6




(mm)

| Code | Range | L | Øa | Øb | Øc |
|---|---|---|---|---|---|
| 4209-1 | 8-12.7mm | 300 | 3.9 | 2.9 | 6.2 |
| 4209-2 | 12.7-19mm | 300 | 5.3 | 3.8 | 6.2 |
| 4209-3 | 19-32mm | 300 | 5.3 | 3.8 | 6.2 |
| 4209-4 | 32-54mm | 300 | 7.6 | 6.1 | 7.2 |
| 4209-5 | 54-90mm | 300 | 7.6 | 6.1 | 7.2 |
| 4209-6 | 90-150mm | 300 | 7.6 | 6.1 | 7.2 |

## FLEXIBLE INNER DIAMETER METERS

- Measure average inner diameter of flexible materials
- Made of PET

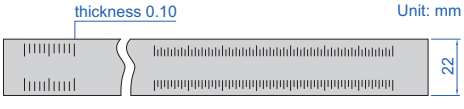


7137-60

application



| Code | Diameter range | Graduation | Accuracy |
|---|---|---|---|
| 7137-30 | Ø10-30mm | 0.05mm | ±0.10mm |
| 7137-60 | Ø30-60mm | 0.05mm | ±0.10mm |
| 7137-100 | Ø50-100mm | 0.05mm | ±0.10mm |
| 7137-200 | Ø100-200mm | 0.05mm | ±0.10mm |
| 7137-350 | Ø200-350mm | 0.05mm | ±0.15mm |





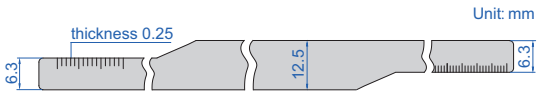

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# DIAMETER METERS

CAN BE CUSTOM-MADE



7135-525




- Measure diameter of pipes, trees, tires, etc.
- Made of stainless steel

**Standard type**

| Code | Diameter range | Graduation | Accuracy |
|---|---|---|---|
| 7135-35* | Ø20-35mm | 0.05mm | ±0.05mm |
| 7135-55* | Ø30-55mm | 0.05mm | ±0.05mm |
| 7135-125 | Ø50-125mm | 0.01mm | ±0.05mm |
| 7135-225 | Ø100-225mm | 0.01mm | ±0.05mm |
| 7135-375 | Ø200-375mm | 0.01mm | ±0.05mm |
| 7135-525 | Ø350-525mm | 0.01mm | ±0.05mm |
| 7135-725 | Ø500-725mm | 0.01mm | ±0.06mm |
| 7135-925 | Ø700-925mm | 0.01mm | ±0.06mm |
| 7135-1125 | Ø900-1125mm | 0.02mm | ±0.06mm |
| 7135-1325 | Ø1100-1325mm | 0.02mm | ±0.08mm |
| 7135-1525 | Ø1300-1525mm | 0.02mm | ±0.08mm |
| 7135-1725 | Ø1500-1725mm | 0.02mm | ±0.08mm |
| 7135-1925 | Ø1700-1925mm | 0.02mm | ±0.08mm |
| 7135-2125 | Ø1900-2125mm | 0.02mm | ±0.08mm |
| 7135-2325 | Ø2100-2325mm | 0.02mm | ±0.10mm |
| 7135-2525 | Ø2300-2525mm | 0.02mm | ±0.10mm |
| 7135-2750 | Ø2500-2750mm | 0.02mm | ±0.10mm |
| 7135-3000 | Ø2750-3000mm | 0.02mm | ±0.10mm |
| 7135-3250 | Ø3000-3250mm | 0.02mm | ±0.15mm |
| 7135-3500 | Ø3250-3500mm | 0.02mm | ±0.15mm |

| Code | Diameter range | Graduation | Accuracy |
|---|---|---|---|
| 7135-3750 | Ø3500-3750mm | 0.02mm | ±0.15mm |
| 7135-4000 | Ø3750-4000mm | 0.02mm | ±0.20mm |
| 7135-4250 | Ø4000-4250mm | 0.02mm | ±0.20mm |
| 7135-4500 | Ø4250-4500mm | 0.02mm | ±0.20mm |
| 7135-4750 | Ø4500-4750mm | 0.02mm | ±0.20mm |
| 7135-5000 | Ø4750-5000mm | 0.02mm | ±0.20mm |
| 7135-5250 | Ø5000-5250mm | 0.02mm | ±0.005%L** |
| 7135-5500 | Ø5250-5500mm | 0.02mm | ±0.005%L** |
| 7135-5750 | Ø5500-5750mm | 0.02mm | ±0.005%L** |
| 7135-6000 | Ø5750-6000mm | 0.02mm | ±0.005%L** |
| 7135-6250 | Ø6000-6250mm | 0.02mm | ±0.005%L** |
| 7135-6500 | Ø6250-6500mm | 0.02mm | ±0.005%L** |
| 7135-6750 | Ø6500-6750mm | 0.02mm | ±0.005%L** |
| 7135-7000 | Ø6750-7000mm | 0.02mm | ±0.005%L** |
| 7135-7250 | Ø7000-7250mm | 0.02mm | ±0.005%L** |
| 7135-7500 | Ø7250-7500mm | 0.02mm | ±0.005%L** |
| 7135-7750 | Ø7500-7750mm | 0.02mm | ±0.005%L** |
| 7135-8000 | Ø7750-8000mm | 0.02mm | ±0.005%L** |
| 7135-8250 | Ø8000-8250mm | 0.02mm | ±0.005%L** |

**Long type**

| Code | Diameter range | Graduation | Accuracy |
|---|---|---|---|
| 7135-80* | Ø9-80mm | 0.05mm | ±0.05mm |
| 7135-55B* | Ø15-55mm | 0.02mm | ±0.05mm |
| 7135-300 | Ø50-300mm | 0.01mm | ±0.05mm |
| 7135-600 | Ø300-600mm | 0.01mm | ±0.05mm |
| 7135-900 | Ø600-900mm | 0.01mm | ±0.06mm |
| 7135-1200 | Ø900-1200mm | 0.02mm | ±0.08mm |
| 7135-1500 | Ø1200-1500mm | 0.02mm | ±0.08mm |
| 7135-1800 | Ø1500-1800mm | 0.02mm | ±0.08mm |
| 7135-2100 | Ø1800-2100mm | 0.02mm | ±0.08mm |
| 7135-2400 | Ø2100-2400mm | 0.02mm | ±0.10mm |
| 7135-2700 | Ø2400-2700mm | 0.02mm | ±0.10mm |
| 7135-3000B | Ø2700-3000mm | 0.02mm | ±0.10mm |
| 7135-3300 | Ø3000-3300mm | 0.02mm | ±0.15mm |
| 7135-3600 | Ø3300-3600mm | 0.02mm | ±0.15mm |
| 7135-3900 | Ø3600-3900mm | 0.02mm | ±0.20mm |
| 7135-4200 | Ø3900-4200mm | 0.02mm | ±0.20mm |
| 7135-4500B | Ø4200-4500mm | 0.02mm | ±0.20mm |

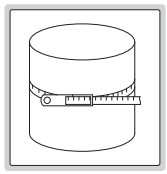
| Code | Diameter range | Graduation | Accuracy |
|---|---|---|---|
| 7135-4800 | Ø4500-4800mm | 0.02mm | ±0.20mm |
| 7135-5100 | Ø4800-5100mm | 0.02mm | ±0.005%L** |
| 7135-5400 | Ø5100-5400mm | 0.02mm | ±0.005%L** |
| 7135-5700 | Ø5400-5700mm | 0.02mm | ±0.005%L** |
| 7135-6000B | Ø5700-6000mm | 0.02mm | ±0.005%L** |
| 7135-6300 | Ø6000-6300mm | 0.02mm | ±0.005%L** |
| 7135-6600 | Ø6300-6600mm | 0.02mm | ±0.005%L** |
| 7135-6900 | Ø6600-6900mm | 0.02mm | ±0.005%L** |
| 7135-7200 | Ø6900-7200mm | 0.02mm | ±0.005%L** |
| 7135-7500B | Ø7200-7500mm | 0.02mm | ±0.005%L** |
| 7135-7800 | Ø7500-7800mm | 0.02mm | ±0.005%L** |
| 7135-8100 | Ø7800-8100mm | 0.02mm | ±0.005%L** |
| 7135-8400 | Ø8100-8400mm | 0.02mm | ±0.005%L** |
| 7135-8700 | Ø8400-8700mm | 0.02mm | ±0.005%L** |
| 7135-9000 | Ø8700-9000mm | 0.02mm | ±0.005%L** |
| 7135-9300 | Ø9000-9300mm | 0.02mm | ±0.005%L** |

* The thickness of code **7135-35**, **7135-55**, **7135-80** and **7135-55B** is 0.10mm, while the thickness of other codes is 0.25mm

** L is the actual measured value (unit: mm)

## CIRCUMFERENCE METERS

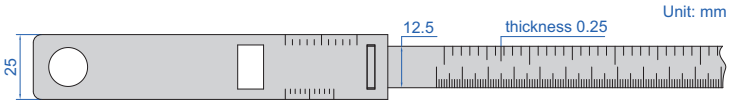
CAN BE CUSTOM-MADE





**7136-1880**

- Measure diameter and circumference of pipes, trees, tires, etc.
- Made of stainless steel



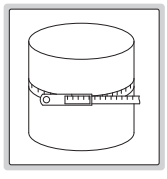

| Code | Circumference range | Diameter range | Graduation | Accuracy | |
|---|---|---|---|---|---|
| | | | | circumference | diameter |
| **7136-940** | 160-940mm | Ø50-300mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-1880** | 940-1880mm | Ø300-600mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-2830** | 1880-2830mm | Ø600-900mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-3770** | 2830-3770mm | Ø900-1200mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-4710** | 3770-4710mm | Ø1200-1500mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-5650** | 4710-5650mm | Ø1500-1800mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-6600** | 5650-6600mm | Ø1800-2100mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-7540** | 6600-7540mm | Ø2100-2400mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-8480** | 7540-8480mm | Ø2400-2700mm | 0.1mm | ±0.30mm | ±0.10mm |
| **7136-9430** | 8480-9430mm | Ø2700-3000mm | 0.1mm | ±0.30mm | ±0.10mm |

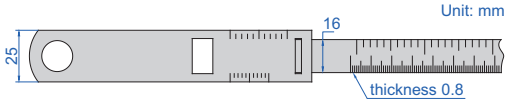
## CIRCUMFERENCE METERS (ECONOMIC TYPE)

- Measure diameter and circumference of soft materials like pipes, trees, tires, etc.
- Graduation: 0.1mm
- Laser engraved scale
- Made of stainless steel



**7114-950**






| Code | Circumference range | Diameter range | Accuracy | |
|---|---|---|---|---|
| | | | circumference | diameter |
| **7114-950** | 150-950mm | Ø50-300mm | ±3mm | ±1mm |
| **7114-2200** | 940-2200mm | Ø300-700mm | ±3mm | ±1mm |
| **7114-3460** | 2190-3460mm | Ø700-1100mm | ±3mm | ±1mm |



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## TAPER GAUGES

REFER TO PAGE 456-457 FOR DETAILS




4833-2




TAPER GAUGE SET
4837-1

## TAPER BORE GAUGES

REFER TO PAGE 458 FOR DETAILS



4852-15

## SMALL TAPER BORE GAUGE

REFER TO PAGE 458 FOR DETAILS



4855-5

## INSIDE SPRING CALIPERS

REFER TO PAGE 466 FOR DETAILS



7261-150

# 08 ARC RADIUS MEASURING TOOLS



Outside Diameter Variation Measuring Instruments
Page 234



Outside Diameter Measuring Instruments
Page 235



Digital Radius Gauges
Page 236



Digital Radius Gauges
Page 237-238



Digital Arc Radius Calipers
Page 238



Digital Radius Calipers
Page 239



Radius Gauges
Page 239



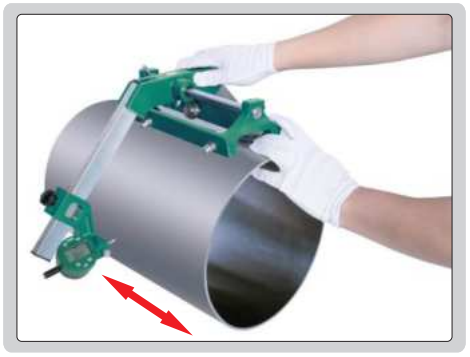
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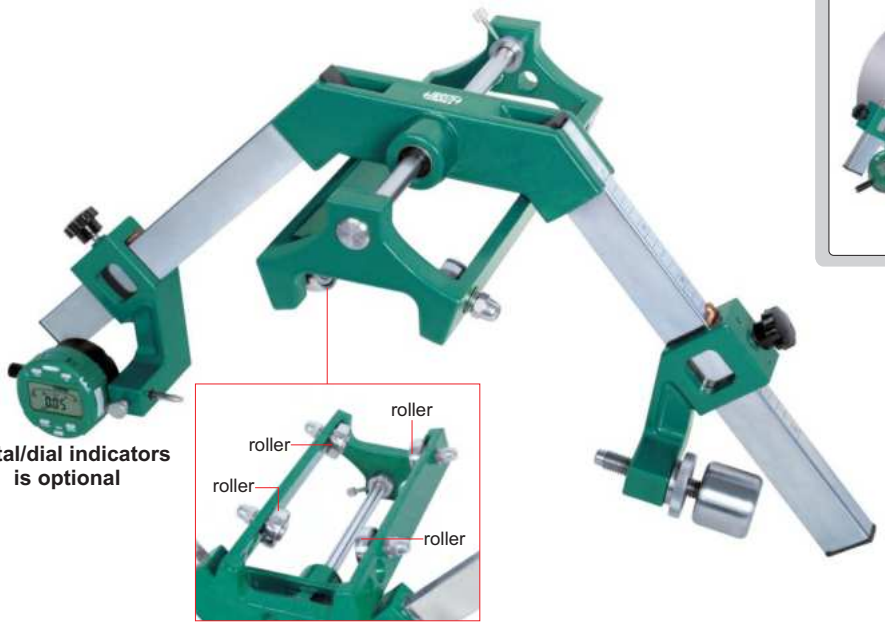
CAN BE CUSTOM-MADE

# OUTSIDE DIAMETER VARIATION MEASURING INSTRUMENTS

VIDEO

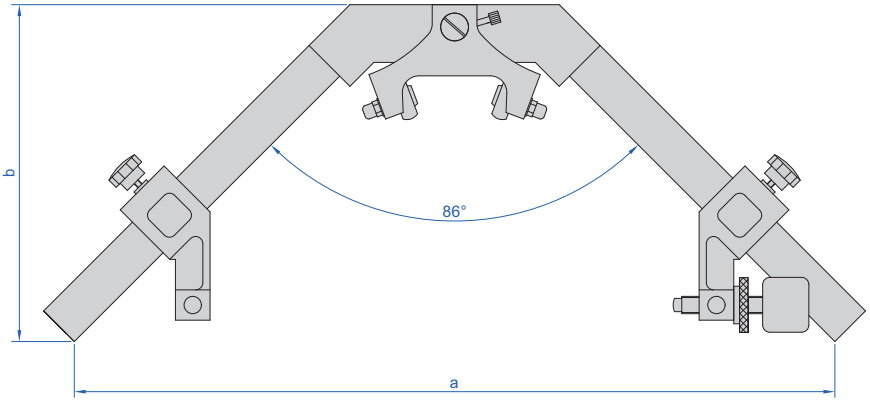
application



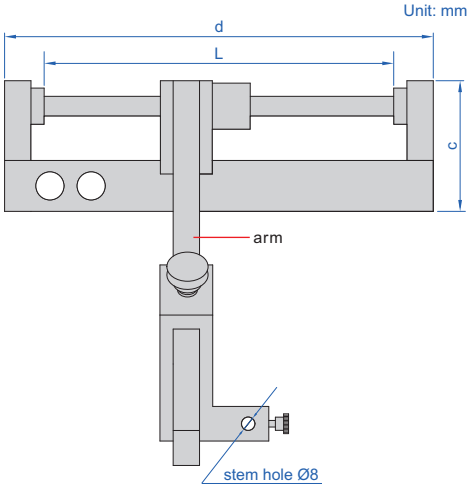



digital/dial indicators is optional

**2715-350**




Unit: mm



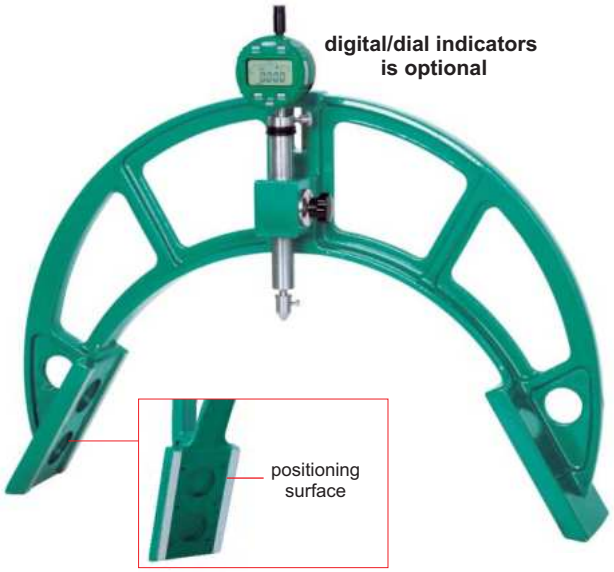

- Measurement of diameter variation, convexity, concavity, taper and other parameters
- Continuous measurement in the axis direction
- Four rollers are included
- Optional accessory: 0.01mm or 0.001mm graduation digital/dial indicators

(mm)

| Code | Range (diameter) | Accuracy | Repeatability | Arm moving range (L) | a | b | c | d | Weight |
|---|---|---|---|---|---|---|---|---|---|
| **2715-350** | 100-350mm/4-14" | 0.01mm | 3μm | 200mm | 500 | 230 | 80 | 260 | 4kg |
| **2715-500** | 200-500mm/8-20" | 0.01mm | 3μm | 151mm | 630 | 260 | 95 | 260 | 5kg |
| **2715-700** | 300-700mm/12-28" | 0.01mm | 3μm | 197mm | 910 | 372 | 112 | 320 | 6.5kg |
| **2715-1000** | 500-1000mm/20-40" | 0.01mm | 3μm | 190mm | 1170 | 460 | 120 | 320 | 8kg |
| **2715-1600** | 800-1600mm/32-64" | 0.02mm | 6μm | 202mm | 1860 | 690 | 180 | 320 | 12.5kg |
| **2715-2000** | 1400-2000mm/56-80" | 0.02mm | 6μm | 232mm | 2156 | 860 | 210 | 350 | 18.5kg |

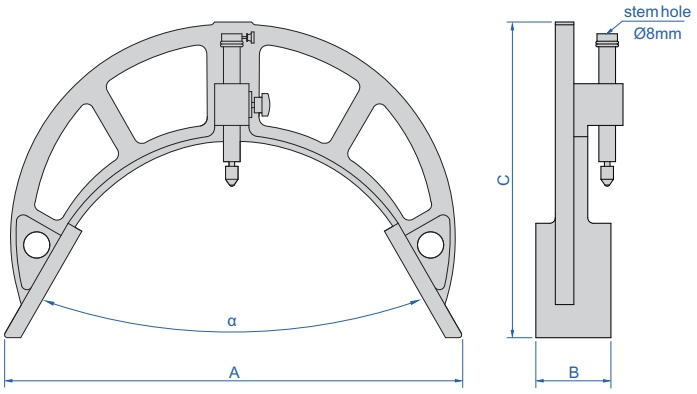
# OUTSIDE DIAMETER MEASURING INSTRUMENTS

VIDEO




**2716-500**

- Need standard workpieces to set zero
- The frame is made of aluminum magnesium alloy with light weight and high strength
- Optional accessory: 0.01mm or 0.001mm digital/dial indicators




**(mm)**

| Code | Range (diameter) | Repeatability | α | A | B | C | Weight |
|---|---|---|---|---|---|---|---|
| **2716-60** | 18-60 | 0.01mm | 60° | 140 | 60 | 160 | 1kg |
| **2716-120** | 60-120 | 0.01mm | 60° | 166 | 65 | 162 | 1.5kg |
| **2716-200** | 120-200 | 0.01mm | 60° | 225 | 70 | 228 | 2kg |
| **2716-300** | 200-300 | 0.01mm | 60° | 330 | 80 | 262 | 2.5kg |
| **2716-400** | 300-400 | 0.01mm | 60° | 405 | 80 | 303 | 4kg |
| **2716-500** | 400-500 | 0.01mm | 60° | 494 | 80 | 340 | 5kg |
| **2716-600** | 500-600 | 0.01mm | 60° | 594 | 80 | 398 | 6kg |
| **2716-700** | 600-700 | 0.01mm | 60° | 685 | 80 | 446 | 7.5kg |
| **2716-800** | 700-800 | 0.01mm | 60° | 772 | 80 | 479 | 9kg |
| **2716-900** | 800-900 | 0.01mm | 60° | 860 | 80 | 520 | 10kg |
| **2716-1000** | 900-1000 | 0.01mm | 60° | 950 | 80 | 560 | 11.5kg |
| **2716-1100** | 1000-1100 | 0.01mm | 60° | 1035 | 90 | 575 | 13kg |
| **2716-1200** | 1000-1200 | 0.01mm | 83.62° | 960 | 100 | 460 | 12kg |
| **2716-1300** | 1100-1300 | 0.01mm | 83.62° | 1000 | 100 | 485 | 13.5kg |
| **2716-1400** | 1200-1400 | 0.01mm | 83.62° | 1100 | 100 | 512 | 15kg |
| **2716-1600** | 1400-1600 | 0.01mm | 83.62° | 1260 | 100 | 540 | 17kg |
| **2716-1800** | 1600-1800 | 0.01mm | 83.62° | 1460 | 100 | 570 | 19kg |
| **2716-2000** | 1800-2000 | 0.01mm | 83.62° | 1645 | 100 | 605 | 21kg |

# DIGITAL RADIUS GAUGES

DATA OUTPUT

VIDEO



2188-55



2188-233



2188-143

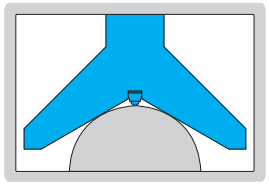


2188-323

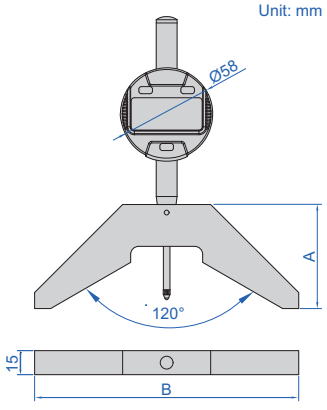


- Measure radius of external arc, arc angle of measured surface should be larger than 60°
- Display radius value, no need to calculate
- Button function: on/off, zero, data preset, inch/mm
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Optional accessory: setting standards, wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21

application



Unit: mm




| Code | Range (radius) | Resolution | Accuracy | A | B |
|---|---|---|---|---|---|
| **2188-55** | 4-53mm/0.16-2.09" | 0.01mm/0.0005" | ±0.02mm | 40mm | 65mm |
| **2188-143** | 48-143mm/1.89-5.63" | 0.01mm/0.0005" | ±0.03mm | 65mm | 165mm |
| **2188-233** | 138-233mm/5.43-9.17" | 0.01mm/0.0005" | ±0.03mm | 85mm | 255mm |
| **2188-323** | 228-323mm/8.98-12.72" | 0.01mm/0.0005" | ±0.04mm | 95mm | 345mm |

**Setting standards**

| Code | Setting standards | Remark |
|---|---|---|
| **4110-10D00** | setting standard for **2188-55** | included |
| **2188-P143** | setting standard for **2188-143** | **optional** |
| **2188-P233** | setting standard for **2188-233** | **optional** |
| **2188-P323** | setting standard for **2188-323** | **optional** |



**2188-P143**

setting standard application



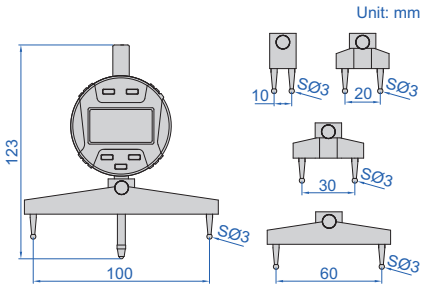
## DIGITAL RADIUS GAUGE (LOW ACCURACY)

DATA OUTPUT

VIDEO



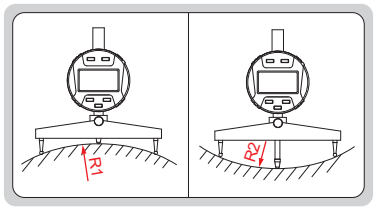
2183

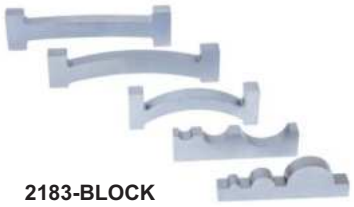



calibration standard application



- Resolution: 0.01mm/0.001"
- Buttons: on/off, hold, mm/inch, s (select jaws), zero
- Measure radius of internal or external arcs
- Display can be rotated by 320°
- Supplied with 5 jaws for different sizes of arc
- Data output
- Battery CR2032
- Automatic power off (time is adjustable)
- Optional accessory:
  calibration standard (code **2183-BLOCK**),
  wireless transmitter code **7315-2183**
  (receiver is needed) page 7,
  data output cable code **7302-2183**



2183-BLOCK

| Code | Range of external radius (R1) | Range of internal radius (R2) | Accuracy (mm) |
|---|---|---|---|
| **2183** | 5-910mm/0.2-35.83" | 7-910mm/0.3-35.83" | ±0.01R* |

*R is the radius to be measured. For example, radius is 100mm, the accuracy is ±0.01x100=±1mm

**Calibration standard (optional)**

| Code | Remark |
|---|---|
| **2183-BLOCK** | includes 5 standard blocks |

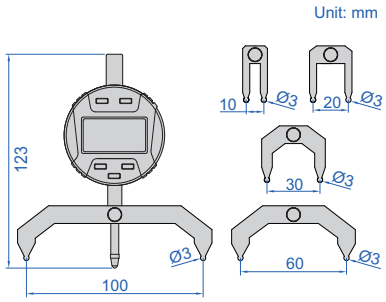
## DIGITAL RADIUS GAUGE

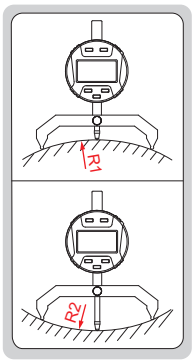
DATA OUTPUT

VIDEO



2511

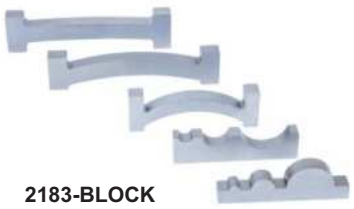



- Resolution: 0.01mm/0.001"
- Buttons: on/off, hold, mm/inch, s (select jaws), zero
- Measure radius of internal or external arcs
- Cylindrical measuring jaws, self-positioning
- Display can be rotated by 320°
- Supplied with 5 jaws for different sizes of arc
- Data output
- Battery CR2032
- Automatic power off (time is adjustable)
- Optional accessory: calibration standard (code **2183-BLOCK**), wireless transmitter code **7315-2183** (receiver is needed) page 7, data output cable code **7302-2183**

calibration standard application





2183-BLOCK

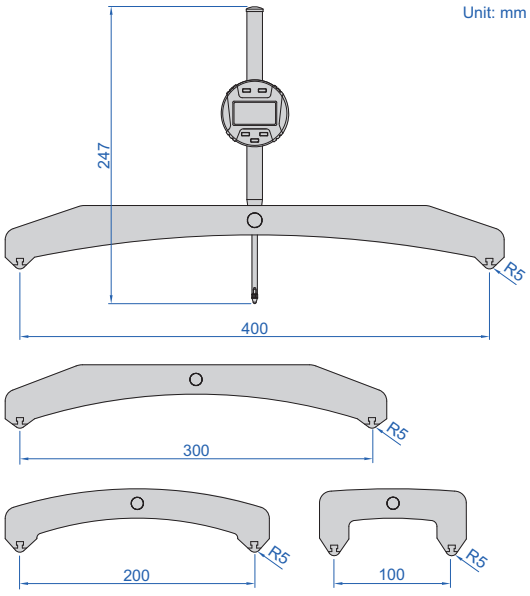
| Code | Range of external radius (R1) | Range of internal radius (R2) | Accuracy (mm) |
|---|---|---|---|
| **2511** | 5-910mm/0.2-35.83" | 7-910mm/0.3-35.83" | ±0.005R* |

*R is the radius to be measured. For example, radius is 100mm, the accuracy is ±0.005x100=±0.5mm

**Calibration standard (optional)**

| Code | Remark |
|---|---|
| **2183-BLOCK** | includes 5 standard blocks |

## LARGE RANGE DIGITAL RADIUS GAUGE



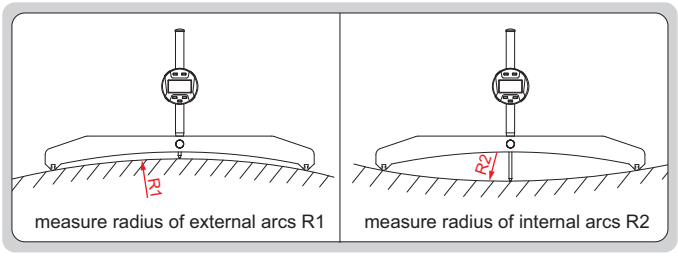

DATA OUTPUT

VIDEO



**2197**

- Measure radius of internal or external arcs
- Resolution: 0.01mm/0.001"
- Buttons: on/off, hold, mm/inch, s (select jaws), zero
- Display can be rotated by 320°
- Supplied with 4 jaws for different sizes of arc
- Battery CR2032, automatic power off (time is adjustable)
- Data output
- Optional accessory: wireless transmitter code **7315-2183** (receiver is needed) page 7, data output cable code **7302-2183**




| Code | Range of external radius (R1) | Range of internal radius (R2) | Accuracy (mm) |
|---|---|---|---|
| **2197** | 100-15000mm/4-590" | 100-15000mm/4-590" | ±0.005R* |

*R is the radius to be measured. For example, radius is 100mm, the accuracy is ±0.005x100=±0.5mm

## DIGITAL ARC RADIUS CALIPERS

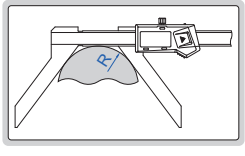
VIDEO

DATA OUTPUT



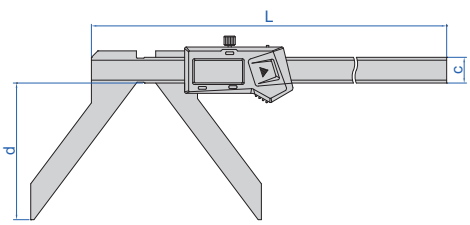
**1189-200B**

- Non waterproof
- Measure the radius of arc less than half round
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range (R) | Accuracy | L | c | d |
|---|---|---|---|---|---|
| **1189-150B** | 5-150mm/0.2-6" | ±0.05mm | 263mm | 16mm | 65mm |
| **1189-200B** | 5-200mm/0.2-8" | ±0.07mm | 313mm | 16mm | 85mm |




**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range (R) | Accuracy | L | c | d |
|---|---|---|---|---|---|
| **1189-150BWL** | 5-150mm/0.2-6" | ±0.05mm | 263mm | 16mm | 65mm |
| **1189-200BWL** | 5-200mm/0.2-8" | ±0.07mm | 313mm | 16mm | 85mm |

# DIGITAL RADIUS CALIPERS

DATA OUTPUT

DIRECT READING, CALCULATION IS NOT REQUIRED

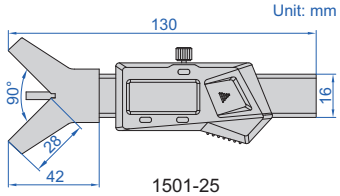
VIDEO



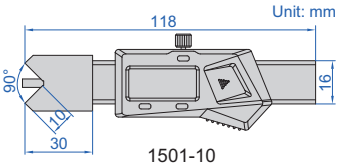
**1501-25**



**1501-10**




1501-25



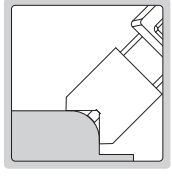

1501-10

8

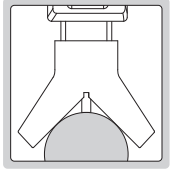
- Non waterproof
- Measure radius of external arc, arc angle of measured surface should be larger than 90°
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Supplied with pin gauge for zero setting
- Optional accessory:
  wireless transmitter code **7315-25** (receiver is needed) page 5,
  bluetooth transmitter code **7214-25** page 11,
  data output cable code **7302-21** page 20

| Code | Range (radius) | Accuracy |
|---|---|---|
| **1501-25** | 2-25mm/0.079-1" | ±0.05mm |
| **1501-10** | 2-10mm/0.079-0.394" | ±0.05mm |

**1501-10** can measure small workpieces or workpieces with steps



application



pin gauge (included)



# RADIUS GAUGES

REFER TO PAGE 451-452 FOR DETAILS



**4801-17**



**4802-31**



**RADIUS GAUGE SET**
**4804-26**

# KEYWAY AND CHAMFER MEASURING TOOLS

09



Keyway Symmetry Gauges
Page 241



Keyway Symmetry Digital Calipers
Page 241



Digital Keyway Depth Gauges
Page 242



Groove Micrometers
Page 242



Digital Chamfer Gauges
Page 243



Chamfer Gauges
Page 244



Digital Chamfer Gauges
Page 244



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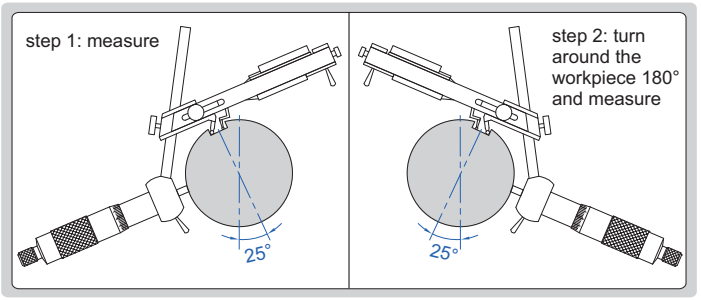
## KEYWAY SYMMETRY GAUGE

VIDEO



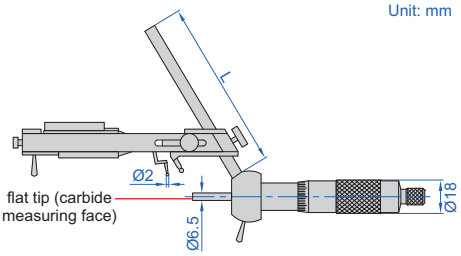
4865-14

application




- Used to measure the symmetry of shaft keyways

Unit: mm

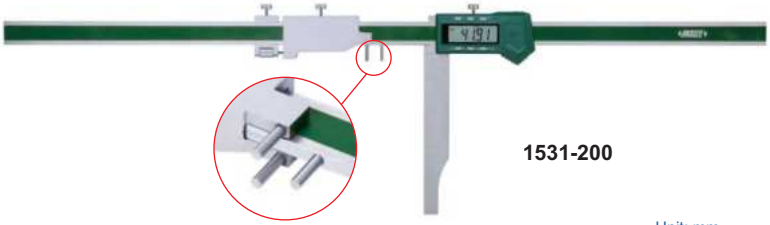



| Code | Range | | Graduation | Accuracy | L |
|---|---|---|---|---|---|
| | diameter of shaft | width of keyway | | | |
| 4865-14 | 14-110mm | 5-28mm | 0.01mm | 0.02mm | 100mm |

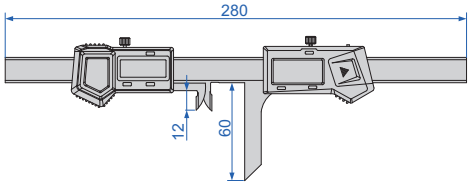
## KEYWAY SYMMETRY DIGITAL CALIPERS



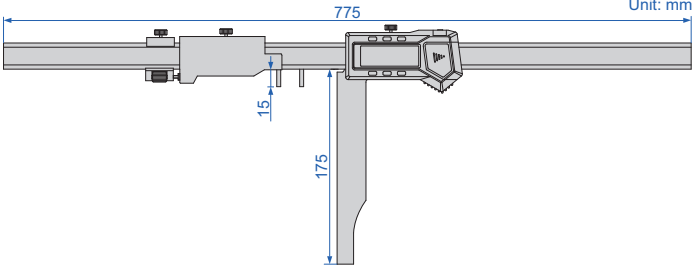
1531-60

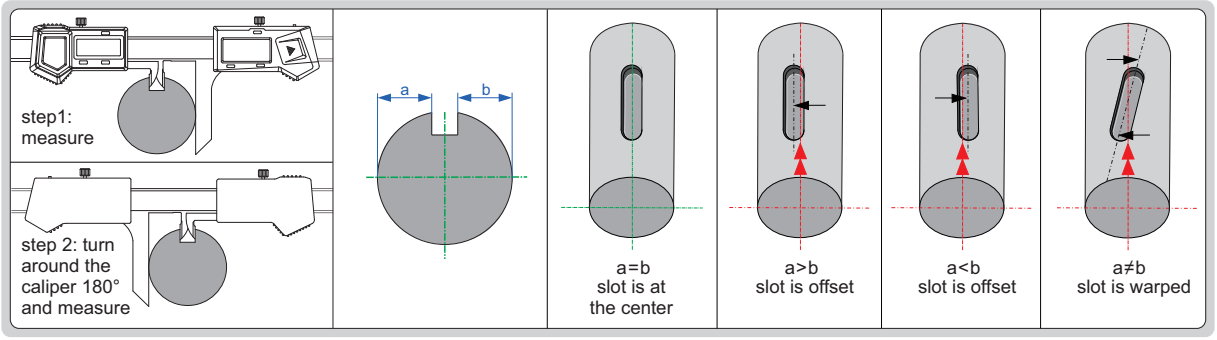


1531-200




Unit: mm




DATA OUTPUT

VIDEO

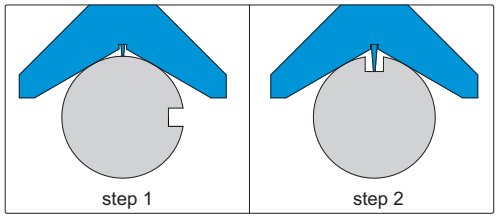
- Non waterproof
- Used to measure the symmetry of shaft keyways
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: wireless transmitter code **7315-22** (receiver is needed) page 5, bluetooth transmitter code **7214-22** page 11, data output cable code **7302-22** page 20

| Code | Width of keyway | Diameter of shaft | Accuracy | Remark |
|---|---|---|---|---|
| 1531-60 | 6-45mm | Ø10-120mm | ±0.05mm | can measure keyway width |
| 1531-200 | 3-250mm | Ø6-350mm | ±0.05mm | cannot measure keyway width |

## DIGITAL KEYWAY DEPTH GAUGE

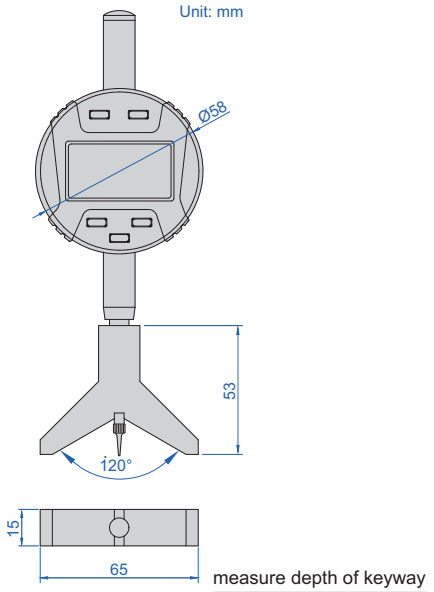
VIDEO

DATA OUTPUT

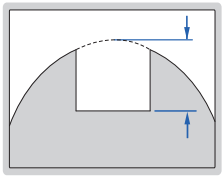





2182-25




measure depth of keyway



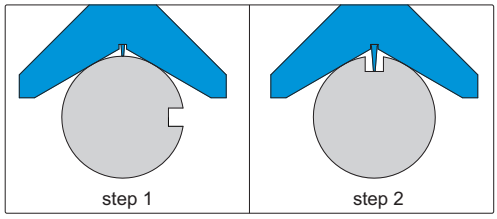
- Measure keyway depth of cylindrical workpieces with diameter Ø10-100mm
- Button function: on/off, zero, inch/metric conversion, absolute/incremental measurement, data preset, measuring direction change
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Pointed tip
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2182-25** | 0-25.4mm/0-1" | 0.01mm/0.0005" | ±0.02mm |

9

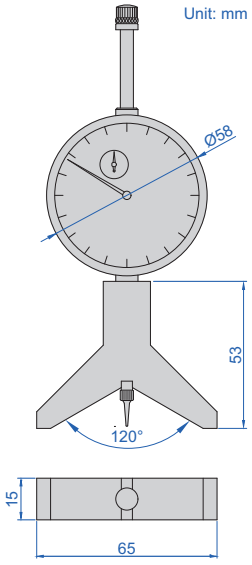
## DIAL KEYWAY DEPTH GAUGE

VIDEO

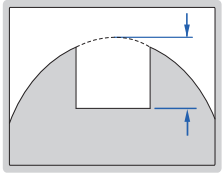





2189-30




measure depth of keyway

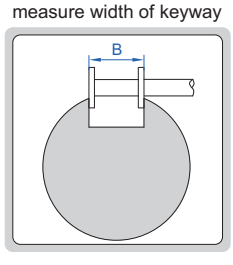


- Measure keyway depth of cylindrical workpieces with diameter Ø10-100mm
- Stainless steel base
- Pointed tip

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **2189-30** | 0-30mm | 0.01mm | ±0.03mm |

## GROOVE MICROMETERS

measure width of keyway






3287-50B

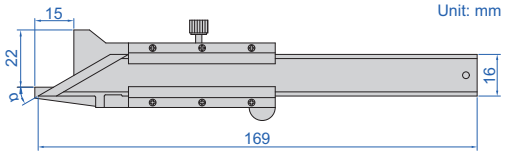
REFER TO PAGE 153 FOR DETAILS

## CHAMFER GAUGES

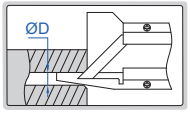


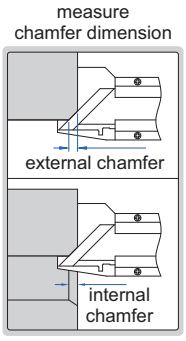
**1267-6**

- Measure 30º/45º/60º chamfer dimension
- Graduation: 0.02mm
- Made of stainless steel
- Satin chrome plated reading surface




for internal chamfer measurement, diameter should be larger than ØD




| Code | Range | Accuracy | Chamfer (α) | ØD |
|---|---|---|---|---|
| **1267-6** | 0-10mm | ±0.06mm | 45º | 7mm |
| **1267-63** | 0-10mm | ±0.06mm | 30º | 8mm |
| **1267-66** | 0-10mm | ±0.06mm | 60º | 7mm |

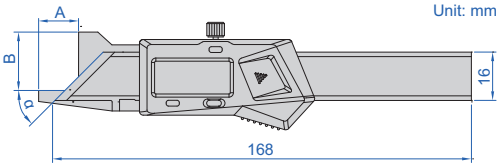
## DIGITAL CHAMFER GAUGES

DATA OUTPUT

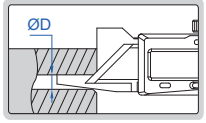


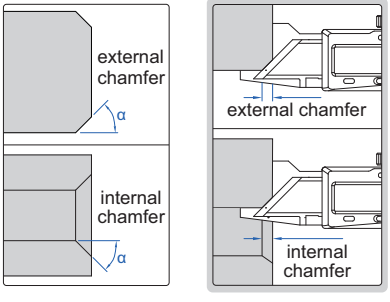
**1180-6**

- Non waterproof
- Measure 15º/20º/30º/45º/60º chamfer dimension
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel




for internal chamfer measurement, diameter should be larger than ØD




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

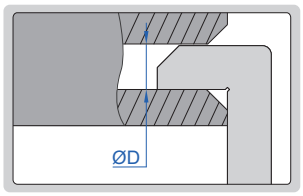
| Code | Range | Accuracy | Chamfer (α) | A | B | ØD |
|---|---|---|---|---|---|---|
| **1180-6** | 0-10mm/0-0.39" | ±0.06mm | 45º | 15mm | 22mm | 7mm |
| **1180-61** | 0-10mm/0-0.39" | ±0.06mm | 15º | 33mm | 20mm | 11mm |
| **1180-62** | 0-10mm/0-0.39" | ±0.06mm | 20º | 33mm | 20mm | 11mm |
| **1180-63** | 0-10mm/0-0.39" | ±0.06mm | 30º | 15mm | 22mm | 8mm |
| **1180-66** | 0-10mm/0-0.39" | ±0.06mm | 60º | 14mm | 21mm | 7mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy | Chamfer (α) | A | B | ØD |
|---|---|---|---|---|---|---|
| **1180-6WL** | 0-10mm/0-0.39" | ±0.06mm | 45º | 15mm | 22mm | 7mm |
| **1180-61WL** | 0-10mm/0-0.39" | ±0.06mm | 15º | 33mm | 20mm | 11mm |
| **1180-62WL** | 0-10mm/0-0.39" | ±0.06mm | 20º | 33mm | 20mm | 11mm |
| **1180-63WL** | 0-10mm/0-0.39" | ±0.06mm | 30º | 15mm | 22mm | 8mm |
| **1180-66WL** | 0-10mm/0-0.39" | ±0.06mm | 60º | 14mm | 21mm | 7mm |

# CHAMFER GAUGE

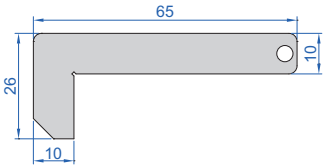
for internal chamfer measurement, diameter should be larger than ØD





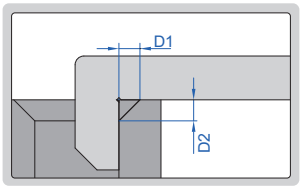

**4844-1**

Unit: mm

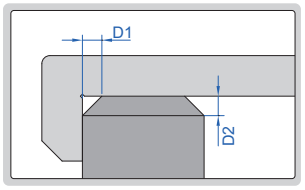



- To measure internal and external chamfers
- Made of stainless steel

internal chamfer




external chamfer




| Code | Graduation | Accuracy | ØD |
|---|---|---|---|
| **4844-1** | 0.5mm | ±0.25mm | 11mm |

9

# DIGITAL CHAMFER GAUGES

**ATTENTION: CHAMFER OF HOLES CANNOT BE MEASURED**

**DATA OUTPUT**

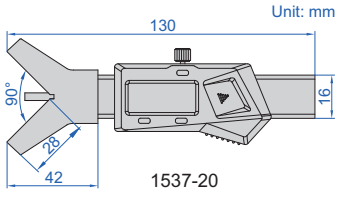
**DIRECT READING, CALCULATION IS NOT REQUIRED**

VIDEO



**1537-20**

Unit: mm

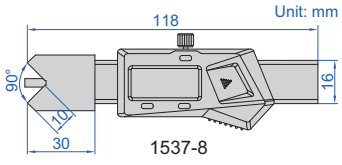



1537-20



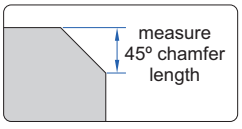
**1537-8**

Unit: mm




1537-8

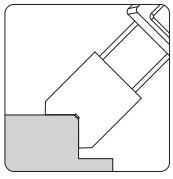
- Non waterproof
- Measure 45º chamfer length
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Supplied with pin gauge for zero setting
- Optional accessory:
  wireless transmitter code **7315-25** (receiver is needed) page 5,
  bluetooth transmitter code **7214-25** page 11,
  data output cable code **7302-21** page 20




pin gauge (included)



**1537-8** can measure small workpieces or workpieces with steps



| Code | Range | Accuracy |
|---|---|---|
| **1537-20** | 0-20mm/0-0.787" | ±0.05mm |
| **1537-8** | 0-8mm/0-0.315" | ±0.05mm |

# 10 INDICATORS AND DIAL INDICATOR STANDS



Dial Test Indicators
Page 246-248



Styli For Dial Test Indicators
Page 248



Digital Indicators
Page 249-263



Zeroing Foot Switches
Page 257



High Precision Digital Indicators
Page 264-265



Digital Comparators
Page 266



Dial Indicators
Page 266-271



Points
Page 272-276



Backs
Page 277-278



Measuring Tools Dynamometers
Page 279



Dial Indicator Testers
Page 279



Dial Test Indicator Holders
Page 280-281



Magnetic Stands
Page 282-287



Dial Indicator Stands (non-magnetic)
Page 288-289



Dial Indicator Stands
Page 290-298



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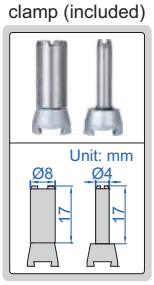
## DIAL TEST INDICATORS

JEWELED BEARING

INSPECTION CERTIFICATE

- Meet DIN2270 (except **2380-02**, **2381-02**, **2381-021**)
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm
- Optional accessory: styli (page 248)

clamp (included)

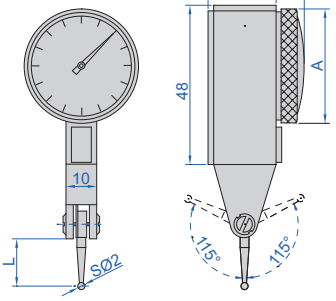





**2380-08**

POPULAR MODEL

Unit: mm




(mm)

| Code | Range | Graduation | Accuracy | Hysteresis | Dial reading | A | L |
|---|---|---|---|---|---|---|---|
| **2380-08*** | 0.8mm | 0.01mm | 13µm | 3µm | 0-40-0 | Ø30 | 13.5 |
| **2381-08*** | 0.8mm | 0.01mm | 13µm | 3µm | 0-40-0 | Ø37 | 13.5 |
| **2380-02*** | 0.2mm | 0.002mm | 6µm | 2µm | 0-100-0 | Ø30 | 12.5 |
| **2381-02*** | 0.2mm | 0.002mm | 6µm | 2µm | 0-100-0 | Ø37 | 12.5 |
| **2381-021*** | 0.2mm | 0.001mm | 6µm | 2µm | 0-100-0 | Ø37 | 12.5 |

*Supplied with manufacturer inspection certificate

## INCH DIAL TEST INDICATORS

JEWELED BEARING

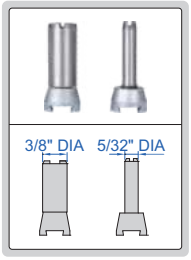
INSPECTION CERTIFICATE

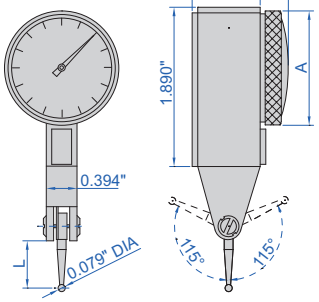
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: 5/32" DIA and 3/8" DIA



**2380-31**

clamp (included)




| Code | Range | Graduation | Accuracy | Dial reading | A | L |
|---|---|---|---|---|---|---|
| **2380-31*** | 0.03" | 0.001" | ±0.001" | 0-15-0 | 1.181" DIA | 0.50" |
| **2380-35*** | 0.03" | 0.0005" | ±0.0005" | 0-15-0 | 1.181" DIA | 0.50" |
| **2380-301*** | 0.008" | 0.0001" | ±0.0001" | 0-40-0 | 1.181" DIA | 0.563" |
| **2381-31*** | 0.03" | 0.001" | ±0.001" | 0-15-0 | 1.457" DIA | 0.50" |
| **2381-35*** | 0.03" | 0.0005" | ±0.0005" | 0-15-0 | 1.457" DIA | 0.50" |
| **2381-301*** | 0.008" | 0.0001" | ±0.0001" | 0-40-0 | 1.457" DIA | 0.563" |

*Supplied with manufacturer inspection certificate

## LONG STYLUS DIAL TEST INDICATOR

JEWELED BEARING

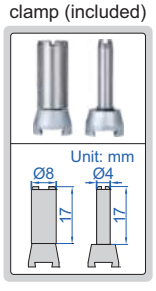
INSPECTION CERTIFICATE

- Meet DIN2270
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm
- Optional accessory: styli (page 248)

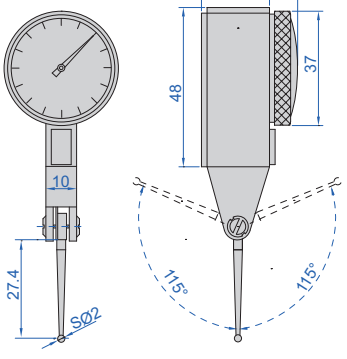


**2383-08A**

clamp (included)




Unit: mm




| Code | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|---|---|---|---|---|---|
| **2383-08A*** | 0.8mm | 0.01mm | 13µm | 3µm | 0-40-0 |

*Supplied with manufacturer inspection certificate

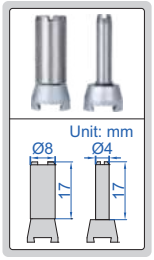
## VERTICAL TYPE DIAL TEST INDICATOR

INSPECTION CERTIFICATE

JEWELED BEARING

- Meet DIN2270
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm
- Optional accessory: styli (page 248)

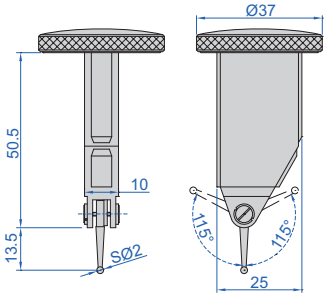
clamp (included)






2398-08

Unit: mm




| Code | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|---|---|---|---|---|---|
| 2398-08* | 0.8mm | 0.01mm | 13μm | 3μm | 0-40-0 |

*Supplied with manufacturer inspection certificate

## TILTED FACE TYPE DIAL TEST INDICATOR

INSPECTION CERTIFICATE

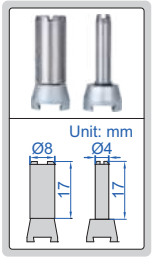
JEWELED BEARING

- Meet DIN2270
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm
- Optional accessory: styli (page 248)

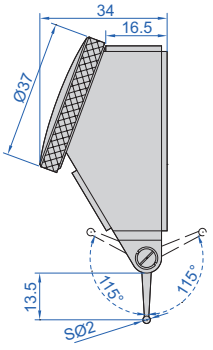


2399-08

clamp (included)




Unit: mm




| Code | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|---|---|---|---|---|---|
| 2399-08* | 0.8mm | 0.01mm | 13μm | 3μm | 0-40-0 |

*Supplied with manufacturer inspection certificate

## LARGE RANGE DIAL TEST INDICATOR

INSPECTION CERTIFICATE

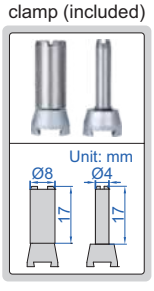
JEWELED BEARING

- Dial reading: 0-40-0
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm
- Optional accessory: styli (page 248)

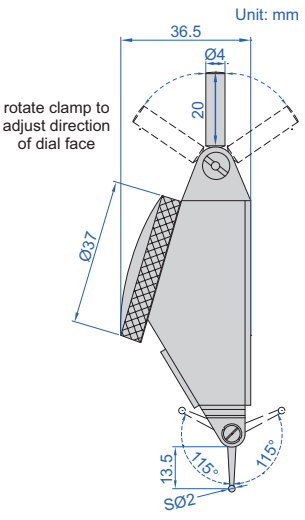


2386-16A

clamp (included)




Unit: mm




| Code | Range | Graduation | Accuracy | Hysteresis |
|---|---|---|---|---|
| 2386-16A* | 1.6mm | 0.01mm | 25μm | 8μm |

*Supplied with manufacturer inspection certificate



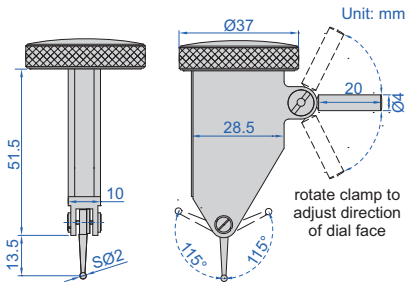
info@insz.sk | +421 944 367 573 | www.insz.sk

JEWELED BEARING

INSPECTION CERTIFICATE

# LARGE RANGE VERTICAL TYPE DIAL TEST INDICATOR

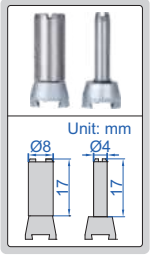
- Dial Reading: 0-40-0
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm
- Optional accessory: styli (page 248)






2480-16

clamp (included)




| Code | Range | Graduation | Accuracy | Hysteresis |
|---|---|---|---|---|
| 2480-16* | 1.6mm | 0.01mm | 18μm | 3μm |

*Supplied with manufacturer inspection certificate

## CLAMPS FOR DIAL TEST INDICATORS

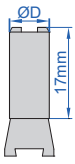
| Code | ØD |
|---|---|
| 6298-1 | Ø4mm |
| 6298-2 | Ø8mm |



6298-1



6298-2



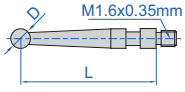

10

## STYLI FOR DIAL TEST INDICATORS

| Code | For dial test indicator | Material of contact point | L | D |
|---|---|---|---|---|
| 6284-1 | 2380-08<br>2398-08<br>2381-08<br>2399-08 | carbide | 13.5mm | SØ1mm |
| 6284-31 | | ruby | 13.5mm | SØ1mm |
| 6284-3 | | carbide | 13.5mm | SØ2mm |
| 6284-4 | | ruby | 13.5mm | SØ2mm |
| 6284-8 | | carbide | 13.5mm | SØ3mm |
| 6284-21 | 2380-02<br>2381-02<br>2381-021 | carbide | 12.5mm | SØ1mm |
| 6284-22 | | carbide | 12.5mm | SØ2mm |
| 6284-24 | | ruby | 12.5mm | SØ2mm |
| 6284-23 | | carbide | 12.5mm | SØ3mm |
| 6284-61 | 2386-16A<br>2480-16 | carbide | 13.5mm | SØ1mm |
| 6284-62 | | carbide | 13.5mm | SØ2mm |
| 6284-63 | | ruby | 13.5mm | SØ2mm |
| 6284-64 | | carbide | 13.5mm | SØ3mm |
| 6284-81 | 2383-08A | carbide | 27.4mm | SØ1mm |
| 6284-82 | | carbide | 27.4mm | SØ2mm |
| 6284-83 | | ruby | 27.4mm | SØ2mm |
| 6284-84 | | carbide | 27.4mm | SØ3mm |



6284-3



# DIGITAL INDICATORS (STANDARD TYPE)

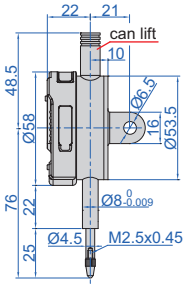
DATA OUTPUT

INSPECTION CERTIFICATE

POPULAR MODEL



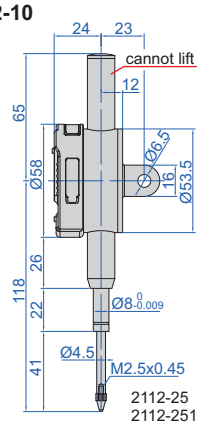
2112-10




2112-10
2112-101



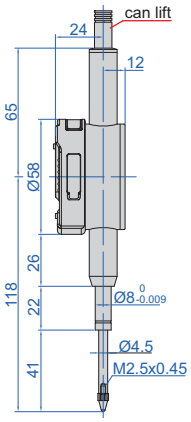
2112-251




2112-25
2112-251



2112-25P

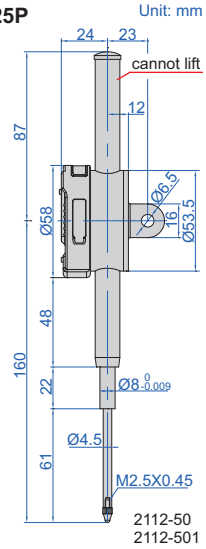



2112-25P
2112-251P

Unit: mm



2112-501




2112-50
2112-501

- Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Switchable high/low frequency measurement mode, high frequency mode is suitable for high speed moving of spindle and has large power consumption, low power consumption in low frequency mode
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, **7305-40M** page 17, backs (page 277~278), contact points (page 272~276)

**Resolution 0.001mm/0.00005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2112-101F*** | 12.7mm/0.5" | 5μm | 2μm | 1.5N | can lift | flat back |
| **2112-251F*** | 25.4mm/1" | 5μm | 3μm | 2.2N | cannot lift | flat back |
| **2112-501F*** | 50.8mm/2" | 6μm | 3μm | 2.5N | cannot lift | flat back |
| **2112-101*** | 12.7mm/0.5" | 5μm | 2μm | 1.5N | can lift | lug back |
| **2112-251*** | 25.4mm/1" | 5μm | 3μm | 2.2N | cannot lift | lug back |
| **2112-501*** | 50.8mm/2" | 6μm | 3μm | 2.5N | cannot lift | lug back |
| **2112-251P*** | 25.4mm/1" | 5μm | 3μm | 2.2N | can lift | flat back |
| **2112-501P*** | 50.8mm/2" | 6μm | 3μm | 2.5N | can lift | flat back |

**Resolution 0.01mm/0.0005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2112-10F*** | 12.7mm/0.5" | 20μm | 10μm | 1.5N | can lift | flat back |
| **2112-25F*** | 25.4mm/1" | 20μm | 10μm | 2.2N | cannot lift | flat back |
| **2112-50F*** | 50.8mm/2" | 30μm | 10μm | 2.5N | cannot lift | flat back |
| **2112-10*** | 12.7mm/0.5" | 20μm | 10μm | 1.5N | can lift | lug back |
| **2112-25*** | 25.4mm/1" | 20μm | 10μm | 2.2N | cannot lift | lug back |
| **2112-50*** | 50.8mm/2" | 30μm | 10μm | 2.5N | cannot lift | lug back |
| **2112-25P*** | 25.4mm/1" | 20μm | 10μm | 2.2N | can lift | flat back |
| **2112-50P*** | 50.8mm/2" | 30μm | 10μm | 2.5N | can lift | flat back |

*Supplied with manufacturer inspection certificate

**2112-251P/501P/25P/50P**




spindle lift knob is included





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DATA OUTPUT

INSPECTION CERTIFICATE

# METRIC DIGITAL INDICATORS



**2116-10**



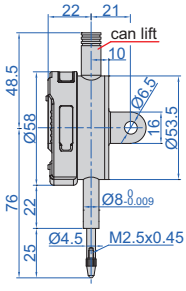
**2116-251**



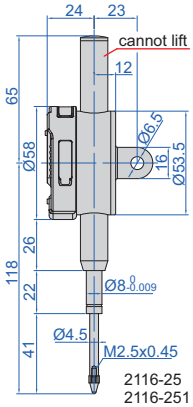
**2116-251P**



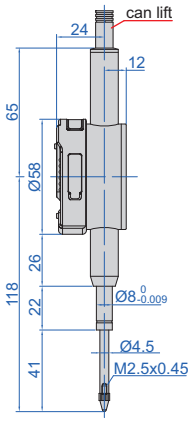
**2116-501**



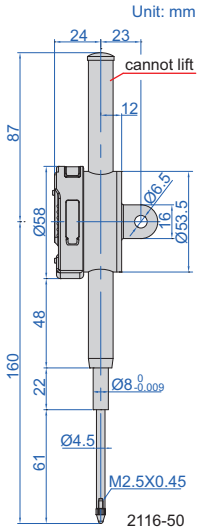

2116-10
2116-101




2116-25
2116-251




2116-25P
2116-251P




2116-50
2116-501

- Button function: on/off, zero, data preset, change measuring direction, absolute/incremental measurement
- Switchable high/low frequency measurement mode, high frequency mode is suitable for high speed moving of spindle and has large power consumption, low power consumption in low frequency mode
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, **7305-40M** page 17, backs (page 277~278), contact points (page 272~276)

**Resolution 0.001mm**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2116-101F*** | 12.7mm | 5μm | 2μm | 1.5N | can lift | flat back |
| **2116-251F*** | 25.4mm | 5μm | 3μm | 2.2N | cannot lift | flat back |
| **2116-501F*** | 50.8mm | 6μm | 3μm | 2.5N | cannot lift | flat back |
| **2116-101*** | 12.7mm | 5μm | 2μm | 1.5N | can lift | lug back |
| **2116-251*** | 25.4mm | 5μm | 3μm | 2.2N | cannot lift | lug back |
| **2116-501*** | 50.8mm | 6μm | 3μm | 2.5N | cannot lift | lug back |
| **2116-251P*** | 25.4mm | 5μm | 3μm | 2.2N | can lift | flat back |
| **2116-501P*** | 50.8mm | 6μm | 3μm | 2.5N | can lift | flat back |

**Resolution 0.01mm**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2116-10F*** | 12.7mm | 20μm | 10μm | 1.5N | can lift | flat back |
| **2116-25F*** | 25.4mm | 20μm | 10μm | 2.2N | cannot lift | flat back |
| **2116-50F*** | 50.8mm | 30μm | 10μm | 2.5N | cannot lift | flat back |
| **2116-10*** | 12.7mm | 20μm | 10μm | 1.5N | can lift | lug back |
| **2116-25*** | 25.4mm | 20μm | 10μm | 2.2N | cannot lift | lug back |
| **2116-50*** | 50.8mm | 30μm | 10μm | 2.5N | cannot lift | lug back |
| **2116-25P*** | 25.4mm | 20μm | 10μm | 2.2N | can lift | flat back |
| **2116-50P*** | 50.8mm | 30μm | 10μm | 2.5N | can lift | flat back |

*Supplied with manufacturer inspection certificate

**2116-251P/501P/25P/50P**




spindle lift knob is included



# DIGITAL INDICATORS (ADVANCED TYPE)

INSPECTION CERTIFICATE

DATA OUTPUT

VIDEO




2103-10




2104-25




2104-25P



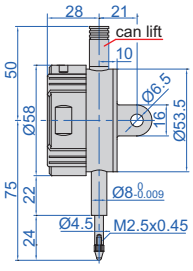

2103-50

analog pointer

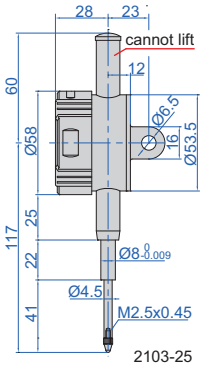



spindle lift knob is included

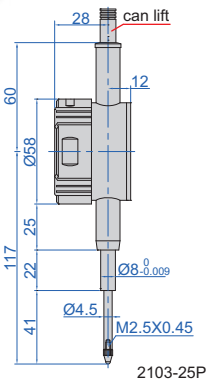





2103-10
2104-10

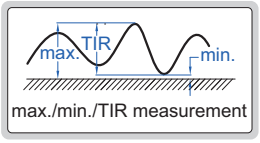



2103-25
2104-25



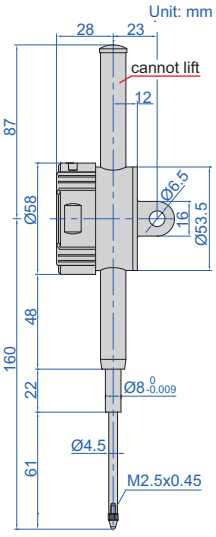

2103-25P
2104-25P

max./min./TIR




max./min./TIR measurement

Unit: mm




2103-50
2104-50

10

- Reading in digital and analog
- Display can be rotated by 320°
- Button function: tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off (time is adjustable), data output
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, **7305-40M** page 17, backs (page 277~278), contact points (page 272~276)

**Resolution 0.001mm/0.00005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2103-10F*** | 12.7mm/0.5" | 5μm | 2μm | 1.5N | can lift | flat back |
| **2103-25F*** | 25.4mm/1" | 5μm | 3μm | 2.2N | cannot lift | flat back |
| **2103-50F*** | 50.8mm/2" | 6μm | 3μm | 2.5N | cannot lift | flat back |
| **2103-10*** | 12.7mm/0.5" | 5μm | 2μm | 1.5N | can lift | lug back |
| **2103-25*** | 25.4mm/1" | 5μm | 3μm | 2.2N | cannot lift | lug back |
| **2103-50*** | 50.8mm/2" | 6μm | 3μm | 2.5N | cannot lift | lug back |
| **2103-25P*** | 25.4mm/1" | 5μm | 3μm | 2.2N | can lift | flat back |
| **2103-50P*** | 50.8mm/2" | 6μm | 3μm | 2.5N | can lift | flat back |

alarm when over tolerance




**Resolution 0.01mm/0.0005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2104-10F*** | 12.7mm/0.5" | 20μm | 10μm | 1.5N | can lift | flat back |
| **2104-25F*** | 25.4mm/1" | 20μm | 10μm | 2.2N | cannot lift | flat back |
| **2104-50F*** | 50.8mm/2" | 30μm | 10μm | 2.5N | cannot lift | flat back |
| **2104-10*** | 12.7mm/0.5" | 20μm | 10μm | 1.5N | can lift | lug back |
| **2104-25*** | 25.4mm/1" | 20μm | 10μm | 2.2N | cannot lift | lug back |
| **2104-50*** | 50.8mm/2" | 30μm | 10μm | 2.5N | cannot lift | lug back |
| **2104-25P*** | 25.4mm/1" | 20μm | 10μm | 2.2N | can lift | flat back |
| **2104-50P*** | 50.8mm/2" | 30μm | 10μm | 2.5N | can lift | flat back |




display can be rotated by 320°

**2103-25P/50P**
**2104-25P/50P**




*Supplied with manufacturer inspection certificate

# DIGITAL INDICATORS (WITH TRANSMISSION BUTTON AND SIGNAL LIGHT)

INSPECTION CERTIFICATE

VIDEO

DATA OUTPUT




**2138-10**




**2139-25**



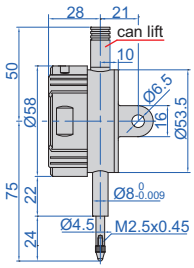

**2139-25P**



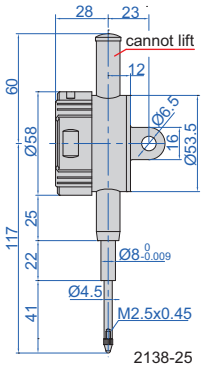

**2138-50**

spindle lift knob is included

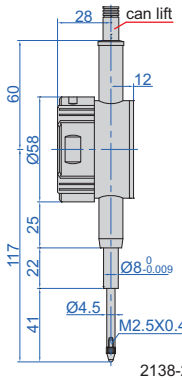





2138-10
2139-10

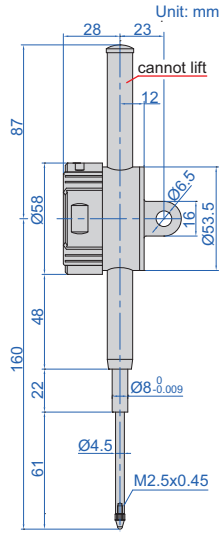



2138-25
2139-25




2138-25P
2139-25P

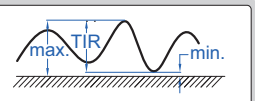
Unit: mm




2138-50
2139-50

- Reading in digital and analog
- Display can be rotated by 320º
- Button function: on/off, zero, tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement, data output
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  flat back: wireless transmitter code **7315-51** (receiver is needed) page 6,
  bluetooth transmitter code **7214-51** page 12,
  data output cable code **7302-40M** page 21, **7305-40M** page 17;
  lug back: wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21, **7305-40M** page 17,
  backs (page 277~278), contact points (page 272~276)

max./min./TIR

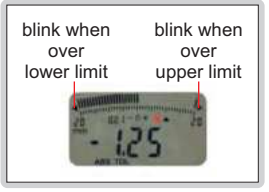



max./min./TIR measurement

analog pointer




alarm when over tolerance




**Resolution 0.001mm/0.00005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2138-10F*** | 12.7mm/0.5" | 5μm | 2μm | 1.5N | can lift | flat back |
| **2138-25F*** | 25.4mm/1" | 5μm | 3μm | 2.2N | cannot lift | flat back |
| **2138-50F*** | 50.8mm/2" | 6μm | 3μm | 2.5N | cannot lift | flat back |
| **2138-10*** | 12.7mm/0.5" | 5μm | 2μm | 1.5N | can lift | lug back |
| **2138-25*** | 25.4mm/1" | 5μm | 3μm | 2.2N | cannot lift | lug back |
| **2138-50*** | 50.8mm/2" | 6μm | 3μm | 2.5N | cannot lift | lug back |
| **2138-25P*** | 25.4mm/1" | 5μm | 3μm | 2.2N | can lift | flat back |
| **2138-50P*** | 50.8mm/2" | 6μm | 3μm | 2.5N | can lift | flat back |

**Resolution 0.01mm/0.0005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2139-10F*** | 12.7mm/0.5" | 20μm | 10μm | 1.5N | can lift | flat back |
| **2139-25F*** | 25.4mm/1" | 20μm | 10μm | 2.2N | cannot lift | flat back |
| **2139-50F*** | 50.8mm/2" | 30μm | 10μm | 2.5N | cannot lift | flat back |
| **2139-10*** | 12.7mm/0.5" | 20μm | 10μm | 1.5N | can lift | lug back |
| **2139-25*** | 25.4mm/1" | 20μm | 10μm | 2.2N | cannot lift | lug back |
| **2139-50*** | 50.8mm/2" | 30μm | 10μm | 2.5N | cannot lift | lug back |
| **2139-25P*** | 25.4mm/1" | 20μm | 10μm | 2.2N | can lift | flat back |
| **2139-50P*** | 50.8mm/2" | 30μm | 10μm | 2.5N | can lift | flat back |

*Supplied with manufacturer inspection certificate




**2138-25P/50P**
**2129-25P/50P**

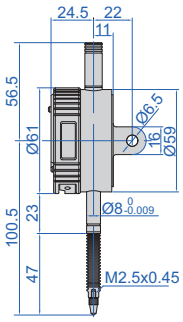


# WATERPROOF DIGITAL INDICATORS

WATERPROOF | DATA OUTPUT | INSPECTION CERTIFICATE



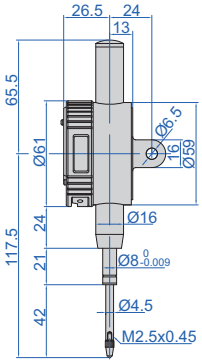
**2115-10**




2115-10
2115-101



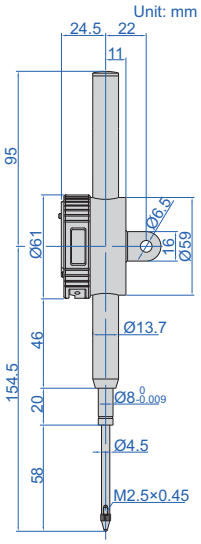
**2115-25**




2115-25
2115-251



**2115-50**



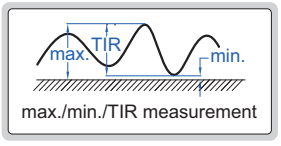

2115-50
2115-501

- Dust/waterproof
- Button function: on/off, zero, mm/inch, data preset, tolerance, change measuring direction, max./min./TIR measurement, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21, **7305-40M** page 17,
  backs (page 277~278), contact points (page 272~276)

spindle lift knob is included (except **2115-101/101F, 2115-10/10F**)



max./min./TIR




max./min./TIR measurement

alarm when over tolerance




**Resolution 0.001mm/0.00005"**

| Code | Range | Dust/waterproof | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|
| **2115-101*** | 12.7mm/0.5" | IP65 | 5μm | 2μm | 1.5N | cannot lift | lug back |
| **2115-251*** | 25.4mm/1" | IP54 | 5μm | 3μm | 2.2N | cannot lift | lug back |
| **2115-501*** | 50.8mm/2" | IP54 | 6μm | 3μm | 2.5N | cannot lift | lug back |
| **2115-101F*** | 12.7mm/0.5" | IP65 | 5μm | 2μm | 1.5N | cannot lift | flat back |
| **2115-251F*** | 25.4mm/1" | IP54 | 5μm | 3μm | 2.2N | cannot lift | flat back |
| **2115-501F*** | 50.8mm/2" | IP54 | 6μm | 3μm | 2.5N | cannot lift | flat back |

**Resolution 0.01mm/0.0005"**

| Code | Range | Dust/waterproof | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|
| **2115-10*** | 12.7mm/0.5" | IP65 | 20μm | 10μm | 1.5N | cannot lift | lug back |
| **2115-25*** | 25.4mm/1" | IP54 | 20μm | 10μm | 2.2N | cannot lift | lug back |
| **2115-50*** | 50.8mm/2" | IP54 | 30μm | 10μm | 2.5N | cannot lift | lug back |
| **2115-10F*** | 12.7mm/0.5" | IP65 | 20μm | 10μm | 1.5N | cannot lift | flat back |
| **2115-25F*** | 25.4mm/1" | IP54 | 20μm | 10μm | 2.2N | cannot lift | flat back |
| **2115-50F*** | 50.8mm/2" | IP54 | 30μm | 10μm | 2.5N | cannot lift | flat back |

*Supplied with manufacturer inspection certificate



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VIDEO

DATA OUTPUT

INSPECTION CERTIFICATE

# ADJUSTABLE COEFFICIENT DIGITAL INDICATORS



**2501-10**



**2501-25**

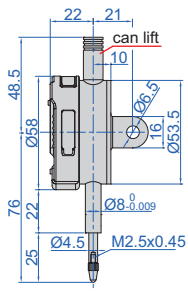


**2501-25P**

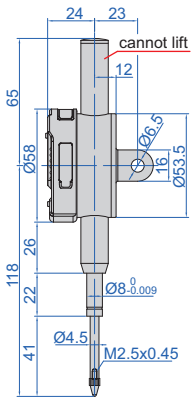


**2501-50**

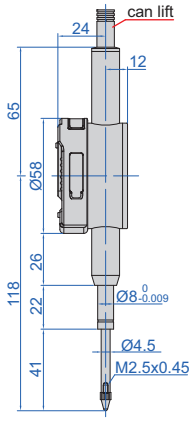
Unit: mm



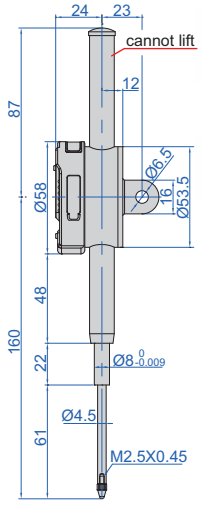

2501-10




2501-25




2501-25P




2501-50

- DISPLAY READING = COEFFICIENT X SPINDLE MOVEMENT.
  The coefficient can be adjusted from 0 to 9.9999.
  For example, coefficient is 4.5562, spindle moves 3.60mm,
  display reading is 4.5562 x 3.60=16.40mm
- Button function: on/off, zero, data preset, inch/mm,
  coefficient set, measuring direction change
- Switchable high/low frequency measurement mode, high frequency
  mode is suitable for high speed moving of spindle and has large power
  consumption, low power consumption in low frequency mode
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21, **7305-40M** page 17,
  backs (page 277~278), contact points (page 272~276)

spindle lift knob is included



**Resolution 0.01mm/0.0005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2501-10*** | 12.7mm/0.5" | 20μm | 10μm | 1.5N | can lift | lug back |
| **2501-25*** | 25.4mm/1" | 20μm | 10μm | 2.2N | cannot lift | lug back |
| **2501-50*** | 50.8mm/2" | 30μm | 10μm | 2.5N | cannot lift | lug back |
| **2501-10F*** | 12.7mm/0.5" | 20μm | 10μm | 1.5N | can lift | flat back |
| **2501-25F*** | 25.4mm/1" | 20μm | 10μm | 2.2N | cannot lift | flat back |
| **2501-50F*** | 50.8mm/2" | 30μm | 10μm | 2.5N | cannot lift | flat back |
| **2501-25P*** | 25.4mm/1" | 20μm | 10μm | 2.2N | can lift | flat back |
| **2501-50P*** | 50.8mm/2" | 30μm | 10μm | 2.5N | can lift | flat back |

**2501-25P/50P**




*Supplied with manufacturer inspection certificate

# DIGITAL INDICATORS FOR BORE GAUGES (WITH TRANSMISSION BUTTON AND SIGNAL LIGHT)

INSPECTION CERTIFICATE

THE ORIGINAL DATA REMAINS AFTER POWER OFF

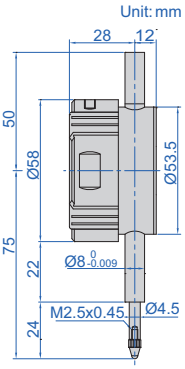
VIDEO

DATA OUTPUT



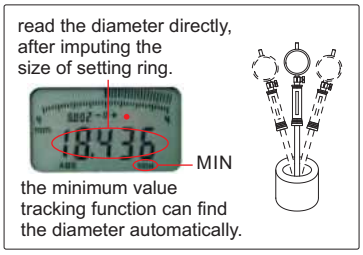

2108-10F




- Specially designed for bore gauges
- The minimum value tracking function can find the diameter automatically
- Read the diameter directly, after imputing the size of setting ring
- Reading in digital and analog
- Display can be rotated by 320°
- Button function: on/off, minimum value tracking, calibration, data preset, inch/metric conversion
- Data remains after power off, no need to recalibrate after power on
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory: wireless transmitter code **7315-51B** (receiver is needed) page 7, bluetooth transmitter code **7214-51B** page 12, data output cable code **7302-40M** page 21, backs (page 277~278), contact points (page 272~276), spindle lift knob (code **7332**)




| Code | Range | Resolution | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|
| **2108-10F*** | 12.7mm/0.5" | 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | 20μm | 10μm | 1.5N | cannot lift | flat back |
| **2108-101F*** | 12.7mm/0.5" | 0.001mm/0.00005" | 5μm | 2μm | 1.5N | cannot lift | flat back |

*Supplied with manufacturer inspection certificate



# WATERPROOF DIGITAL INDICATORS FOR BORE GAUGES

INSPECTION CERTIFICATE

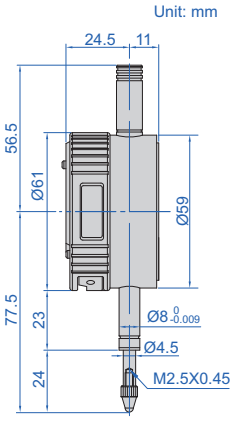
IP54 WATERPROOF

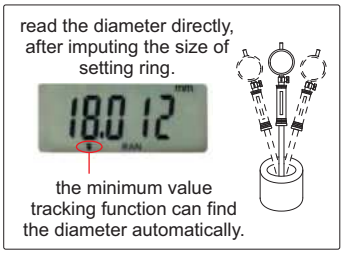
DATA OUTPUT

THE ORIGINAL DATA REMAINS AFTER POWER OFF



2137-10F




- Specially designed for bore gauges
- The minimum value tracking function can find the diameter automatically
- Read the diameter directly, after imputing the size of setting ring
- Button function: on/off, minimum value tracking, calibration, data preset, inch/metric conversion
- Data remains after power off, no need to recalibrate after power on
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory: wireless transmitter code **7315-51B** (receiver is needed) page 7, bluetooth transmitter code **7214-51B** page 12, data output cable code **7302-40M** page 21, backs (page 277~278), contact points (page 272~276), spindle lift knob (code **7332**)

| Code | Range | Resolution | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|
| **2137-10F*** | 12.7mm/0.5" | 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | 20μm | 10μm | 1.5N | cannot lift | flat back |
| **2137-101F*** | 12.7mm/0.5" | 0.001mm/0.00005" | 5μm | 2μm | 1.5N | cannot lift | flat back |

*Supplied with manufacturer inspection certificate



info@insz.sk | +421 944 367 573 | www.insz.sk

DATA OUTPUT

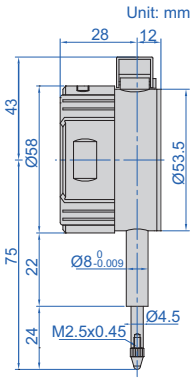
INSPECTION CERTIFICATE

## DIGITAL INDICATORS WITH LIFTING LEVER

- Reading in digital and analog
- Display can be rotated by 320º
- Button function: tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21, **7305-40M** page 17,
  backs (page 277~278), contact points (page 272~276)



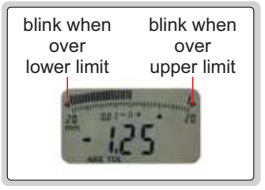
**2109-10**




analog pointer




alarm when over tolerance




| Code | Range | Resolution | Accuracy | Hysteresis | Maximum measuring force | Remark |
|---|---|---|---|---|---|---|
| **2109-10*** | 10mm/0.4" | 0.01mm/0.0005" | 20μm | 10μm | 1.5N | flat back |
| **2109-101*** | 10mm/0.4" | 0.001mm/0.00005" | 5μm | 2μm | 1.5N | flat back |

*Supplied with manufacturer inspection certificate

10

DATA OUTPUT

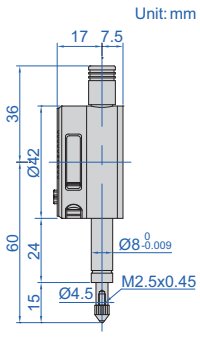
INSPECTION CERTIFICATE

## COMPACT DIGITAL INDICATORS

- Button function:
  in/mm: short press for inch/metric conversion
  long press to change measuring direction
  ABS: short press for absolute/incremental measurement
  long press to preset data
  0/ON: short press to turn on when power is off
  short press to set zero when power is on
  long press to turn off
- Keep preset data in memory after restart
- CR1632 battery, automatic power off
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21, **7305-40M** page 17,
  backs (page 277~278), contact points (page 272~276)



**2114-51F**




| Code | Range | Resolution | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|
| **2114-5F*** | 5mm/0.2" | 0.01mm/0.0005" | 20μm | 10μm | 1.5N | can lift | flat back |
| **2114-51F*** | 5mm/0.2" | 0.001mm/0.00005" | 5μm | 2μm | 1.5N | can lift | flat back |

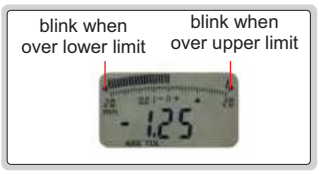
*Supplied with manufacturer inspection certificate

# BACK PLUNGER TYPE DIGITAL INDICATORS

INSPECTION CERTIFICATE

DATA OUTPUT

alarm when over tolerance



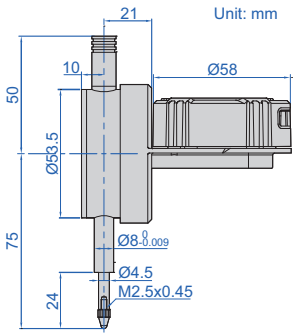

analog pointer




VIDEO



2118-10




- Display can rotate 320°, and display direction is changeable
- Reading in digital and analog
- Button function: tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, **7305-40M** page 17, backs (page 277~278), contact points (page 272~276)

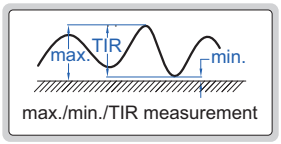
display can rotate 320°



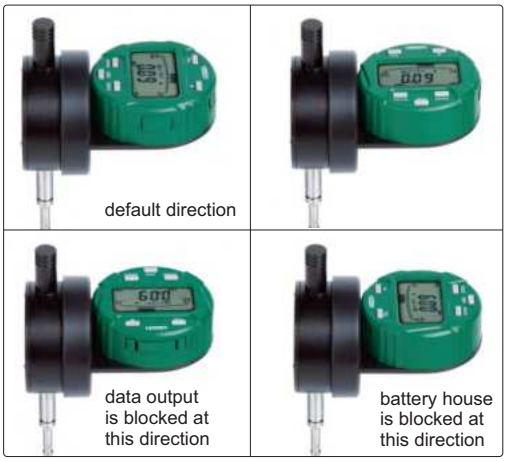
spindle lift knob is included



max./min./TIR




display direction is changeable




remark: to change above direction, 4 fixing screws on the back of display need to be removed first.

| Code | Range | Resolution | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|
| **2118-10** * | 12.7mm/0.5" | 0.01mm/0.0005" | 20μm | 10μm | 1.5N | can lift | flat back |
| **2118-101** * | 12.7mm/0.5" | 0.001mm/0.00005" | 5μm | 2μm | 1.5N | can lift | flat back |

*Supplied with manufacturer inspection certificate

# ZEROING FOOT SWITCH

VIDEO

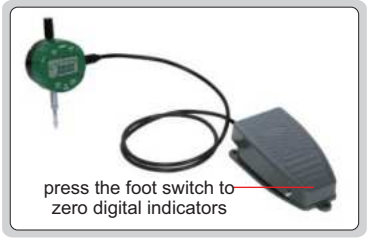
- For zeroing of digital indicators



7360-1M

| Code | Description | Interface of digital indicators | Applicable products |
|---|---|---|---|
| **7360-1M** | zeroing foot switch with cable (length 2.5m) |  |  for digital indicators |

application

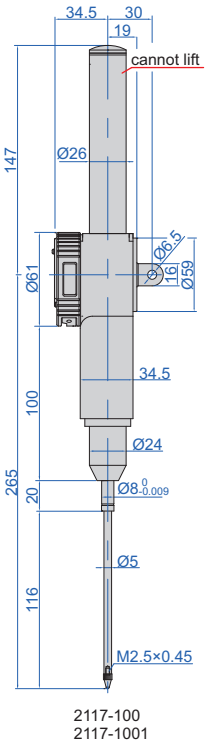


DATA OUTPUT

# LARGE STROKE DIGITAL INDICATORS



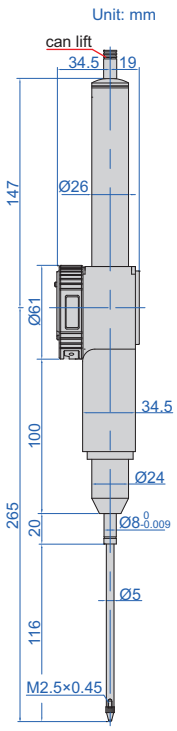
2117-100




2117-100
2117-1001



2117-100P




2117-100P
2117-1001P

alarm when over tolerance

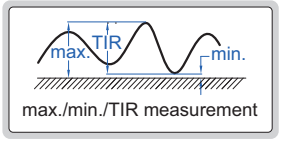



spindle lift knob is included



- Button function: on/off, zero, mm/inch, data preset, tolerance, change measuring direction, max./min./TIR measurement, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21, **7305-40M** page 17,
  backs (page 277~278), contact points (page 272~276)

max./min./TIR




max./min./TIR measurement

**2117-100P/1001P**




**Resolution 0.01mm/0.0005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2117-100** | 100mm/4" | 30μm | 10μm | 3.2N | cannot lift | lug back |
| **2117-100P** | 100mm/4" | 30μm | 10μm | 3.2N | can lift | flat back |

**Resolution 0.001mm/0.00005"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2117-1001** | 100mm/4" | 9μm | 3μm | 3.2N | cannot lift | lug back |
| **2117-1001P** | 100mm/4" | 9μm | 3μm | 3.2N | can lift | flat back |

# WIRELESS HIGH PRECISION DIGITAL INDICATORS

INSPECTION CERTIFICATE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

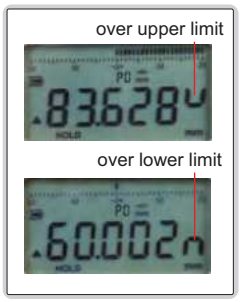
ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

CONTINUOUS DATA COLLECTION CAN BE CUSTOMIZED (PRESS "DATA" BUTTON TO START CONTINUOUS COLLECTION, PRESS AGAIN TO STOP; COLLECTION FREQUENCY CAN BE CUSTOMIZED, THE FASTEST DATA COLLECTION IS 10PCS PER SECOND)

LINEAR BALL BEARINGS FOR TEN MILLION TIMES USE

VIDEO

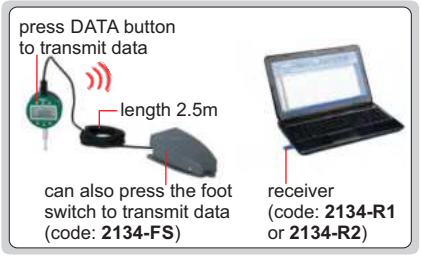
alarm when over tolerance



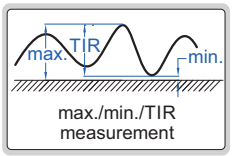

analog pointer




transmit data




max./min./TIR

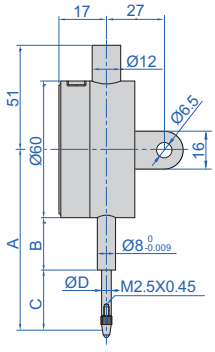




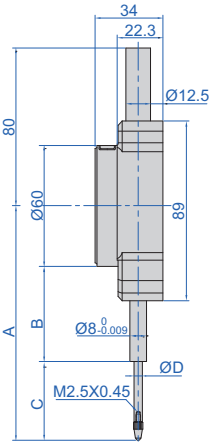

2134-10 2134-25 2134-50

10

- Built-in wireless transmission, Zigbee singal
- Linear ball bearings for ten million times use
- Absolute encoder, the original data remains after power off
- Reading in digital and analog
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, mm/inch, adjust resolution
- Power: rechargeable battery, for 24 hours continuous working
- Optional accessory: contact points (page 272~276), foot switch, code: **2134-FS**
  wireless receiver, code: **2134-R1** (keyboard format)
  **2134-R2** (serial port format)

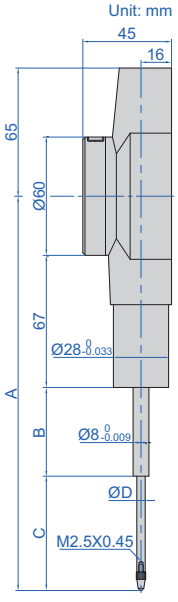



2134-10L
2134-101L




2134-25
2134-251

Unit: mm




2134-50

**Standard accuracy**

Carbide probe

Adjustable resolution: 0.0005mm/0.00002"
0.001mm/0.00005"
0.01mm/0.0005"

**(mm)**

| Code | Range | Accuracy | Hysteresis | A | B | C | ØD | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| **2134-10*** | 12.7mm/0.5" | 3μm | 1.5μm | 75.4 | 20.6 | 24.8 | 5 | 1.5N | can lift | flat back |
| **2134-10L*** | 12.7mm/0.5" | 3μm | 1.5μm | 75.4 | 20.6 | 24.8 | 5 | 1.5N | can lift | lug back |
| **2134-25*** | 25.4mm/1" | 3μm | 1.5μm | 109.5 | 38.5 | 41 | 5 | 2.2N | cannot lift | flat back |
| **2134-50*** | 50.8mm/2" | 3μm | 1.5μm | 201 | 32 | 72 | 4.5 | 2.5N | — | flat back |

**High accuracy**

Ruby probe

Adjustable resolution: 0.0002mm/0.00001"
0.001mm/0.00005"
0.01mm/0.0005"

**(mm)**

| Code | Range | Accuracy | Hysteresis | A | B | C | ØD | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| **2134-101*** | 12.7mm/0.5" | 1.5μm | 1μm | 77.4 | 26 | 21.4 | 4 | 1.5N | can lift | flat back |
| **2134-101L*** | 12.7mm/0.5" | 1.5μm | 1μm | 77.4 | 26 | 21.4 | 4 | 1.5N | can lift | lug back |
| **2134-251*** | 25.4mm/1" | 1.8μm | 1μm | 116.1 | 42.5 | 44 | 4 | 2.2N | cannot lift | flat back |

*Supplied with manufacturer inspection certificate

spindle lift knob is included



# HIGH PRECISION DIGITAL INDICATORS

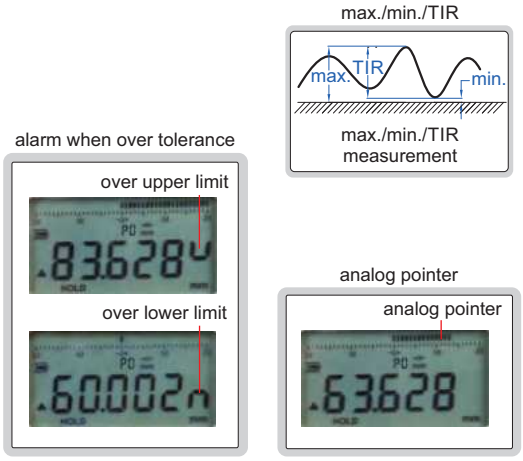
LINEAR BALL BEARINGS FOR TEN MILLION TIMES USE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

DATA OUTPUT

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

INSPECTION CERTIFICATE

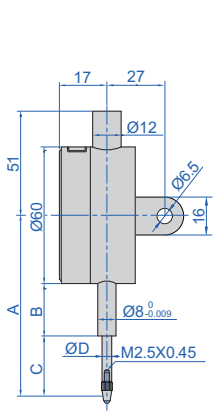




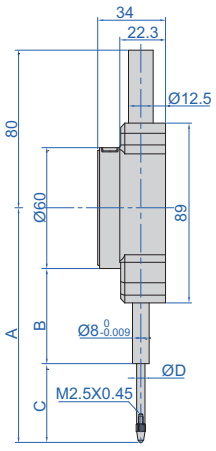

2133-10 2133-25 2133-50

- Linear ball bearings for ten million times use
- Absolute encoder, the original data remains after power off
- Reading in digital and analog
- Data output
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, mm/inch, adjust resolution
- Power: rechargeable battery, for 24 hours continuous working
- Optional accessory: contact points (page 272~276), wireless transmitter code **7315-60** (receiver is needed) page 7, data output cable (keyboard format) code **7302-60** page 21, data output cable (serial port format) code **7305-G60** page 19 (cable length 3m, optional cable length maximum 15m; RS232 protocol, optional RS485 protocol)

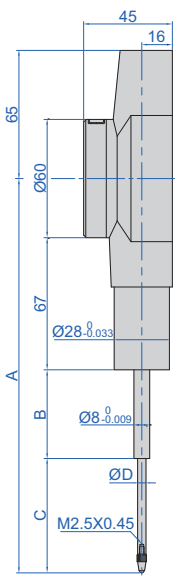
Unit: mm




2133-10L
2133-101L




2133-25
2133-251




2133-50

**Standard accuracy**

Carbide probe

Adjustable resolution: 0.0005mm/0.00002"
0.001mm/0.00005"
0.01mm/0.0005"

(mm)

| Code | Range | Accuracy | Hysteresis | A | B | C | ØD | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| **2133-10*** | 12.7mm/0.5" | 3μm | 1.5μm | 75.4 | 20.6 | 24.8 | 5 | 1.5N | can lift | flat back |
| **2133-10L*** | 12.7mm/0.5" | 3μm | 1.5μm | 75.4 | 20.6 | 24.8 | 5 | 1.5N | can lift | lug back |
| **2133-25*** | 25.4mm/1" | 3μm | 1.5μm | 109.5 | 38.5 | 41 | 5 | 2.2N | cannot lift | flat back |
| **2133-50*** | 50.8mm/2" | 3μm | 1.5μm | 201 | 32 | 72 | 4.5 | 2.5N | — | flat back |

**High accuracy**

Ruby probe

Adjustable resolution: 0.0002mm/0.00001"
0.001mm/0.00005"
0.01mm/0.0005"

(mm)

| Code | Range | Accuracy | Hysteresis | A | B | C | ØD | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| **2133-101*** | 12.7mm/0.5" | 1.5μm | 1μm | 77.4 | 26 | 21.4 | 4 | 1.5N | can lift | flat back |
| **2133-101L*** | 12.7mm/0.5" | 1.5μm | 1μm | 77.4 | 26 | 21.4 | 4 | 1.5N | can lift | lug back |
| **2133-251*** | 25.4mm/1" | 1.8μm | 1μm | 116.1 | 42.5 | 44 | 4 | 2.2N | cannot lift | flat back |

*Supplied with manufacturer inspection certificate

spindle lift knob is included



# HIGH PRECISION DIGITAL INDICATORS

ATTENTION: RECHARGEABLE BATTERY, FOR 30 HOURS CONTINUOUS WORKING

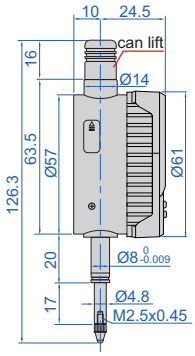
IP54 WATERPROOF

INSPECTION CERTIFICATE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

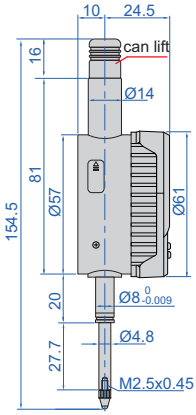
Unit: mm





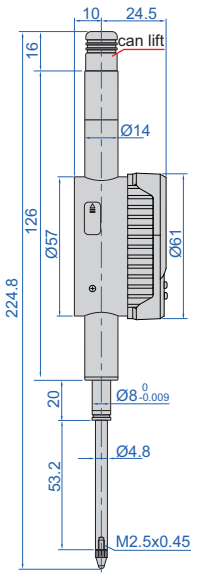

**2136-10**






**2136-25**






**2136-50**

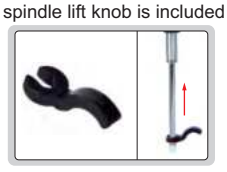
10

- IP54 dust/waterproof (when cap is lifted, no dust/waterproof)
- Absolute encoder, the original data remains after power off
- Automatic power off
- Reading in digital and analog
- Display can be rotated by 270°
- Button function: on/off, zero setting, data preset, tolerance Go and No-Go display, data hold, mm/inch, measuring direction change, max./min./TIR, absolute/incremental measurement, data output
- Data output with USB cable (keyboard format), cable length 1.8 meters, single and continuous transmission (the fastest data output is 40pcs per 10s)
- Power: rechargeable battery, for 30 hours continuous working

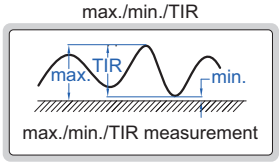
analog pointer




spindle lift knob is included



max./min./TIR

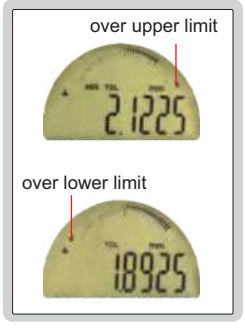









alarm when over tolerance




**Resolution 0.0005mm/0.00002"**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2136-10** * | 0-12.7mm/0-0.5" | 2μm | 1.5μm | 1.5N | can lift | flat back |
| **2136-25** * | 0-25.4mm/0-1" | 2μm | 1.5μm | 1.8N | can lift | flat back |
| **2136-50** * | 0-50.8mm/0-2" | 4μm | 2μm | 2.3N | can lift | flat back |

*Supplied with manufacturer inspection certificate



info@insz.sk | +421 944 367 573 | www.insz.sk

ATTENTION: RECHARGEABLE BATTERY, FOR 30 HOURS CONTINUOUS WORKING

# BLUETOOTH HIGH PRECISION DIGITAL INDICATORS

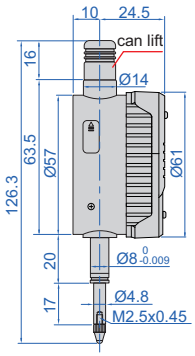
BUILT-IN BLUETOOTH | IP54 WATERPROOF | COLOR DISPLAY LARGE CHARACTERS WITH BACKLIGHT | ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

INSPECTION CERTIFICATE

VIDEO

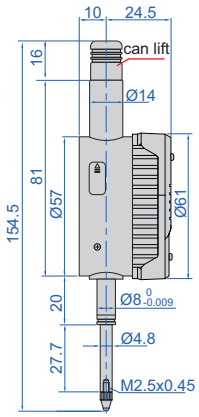
Unit: mm





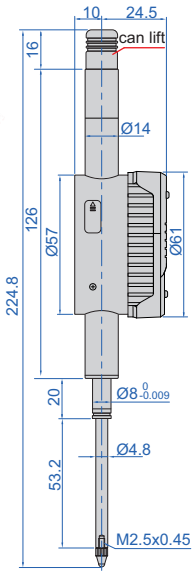

2135-10






2135-25

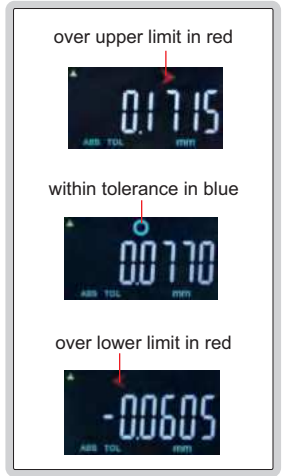





2135-50

- IP54 dust/waterproof (when cap is lifted, no dust/waterproof)
- Color display, large characters with backlight
- Absolute encoder, the original data remains after power off
- Automatic power off
- Display can be rotated by 270°
- Adjustable resolution: 0.0005mm/0.00002"
  0.001mm/0.00005"
- Button function: on/off, zero setting, data preset, tolerance Go and No-Go display, data hold, mm/inch, measuring direction change, blue tooth, max./min./TIR, adjust resolution, absolute/incremental measurement, data output
- Android and iPhone APP, USB type-C cable are included
- Power: rechargeable Li-battery, for 30 hours continuous working (bluetooth transmission reduces working hours)

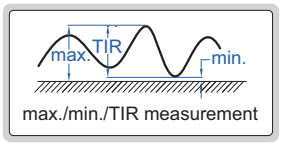
waming in red when over tolerance



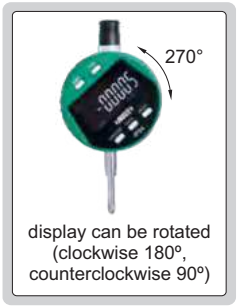

spindle lift knob is included



max./min./TIR




max./min./TIR measurement




display can be rotated (clockwise 180°, counterclockwise 90°)




| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|
| **2135-10** * | 12.7mm/0.5" | 2μm | 1.5μm | 1.5N | can lift | flat back |
| **2135-25** * | 25.4mm/1" | 2μm | 1.5μm | 1.8N | can lift | flat back |
| **2135-50** * | 50.8mm/2" | 4μm | 2μm | 2.3N | can lift | flat back |

*Supplied with manufacturer inspection certificate

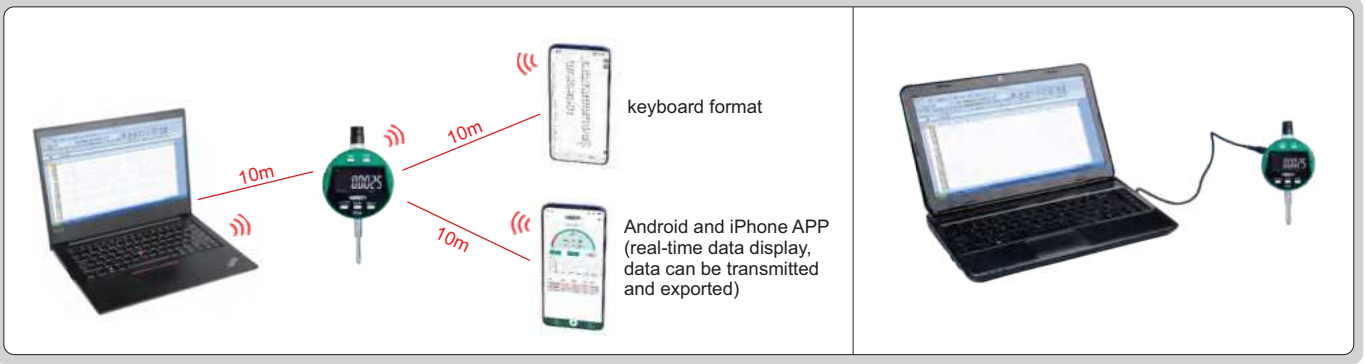
To be continued

Continued from previous page

**Data output**

| | | | |
|---|---|---|---|
| **Data output with bluetooth (transmission distance is 10 meters)** | keyboard format | data can be transmitted to Excel, Word, txt, etc. | single or continuous transmission (the fastest data output is 15pcs per 10s) |
| | virtual com port | data can be transmitted to Android and iPhone APP | real-time display (continuous transmission) or single transmission |
| **Data output with USB cable (cable length 1.8 meters)** | keyboard format | data can be transmitted to Excel, Word, txt, etc. | single or continuous transmission (the fastest data output is 40pcs per 10s) |
| | virtual com port and 485 data output can be customized | | |

data output with bluetooth and USB cable (included)






Android and iPhone APP (included), can choose real-time display (continuous transmission) or single transmission

**Real-time data from multiple digital indicators (up to 7pcs simultaneously connected)**




**Transmission interface of single digital indicator**




select continuous or single transmission mode and set parameters and tolerance

indicator dial

real-time data (display in green when within tolerance and display in red when out of tolerance)

graph

red background (out of tolerance)

green background (within tolerance)

send data (EXCEL/PDF/JPEG)

clear data

transmission button

# HIGH PRECISION DIGITAL INDICATORS

VIDEO

DATA OUTPUT

Ø28MM STEM SUITABLE FOR REINFORCED CLAMPING

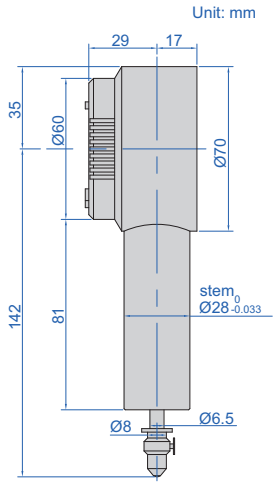
ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

LINEAR BALL BEARINGS FOR TEN MILLION TIMES USE

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

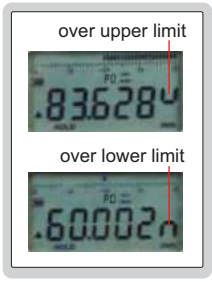


**2140-6**

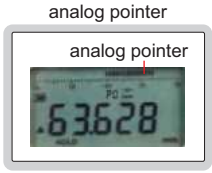



- Linear ball bearings for ten million times use
- Ø28mm stem suitable for reinforced clamping
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0002mm/0.00001"
  0.001mm/0.00005"
  0.01mm/0.0005"
- Reading in digital and analog
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, mm/inch, adjust resolution
- Power: rechargeable battery, for 24 hours continuous working
- Ruby probe

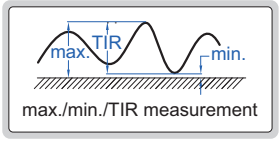
alarm when over tolerance




analog pointer




max./min./TIR




**With data interface**
Optional accessory:
wireless transmitter code **7315-60** (receiver is needed) page 7
data output cable (keyboard format) code **7302-60** page 21
data output cable (serial port format) code **7305-G60** page 19
(cable length 3m, optional cable length maximum 15m; RS232 protocol, optional RS485 protocol)

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Remark |
|---|---|---|---|---|---|
| **2140-6** | 0-6mm/0-0.24" | 1.6μm | 0.8μm | 1.5N | flat back |

**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Remark |
|---|---|---|---|---|---|
| **2140-6WL*** | 0-6mm/0-0.24" | 1.6μm | 0.8μm | 1.5N | flat back |

*Continuous data collection can be customized (press "DATA" button to start continuous collection, press again to stop; collection frequency can be customized, the fastest data collection is 10 pcs per second)

wireless receiver
**2134-R1, 2134-R2 (optional)**



# SMART HIGH PRECISION DIGITAL INDICATORS

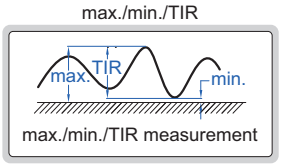
THE MEASURING TIME PERIOD CAN BE SET (1-99S IS ADJUSTABLE), THE MAX./MIN./TIR/AVG. CAN BE MEASURED AUTOMATICALLY DURING THIS PERIOD, AND THE DATA CAN BE TRANSMITTED AUTOMATICALLY AFTER EACH MEASUREMENT

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

DATA OUTPUT

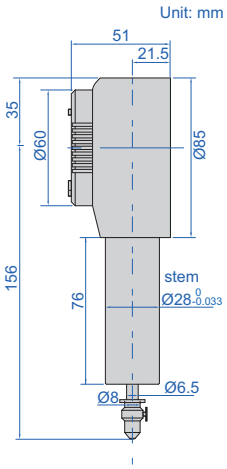
VIDEO

PRESS BUTTON OR PROBE MOVEMENT CAN START AUTOMATIC MEASUREMENT, THE MEASUREMENT CAN BE DELAYED (1-99S IS ADJUSTABLE)

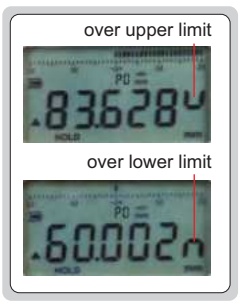





2150-5A




- Linear ball bearings for ten million times use
- Ø28mm stem suitable for reinforced clamping
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0001mm/0.00001"
  0.001mm/0.00005"
  0.01mm/0.0005"
- Reading in digital and analog
- Button function: on/off, adjust resolution, data hold, data output, max./min./TIR/avg., data preset, tolerance, mm/inch, automatic power off, measuring direction change, delay setting, measuring time setting
- Power: rechargeable Li-battery, for 24 hours continuous working
- Ruby probe







wireless receiver **2134-R1, 2134-R2 (optional)**



**With data interface**
Optional accessory:
wireless transmitter code **7315-60** (receiver is needed) page 7
data output cable (keyboard format) code **7302-60** page 21
data output cable (serial port format) code **7305-G60** page 19
(cable length 3m, optional cable length maximum 15m; RS232 protocol, optional RS485 protocol)

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Remark |
|---|---|---|---|---|---|
| **2150-5A** | 0-5mm/0-0.2" | 0.5μm | 0.3μm | 1.5N | probe movement starts measurement |
| **2150-5B** | 0-5mm/0-0.2" | 0.5μm | 0.3μm | 1.5N | press button starts measurement |

**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format, connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format, connect up to 15 digital indicators), code **2134-R2**

| Code | Range | Accuracy | Hysteresis | Maximum measuring force | Remark |
|---|---|---|---|---|---|
| **2150-5AWL*** | 0-5mm/0-0.2" | 0.5μm | 0.3μm | 1.5N | probe movement starts measurement |
| **2150-5BWL*** | 0-5mm/0-0.2" | 0.5μm | 0.3μm | 1.5N | press button starts measurement |

*Continuous data collection can be customized (press "DATA" button to start continuous collection, press it again to stop; collection frequency can be customized, the fastest data collection is 10pcs per second)


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ATTENTION: RECHARGEABLE BATTERY, FOR 12 HOURS CONTINUOUS WORKING

# INDUCTIVE DIGITAL COMPARATOR (HIGH ACCURACY)

VIDEO

IP54 WATERPROOF

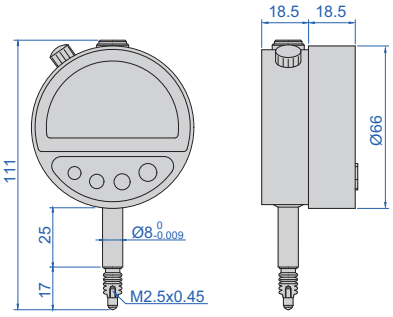
DATA OUTPUT



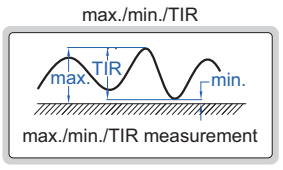



2149-2

Unit: mm




- Built-in wireless transmission
- IP54 dust/waterproof
- Reading in digital and analog
- Display can be rotated by 320°
- Can store 10 set parameters, and the parameter can be searched and recalled
- 999 groups value can be stored
- Touch sensor: use the sensor to transmit data, avoiding press the button to cause deformation of the dial indicator stand and affect the zero position
- Button function: on/off, zero, data hold, measuring direction change, inch/metric conversion, data preset, absolute/incremental measurement, max./min./TIR measurement, tolerance Go and No-Go display, data output, analog pointer resolution and range change, print data
- Power: rechargeable battery, for 12 hours continuous working
- Ruby probe
- Data output
- Optional accessory:
  wireless receiver (code **2149-RE**, transmission distance is 2 meters),
  printer (code **ISF-DF-PRINTER**)




printer (**optional**)



wireless receiver (**optional**)



| Code | Range | Resolution | Accuracy | Hysteresis | Repeatability | Measuring force |
|---|---|---|---|---|---|---|
| **2149-2** | 2mm/0.08" | 0.1μm/0.000005" | 0.5μm | 0.2μm | 0.3μm | 0.8-1N |

10

# PRECISION DIAL INDICATORS

JEWELED BEARING

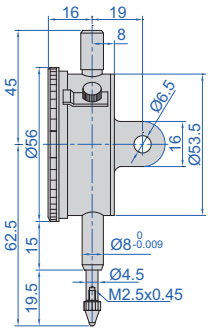
INSPECTION CERTIFICATE



2313-1A

- Graduation: 0.001mm
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)

Unit: mm




| Code | Range | Accuracy | Hysteresis | Range/rev | Dial reading | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|
| **2313-1FA*** | 1mm | 5μm | 2μm | 0.2mm | 0-100-0 | 2N | cannot lift | flat back |
| **2313-2FA*** | 2mm | 6μm | 2.5μm | 0.2mm | 0-100-0 | 2N | cannot lift | flat back |
| **2313-1A*** | 1mm | 5μm | 2μm | 0.2mm | 0-100-0 | 2N | cannot lift | lug back |
| **2313-2A*** | 2mm | 6μm | 2.5μm | 0.2mm | 0-100-0 | 2N | cannot lift | lug back |

*Supplied with manufacturer inspection certificate

## COMPACT DIAL INDICATORS

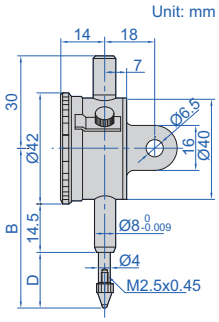
JEWELED BEARING

INSPECTION CERTIFICATE

- Meet DIN878
- Graduation: 0.01mm
- Dial reading: 0-50
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2311-5




(mm)

| Code | Range | Accuracy | Hysteresis | Range/rev | Maximum measuring force | Cap | Remark | B | D |
|---|---|---|---|---|---|---|---|---|---|
| 2311-3F * | 3mm | 12μm | 3μm | 0.5mm | 1.5N | can lift | flat back | 46 | 10.5 |
| 2311-5F * | 5mm | 14μm | 3μm | 0.5mm | 1.5N | can lift | flat back | 48 | 12.5 |
| 2311-3 * | 3mm | 12μm | 3μm | 0.5mm | 1.5N | can lift | lug back | 46 | 10.5 |
| 2311-5 * | 5mm | 14μm | 3μm | 0.5mm | 1.5N | can lift | lug back | 48 | 12.5 |

*Supplied with manufacturer inspection certificate

## DIAL INDICATORS (STANDARD TYPE)

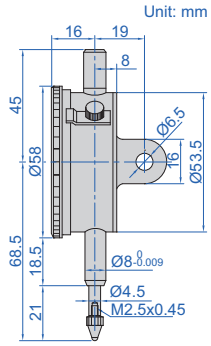
JEWELED BEARING

INSPECTION CERTIFICATE

- Meet DIN878
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2308-10A




| Code | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 2308-3FA * | 3mm | 0.01mm | 12μm | 3μm | 1mm | 0-100 | 1.5N | can lift | flat back |
| 2308-5FA * | 5mm | 0.01mm | 14μm | 3μm | 1mm | 0-100 | 1.5N | can lift | flat back |
| 2308-10FA * | 10mm | 0.01mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | can lift | flat back |
| 2308-3A * | 3mm | 0.01mm | 12μm | 3μm | 1mm | 0-100 | 1.5N | can lift | lug back |
| 2308-5A * | 5mm | 0.01mm | 14μm | 3μm | 1mm | 0-100 | 1.5N | can lift | lug back |
| 2308-10A * | 10mm | 0.01mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | can lift | lug back |

*Supplied with manufacturer inspection certificate

## DIAL INDICATORS (BASIC TYPE)

JEWELED BEARING

INSPECTION CERTIFICATE

POPULAR MODEL

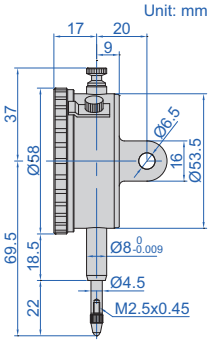
- Meet DIN878
- Graduation: 0.01mm
- Jeweled bearing
- Supplied with limit hands and bezel clamp
- Packed in carton box
- Optional accessory: backs (page 277~278), contact points (page 272~276)

carton box





2301-10




| Code | Range | Accuracy | Hysteresis | Range/rev | Dial reading | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|
| 2301-10F * | 10mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | can lift | flat back |
| 2301-10 * | 10mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | can lift | lug back with spare flat back |

*Supplied with manufacturer inspection certificate

## REVERSE READING DIAL INDICATORS

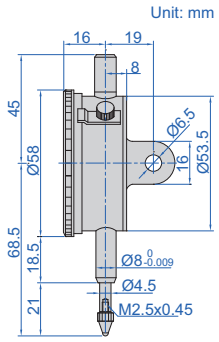
INSPECTION CERTIFICATE | JEWELED BEARING

- Meet DIN878
- Suitable for depth and step measurements
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2801-10

Unit: mm




| Code | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 2801-10F* | 10mm | 0.01mm | 17μm | 3μm | 1mm | 100-0 | 1.5N | can lift | flat back |
| 2801-10* | 10mm | 0.01mm | 17μm | 3μm | 1mm | 100-0 | 1.5N | can lift | lug back |

*Supplied with manufacturer inspection certificate

## SHOCKPROOF DIAL INDICATORS

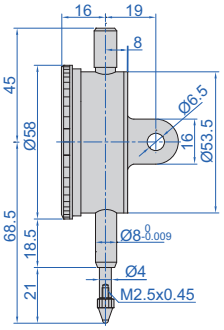
INSPECTION CERTIFICATE | SHOCK PROOF | JEWELED BEARING

- Meet DIN878
- Shockproof
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2314-10A

Unit: mm




| Code | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 2314-3FA* | 3mm | 0.01mm | 12μm | 3μm | 1mm | 0-100 | 1.5N | can lift | flat back |
| 2314-5FA* | 5mm | 0.01mm | 14μm | 3μm | 1mm | 0-100 | 1.5N | can lift | flat back |
| 2314-10FA* | 10mm | 0.01mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | can lift | flat back |
| 2314-3A* | 3mm | 0.01mm | 12μm | 3μm | 1mm | 0-100 | 1.5N | can lift | lug back |
| 2314-5A* | 5mm | 0.01mm | 14μm | 3μm | 1mm | 0-100 | 1.5N | can lift | lug back |
| 2314-10A* | 10mm | 0.01mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | can lift | lug back |

*Supplied with manufacturer inspection certificate

## WATERPROOF DIAL INDICATORS

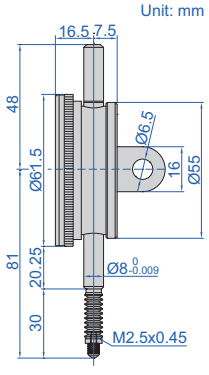
INSPECTION CERTIFICATE | IP54 WATERPROOF

- Meet DIN878
- IP54 dust/waterproof
- With limit pointers
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2324-10A

Unit: mm




| Code | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 2324-10FA* | 10mm | 0.01mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | cannot lift | flat back |
| 2324-10A* | 10mm | 0.01mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | cannot lift | lug back |

*Supplied with manufacturer inspection certificate

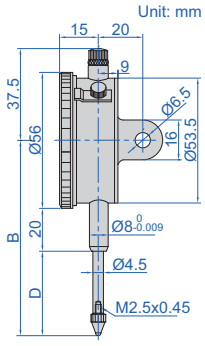
## DIAL INDICATORS (LONG STROKE)

INSPECTION CERTIFICATE

- Graduation: 0.01mm
- Dial reading: 0-100
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2310-30A




(mm)

| Code | Range | Accuracy | Hysteresis | Range/rev | Maximum measuring force | Cap | Remark | B | D |
|---|---|---|---|---|---|---|---|---|---|
| **2310-20FA*** | 20mm | 25μm | 5μm | 1mm | 2.0N | can lift | flat back | 83 | 35 |
| **2310-30FA*** | 30mm | 35μm | 7μm | 1mm | 2.2N | can lift | flat back | 88 | 40 |
| **2310-20A*** | 20mm | 25μm | 5μm | 1mm | 2.0N | can lift | lug back | 83 | 35 |
| **2310-30A*** | 30mm | 35μm | 7μm | 1mm | 2.2N | can lift | lug back | 88 | 40 |

*Supplied with manufacturer inspection certificate

## DIAL INDICATORS (LONG STROKE, BASIC TYPE)

POPULAR MODEL

INSPECTION CERTIFICATE

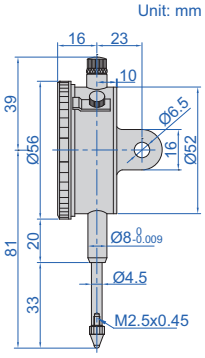
- Supplied with limit pointers and bezel clamp
- Graduation: 0.01mm
- Packed in carton box
- Optional accessory: backs (page 277~278), contact points (page 272~276)

carton box





2302-25




| Code | Range | Accuracy | Hysteresis | Range/rev | Dial reading | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|
| **2302-25F*** | 25mm | 35μm | 7μm | 1mm | 0-100 | 2.2N | can lift | flat back |
| **2302-25*** | 25mm | 35μm | 7μm | 1mm | 0-100 | 2.2N | can lift | lug back with spare flat back |

*Supplied with manufacturer inspection certificate

## DOUBLE FACE DIAL INDICATOR

JEWELED BEARING

INSPECTION CERTIFICATE

- Meet DIN878
- Read from both sides
- Jeweled bearing
- Supplied with limit pointers
- Optional accessory: contact points (page 272~276)

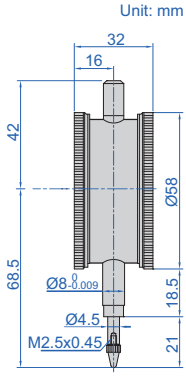


front

2328-10



back




| Code | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Maximum measuring force | Cap |
|---|---|---|---|---|---|---|---|---|
| **2328-10*** | 10mm | 0.01mm | 17μm | 3μm | 1mm | 0-100 | 1.5N | can lift |

*Supplied with manufacturer inspection certificate

## DIAL INDICATORS (GRADUATION 0.1mm)

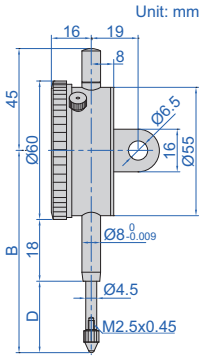
- Graduation: 0.1mm
- Dial reading: 0-10
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2318-30

(mm)

| Code | Range | Accuracy | Hysteresis | Range/rev | Maximum measuring force | Cap | Remark | B | D |
|---|---|---|---|---|---|---|---|---|---|
| **2318-10F** | 10mm | 40μm | 20μm | 10mm | 2.0N | can lift | flat back | 70 | 20 |
| **2318-20F** | 20mm | 50μm | 20μm | 10mm | 2.0N | can lift | flat back | 85 | 35 |
| **2318-25F** | 25mm | 60μm | 20μm | 10mm | 2.2N | can lift | flat back | 85 | 35 |
| **2318-30F** | 30mm | 60μm | 20μm | 10mm | 2.2N | can lift | flat back | 90 | 40 |
| **2318-10** | 10mm | 40μm | 20μm | 10mm | 2.0N | can lift | lug back | 70 | 20 |
| **2318-20** | 20mm | 50μm | 20μm | 10mm | 2.0N | can lift | lug back | 85 | 35 |
| **2318-25** | 25mm | 60μm | 20μm | 10mm | 2.2N | can lift | lug back | 85 | 35 |
| **2318-30** | 30mm | 60μm | 20μm | 10mm | 2.2N | can lift | lug back | 90 | 40 |




## DIAL INDICATORS (LONG STROKE)

- Graduation: 0.01mm
- Dial reading: 0-100
- Shockproof
- Jeweled bearing
- Supplied with limit pointers
- Optional accessory: backs (page 277~278), contact points (page 272~276)

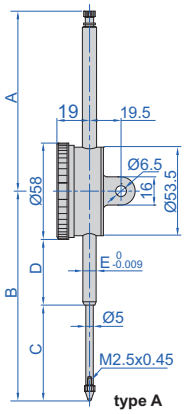
INSPECTION CERTIFICATE

JEWELED BEARING

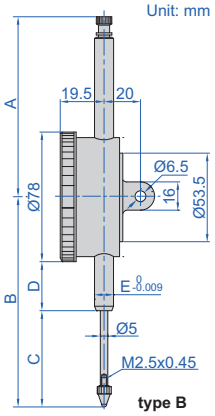
SHOCK PROOF



2309-50




type A




type B

stem clamp Ø10mm for **2309-100D**



back of type B



(mm)

| Code | Type | A | B | C | D | E |
|---|---|---|---|---|---|---|
| **2309-30F** | A | 37.5 | 89.5 | 40.9 | 19.5 | Ø8 |
| **2309-30** | A | 37.5 | 89.5 | 40.9 | 19.5 | Ø8 |
| **2309-50** | A | 108.3 | 126.2 | 57.7 | 39.5 | Ø8 |
| **2309-50D** | B | 108.3 | 126.2 | 57.7 | 29.5 | Ø8 |
| **2309-80** | A | 138.4 | 168.4 | 88 | 51.3 | Ø8 |
| **2309-80D** | B | 138.4 | 168.4 | 88 | 41.3 | Ø8 |
| **2309-100D** | B | 167.6 | 207.8 | 108 | 60.8 | Ø10 |

(mm)

| Code | Range | Type | Accuracy | Hysteresis | Range/rev | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|
| **2309-30F*** | 30mm | A | 35μm | 7μm | 1mm | 2.2N | can lift | flat back |
| **2309-30*** | 30mm | A | 35μm | 7μm | 1mm | 2.2N | can lift | lug back |
| **2309-50*** | 50mm | A | 40μm | 8μm | 1mm | 2.5N | can lift | flat back with spare lug back |
| **2309-50D*** | 50mm | B | 40μm | 8μm | 1mm | 2.5N | can lift | flat back with spare lug back |
| **2309-80** | 80mm | A | 50μm | 9μm | 1mm | 3.2N | can lift | flat back with spare lug back |
| **2309-80D** | 80mm | B | 50μm | 9μm | 1mm | 3.2N | can lift | flat back with spare lug back |
| **2309-100D** | 100mm | B | 50μm | 9μm | 1mm | 3.2N | can lift | flat back with spare lug back |

**Note:** 1) **2309-80, 2309-80D** and **2309-100D** can only be used vertically
2) **2309-100D** is supplied with stem clamp Ø10mm for magnetic stands (code **6200-60**, **6201-60**, **6202-80**, **6202-100**)
3) **2309-30** and **2309-30F** can not accept optional backs (page 277~278)

*Supplied with manufacturer inspection certificate

## ONE REVOLUTION DIAL INDICATORS

SHOCK PROOF

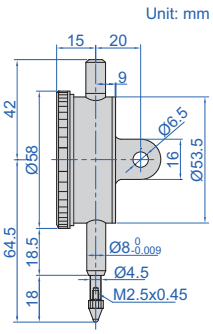
INSPECTION CERTIFICATE

- Meet DIN878
- Graduation: 0.01mm
- Eliminate the possibility of reading errors due to miscounting
- Shockproof
- Supplied with limit pointers
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2316-05

Unit: mm




| Code | Range | Dial indicator stroke | Accuracy | Hysteresis | Dial reading | Maximum measuring force | Cap | Remark |
|---|---|---|---|---|---|---|---|---|
| 2316-05F* | 0.5mm | 5mm | 9μm | 3μm | 25-0-25 | 1.5N | cannot lift | flat back |
| 2316-1F* | 1mm | 5mm | 9μm | 3μm | 50-0-50 | 1.5N | cannot lift | flat back |
| 2316-05* | 0.5mm | 5mm | 9μm | 3μm | 25-0-25 | 1.5N | cannot lift | lug back |
| 2316-1* | 1mm | 5mm | 9μm | 3μm | 50-0-50 | 1.5N | cannot lift | lug back |

*Supplied with manufacturer inspection certificate

## INCH DIAL INDICATORS

INSPECTION CERTIFICATE

- Meet ASME B89.1.10M-2001
- With lug back
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)

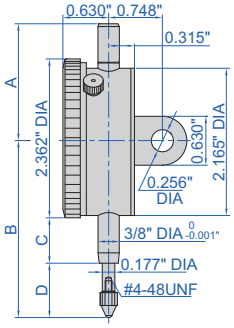


2307-1

| Range | A | B | C | D |
|---|---|---|---|---|
| 0.25" | 1.811" | 2.953" | 0.787" | 0.984" |
| 0.5" | 1.811" | 2.953" | 0.787" | 0.984" |
| 1" | 1.811" | 3.346" | 0.787" | 1.378" |
| 2" | 4.370" | 5.472" | 1.969" | 2.323" |

| Code | Range | Graduation | Accuracy | | Range/rev | Dial reading | Maximum measuring force | Cap |
|---|---|---|---|---|---|---|---|---|
| | | | First 2.5 rev | Overall | | | | |
| 2307-025* | 0.25" | 0.001" | ±0.001" | ±0.001" | 0.1" | 0-100 | 1.8N | can lift |
| 2307-05* | 0.5" | 0.001" | ±0.001" | ±0.002" | 0.1" | 0-100 | 1.8N | can lift |
| 2307-1* | 1" | 0.001" | ±0.001" | ±0.002" | 0.1" | 0-100 | 1.8N | can lift |
| 2307-2* | 2" | 0.001" | ±0.001" | ±0.004" | 0.1" | 0-100 | 2.5N | cannot lift |
| 2307-0255* | 0.25" | 0.0005" | ±0.0005" | ±0.0015" | 0.05" | 0-50 | 1.8N | can lift |
| 2307-055* | 0.5" | 0.0005" | ±0.0005" | ±0.0015" | 0.05" | 0-50 | 1.8N | can lift |
| 2307-105* | 1" | 0.0005" | ±0.0005" | ±0.002" | 0.05" | 0-50 | 1.8N | can lift |
| 2307-205* | 2" | 0.0005" | ±0.0005" | ±0.002" | 0.05" | 0-50 | 2.5N | cannot lift |

*Supplied with manufacturer inspection certificate




## INCH LONG STROKE DIAL INDICATOR

INSPECTION CERTIFICATE

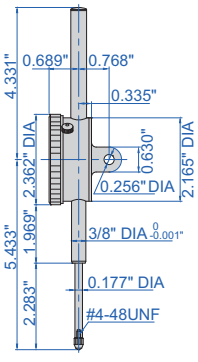
- Graduation 0.001"
- With lug back
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 277~278), contact points (page 272~276)



2326-2

| Code | Range | Accuracy | | Range/rev | Dial reading | Maximum measuring force | Cap |
|---|---|---|---|---|---|---|---|
| | | first 2.5 rev | overall | | | | |
| 2326-2* | 2" | ±0.001" | ±0.004" | 0.1" | 0-100 | 2.5N | cannot lift |

*Supplied with manufacturer inspection certificate



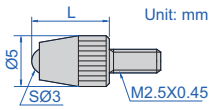



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# BALL POINTS



6282-0101

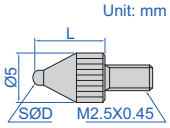



| Code | Material of measuring face | L (mm) |
|---|---|---|
| 6282-0101 | carbide | 7.3 |
| 6282-0103 | ceramic | 7.3 |
| 6282-0104 | carbide | 8.3 |
| 6282-0106 | carbide | 12.1 |
| 6282-0107 | carbide | 14 |
| 6282-0108 | carbide | 15 |
| 6282-0109 | ceramic | 15 |
| 6282-0110 | carbide | 17 |

| Code | Material of measuring face | L (mm) |
|---|---|---|
| 6282-0111 | carbide | 19.3 |
| 6282-0112 | carbide | 20 |
| 6282-0113 | ceramic | 20 |
| 6282-0114 | carbide | 22 |
| 6282-0115 | carbide | 25 |
| 6282-0116 | ceramic | 25 |
| 6282-0117 | carbide | 30 |
| 6282-0118 | ceramic | 30 |

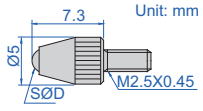
| Code | Material of measuring face | L (mm) |
|---|---|---|
| 6282-0119 | carbide | 35 |
| 6282-0120 | ruby | 35 |
| 6282-0121 | carbide | 40 |
| 6282-0122 | ruby | 40 |
| 6282-0123 | carbide | 45 |
| 6282-0124 | ruby | 45 |
| 6282-0125 | carbide | 50 |
| 6282-0126 | ruby | 50 |






6282-0301





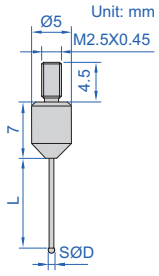

6282-0304

| Code | Material of measuring face | SØD (mm) | L (mm) |
|---|---|---|---|
| 6282-0301 | steel | 1 | 7.3 |
| 6282-0306 | carbide | 1 | 6 |
| 6282-0307 | carbide | 2 | 7 |
| 6282-0308 | carbide | 3 | 8 |
| 6282-0309 | carbide | 3.5 | 8.5 |
| 6282-0310 | carbide | 4 | 9 |
| 6282-0311 | carbide | 4.5 | 9.5 |
| 6282-0312 | carbide | 5.5 | 10 |
| 6282-0313 | carbide | 6 | 10.5 |
| 6282-0314 | carbide | 7 | 11.5 |

| Code | Material of measuring face | SØD (mm) |
|---|---|---|
| 6282-0302 | carbide | 1.5 |
| 6282-0303 | carbide | 1.8 |
| 6282-0304 | carbide | 2.5 |
| 6282-0305 | carbide | 4 |



6282-3407




(mm)

| Code | Material of measuring face | L | SØD |
|---|---|---|---|
| 6282-3401 | ruby | 10 | 1 |
| 6282-3402 | ruby | 20 | 1 |
| 6282-3403 | ruby | 30 | 1 |
| 6282-3404 | ruby | 40 | 1 |
| 6282-3405 | ruby | 50 | 1 |
| 6282-3406 | ruby | 10 | 2 |
| 6282-3407 | ruby | 20 | 2 |
| 6282-3408 | ruby | 30 | 2 |
| 6282-3409 | ruby | 40 | 2 |
| 6282-3410 | ruby | 50 | 2 |
| 6282-3411 | carbide | 10 | 1 |
| 6282-3412 | carbide | 20 | 1 |

(mm)

| Code | Material of measuring face | L | SØD |
|---|---|---|---|
| 6282-3413 | carbide | 30 | 1 |
| 6282-3414 | carbide | 40 | 1 |
| 6282-3415 | carbide | 50 | 1 |
| 6282-3416 | carbide | 10 | 1.5 |
| 6282-3417 | carbide | 20 | 1.5 |
| 6282-3418 | carbide | 30 | 1.5 |
| 6282-3419 | carbide | 40 | 1.5 |
| 6282-3420 | carbide | 50 | 1.5 |
| 6282-3421 | carbide | 10 | 2 |
| 6282-3422 | carbide | 20 | 2 |
| 6282-3423 | carbide | 30 | 2 |
| 6282-3424 | carbide | 40 | 2 |

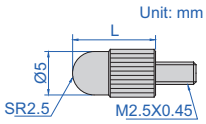
(mm)

| Code | Material of measuring face | L | SØD |
|---|---|---|---|
| 6282-3425 | carbide | 50 | 2 |
| 6282-3426 | carbide | 10 | 2.5 |
| 6282-3427 | carbide | 20 | 2.5 |
| 6282-3428 | carbide | 30 | 2.5 |
| 6282-3429 | carbide | 40 | 2.5 |
| 6282-3430 | carbide | 50 | 2.5 |
| 6282-3431 | carbide | 10 | 3 |
| 6282-3432 | carbide | 20 | 3 |
| 6282-3433 | carbide | 30 | 3 |
| 6282-3434 | carbide | 40 | 3 |
| 6282-3435 | carbide | 50 | 3 |

## SHELL TYPE POINTS



6282-0202



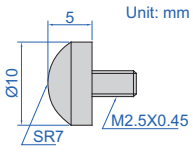

| Code | Material of measuring face | L (mm) |
|---|---|---|
| 6282-0202 | steel | 5 |
| 6282-0203 | steel | 10 |
| 6282-0205 | steel | 15 |

| Code | Material of measuring face | L (mm) |
|---|---|---|
| 6282-0207 | steel | 20 |
| 6282-0208 | steel | 25 |
| 6282-0210 | steel | 30 |

## SPHERICAL POINT

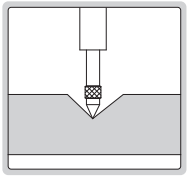


6282-0401




| Code | Material of measuring face |
|---|---|
| 6282-0401 | steel |

## CONICAL POINTS





6282-0601



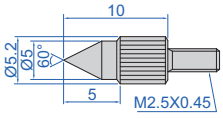
6282-0701

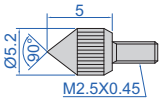


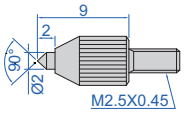
6282-0801

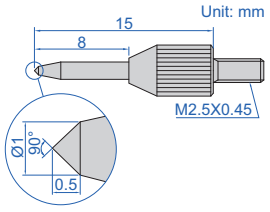


6282-0901



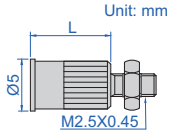




| Code | Material of measuring face |
|---|---|
| 6282-0601 | steel |
| 6282-0701 | steel |
| 6282-0801 | steel |
| 6282-0901 | steel |

## FLAT POINTS



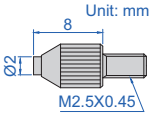



6282-1101

| Code | Material of measuring face | L (mm) |
|---|---|---|
| 6282-1101 | steel | 8 |
| 6282-1102 | steel | 10 |



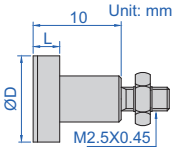
6282-1301



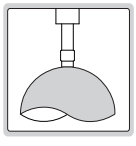

| Code | Material of measuring face |
|---|---|
| 6282-1301 | carbide |



6282-1201



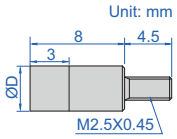

| Code | Material of measuring face | ØD | L |
|---|---|---|---|
| 6282-1201 | steel | 10mm | 3mm |
| 6282-1202 | steel | 15mm | 4mm |
| 6282-1203 | steel | 20mm | 3mm |
| 6282-1204 | steel | 25mm | 4mm |
| 6282-1205 | steel | 30mm | 3mm |



## FLAT POINTS



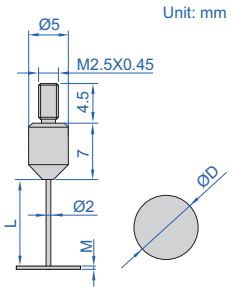
6282-2902






6282-3004

| Code | Material of measuring face | ØD (mm) |
|---|---|---|
| 6282-2901 | carbide | 4 |
| 6282-2902 | carbide | 5 |
| 6282-2903 | carbide | 6 |
| 6282-2904 | carbide | 8 |
| 6282-2905 | carbide | 10 |

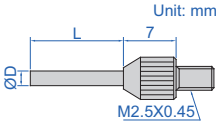



| Code | Material of measuring face | L (mm) | M (mm) | ØD (mm) |
|---|---|---|---|---|
| 6282-3001 | carbide | 13 | 0.4 | 3 |
| 6282-3002 | carbide | 13 | 0.4 | 4 |
| 6282-3003 | carbide | 13 | 0.4 | 5 |
| 6282-3004 | carbide | 13 | 0.4 | 6 |
| 6282-3005 | carbide | 13 | 1 | 6 |
| 6282-3006 | carbide | 33 | 0.4 | 6 |
| 6282-3007 | carbide | 13 | 0.4 | 8 |
| 6282-3008 | carbide | 13 | 0.4 | 10 |

## NEEDLE POINTS



6282-1711




(mm)

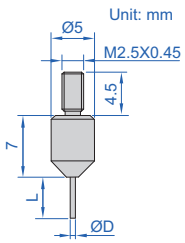
| Code | Material of measuring face | ØD | L |
|---|---|---|---|
| 6282-1701 | steel | 0.45 | 3 |
| 6282-1702 | steel | 0.45 | 5 |
| 6282-1703 | carbide | 1 | 3 |
| 6282-1704 | carbide | 1 | 5 |
| 6282-1705 | carbide | 1 | 8 |
| 6282-1706 | carbide | 1 | 10 |
| 6282-1707 | carbide | 1 | 20 |
| 6282-1708 | carbide | 1 | 40 |
| 6282-1709 | carbide | 1.5 | 5 |
| 6282-1710 | carbide | 1.5 | 10 |
| 6282-1711 | carbide | 1.5 | 13 |
| 6282-1712 | carbide | 1.5 | 20 |
| 6282-1713 | carbide | 1.5 | 40 |
| 6282-1714 | carbide | 2 | 8 |
| 6282-1715 | carbide | 2 | 18 |
| 6282-1716 | carbide | 2 | 28 |
| 6282-1717 | carbide | 2 | 40 |

(mm)

| Code | Material of measuring face | ØD | L |
|---|---|---|---|
| 6282-1718 | carbide | 1 | 50 |
| 6282-1719 | carbide | 1.5 | 50 |
| 6282-1720 | carbide | 2 | 50 |
| 6282-1721 | ceramic | 1 | 10 |
| 6282-1722 | ceramic | 1 | 20 |
| 6282-1723 | ceramic | 1.5 | 10 |
| 6282-1724 | ceramic | 1.5 | 20 |
| 6282-1725 | ceramic | 1.5 | 30 |
| 6282-1726 | ceramic | 1.5 | 40 |
| 6282-1727 | ceramic | 1.5 | 50 |
| 6282-1728 | ceramic | 2 | 10 |
| 6282-1729 | ceramic | 2 | 20 |
| 6282-1730 | ceramic | 2 | 30 |
| 6282-1731 | ceramic | 2 | 40 |
| 6282-1732 | ceramic | 2 | 50 |



6282-3303




(mm)

| Code | Material of measuring face | ØD | L |
|---|---|---|---|
| 6282-3301 | carbide | 0.5 | 3 |
| 6282-3302 | carbide | 0.5 | 5 |
| 6282-3303 | carbide | 0.5 | 10 |
| 6282-3304 | carbide | 0.6 | 10 |
| 6282-3305 | carbide | 0.7 | 10 |
| 6282-3306 | carbide | 0.8 | 10 |
| 6282-3307 | carbide | 0.9 | 10 |
| 6282-3308 | carbide | 1.2 | 10 |
| 6282-3309 | carbide | 0.5 | 15 |
| 6282-3310 | carbide | 0.6 | 15 |

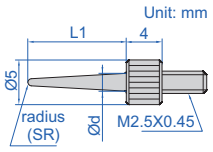
(mm)

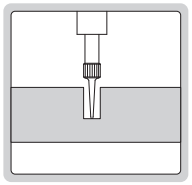
| Code | Material of measuring face | ØD | L |
|---|---|---|---|
| 6282-3311 | carbide | 0.7 | 15 |
| 6282-3312 | carbide | 0.8 | 15 |
| 6282-3313 | carbide | 0.9 | 15 |
| 6282-3314 | carbide | 1.2 | 15 |
| 6282-3315 | carbide | 0.5 | 20 |
| 6282-3316 | carbide | 0.6 | 20 |
| 6282-3317 | carbide | 0.7 | 20 |
| 6282-3318 | carbide | 0.8 | 20 |
| 6282-3319 | carbide | 0.9 | 20 |
| 6282-3320 | carbide | 1.2 | 20 |

## NEEDLE POINTS



6282-1601



(mm)

| Code | Material of measuring face | L1 | Ød | SR |
|---|---|---|---|---|
| 6282-1611 | steel | 7 | 2 | 0.15 |
| 6282-1612 | steel | 13 | 2 | 0.15 |
| 6282-1613 | steel | 22 | 2 | 0.15 |
| 6282-1614 | steel | 30 | 2 | 0.15 |
| 6282-1615 | steel | 40 | 2 | 0.15 |
| 6282-1602 | steel | 13 | 2 | 0.2 |
| 6282-1616 | steel | 50 | 2 | 0.2 |
| 6282-1617 | steel | 13 | 2 | 0.3 |
| 6282-1618 | steel | 17 | 2 | 0.3 |
| 6282-1619 | steel | 22 | 2 | 0.3 |
| 6282-1620 | steel | 30 | 2 | 0.3 |
| 6282-1621 | steel | 40 | 2 | 0.3 |
| 6282-1601 | steel | 11 | 2 | 0.4 |
| 6282-1603 | steel | 21 | 3 | 0.4 |
| 6282-1604 | steel | 31 | 3 | 0.4 |
| 6282-1622 | steel | 50 | 2 | 0.4 |

(mm)

| Code | Material of measuring face | L1 | Ød | SR |
|---|---|---|---|---|
| 6282-1623 | carbide | 13 | 2 | 0.2 |
| 6282-1624 | carbide | 23 | 2 | 0.2 |
| 6282-1625 | carbide | 30 | 2 | 0.2 |
| 6282-1626 | carbide | 40 | 2 | 0.2 |
| 6282-1627 | carbide | 50 | 2 | 0.2 |
| 6282-1628 | carbide | 13 | 2 | 0.35 |
| 6282-1629 | carbide | 23 | 2 | 0.35 |
| 6282-1630 | carbide | 30 | 2 | 0.35 |
| 6282-1631 | carbide | 40 | 2 | 0.35 |
| 6282-1632 | carbide | 50 | 2 | 0.35 |

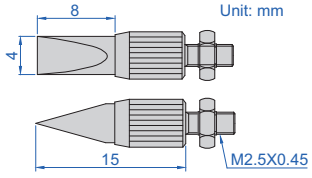
10

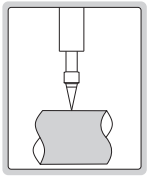
## KNIFE EDGE POINT

| Code | Material of measuring face |
|---|---|
| 6282-1001 | steel |



6282-1001



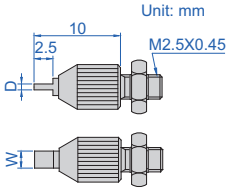



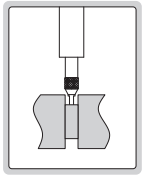
## BLADE POINTS

| Code | Material of measuring face | D | W |
|---|---|---|---|
| 6282-1801 | steel | 0.4mm | 2mm |
| 6282-1802 | steel | 0.6mm | 2mm |
| 6282-1803 | steel | 1mm | 4mm |



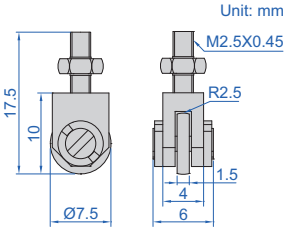
6282-1801



## ROLLER POINT

| Code | Material of measuring face |
|---|---|
| 6282-1901 | steel |






6282-1901

## EXTENSION RODS

(mm)

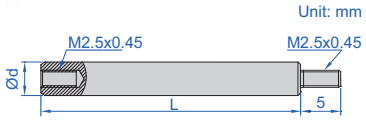
| Code | Material | L | Ød |
|---|---|---|---|
| 6282-2001 | steel | 10 | 4 |
| 6282-2002 | steel | 15 | 4 |
| 6282-2003 | steel | 20 | 4 |
| 6282-2004 | steel | 25 | 4 |
| 6282-2005 | steel | 30 | 4 |
| 6282-2006 | steel | 35 | 4 |
| 6282-2007 | steel | 40 | 4 |
| 6282-2008 | steel | 45 | 4 |
| 6282-2009 | steel | 50 | 4 |

(mm)

| Code | Material | L | Ød |
|---|---|---|---|
| 6282-2010 | steel | 55 | 4 |
| 6282-2011 | steel | 60 | 4 |
| 6282-2012 | steel | 65 | 4 |
| 6282-2013 | steel | 70 | 4 |
| 6282-2014 | steel | 75 | 4 |
| 6282-2015 | steel | 80 | 4 |
| 6282-2016 | steel | 90 | 4 |
| 6282-2017 | steel | 100 | 4 |
| 6282-2023 | steel | 150 | 5 |
| 6282-2024 | steel | 200 | 5 |
| 6282-2025 | steel | 300 | 5 |



6282-2010

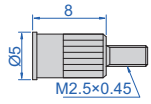



## POINT SET

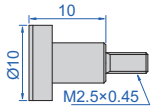


6282-S6

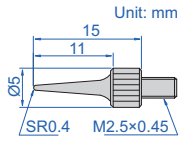
| Code | Material of measuring face |
|---|---|
| 6282-S6 | steel |



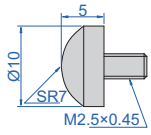

flat point



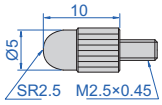

flat point



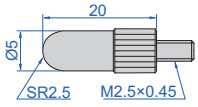

needle point




spherical point




shell type point



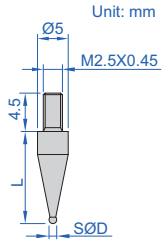

shell type point

10

## PRECISION BALL POINTS



6282-3101




- Material of measuring face: carbide
- Accuracy: ±2μm

(mm)

| Code | SØD | L |
|---|---|---|
| 6282-3101 | 1 | 12 |
| 6282-3102 | 1.5 | 12 |
| 6282-3103 | 2 | 12 |
| 6282-3104 | 2.5 | 12 |
| 6282-3105 | 3 | 12 |
| 6282-3106 | 3.5 | 12 |
| 6282-3107 | 4 | 12 |
| 6282-3108 | 4.5 | 12 |
| 6282-3109 | 5 | 12 |
| 6282-3110 | 5.5 | 12 |
| 6282-3111 | 6 | 12 |
| 6282-3112 | 6.5 | 12 |

(mm)

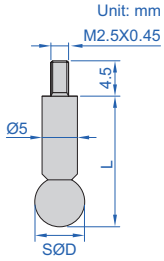
| Code | SØD | L |
|---|---|---|
| 6282-3113 | 1 | 20 |
| 6282-3114 | 1.5 | 20 |
| 6282-3115 | 2 | 20 |
| 6282-3116 | 2.5 | 20 |
| 6282-3117 | 3 | 20 |
| 6282-3118 | 3.5 | 20 |
| 6282-3119 | 4 | 20 |
| 6282-3120 | 4.5 | 20 |
| 6282-3121 | 5 | 20 |
| 6282-3122 | 5.5 | 20 |
| 6282-3123 | 6 | 20 |
| 6282-3124 | 6.5 | 20 |

(mm)

| Code | SØD | L |
|---|---|---|
| 6282-3125 | 1 | 30 |
| 6282-3126 | 1.5 | 30 |
| 6282-3127 | 2 | 30 |
| 6282-3128 | 2.5 | 30 |
| 6282-3129 | 3 | 30 |
| 6282-3130 | 3.5 | 30 |
| 6282-3131 | 4 | 30 |
| 6282-3132 | 4.5 | 30 |
| 6282-3133 | 5 | 30 |
| 6282-3134 | 5.5 | 30 |
| 6282-3135 | 6 | 30 |
| 6282-3136 | 6.5 | 30 |



6282-3206




- Material of measuring face: carbide
- Accuracy: ±2μm

(mm)

| Code | SØD | L |
|---|---|---|
| 6282-3201 | 7 | 20 |
| 6282-3202 | 7.5 | 20 |
| 6282-3203 | 8 | 20 |
| 6282-3204 | 8.5 | 20 |
| 6282-3205 | 9 | 20 |
| 6282-3206 | 9.5 | 20 |
| 6282-3207 | 10 | 20 |
| 6282-3208 | 10.5 | 20 |
| 6282-3209 | 11 | 20 |
| 6282-3210 | 12 | 20 |
| 6282-3211 | 13 | 20 |
| 6282-3212 | 14 | 20 |

(mm)

| Code | SØD | L |
|---|---|---|
| 6282-3213 | 7 | 30 |
| 6282-3214 | 7.5 | 30 |
| 6282-3215 | 8 | 30 |
| 6282-3216 | 8.5 | 30 |
| 6282-3217 | 9 | 30 |
| 6282-3218 | 9.5 | 30 |
| 6282-3219 | 10 | 30 |
| 6282-3220 | 10.5 | 30 |
| 6282-3221 | 11 | 30 |
| 6282-3222 | 12 | 30 |
| 6282-3223 | 13 | 30 |
| 6282-3224 | 14 | 30 |



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## SPINDLE LIFT KNOB

- For dial/digital indicators with spindle diameter Ø4.5mm or Ø5mm

| Code |
|---|
| 7332 |

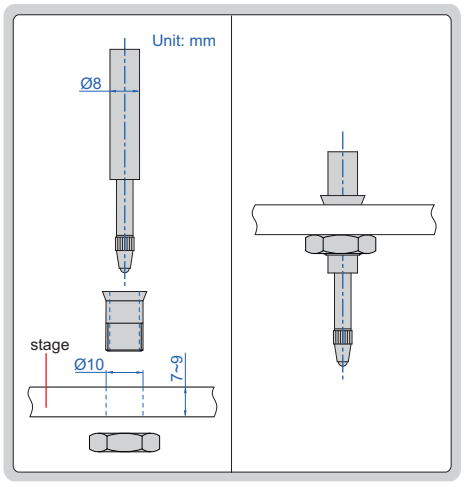




7332

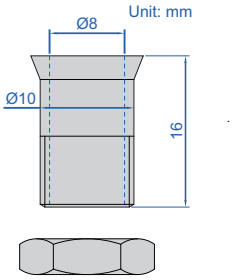
## SHAFT SLEEVE








7333




- For dial indicators and probes with shaft diameter Ø8mm

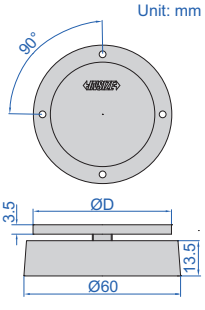
| Code |
|---|
| 7333 |

## MAGNETIC BACKS

| Code | ØD | For digital/dial indicators |
|---|---|---|
| 7331-M1 | 51.5mm | 2103 |
| | | 2104 |
| | | 2108 |
| | | 2109 |
| | | 2112 |
| | | 2115 |
| | | 2116 |
| | | 2117 |
| | | 2118 |
| | | 2137 |
| | | 2138 |
| | | 2139 |
| | | 2501 |
| | | 2301 |
| | | 2302 |
| | | 2308 |
| | | 2309 (except 2309-30, 2309-30F) |
| | | 2313 |
| | | 2314 |
| | | 2316 |
| | | 2324 |
| | | 2801 |
| 7331-M2 | 54mm | 2318 |




7331-M2








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## FLAT BACKS

| Code | For digital/ dial indicators |
|---|---|
| **7330-F1** | 2311 |
| **7330-F2** | 2301<br>2302<br>2308<br>2309 (except 2309-30, 2309-30F)<br>2313<br>2314<br>2316<br>2324<br>2801 |
| **7330-F5** | 2103<br>2104<br>2108<br>2109<br>2112<br>2115<br>2116<br>2117<br>2118<br>2138<br>2139<br>2501<br>2137 |



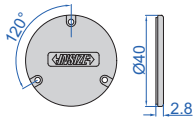
**7330-F2**



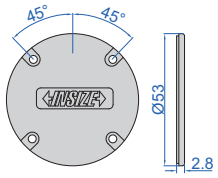
**7330-F8**

| Code | For digital/ dial indicators |
|---|---|
| **7330-F6** | 2318<br>2307<br>2326 |
| **7330-F10** | 2310 |

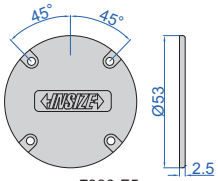
Unit: mm



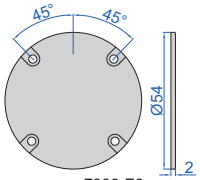

7330-F1




7330-F2 and 7330-F10




7330-F5




7330-F6



## LUG BACKS

| Code | For digital/ dial indicators |
|---|---|
| **7330-L1** | 2311 |
| **7330-L2** | 2301<br>2302<br>2308<br>2309 (except 2309-30, 2309-30F)<br>2313<br>2314<br>2316<br>2324<br>2801 |
| **7330-L5** | 2103<br>2104<br>2108<br>2109<br>2112<br>2115<br>2116<br>2117<br>2118<br>2138<br>2139<br>2501<br>2137 |



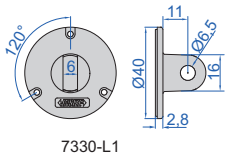
**7330-L2**



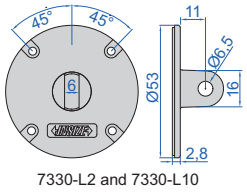
**7330-L8**

| Code | For digital/ dial indicators |
|---|---|
| **7330-L6** | 2318<br>2307<br>2326 |
| **7330-L10** | 2310 |
| **7330-L11** | 2114 |

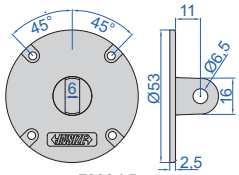
Unit: mm



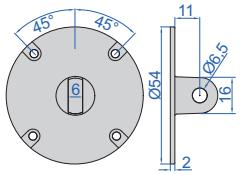

7330-L1



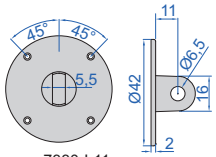

7330-L2 and 7330-L10




7330-L5




7330-L6




7330-L11

## MEASURING TOOLS DYNAMOMETERS



check the measuring force of dial test indicators



check the measuring force of dial indicators



ISF-DGD15

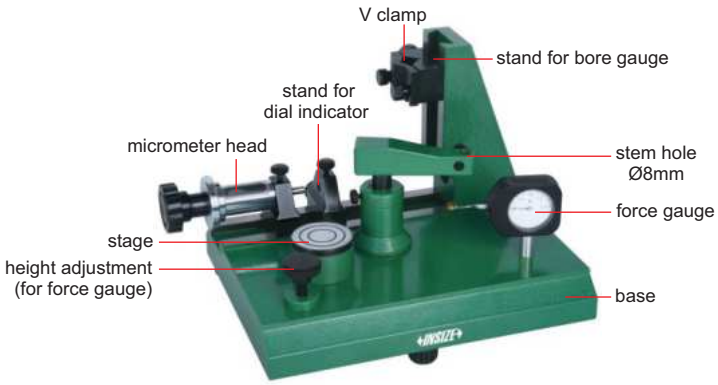
REFER TO PAGE 187 FOR DETAILS

## DIAL INDICATOR TESTER CODE 2396-25A

ATTENTION: NOT SUITABLE FOR DIAL INDICATORS WITH GRADUATION 0.001MM

VIDEO

- To calibrate dial indicators, test indicators and dial bore gauges
- Dimension: 270x210x205mm
- Weight: 11kg




2396-25A

**Micrometer head**

| Range | Sampling interval | Accuracy | Hysteresis |
|---|---|---|---|
| 0-25mm | 0.1mm | 4μm (0-25mm), 3μm (0-10mm), 2μm (0-1mm) | 1μm |

**Force gauge**

| Range | Graduation | Accuracy |
|---|---|---|
| 0-1.6N | 0.05N | ±5% (of load capacity) |

**Stage**

| Diameter | Flatness | Roughness |
|---|---|---|
| 50mm | 1μm | 0.05μm |



inspect accuracy of dial indicators (range 0-25mm)



inspect accuracy of dial bore gauges (range 6-450mm)



inspect accuracy of test indicators



check force of dial indicators



check repeatability of dial indicators



check the effect of lateral force on accuracy of dial indicators (half round gauge block is needed)



check the effect of lateral force on accuracy of test indicators (half round gauge block is needed)

**Half round gauge block (optional)**

| Code | Parallelism |
|---|---|
| **2396-block** | 1μm |



half round gauge block code **2396-block** (**optional**)

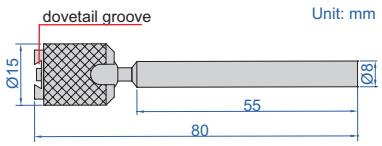


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## DIAL TEST INDICATOR UNIVERSAL HOLDER



6297-1





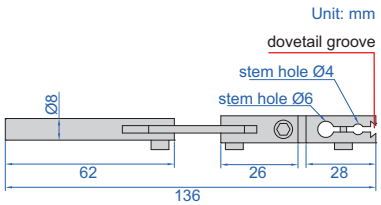

| Code |
|---|
| 6297-1 |

- Set the indicators at the desired attitude to the workpiece

## DIAL TEST INDICATOR HOLDER



6296-1






| Code |
|---|
| 6296-1 |

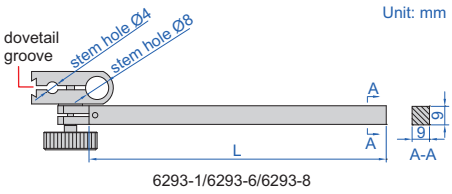
- Supplied with hex key

10

## DIAL TEST INDICATOR HOLDERS



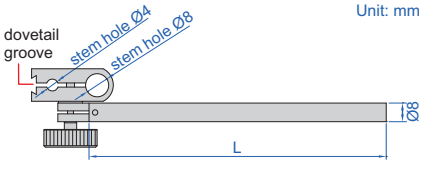
6293-1




6293-1/6293-6/6293-8



6293-2




6293-2

| Code | Stem section | Stem length (L) |
|---|---|---|
| 6293-1 | 9x9mm | 100mm |
| 6293-6 | 9x9mm | 50mm |
| 6293-8 * | 9x9mm | 200mm |
| 6293-2 | Ø8mm | 115mm |

*Only apply for 0.01mm dial test indicator

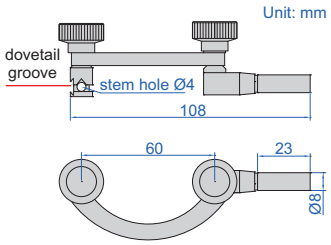


## DIAL TEST INDICATOR HOLDER

- Can be used with dial test indicators



6291-1



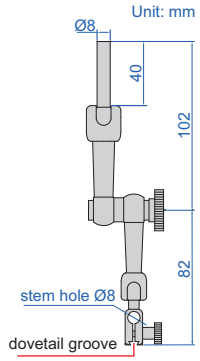

| Code |
| --- |
| 6291-1 |

## DIAL TEST INDICATOR HOLDER

- Can be used with dial test indicators



6295-1A



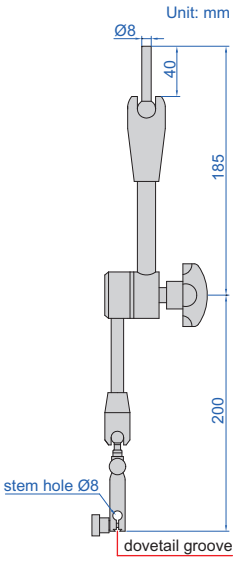

| Code |
| --- |
| 6295-1A |

## DIAL INDICATOR HOLDER

- Can be used with dial test indicators or dial indicators



6294-1A




| Code |
| --- |
| 6294-1A |

## HYDRAULIC UNIVERSAL MAGNETIC STANDS



6229-60



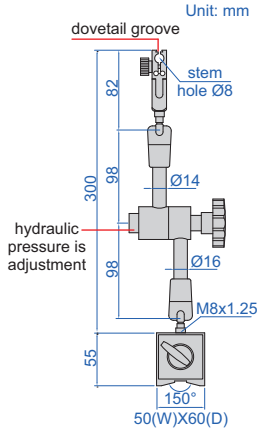
6229-80



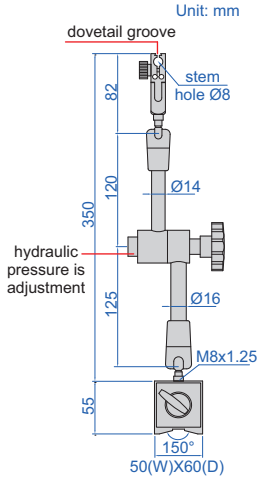
6229-100



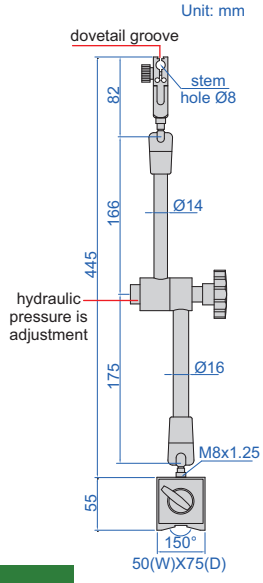
6229-101



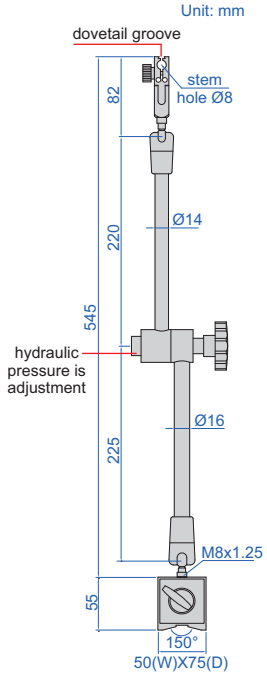

6229-60




6229-80




6229-100

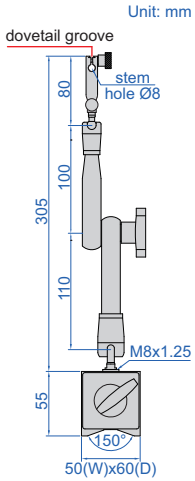



6229-101

- Hydraulic pressure is adjustment
- For digital/dial indicators and dial test indicators

| Code | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|
| **6229-60** | 60kgf | Ø8mm | with fine adjustment and dovetail groove |
| **6229-80** | 80kgf | Ø8mm | with fine adjustment and dovetail groove |
| **6229-100** | 100kgf | Ø8mm | with fine adjustment and dovetail groove |
| **6229-101** | 100kgf | Ø8mm | with fine adjustment and dovetail groove |

## LARGE LOCKING FORCE MAGNETIC STAND





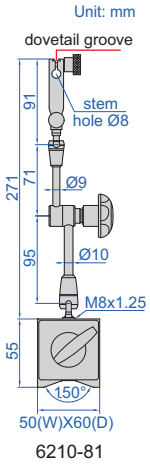

6219-80

- For digital/dial indicators and dial test indicators

| Code | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|
| **6219-80** | 80kgf | Ø8mm | with fine adjustment and dovetail groove |

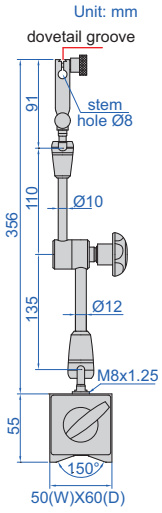
## UNIVERSAL MAGNETIC STANDS

POPULAR MODEL



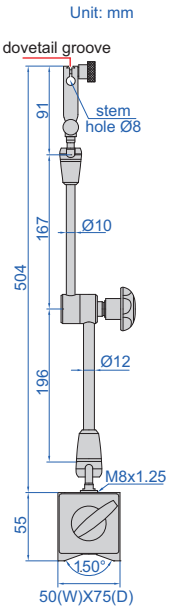
6210-81


**6210-81**



6210-80


**6210-80**



6210-100


**6210-100**

- For digital/dial indicators and dial test indicators

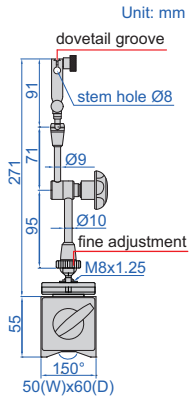
| Code | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|
| **6210-81** | 80kgf | Ø8mm | with fine adjustment and dovetail groove |
| **6210-80** | 80kgf | Ø8mm | with fine adjustment and dovetail groove |
| **6210-100** | 100kgf | Ø8mm | with fine adjustment and dovetail groove |

## MAGNETIC STAND WITH TWO FINE ADJUSTMENTS

- With two fine adjustments on the head and on the base
- For digital/dial indicators and dial test indicators



**6272-80**




| Code | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|
| **6272-80** | 80kgf | Ø8mm | with two fine adjustments and dovetail groove |



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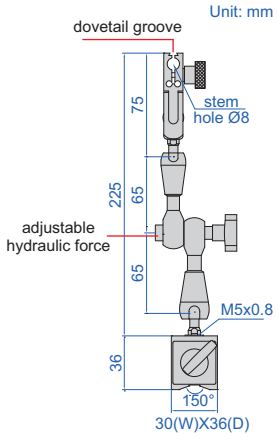
## HYDRAULIC MINI MAGNETIC STAND

ATTENTION: FOR DIAL TEST INDICATORS ONLY

- For dial test indicators
- With fine adjustment and dovetail groove
- Adjustable hydraulic force



6228-40




| Code | Magnetic force | Applicable holding stem |
|---|---|---|
| 6228-40 | 40kgf | Ø8mm |

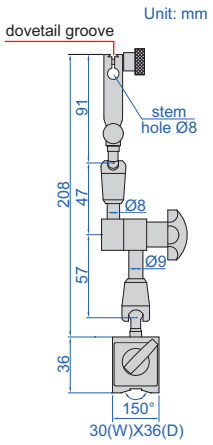
## MINI MAGNETIC STAND

ATTENTION: FOR DIAL TEST INDICATORS ONLY

- For dial test indicators
- With fine adjustment and dovetail groove



6224-40



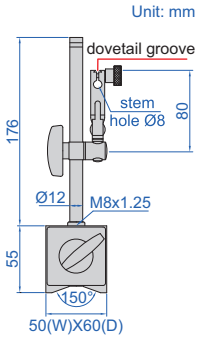

| Code | Magnetic force | Applicable holding stem |
|---|---|---|
| 6224-40 | 40kgf | Ø8mm |

## MAGNETIC STAND (FOR 0.001MM DIAL AND TEST INDICATORS)

- For 0.001mm and 0.01mm dial and test indicators



6221-80




| Code | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|
| 6221-80 | 80kgf | Ø8mm | with fine adjustment and dovetail groove |

## MAGNETIC STANDS

POPULAR MODEL



6200-60



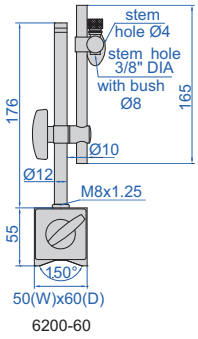
6201-60



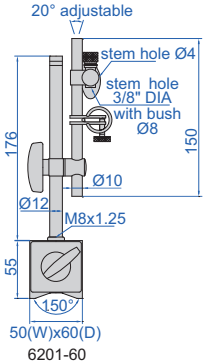
6202-80



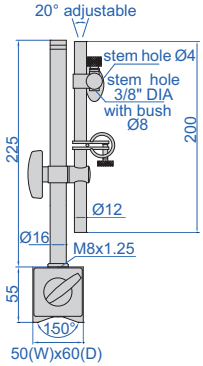
6202-100



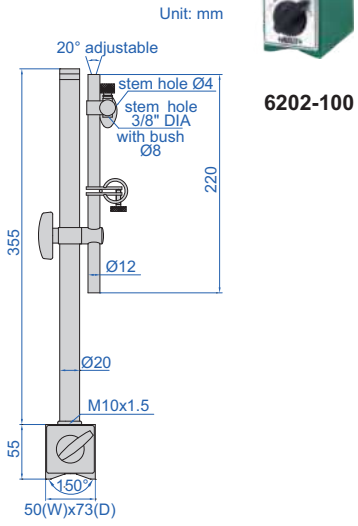

6200-60




6201-60




6202-80




6202-100

10

- For digital/dial indicators and dial test indicators

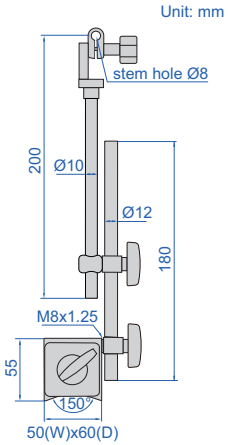
| Code | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|
| **6200-60** | 60kgf | Ø8mm, Ø4mm, 3/8" DIA | without fine adjustment |
| **6201-60** | 60kgf | Ø8mm, Ø4mm, 3/8" DIA | with fine adjustment |
| **6202-80** | 80kgf | Ø8mm, Ø4mm, 3/8" DIA | with fine adjustment |
| **6202-100** | 100kgf | Ø8mm, Ø4mm, 3/8" DIA | with fine adjustment |

## MAGNETIC STAND

- For digital/dial indicators and dial test indicators



6231-60

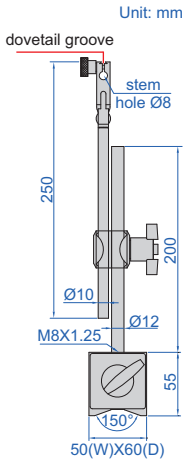



| Code | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|
| **6231-60** | 60kgf | Ø8mm | without fine adjustment or dovetail groove |



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## MAGNETIC STAND



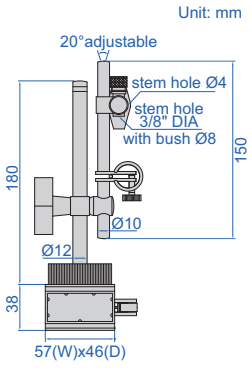



6216-80

- For digital/dial indicators and dial test indicators

| Code | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|
| 6216-80 | 80kgf | Ø8mm | with fine adjustment and dovetail groove |

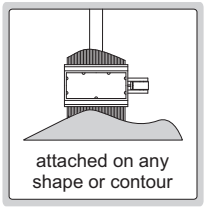
## MAGNETIC STAND FOR UNEVEN SURFACES






6215-60

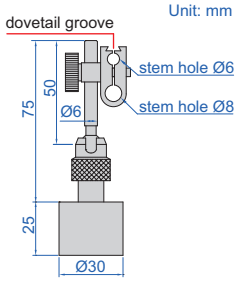
- For digital/dial indicators and dial test indicators
- With fine adjustment




| Code | Magnetic force | Applicable holding stem |
|---|---|---|
| 6215-60 | 60kgf | Ø8mm, Ø4mm, 3/8" DIA |

10

## MINI MAGNETIC STAND






6211-10

ATTENTION: FOR DIAL TEST INDICATORS ONLY

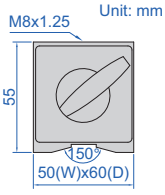
- For dial test indicators
- With dovetail groove

| Code | Magnetic force | Applicable holding stem |
|---|---|---|
| 6211-10 | 10kgf | Ø6mm, Ø8mm |

## MAGNETIC BASES



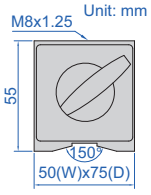
6212-80




6212-80



6212-100




6212-100

| Code | Magnetic force |
|---|---|
| 6212-80 | 80kgf |
| 6212-100 | 100kgf |

## FLEX ARM MAGNETIC STAND

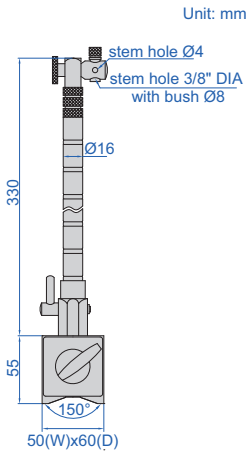
ATTENTION: FOR DIAL TEST INDICATORS ONLY

- For dial test indicators

| Code | Magnetic force | Applicable holding stem |
|---|---|---|
| 6207-80A | 80kgf | Ø8mm, Ø4mm, 3/8" DIA |



6207-80A




## VACUUM STAND

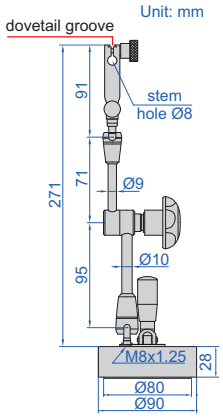


- Suitable for granite surface plates or cast iron surface plates
- For digital/dial indicators and dial test indicators

| Code | Diameter of vacuum disc | Vacuum force | Applicable holding stem | Remark |
|---|---|---|---|---|
| 6217-B | Ø80mm | 80kgf | Ø8mm | with fine adjustment and dovetail groove |



6217-B



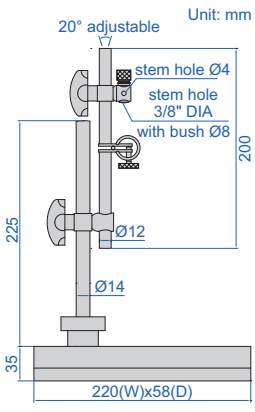

## UNIVERSAL STAND

- For digital/dial indicators and dial test indicators
- With fine adjustment

| Code | Applicable holding stem |
|---|---|
| 6214-A | Ø8mm, Ø4mm, 3/8" DIA |



6214-A



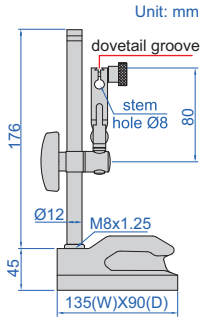
## DIAL INDICATOR STAND (FOR 0.001MM DIAL AND TEST INDICATORS)

- Non-magnetic and hardened base
- Suitable for granite surface plates or cast iron surface plates
- For 0.001mm and 0.01mm dial and test indicators

| Code | Applicable holding stem | Remark |
|---|---|---|
| 6230-60 | Ø8mm | with fine adjustment and dovetail groove |



6230-60




## DIAL INDICATOR STANDS (NON-MAGNETIC)





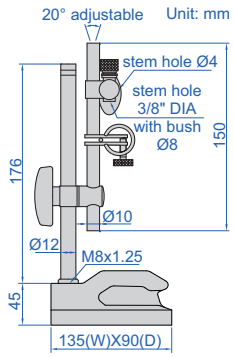
6226-60



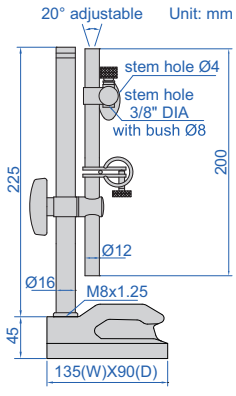
6226-80



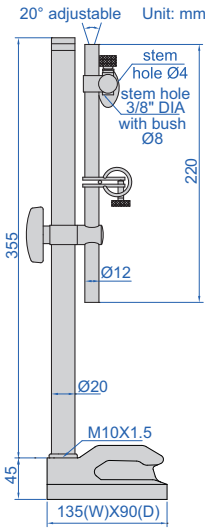
6226-100




6226-60




6226-80




6226-100

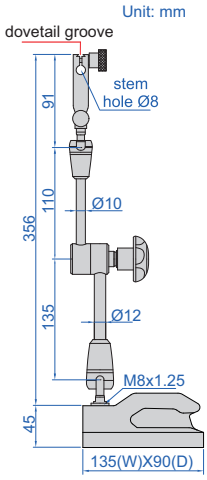
| Code | Applicable holding stem | Remark |
|---|---|---|
| 6226-60 | Ø8mm, Ø4mm, 3/8" DIA | with fine adjustment |
| 6226-80 | Ø8mm, Ø4mm, 3/8" DIA | with fine adjustment |
| 6226-100 | Ø8mm, Ø4mm, 3/8" DIA | with fine adjustment |

- Hardened base
- Suitable for granite surface plates and cast iron surface plates
- For digital/dial indicators and dial test indicators

## UNIVERSAL DIAL INDICATOR STANDS (NON-MAGNETIC)



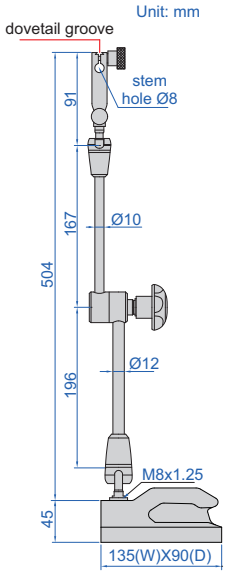
6225-80




6225-80



6225-100




6225-100

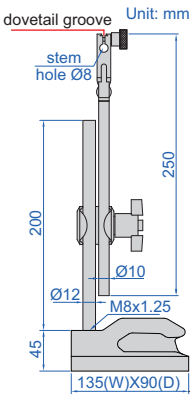
- Hardened base
- Suitable for granite surface plates and cast iron surface plates
- For digital/dial indicators and dial test indicators

| Code | Applicable holding stem | Remark |
|---|---|---|
| **6225-80** | Ø8mm | with fine adjustment and dovetail groove |
| **6225-100** | Ø8mm | with fine adjustment and dovetail groove |

## DIAL INDICATOR STAND (NON-MAGNETIC)



6227-80

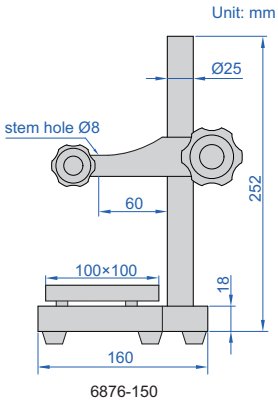



- Hardened base
- Suitable for granite surface plates and cast iron surface plates
- For digital/dial indicators and dial test indicators

| Code | Applicable holding stem | Remark |
|---|---|---|
| **6227-80** | Ø8mm | with fine adjustment and dovetail groove |

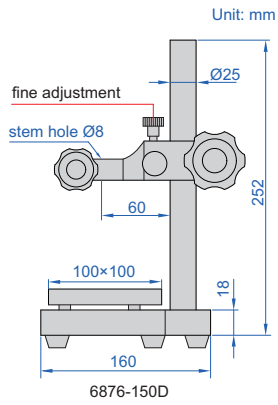
## DIAL INDICATOR STANDS









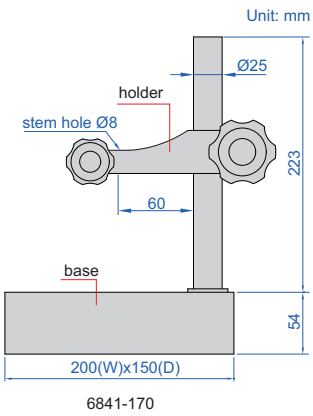

| Code | Applicable holding stem | Anvil | Remark |
|---|---|---|---|
| **6876-150** | Ø8mm | ceramic, plain, flatness 1.5μm | without fine adjustment |
| **6876-150D** | Ø8mm | ceramic, plain, flatness 1.5μm | with fine adjustment, fine adjustment range 3mm |

- Vertical travel of holder: 150mm
- Ceramic anvil
- Supplied with dust cover

## GRANITE DIAL INDICATOR STANDS (BASIC TYPE)

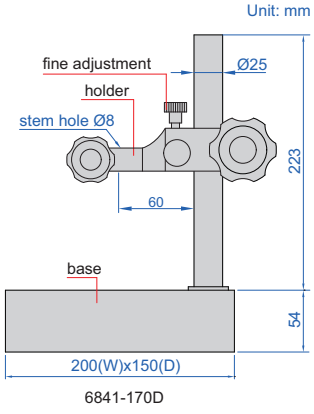
POPULAR MODEL









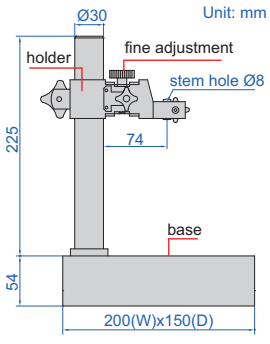

| Code | Applicable holding stem | Base | Remark |
|---|---|---|---|
| **6841-170** | Ø8mm | flatness 2.5μm | without fine adjustment |
| **6841-170D** | Ø8mm | flatness 2.5μm | with fine adjustment, fine adjustment range 3mm |

- Vertical travel of holder: 170mm
- Supplied with dust cover

## GRANITE DIAL INDICATOR STAND

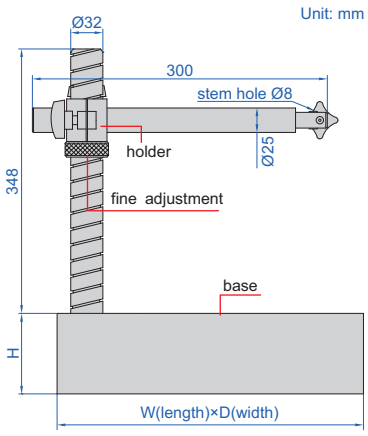
- Vertical travel of holder: 150mm
- Fine adjustment range: 2mm
- Supplied with dust cover




| Code | Applicable holding stem | Base |
|---|---|---|
| **6866-150** | Ø8mm | flatness 2.5μm |

## GRANITE DIAL INDICATOR STANDS






6867-250



6867-400

- Vertical travel of holder: 250mm
- Fine adjustment range: entire stroke
- Supplied with dust cover

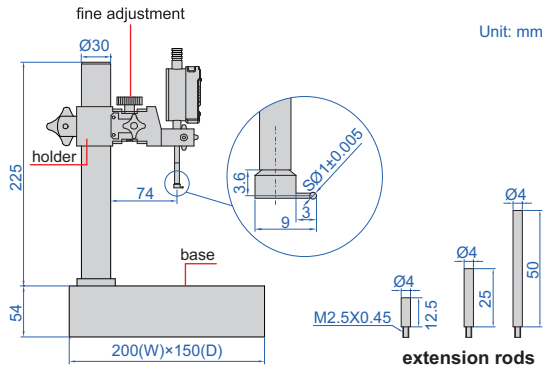
| Code | Applicable holding stem | W | D | H | Base |
|---|---|---|---|---|---|
| **6867-250** | Ø8mm | 300mm | 300mm | 75mm | flatness 2.8μm |
| **6867-400** | Ø8mm | 400mm | 300mm | 100mm | flatness 3μm |

10

## DIGITAL GROOVE MEASUREMENT STANDS

DATA OUTPUT

VIDEO

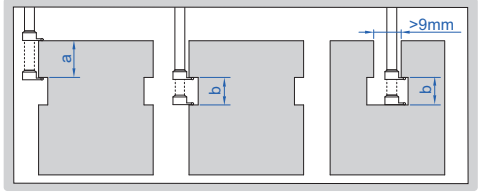





6870-150

- Button function: on/off, zero, mm/inch, measuring direction change, data preset, absolute/incremental measurement
- Vertical travel of holder: 150mm
- Fine adjustment range: 2mm
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Supplied with extension rods: 12.5mm (1pc), 25mm (1pc), 50mm (1pc)
- Supplied with groove point and dust cover
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21

measure width (b) and depth (a) of groove

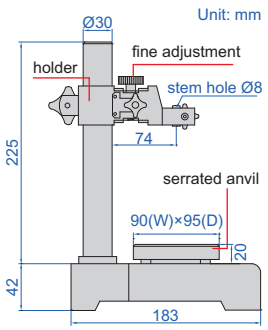



| Code | Digital indicator stroke | Digital indicator resolution | Accuracy | Applicable holding stem | Base |
|---|---|---|---|---|---|
| **6870-150** | 12.7mm/0.5" | 0.01mm/0.0005" | ±20μm | Ø8mm | flatness 2.5μm |
| **6870-1501** | 12.7mm/0.5" | 0.001mm/0.00005" | ±5μm | Ø8mm | flatness 2.5μm |



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## DIAL INDICATOR STANDS







**6863-150**



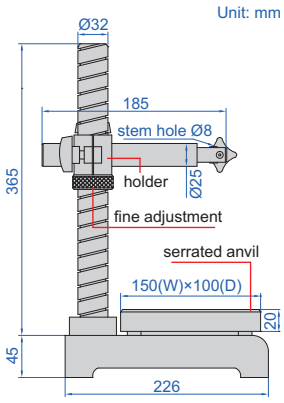

**6863-150T**

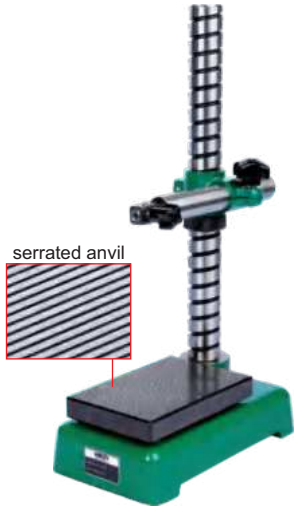
- Vertical travel of holder: 150mm
- Fine adjustment range: 2mm
- Supplied with dust cover

| Code | Applicable holding stem | Anvil |
|---|---|---|
| **6863-150** | Ø8mm | steel (hardness HRC60±2), serrated, flatness 1.5μm |
| **6863-150T** | Ø8mm | ceramic, serrated, flatness 1.5μm |

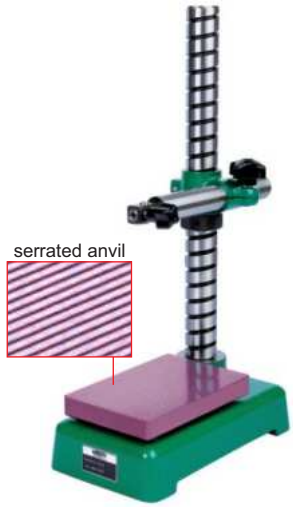


## DIAL INDICATOR STANDS




**6864-250**




**6864-250T**

- Vertical travel of holder: 250mm
- Fine adjustment range: entire stroke
- Supplied with dust cover

| Code | Applicable holding stem | Anvil |
|---|---|---|
| **6864-250** | Ø8mm | steel (hardness HRC60±2), serrated, flatness 1.5μm |
| **6864-250T** | Ø8mm | ceramic, serrated, flatness 1.5μm |

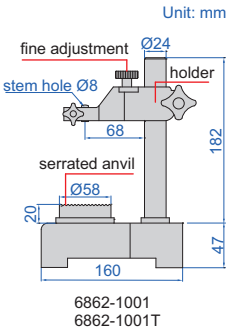
## DIAL INDICATOR STANDS



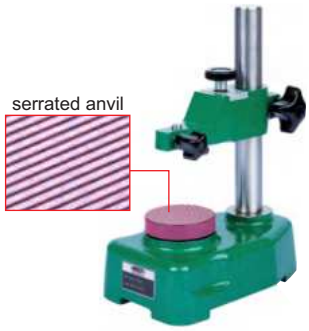

6862-1001



6862-1002



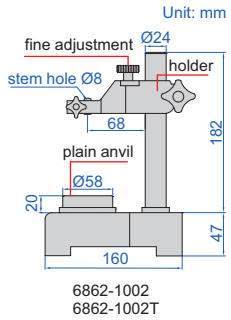

6862-1001
6862-1001T




6862-1001T



6862-1002T




6862-1002
6862-1002T

10

- Vertical travel of holder: 100mm
- Fine adjustment range: 2mm
- Supplied with dust cover

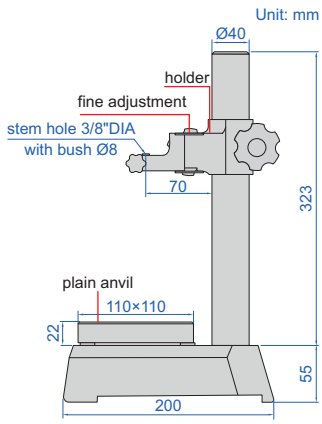
| Code | Applicable holding stem | Anvil |
|---|---|---|
| **6862-1001** | Ø8mm | steel (hardness HRC60±2), serrated, flatness 1.5μm |
| **6862-1002** | Ø8mm | steel (hardness HRC60±2), plain, flatness 1.5μm |
| **6862-1001T** | Ø8mm | ceramic, serrated, flatness 1.5μm |
| **6862-1002T** | Ø8mm | ceramic, plain, flatness 1.5μm |

## DIAL INDICATOR STAND

- Vertical travel of holder: 250mm
- Fine adjustment range: 1mm
- Supplied with dust cover



6861-250




| Code | Applicable holding stem | Anvil |
|---|---|---|
| **6861-250** | Ø8mm, 3/8" | ceramic, plain, flatness 1.5μm |

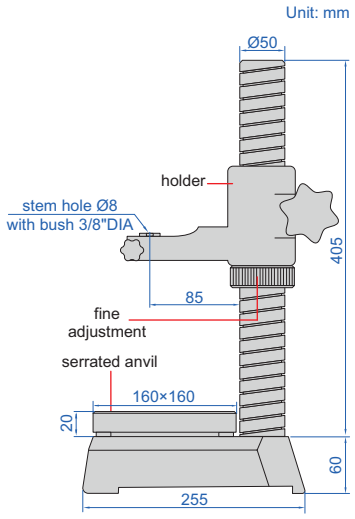


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## HEAVY DUTY DIAL INDICATOR STAND



6868-300




- Vertical travel of holder: 300mm
- Fine adjustment range: entire stroke
- Supplied with dust cover

| Code | Applicable holding stem | Anvil |
|---|---|---|
| **6868-300** | Ø8mm, 3/8" | steel (hardness HRC60±2), serrated, flatness 1.5μm |

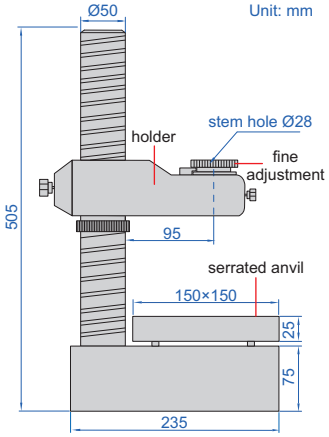


## HEAVY DUTY DIAL INDICATOR STAND

**digital/dial indicator is optional**



6877-300



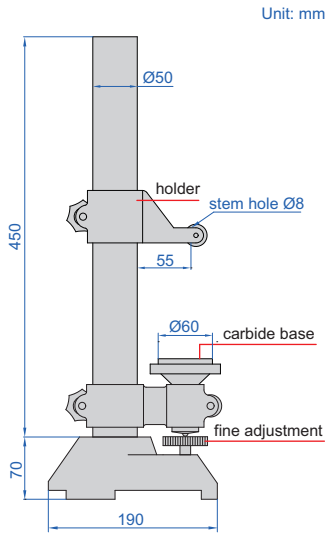

- Vertical travel of holder: 300mm
- Holder fine adjustment range: entire stroke
- Indicator fine adjustment range: 5mm
- Optional accessory: high precision digital indicators (code **2140** series, **2150** series), gauge blocks (**4101** series, for zero setting)

| Code | Applicable holding stem | Anvil |
|---|---|---|
| **6877-300** | Ø28mm | steel (hardness HRC60±2), serrated, flatness 2μm |

## HEAVY DUTY DIAL INDICATOR STAND

VIDEO

- Vertical travel of holder: 300mm
- Fine adjustment range: 5mm
- Carbide base
- Supplied with dust cover
- Optional accessory:
  holder with stem hole Ø28 (code **6869-D28**)






**6869-300**

| Code | Applicable holding stem | Base |
|---|---|---|
| 6869-300 | Ø8mm | plain, flatness 1μm, carbide |

## DIAL INDICATOR STAND

GAUGE BLOCKS ARE NEEDED FOR ZERO SETTING

VIDEO



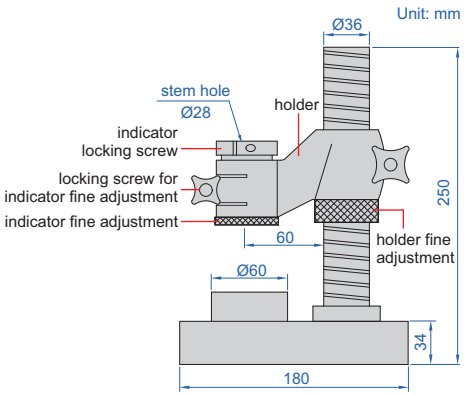
locating fork for workpieces (included)




**digital/dial indicator is optional**




**6845-100**




- Vertical travel of holder: 100mm
- Holder fine adjustment range: entire stroke
- Indicator fine adjustment range: 3mm
- Optional accessory: Ø28mm/Ø8mm bush (code **6843-B8**), 0.001mm digital/dial indicators, high precision digital indicators (code **2140** series, **2150** series), gauge blocks (**4101** series, for zero setting)

| Code | Applicable holding stem | Anvil |
|---|---|---|
| 6845-100 | Ø28mm | serrated, flatness 1μm |

**Ø28mm/Ø8mm bush (optional)**



| Code |
|---|
| 6843-B8 |

application



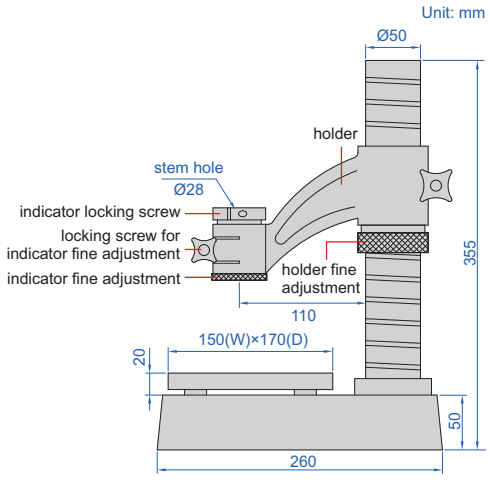
# DIAL INDICATOR STAND

GAUGE BLOCKS ARE NEEDED FOR ZERO SETTING

VIDEO

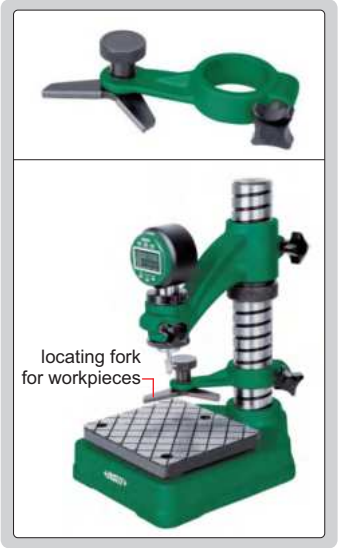



6846-140




10

locating fork for workpieces (included)




- Vertical travel of holder: 140mm
- Holder fine adjustment range: entire stroke
- Indicator fine adjustment range: 3mm
- Optional accessory: Ø28mm/Ø8mm bush (code **6843-B8**), 0.001mm digital/dial indicators, high precision digital indicators (code **2140** series, **2150** series), gauge blocks (**4101** series, for zero setting)

| Code | Applicable holding stem | Anvil |
|---|---|---|
| 6846-140 | Ø28mm | grid, flatness 1μm |

**Ø28mm/Ø8mm bush (optional)**



| Code |
|---|
| 6843-B8 |

application



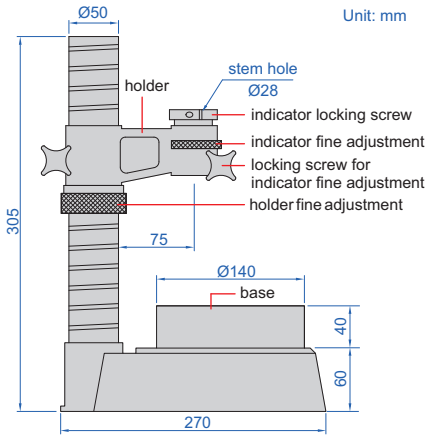
# DIAL INDICATOR STAND

GAUGE BLOCKS ARE NEEDED FOR ZERO SETTING

VIDEO



digital/dial indicator is optional




**6842-150**

locating fork for workpiece (included)



rotary lever probe (included)



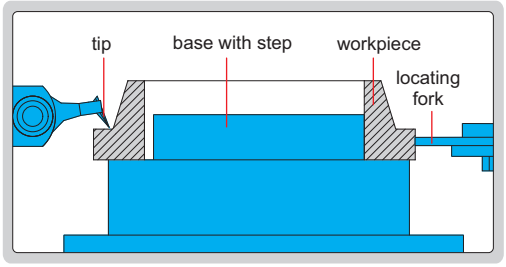
base with step (included)



- Vertical travel of holder: 180mm
- Holder fine adjustment range: entire stroke
- Indicator fine adjustment range: 10mm
- Optional accessory: Ø28mm/Ø8mm bush (code **6843-B8**), 0.001mm digital/dial indicators, high precision digital indicators (code **2140** series, **2150** series), gauge blocks (**4101** series, for zero setting)

| Code | Applicable holding stem | Base |
|---|---|---|
| **6842-150** | Ø28mm | flatness 2μm |

the tip of rotary lever probe can reach narrow areas



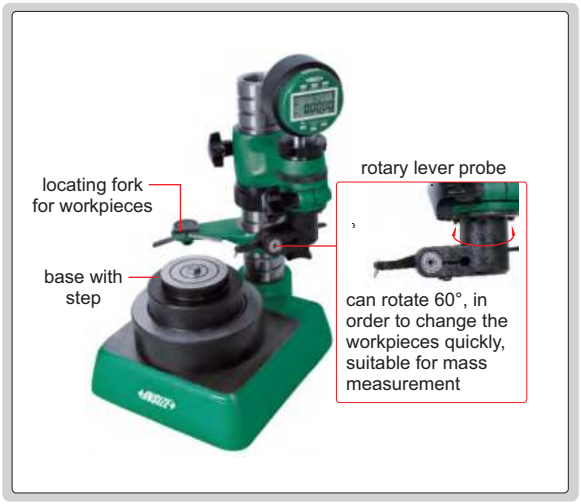

**Ø28mm/Ø8mm bush (optional)**



| Code |
|---|
| **6843-B8** |

application






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# TRANSFER STANDS

application



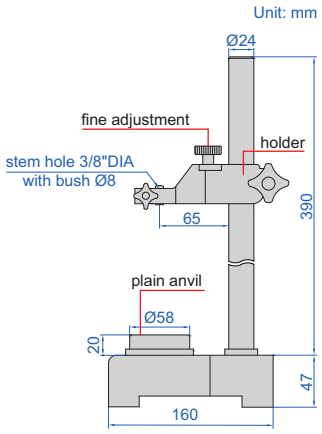
rigid construction, designed to make comparison height measurement (set zero with gauge block then measure height of workpiece) with dial indicators or digital indicators (variation of measuring force is high)



**6865-300**



**6865-300T**




- Vertical travel of holder: 335mm
- Fine adjustment range: 2mm
- Supplied with dust cover

| Code | Applicable holding stem | Anvil |
|---|---|---|
| **6865-300** | 3/8"DIA, Ø8mm | steel (hardness HRC60±2), plain, flatness 1.5μm |
| **6865-300T** | 3/8"DIA, Ø8mm | ceramic, plain, flatness 1.5μm |



REFER TO PAGE 102-104 FOR DETAILS

# DIGITAL HEIGHT GAUGES



**1155-505**



**1157-501**



**1158-100**

# 11 INDICATING MEASURING TOOLS



Internal Caliper Gauges
Page 301-306



External Caliper Gauges
Page 306-307



Thickness Gauges
Page 308-315



Geomembrane
Thickness Gauges
Page 315



Rubber Thickness Gauges
Page 316-317



Leather Thickness Gauges
Page 318



Tube Thickness Gauges
Page 318-320



Thread/Lead Screw Pitch
Diameter Snap Gauges
Page 320



Snap Gauges
Page 321-323



Step And Gap Gauges
Page 324



Mini Digital Height Gauges
Page 324-325



Height Gauges
Page 325-326



Crankshaft Testers
Page 326



Perpendicularity/Parallelism
Comparison Gauges
Page 327



Thread Pitch Measuring
Instruments
Page 329-330



Buttress Thread
Run-out Gauges
Page 330



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# INDICATING MEASURING TOOLS

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Thread Height Measuring Instruments
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Thread Crest Diameter Measuring Instruments
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Groove Diameter Measuring Instruments
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Groove Width Measuring Instruments
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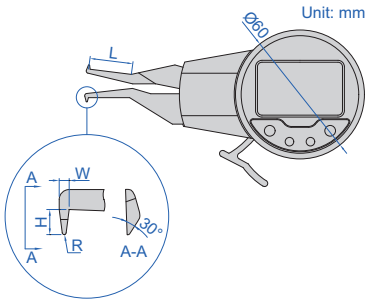
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# DIGITAL INTERNAL CALIPER GAUGES

DATA OUTPUT

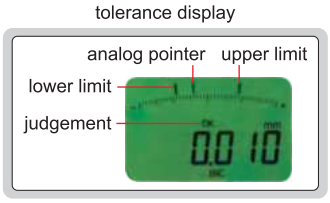


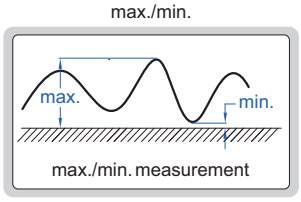
2121-15




- Resolution: 0.005mm/0.0002"
- Reading in digit and analog
- Display can be rotated by 170°
- Button function: tolerance Go and No-Go display, data preset, max./min. measurement, data holding, inch/metric conversion, absolute/incremental measurement
- CR2032 battery, automatic power off
- Data output
- Optional accessory:
  wireless transmitter code **7315-30** (receiver is needed) page 5,
  bluetooth transmitter code **7214-30** page 11,
  data output cable code **7302-30** page 20




(mm)

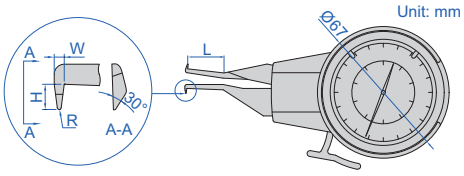
| Code | Range | Accuracy | Repeatability | L | H | W | R |
|---|---|---|---|---|---|---|---|
| **2121-15** | 5-15mm/0.2-0.6" | ±0.03mm | 0.01mm | 20 | 2 | 1.5 | R0.3 |
| **2121-25** | 5-25mm/0.2-1.0" | ±0.03mm | 0.01mm | 35 | 1.5 | 1.0 | R0.3 |
| **2121-31** | 10-30mm/0.4-1.2" | ±0.03mm | 0.01mm | 55 | 5.5 | 2.5 | R0.5 |
| **2121-41** | 20-40mm/0.8-1.6" | ±0.03mm | 0.01mm | 80 | 6.0 | 3.0 | R0.5 |
| **2121-51** | 30-50mm/1.2-2.0" | ±0.03mm | 0.01mm | 80 | 8.0 | 3.0 | R0.5 |
| **2121-61** | 40-60mm/1.6-2.4" | ±0.03mm | 0.01mm | 80 | 8.0 | 3.0 | R0.5 |



# INTERNAL DIAL CALIPER GAUGES



2222-15

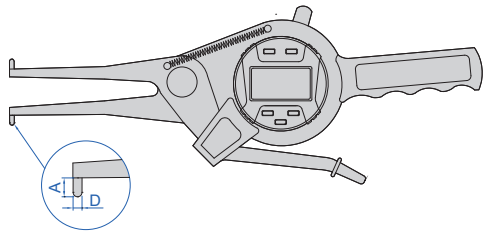



(mm)

| Code | Range | Graduation | Accuracy | L | H | W | R |
|---|---|---|---|---|---|---|---|
| **2222-15** | 5-15mm | 0.01mm | ±0.03mm | 20 | 2 | 1.5 | R0.3 |
| **2222-25** | 5-25mm | 0.01mm | ±0.03mm | 35 | 1.5 | 1.0 | R0.3 |
| **2222-301** | 10-30mm | 0.01mm | ±0.03mm | 55 | 5.5 | 2.5 | R0.5 |
| **2222-401** | 20-40mm | 0.01mm | ±0.03mm | 80 | 6.0 | 3.0 | R0.5 |
| **2222-501** | 30-50mm | 0.01mm | ±0.03mm | 80 | 8.0 | 3.0 | R0.5 |
| **2222-60** | 40-60mm | 0.01mm | ±0.03mm | 80 | 8.0 | 3.0 | R0.5 |

DATA OUTPUT

## DIGITAL INTERNAL CALIPER GAUGES





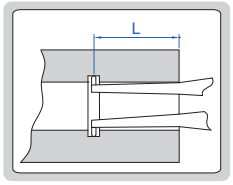


**2151-35**

- Carbide measuring tips
- Reading in digit and analog
- With transmission button and signal light
- Display can be rotated by 320º
- Button function: on/off, zero, tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, data output, absolute/incremental measurement
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21

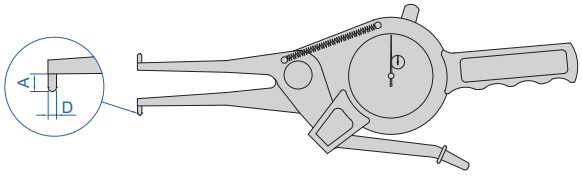
**(mm)**

| Code | Range | Resolution | Accuracy | L | A | D |
|---|---|---|---|---|---|---|
| **2151-35** | 15-35mm/0.6-1.4" | 0.01mm/0.0005" | ±0.04mm | <50 | 3 | Ø3 |
| **2151-AL35** | 15-35mm/0.6-1.4" | 0.01mm/0.0005" | ±0.04mm | <200 | 3 | Ø3 |
| **2151-55** | 35-55mm/1.4-2.2" | 0.01mm/0.0005" | ±0.04mm | <80 | 6 | Ø3 |
| **2151-AL55** | 35-55mm/1.4-2.2" | 0.01mm/0.0005" | ±0.04mm | <250 | 8 | Ø3 |
| **2151-75** | 55-75mm/2.2-3" | 0.01mm/0.0005" | ±0.04mm | <90 | 8 | Ø3 |
| **2151-AL75** | 55-75mm/2.2-3" | 0.01mm/0.0005" | ±0.04mm | <250 | 8 | Ø3 |
| **2151-95** | 75-95mm/3-3.8" | 0.01mm/0.0005" | ±0.04mm | <100 | 8 | Ø3 |
| **2151-115** | 95-115mm/3.8-4.6" | 0.01mm/0.0005" | ±0.04mm | <120 | 10 | Ø3.2 |
| **2151-135** | 115-135mm/4.6-5.4" | 0.01mm/0.0005" | ±0.04mm | <120 | 10 | Ø3.2 |






## INTERNAL DIAL CALIPER GAUGES



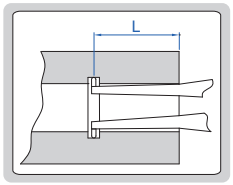



**2321-35**

- Carbide measuring tips

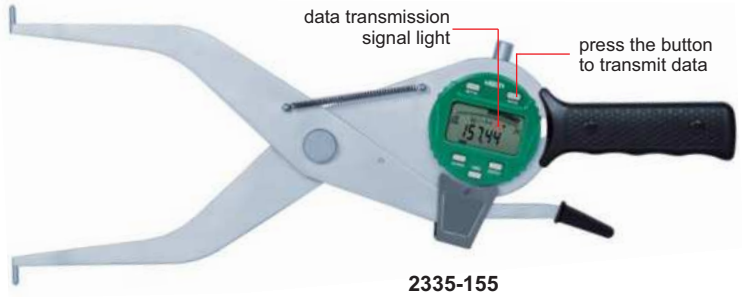
**(mm)**

| Code | Range | Graduation | Accuracy | L | A | D |
|---|---|---|---|---|---|---|
| **2321-35** | 15-35mm | 0.01mm | ±0.04mm | <50 | 3 | Ø3 |
| **2321-AL35** | 15-35mm | 0.01mm | ±0.04mm | <200 | 3 | Ø3 |
| **2321-55** | 35-55mm | 0.01mm | ±0.04mm | <80 | 6 | Ø3 |
| **2321-AL55** | 35-55mm | 0.01mm | ±0.04mm | <250 | 8 | Ø3 |
| **2321-75** | 55-75mm | 0.01mm | ±0.04mm | <90 | 8 | Ø3 |
| **2321-AL75** | 55-75mm | 0.01mm | ±0.04mm | <250 | 8 | Ø3 |
| **2321-95** | 75-95mm | 0.01mm | ±0.04mm | <100 | 8 | Ø3 |
| **2321-115** | 95-115mm | 0.01mm | ±0.04mm | <120 | 10 | Ø3.2 |
| **2321-135** | 115-135mm | 0.01mm | ±0.04mm | <120 | 10 | Ø3.2 |

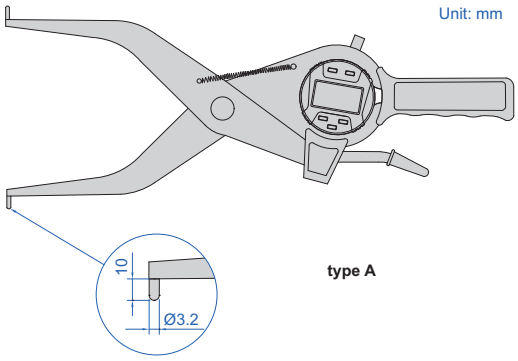


# LARGE RANGE INTERNAL DIGITAL CALIPER GAUGES

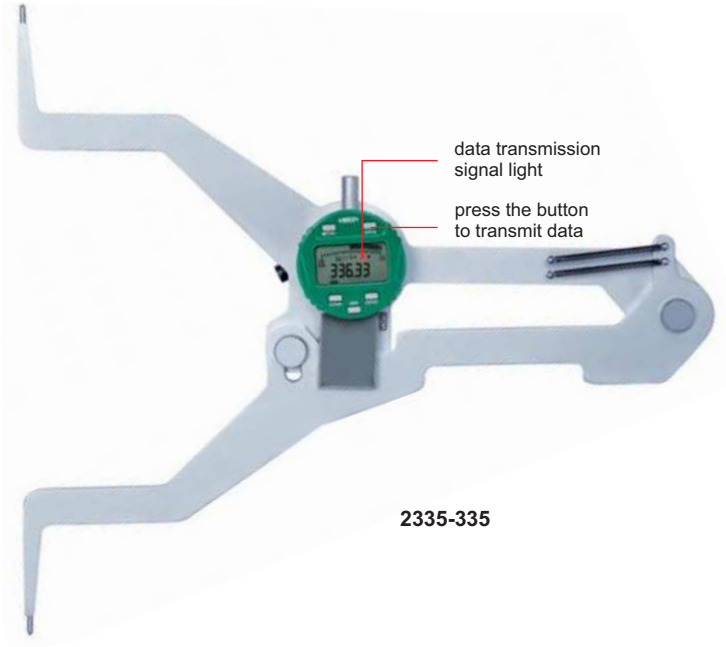
DATA OUTPUT



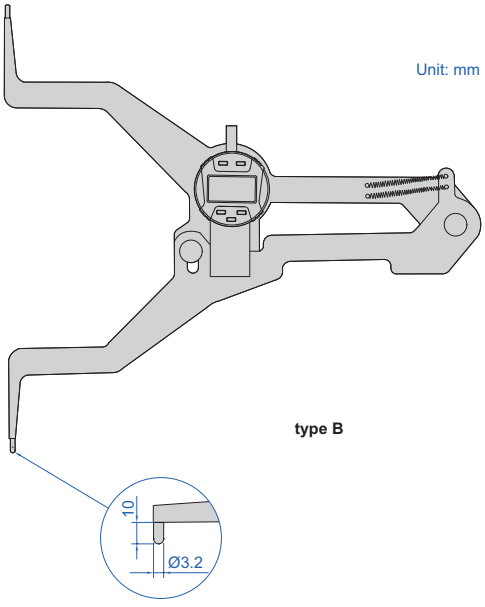

**2335-155**




**type A**



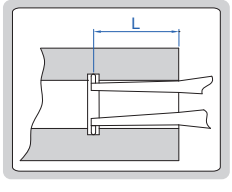

**2335-335**




**type B**

- Carbide measuring tips
- Reading in digit and analog
- With transmission button and signal light
- Display can be rotated by 320º
- Button function: on/off, zero, tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, data output, absolute/incremental measurement
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-50M** page 21

| Code | Range | Resolution | Accuracy | Type | L |
|---|---|---|---|---|---|
| **2335-155** | 135-155mm/5.32-6.10" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-175** | 155-175mm/6.10-6.89" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-195** | 175-195mm/6.68-7.68" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-215** | 195-215mm/7.68-8.46" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-235** | 215-235mm/8.46-9.25" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-255** | 235-255mm/9.25-10.04" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-275** | 255-275mm/10.04-10.83" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-295** | 275-295mm/10.83-11.61" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-315** | 295-315mm/11.61-12.40" | 0.01mm/0.0005" | ±0.04mm | A | <200mm |
| **2335-335** | 315-335mm/12.40-13.19" | 0.01mm/0.0005" | ±0.04mm | B | <200mm |
| **2335-355** | 335-355mm/13.19-13.98" | 0.01mm/0.0005" | ±0.04mm | B | <200mm |
| **2335-375** | 355-375mm/13.98-14.76" | 0.01mm/0.0005" | ±0.04mm | B | <200mm |

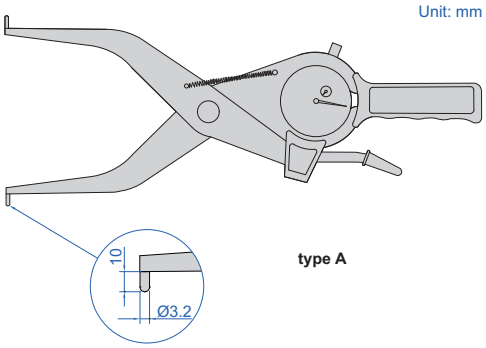


# LARGE RANGE INTERNAL DIAL CALIPER GAUGES

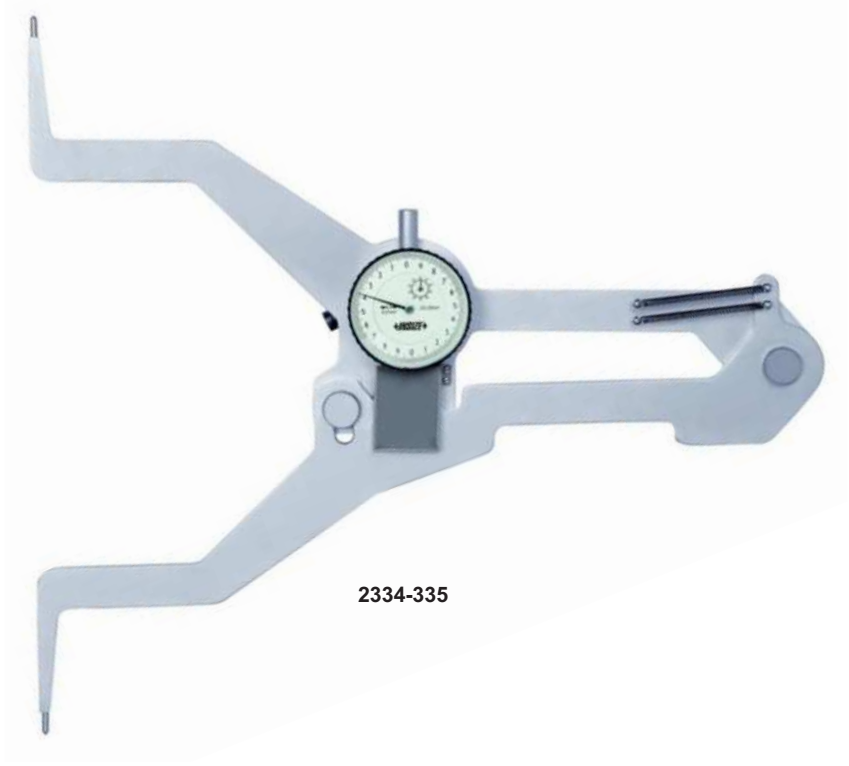


2334-155

Unit: mm

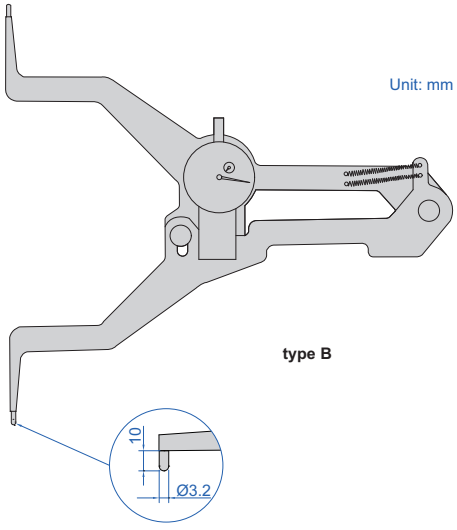



type A



2334-335

Unit: mm



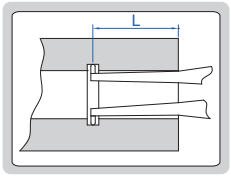

type B

11

- Carbide measuring tips

(mm)

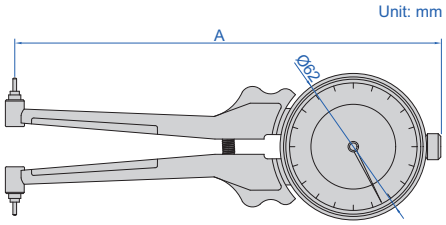
| Code | Range | Graduation | Accuracy | Type | L |
|---|---|---|---|---|---|
| **2334-155** | 135-155mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-175** | 155-175mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-195** | 175-195mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-215** | 195-215mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-235** | 215-235mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-255** | 235-255mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-275** | 255-275mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-295** | 275-295mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-315** | 295-315mm | 0.01mm | ±0.04mm | A | <200 |
| **2334-335** | 315-335mm | 0.01mm | ±0.04mm | B | <200 |
| **2334-355** | 335-355mm | 0.01mm | ±0.04mm | B | <200 |
| **2334-375** | 355-375mm | 0.01mm | ±0.04mm | B | <200 |

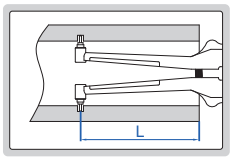


# INTERNAL DIAL CALIPER GAUGES WITH INTERCHANGEABLE POINTS



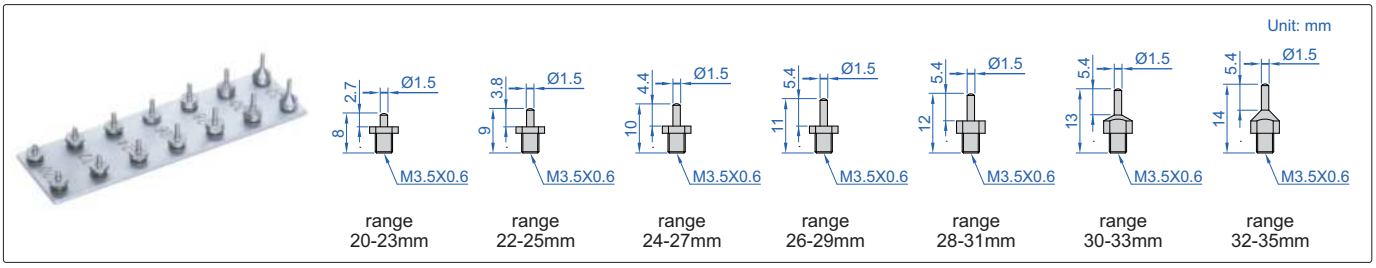
2223-153



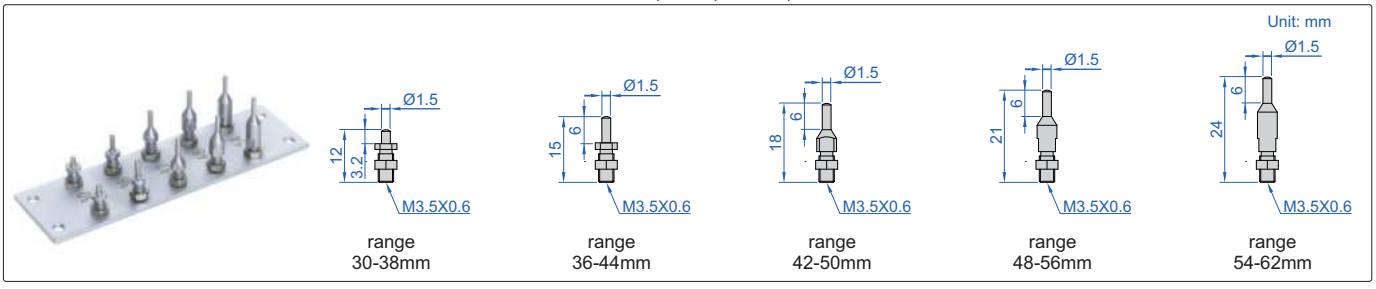




| Code | Range | Dial indicator range | Graduation | Accuracy | A | L | Remark |
|---|---|---|---|---|---|---|---|
| **2223-35** | 20-35mm | 2mm | 0.01mm | ±0.02mm | 164mm | <70mm | supplied with 7 pairs of points |
| **2223-62** | 30-62mm | 2mm | 0.01mm | ±0.02mm | 170mm | <75mm | supplied with 5 pairs of points |
| **2223-153** | 55-153mm | 2mm | 0.01mm | ±0.02mm | 179mm | <90mm | supplied with 6 pairs of points |

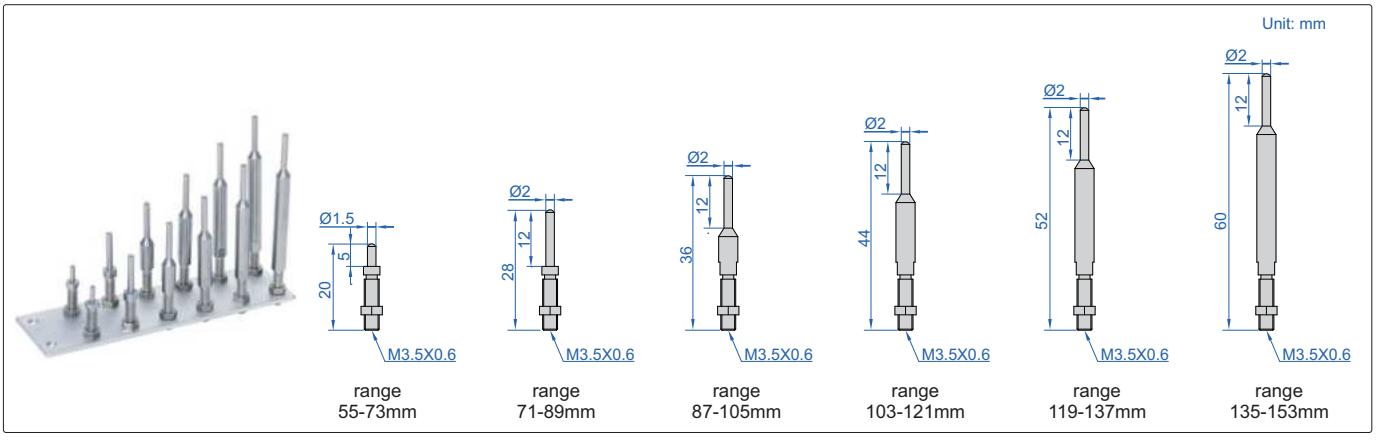
**2223-35** points (included)




**2223-62** points (included)




**2223-153** points (included)





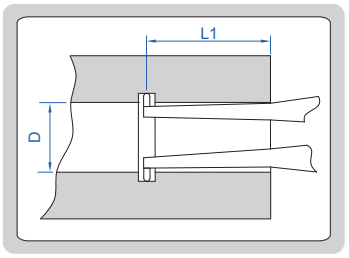

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# DIGITAL INTERNAL CALIPER GAUGES (ECONOMIC TYPE)

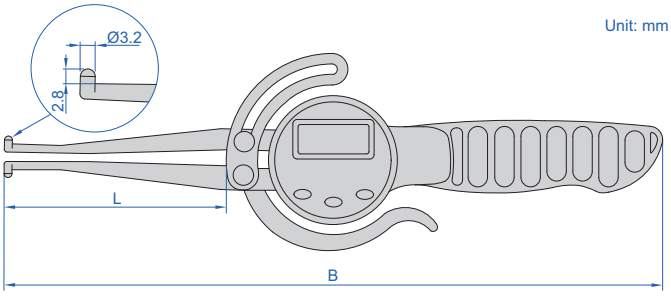


2711-165

sizes to be measured




Unit: mm




- Button function: on/off, zero, mm/inch, data hold
- Battery CR2032, automatic power off

(mm)

| Code | Range | Resolution | Accuracy | Repeatability | L | B |
|---|---|---|---|---|---|---|
| **2711-165** | 12.7-165mm/0.5-6.5" | 0.1mm/0.01" | ±0.3mm | 0.2mm | 85 | 252 |
| **2711-216** | 12.7-216mm/0.5-8.5" | 0.1mm/0.01" | ±0.3mm | 0.2mm | 160 | 327 |

(mm)

| Code 2711-165 | | Code 2711-216 | |
|---|---|---|---|
| D | L1 | D | L1 |
| Ø13 | <42 | Ø13 | <50 |
| Ø15 | <45 | Ø15 | <55 |
| Ø17 | <50 | Ø17 | <60 |
| Ø20 | <60 | Ø20 | <65 |
| Ø25 | <75 | Ø25 | <75 |
| Ø27 | <80 | Ø30 | <95 |
| Ø29~165 | <85 | Ø35~216 | <160 |

DATA OUTPUT

# DIGITAL EXTERNAL CALIPER GAUGES

11

- Resolution: 0.005mm/0.0002"
- Reading in digit and analog
- Display can be rotated by 170º
- Button function: tolerance Go and No-Go display, data preset, max./min. measurement, data holding, inch/metric conversion, absolute/incremental measurement
- CR2032 battery, automatic power off
- Data output
- Optional accessory:
  wireless transmitter code **7315-30** (receiver is needed) page 5,
  bluetooth transmitter code **7214-30** page 11,
  data output cable code **7302-30** page 20

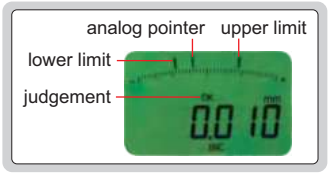


2131-21

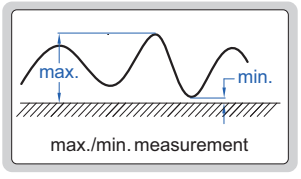
analog pointer



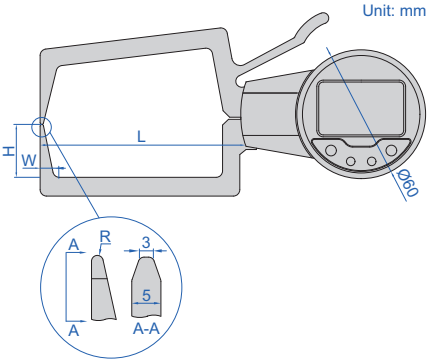

tolerance display




max./min.

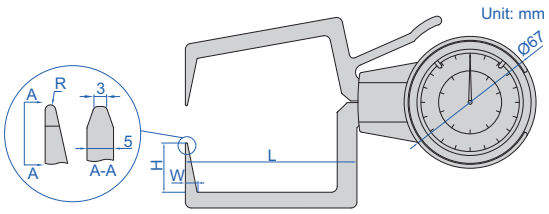



Unit: mm




| Code | Range | Accuracy | Repeatability | L | H | W | R |
|---|---|---|---|---|---|---|---|
| **2131-21** | 0-20mm/0-0.8" | ±0.03mm | 0.01mm | 80mm | 25mm | 6.5mm | R0.5mm |
| **2131-31** | 10-30mm/0.4-1.2" | ±0.03mm | 0.01mm | 80mm | 25mm | 6.5mm | R0.5mm |
| **2131-41** | 20-40mm/0.8-1.6" | ±0.03mm | 0.01mm | 80mm | 25mm | 6.5mm | R0.5mm |
| **2131-51** | 30-50mm/1.2-2.0" | ±0.03mm | 0.01mm | 80mm | 25mm | 6.5mm | R0.5mm |
| **2131-61** | 40-60mm/1.6-2.4" | ±0.03mm | 0.01mm | 80mm | 25mm | 6.5mm | R0.5mm |

## EXTERNAL DIAL CALIPER GAUGES




(mm)

| Code | Range | Graduation | Accuracy | L | H | W | R |
|---|---|---|---|---|---|---|---|
| **2333-201** | 0-20mm | 0.01mm | ±0.03mm | 80 | 25 | 6.5 | R0.5 |
| **2333-301** | 10-30mm | 0.01mm | ±0.03mm | 80 | 25 | 6.5 | R0.5 |
| **2333-401** | 20-40mm | 0.01mm | ±0.03mm | 80 | 25 | 6.5 | R0.5 |
| **2333-501** | 30-50mm | 0.01mm | ±0.03mm | 80 | 25 | 6.5 | R0.5 |
| **2333-601** | 40-60mm | 0.01mm | ±0.03mm | 80 | 25 | 6.5 | R0.5 |

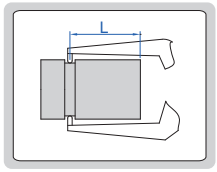


**2333-201**

## DIGITAL EXTERNAL CALIPER GAUGES

DATA OUTPUT

- Carbide measuring tips
- Reading in digit and analog
- With transmission button and signal light
- Display can be rotated by 320º
- Button function: on/off, zero, tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement, data output
- CR2032 battery
- Automatic power off (time is adjustable)
- Data output
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-50M** page 21

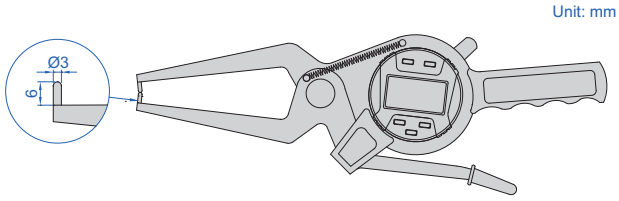




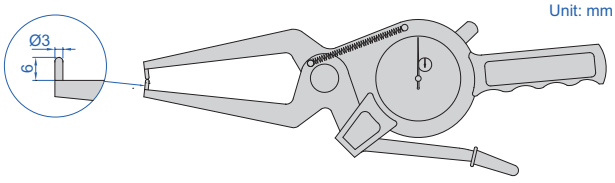


**2132-20**

| Code | Range | Resolution | Accuracy | L |
|---|---|---|---|---|
| **2132-20** | 0-20mm/0-0.8" | 0.01mm/0.0005" | ±0.04mm | <60mm |
| **2132-40** | 20-40mm/0.8-1.6" | 0.01mm/0.0005" | ±0.04mm | <60mm |
| **2132-60** | 40-60mm/1.6-2.4" | 0.01mm/0.0005" | ±0.04mm | <55mm |
| **2132-80** | 60-80mm/2.4-3.2" | 0.01mm/0.0005" | ±0.04mm | <55mm |
| **2132-100** | 80-100mm/3.2-4" | 0.01mm/0.0005" | ±0.04mm | <55mm |




## EXTERNAL DIAL CALIPER GAUGES



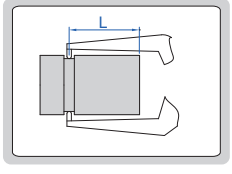

- Carbide measuring tips

(mm)

| Code | Range | Graduation | Accuracy | L |
|---|---|---|---|---|
| **2332-20** | 0-20mm | 0.01mm | ±0.04mm | <60 |
| **2332-40** | 20-40mm | 0.01mm | ±0.04mm | <60 |
| **2332-60** | 40-60mm | 0.01mm | ±0.04mm | <55 |
| **2332-80** | 60-80mm | 0.01mm | ±0.04mm | <55 |
| **2332-100** | 80-100mm | 0.01mm | ±0.04mm | <55 |



**2332-20**



# HIGH PRECISION DIGITAL THICKNESS GAUGES

VIDEO

ATTENTION: RECHARGEABLE BATTERY, FOR 12 HOURS CONTINUOUS WORKING

DATA OUTPUT

MEASURING TIPS AND ANVILS CAN BE CUSTOM-MADE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF



**2879-10**

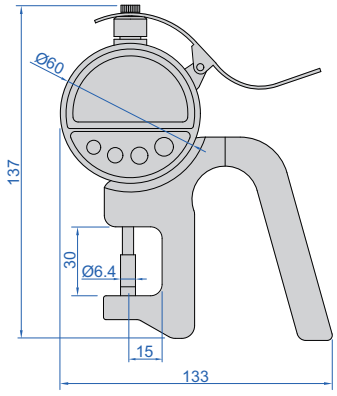


**2879-30**

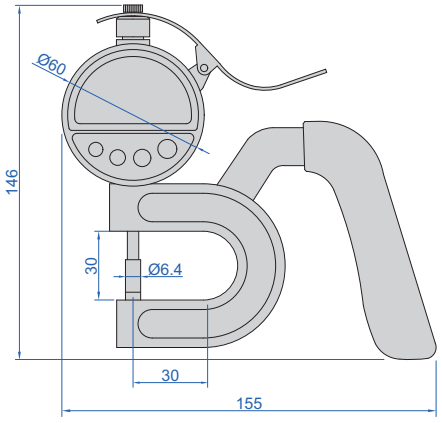


**2879-60**

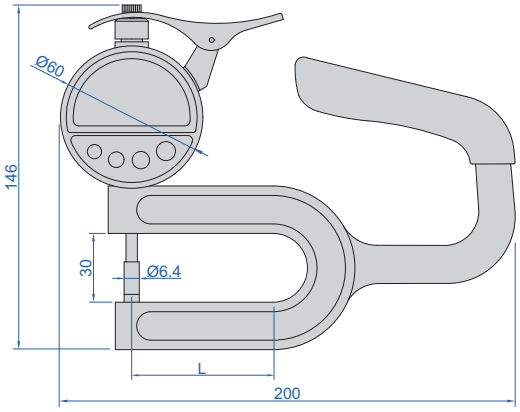
Unit: mm




2879-10
2879-101




2879-30




2879-60
2879-100

- Absolute encoder, the original data remains after power off
- Button function: on/off, zero, tolerance, absolute/incremental measurement, max./min./TIR, data preset, mm/inch, data output, data hold
- Reading in digital and analog
- Power: rechargeable battery, for 12 hours continuous working
- Data output
- Supplied with data output cable (keyboard format)

| Code | Range | Resolution | Accuracy | Repeatability | Measuring force | L |
|---|---|---|---|---|---|---|
| **2879-10** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.002mm | 0.001mm | 0.5-1N | — |
| **2879-101** | 0-10mm/0-0.4" | 0.0005mm/0.00002" | ±0.0015mm | 0.0005mm | 0.5-1N | — |
| **2879-30** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.002mm | 0.001mm | 0.5-1N | — |
| **2879-60** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.003mm | 0.001mm | 0.5-1N | 60mm |
| **2879-100** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.004mm | 0.001mm | 0.5-1N | 100mm |

## SMART DIGITAL THICKNESS GAUGES

VIDEO

AUTOMATIC MEASUREMENT OF THE MIN. VALUE, AND THE DATA CAN BE TRANSMITTED AUTOMATICALLY AFTER EACH MEASUREMENT

DATA OUTPUT

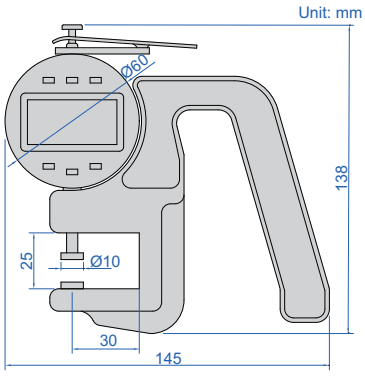
LINEAR BALL BEARINGS FOR TEN MILLION TIMES USE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING



**2850-10**




analog pointer




- Linear ball bearings for ten million times use
- Absolute encoder, the original data remains after power off
- Adjustable resolution: 0.0005mm/0.00002"
  0.001mm/0.00005"
  0.01mm/0.0005"
- Ceramic spindle tip and anvil
- Reading in digital and analog
- Data output
- Automatic measurement of the min. value, and the data can be transmitted automatically after each measurement
- Button function: data output, tolerance, data preset, data hold, measuring direction change, power off time, on/off, mm/inch, adjust resolution
- Power: rechargeable battery, for 24 hours continuous working

wireless receiver
**2134-R1, 2134-R2 (optional)**



alarm when over tolerance




**With data interface**
Optional accessory:
wireless transmitter code **7315-60** (receiver is needed) page 7
data output cable (keyboard format) code **7302-60** page 21

| Code | Range | Accuracy |
|---|---|---|
| **2850-10** | 10mm/0.4" | ±3μm |

**Built-in wireless**
Optional accessory:
wireless receiver (keyboard format,
connect up to 15 digital indicators), code **2134-R1**
wireless receiver (serial port format,
connect up to 15 digital indicators), code **2134-R2**

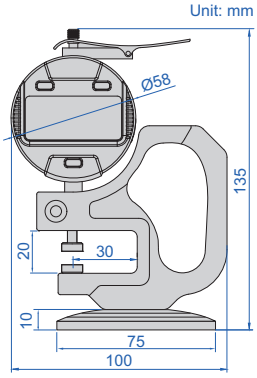
| Code | Range | Accuracy |
|---|---|---|
| **2850-10WL** | 10mm/0.4" | ±3μm |

## DIGITAL THICKNESS GAUGES (WITH BASE)

DATA OUTPUT

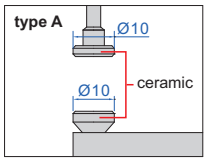


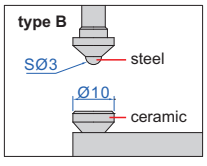
**2673-10**




- Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21

| Code | Range | Resolution | Accuracy | Type |
|---|---|---|---|---|
| **2673-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm | A |
| **2673-101** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.005mm | A |
| **2673-10B** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm | B |
| **2673-101B** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.005mm | B |






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POPULAR MODEL

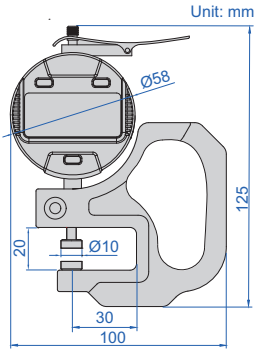
DATA OUTPUT

## DIGITAL THICKNESS GAUGES

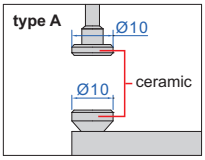
- Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21

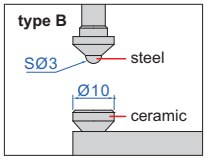


**2871-101**

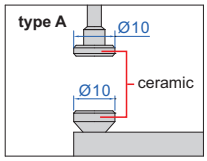


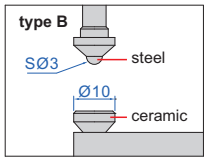

| Code | Range | Resolution | Accuracy | Type |
|---|---|---|---|---|
| **2871-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm | A |
| **2871-101** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.005mm | A |
| **2871-10B** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm | B |
| **2871-101B** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.005mm | B |

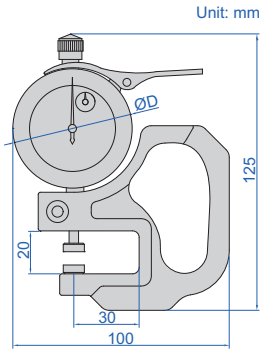



## THICKNESS GAUGES





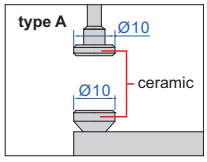

**2364-10**

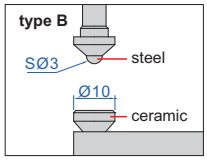


**2364-1**

| Code | Range | Graduation | Accuracy | Type | ØD |
|---|---|---|---|---|---|
| **2364-10** | 0-10mm | 0.01mm | ±0.02mm | A | 58mm |
| **2364-10B** | 0-10mm | 0.01mm | ±0.02mm | B | 58mm |
| **2364-1** | 0-1mm | 0.001mm | ±0.005mm | A | 56mm |

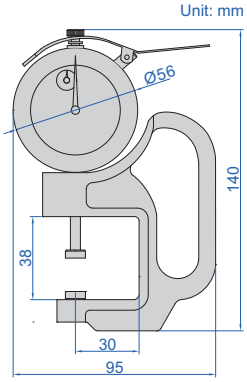
## THICKNESS GAUGES






**2366-30**



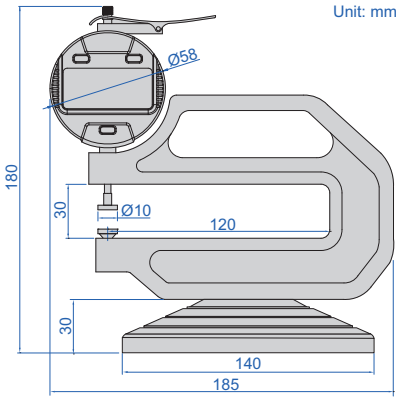

| Code | Range | Graduation | Accuracy | Type |
|---|---|---|---|---|
| **2366-30** | 0-30mm | 0.01mm | ±0.035mm | A |
| **2366-30B** | 0-30mm | 0.01mm | ±0.035mm | B |

## DIGITAL THICKNESS GAUGES (WITH BASE)

DATA OUTPUT

measuring tips and anvils can be custom-made








**2674-10**

- Ceramic spindle tip and anvil
- Buttons: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- Battery CR2032, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2674-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm |
| **2674-101** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.01mm |

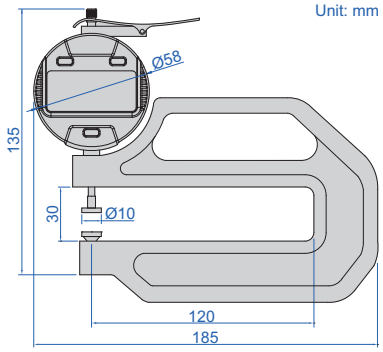
11

## DIGITAL THICKNESS GAUGES

DATA OUTPUT

measuring tips and anvils can be custom-made





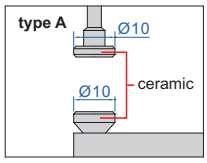


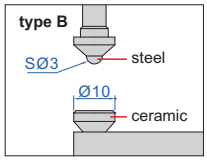

**2872-10**

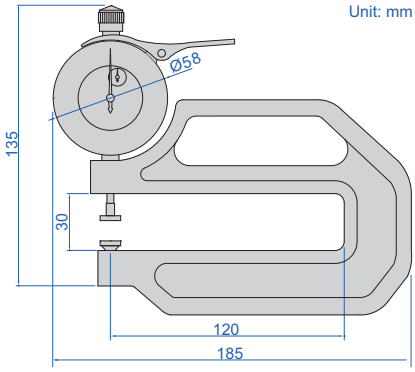
- Ceramic spindle tip and anvil
- Buttons: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- Battery CR2032, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21

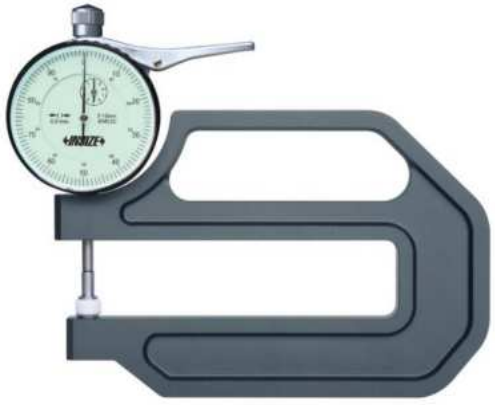
| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2872-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm |
| **2872-101** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.01mm |

# THICKNESS GAUGES



**2365-10**

| Code | Range | Graduation | Accuracy | Type |
|---|---|---|---|---|
| **2365-10** | 0-10mm | 0.01mm | ±0.02mm | A |
| **2365-20** | 0-20mm | 0.01mm | ±0.03mm | A |
| **2365-10B** | 0-10mm | 0.01mm | ±0.02mm | B |
| **2365-20B** | 0-20mm | 0.01mm | ±0.03mm | B |

measuring tips and anvils can be custom-made



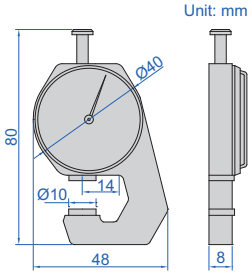
11

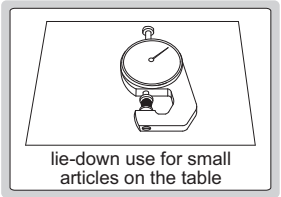
SUITABLE FOR JEWELLERY

# THICKNESS GAUGE



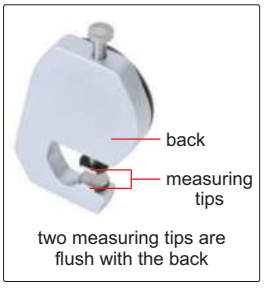
**2361-10**



lie-down use for small articles on the table

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **2361-10** | 0-10mm | 0.1mm | ±0.05mm |




two measuring tips are flush with the back

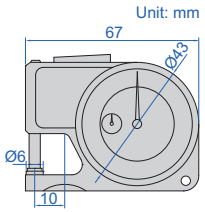
## THICKNESS GAUGE

- Stainless steel spindle tip and anvil

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **2363-10** | 0-10mm | 0.01mm | ±0.03mm |



**2363-10**




## DIGITAL ROLLER THICKNESS GAUGES

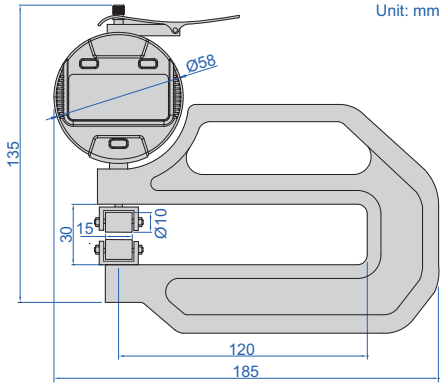
DATA OUTPUT



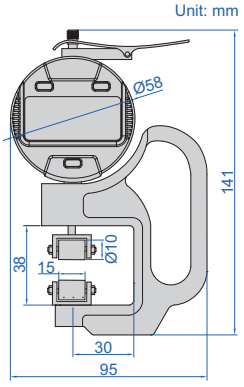
**2877-4**



**2877-10**




2877-4/2877-41

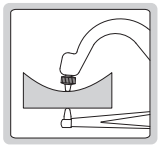



2877-10/2877-101

- Buttons: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- Battery CR2032, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21

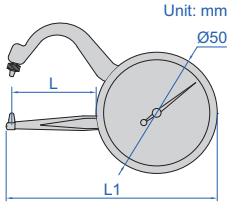
| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2877-4** | 0-3.5mm/0-0.14" | 0.01mm/0.0005" | ±0.02mm |
| **2877-41** | 0-3.5mm/0-0.14" | 0.001mm/0.00005" | ±0.01mm |
| **2877-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm |
| **2877-101** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.01mm |

## THICKNESS GAUGES



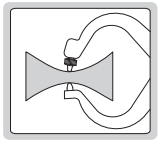


2862-101



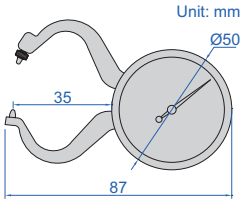

| Code | Range | Graduation | Accuracy | L | L1 |
|---|---|---|---|---|---|
| 2862-101 | 0-10mm | 0.05mm | ±0.1mm | 35mm | 85mm |
| 2862-102 | 0-10mm | 0.05mm | ±0.1mm | 60mm | 110mm |

## THICKNESS GAUGE





2863-10

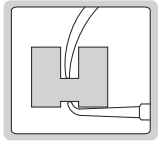



| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 2863-10 | 0-10mm | 0.05mm | ±0.1mm |

11

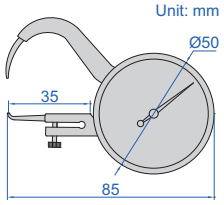
## THICKNESS GAUGE WITH POINTED TIPS

- Pointed tips fit into small grooves and recesses





2866-10



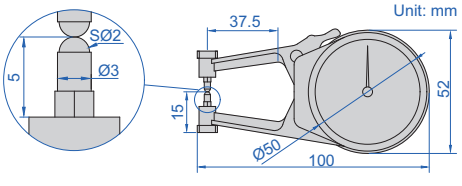

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 2866-10 | 0-10mm | 0.05mm | ±0.1mm |

## THICKNESS GAUGE

- Main boby is made of hard plastic



2870-10

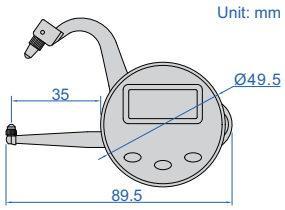



| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 2870-10 | 0-10mm | 0.1mm | ±0.1mm |

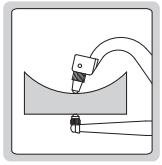
## DIGITAL THICKNESS GAUGE



**2710-25**




- Resolution: 0.01mm, 0.001", 1/64"
- Buttons: on/off, zero, unit (mm/in/fraction), data hold
- Battery CR2032, automatic power off



| Code | Range | Accuracy | Repeatability |
|---|---|---|---|
| **2710-25** | 0-25.4mm/0-1" | 0.05mm | 0.02mm |

## DIGITAL GEOMEMBRANE THICKNESS GAUGE

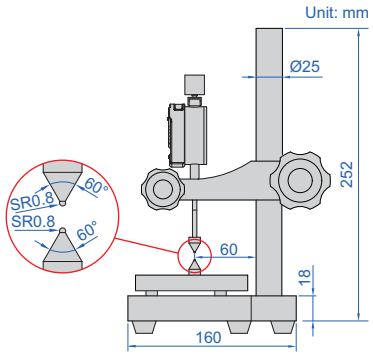
DATA OUTPUT

11

VIDEO



**2259-10**




- Measure thickness of geomembranes
- Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- CR2032 battery, automatic power off (time is adjustable)
- Supplied with dust cover
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21

| Code | Range | Resolution | Accuracy | Pressure |
|---|---|---|---|---|
| **2259-10** | 12.7mm/0.5" | 0.001mm/0.00005" | 5μm | 0.56±0.05N |

# DIGITAL RUBBER THICKNESS GAUGES

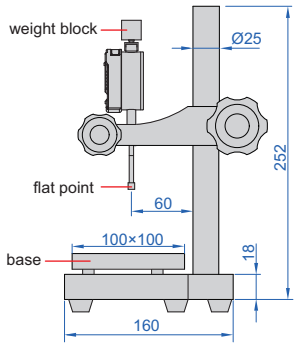
DATA OUTPUT

VIDEO



2878-6B

Unit: mm

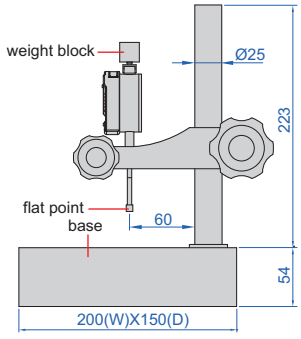



2878-6A
2878-6B



2878-71B

Unit: mm




2878-71A
2878-71B

- Measure thickness of vulcanized rubber and plastic products
- Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- CR2032 battery, automatic power off (time is adjustable)
- Supplied with dust cover
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21,
  flat points, weight blocks

| Code | Range | Resolution | Accuracy | Flat point diameter | Pressure | Base |
|---|---|---|---|---|---|---|
| **2878-6A** | 12.7mm/0.5" | 0.01mm/0.0005" | 20μm | 6mm | 22kPa±5kPa | ceramic, plain, flatness 1.5μm |
| **2878-6B** | 12.7mm/0.5" | 0.001mm/0.00005" | 5μm | 6mm | 22kPa±5kPa | ceramic, plain, flatness 1.5μm |
| **2878-71A** | 12.7mm/0.5" | 0.01mm/0.0005" | 20μm | 6mm | 22kPa±5kPa | granite, plain, flatness 2.5μm |
| **2878-71B** | 12.7mm/0.5" | 0.001mm/0.00005" | 5μm | 6mm | 22kPa±5kPa | granite, plain, flatness 2.5μm |

**Flat points and weight blocks (optional)**

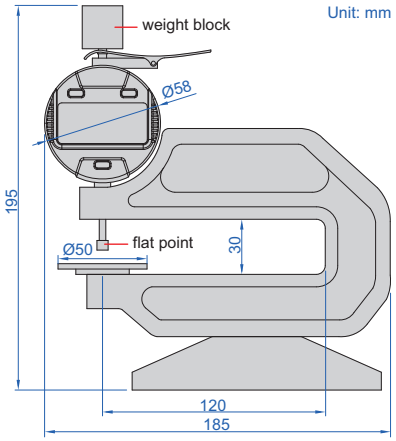
| Flat point | Flat point code | Pressure | | | | |
|---|---|---|---|---|---|---|
| | | 10kPa±2kPa | 22kPa±5kPa | 20kPa±3kPa | 70kPa±5kPa | 1.6kPa±0.1kPa |
| | | weight block code | weight block code | weight block code | weight block code | weight block code |
| Ø4mm | **2878-P4** | – | **2878-W4B** | – | – | – |
| Ø5mm | **2878-P5** | **2878-W5A** | **2878-W5B** | **2878-W5C** | **2878-W5D** | – |
| Ø6mm | **2878-P6** | **2878-W6A** | **2878-W6B** | – | – | – |
| Ø8mm | **2878-P8** | **2878-W8A** | **2878-W8B** | – | – | – |
| Ø10mm | **2878-P10** | **2878-W10A** | **2878-W10B** | **2878-W10C** | – | – |
| Ø25mm | **2878-P25** | – | – | – | – | **2878-W25E** |
| 1×4mm (rectangle) | **2878-P14** | – | – | – | **2878-W14D** | – |

# DIGITAL RUBBER THICKNESS GAUGES

DATA OUTPUT

VIDEO






**2263-6B**

11

- Measure thickness of vulcanized rubber and plastic products
- Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21,
  flat points, weight blocks

| Code | Range | Resolution | Accuracy | Flat point diameter | Pressure |
|---|---|---|---|---|---|
| **2263-6A** | 0-10mm/0-0.4" | 0.01mm/0.0005" | 20μm | 6mm | 22kPa±5kPa |
| **2263-6B** | 0-10mm/0-0.4" | 0.001mm/0.00005" | 5μm | 6mm | 22kPa±5kPa |

**Flat points and weight blocks (optional)**

| Flat point | Flat point code | Pressure | | | | |
|---|---|---|---|---|---|---|
| | | 10kPa±2kPa | 22kPa±5kPa | 20kPa±3kPa | 70kPa±5kPa | 1.6kPa±0.1kPa |
| | | weight block code | weight block code | weight block code | weight block code | weight block code |
| Ø4mm | **2878-P4** | – | **2878-W4B** | – | – | – |
| Ø5mm | **2878-P5** | **2878-W5A** | **2878-W5B** | **2878-W5C** | **2878-W5D** | – |
| Ø6mm | **2878-P6** | **2878-W6A** | **2878-W6B** | – | – | – |
| Ø8mm | **2878-P8** | **2878-W8A** | **2878-W8B** | – | – | – |
| Ø10mm | **2878-P10** | **2878-W10A** | **2878-W10B** | **2878-W10C** | – | – |
| Ø25mm | **2878-P25** | – | – | – | – | **2878-W25E** |
| 1×4mm (rectangle) | **2878-P14** | – | – | – | **2878-W14D** | – |

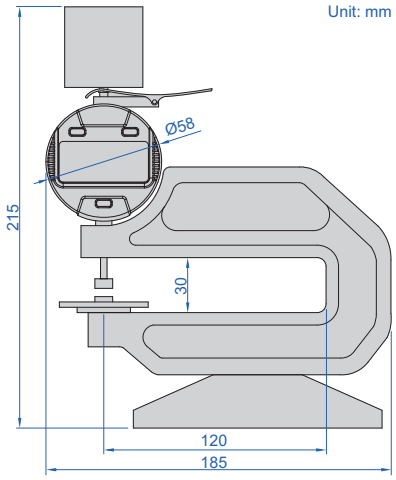
DATA OUTPUT

VIDEO

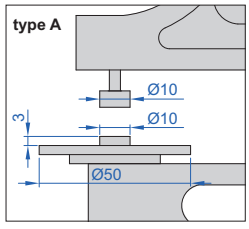
## DIGITAL LEATHER THICKNESS GAUGES

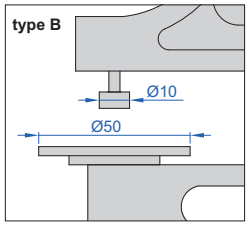


2262-10



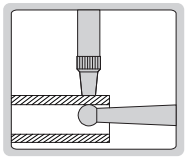

- Measure thickness of leather
- Buttons: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- Battery CR2032, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21



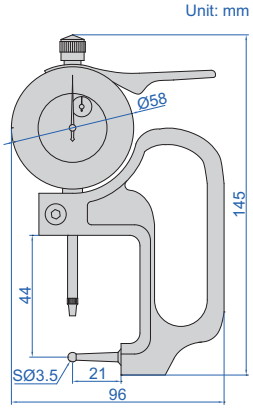

| Code | Range | Resolution | Accuracy | Type |
|---|---|---|---|---|
| **2262-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm | A |
| **2262-10B** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm | B |

## TUBE THICKNESS GAUGE





2367-10A




- Measure tube wall thickness

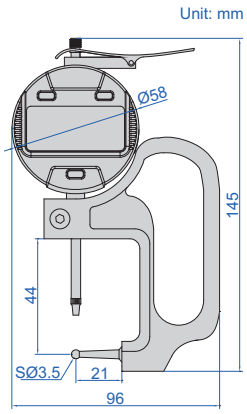
| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **2367-10A** | 0-10mm | 0.01mm | ±0.02mm |

## DIGITAL TUBE THICKNESS GAUGES

DATA OUTPUT

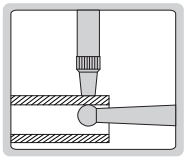


**2876-10**




- Buttons: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- Battery CR2032, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2876-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm |
| **2876-101** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.005mm |



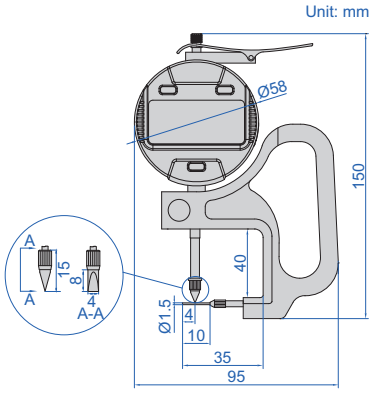
11

## DIGITAL TUBE THICKNESS GAUGES

DATA OUTPUT



**2873-10**

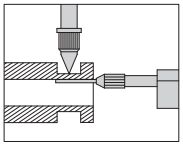



- Buttons: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- Battery CR2032, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2873-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm |
| **2873-101** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.005mm |



measure wall thickness of grooves



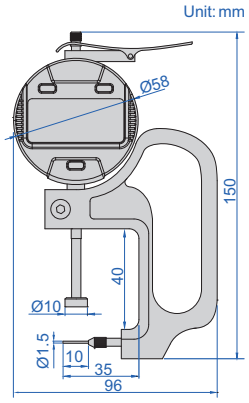


info@insz.sk | +421 944 367 573 | www.insz.sk

DATA OUTPUT

## DIGITAL TUBE THICKNESS GAUGES

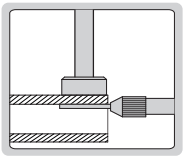





2859-101

- Buttons: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- Battery CR2032, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21





| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2859-10** | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm |
| **2859-101** | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.005mm |

## THREAD/LEAD SCREW PITCH DIAMETER SNAP GAUGES

application



BALL TIP DIAMETER CAN BE CUSTOMIZED

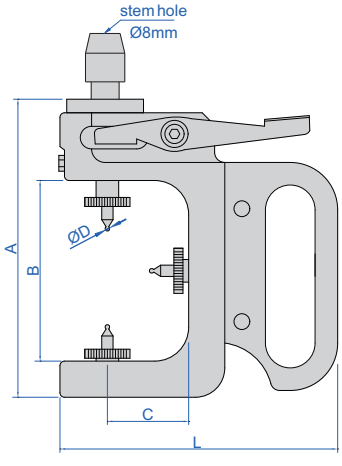


digital indicator is optional

VIDEO

2165-40

- Measure the pitch diameter of lead screw and external thread
- Ball tip diameter can be customized according to workpieces.
  Diameter of trapezoidal screw or external thread ball tips:
  ØD=0.5 x pitch P/cos (thread angle α/2).
  Ball tips diameter ØD of ball screw is corresponding steel ball specification
- Probe retracting range: 3mm, measuring force: 20N
- Repeatability: 2μm
- Optional accessory: 0.001mm digital/dial indicators




(mm)

| Code | Range | Accuracy | A | B | C | L |
|---|---|---|---|---|---|---|
| **2165-20** | 3-20mm | ±5μm | 116 | 60 | 27 | 113 |
| **2165-40** | 20-40mm | ±5μm | 132 | 80 | 37 | 123 |
| **2165-60** | 40-60mm | ±5μm | 152 | 138 | 46 | 100 |
| **2165-80** | 60-80mm | ±5μm | 172 | 156 | 59 | 121 |
| **2165-100** | 80-100mm | ±5μm | 192 | 170 | 68 | 140 |

## DIAL SNAP GAUGES

INSIZE PLUS
MADE IN EUROPE

IP54 WATERPROOF

VIDEO

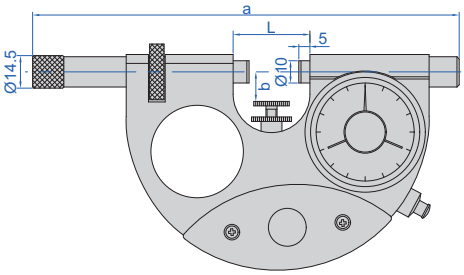
- Quick Go/No-Go measurement for mass production
- Anvil retracting stroke: 2.5mm
- Dial indicator: measuring range ±0.07mm, graduation 1µm, accuracy ±1µm
- Constant measuring force over the whole range: 8.5N
- Carbide measuring faces
- IP54 dust/waterproof
- Zero position of dial indicator is adjustable and can be locked (supplied with locking wrench)
- Adjustable platform height




**3335-25**




Unit: mm




| Code | Range | L | a | b |
|---|---|---|---|---|
| **3335-25** | 0-25mm | 35mm | 191mm | <15mm |
| **3335-50** | 25-50mm | 60mm | 215mm | <25mm |
| **3335-75** | 50-75mm | 84mm | 239mm | <37.5mm |
| **3335-100** | 75-100mm | 110mm | 265mm | <50mm |

## DIAL SNAP GAUGES

ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

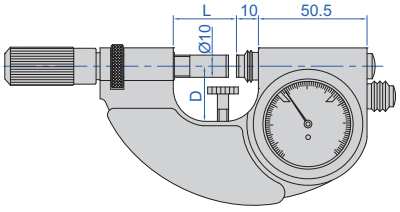
IP54 WATERPROOF

- Quick measurement for mass production
- Dial indicator: range ±0.04mm, graduation 0.001mm, accuracy 0.001mm
- IP54 dust/waterproof
- Measuring force: 5-10N
- Carbide measuring faces
- Optional accessory: gauge blocks grade 0 (**4101-A** series), for zero setting



**3334-25**

Unit: mm




| Code | Range | L | D |
|---|---|---|---|
| **3334-25** | 0-25mm | 28.5mm | 25mm |
| **3334-50** | 25-50mm | 53.5mm | 35mm |
| **3334-75** | 50-75mm | 78.5mm | 47.5mm |
| **3334-100** | 75-100mm | 103.5mm | 60mm |

## DIAL SNAP GAUGES

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

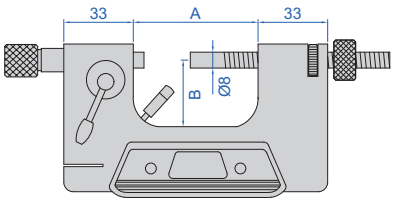
- Quick measurement for mass production
- Anvil retracting stroke: 3mm
- Measuring force: 6-9N
- Carbide measuring faces
- Optional accessory: dial indicators (graduation 0.01mm), digital indicators (resolution 0.01mm/0.0005")



**digital indicator is optional**

**2184-50W**

Unit: mm




| Code | Range | A | B |
|---|---|---|---|
| **2184-25W** | 0-25mm | 34mm | 18mm |
| **2184-50W** | 0-50mm | 62mm | 32mm |
| **2184-100W** | 50-100mm | 112mm | 62mm |
| **2184-150W** | 100-150mm | 162mm | 85mm |
| **2184-200W** | 150-200mm | 212mm | 110mm |

VIDEO

QUICK AND ACCURATE MEASUREMENT OF CYLINDRICAL WORKPIECES

# DIAL SNAP GAUGES

INSPECTION CERTIFICATE

- Left anvil retracting stroke: 2mm
- Measuring force: 6-8N
- Flatness of anvil: 1.5μm
- Repeatability: 1μm
- Carbide measuring faces for anvils
- Front edges of anvils are chamfered for easy workpiece insertion
- Optional accessory: dial indicators and digital indicators (reading 0.001mm or 0.01mm)



**digital indicator is optional**

**2186-25**

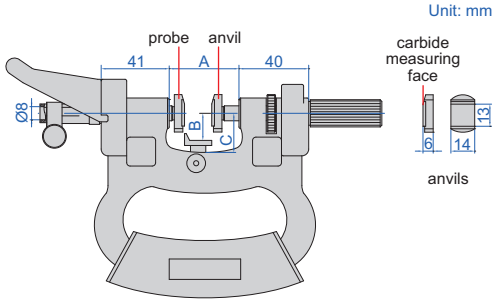
application



(mm)

| Code | Range | Parallelism of measuring faces | A | B | C |
|---|---|---|---|---|---|
| **2186-25*** | 0-25mm | 4μm | 42 | 11-18 | 20 |
| **2186-50*** | 25-50mm | 4μm | 69 | 11-32 | 41 |
| **2186-75*** | 50-75mm | 5μm | 94 | 17-41 | 51 |
| **2186-100*** | 75-100mm | 6μm | 119 | 31-55 | 65 |
| **2186-125*** | 100-125mm | 6μm | 144 | 42-70 | 75 |
| **2186-150*** | 125-150mm | 8μm | 169 | 55-82 | 90 |
| **2186-175*** | 150-175mm | 8μm | 194 | 68-95 | 100 |
| **2186-200*** | 175-200mm | 10μm | 219 | 85-110 | 115 |
| **2186-225*** | 200-225mm | 10μm | 244 | 95-120 | 130 |
| **2186-250*** | 225-250mm | 10μm | 269 | 110-135 | 145 |
| **2186-275*** | 250-275mm | 12μm | 294 | 120-150 | 160 |
| **2186-300*** | 275-300mm | 12μm | 319 | 128-160 | 170 |

*Supplied with manufacturer inspection certificate



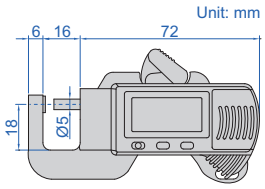

11

ATTENTION: NO DATA OUTPUT

# DIGITAL SNAP GAUGE



**2166-12**



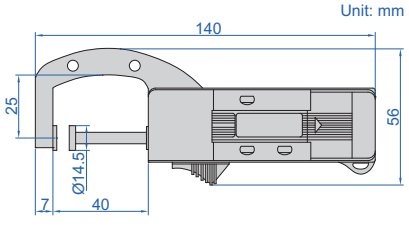

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2166-12** | 0-12mm/0-0.5" | 0.01mm/0.0005" | ±0.03mm |

ATTENTION: NO DATA OUTPUT

# DIGITAL SNAP GAUGE



**2167-25**



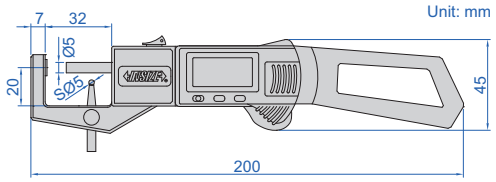

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2167-25** | 0-25mm/0-1" | 0.01mm/0.0005" | ±0.03mm |

## DIGITAL SNAP GAUGE

ATTENTION: NO DATA OUTPUT

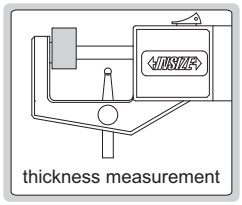


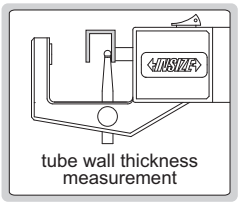
2163-25




- Resolution: 0.01mm/0.0005"
- Accuracy: ±0.04mm
- For thickness and tube wall thickness measurement

| Code | Thickness range | Tube wall thickness range |
|---|---|---|
| 2163-25 | 0-25mm/0-1" | 0-2mm/0.08" |


thickness measurement

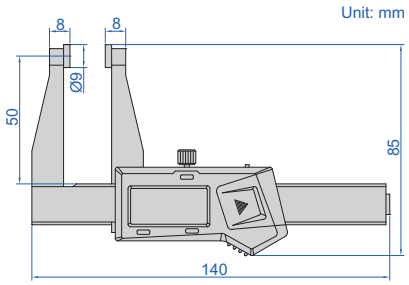

tube wall thickness measurement

## DIGITAL SNAP GAUGES

DATA OUTPUT




1163-50A




**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| 1163-50A | 0-50mm/0-2" | 0.01mm/0.0005" | ±0.03mm |

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| 1163-50AWL | 0-50mm/0-2" | 0.01mm/0.0005" | ±0.03mm |

- Non waterproof
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

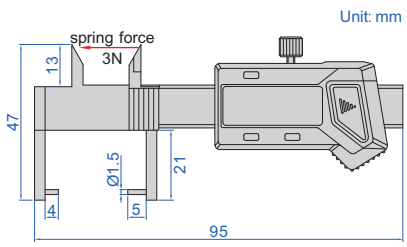
## DIGITAL 3-PURPOSE SNAP GAUGE

ATTENTION: NO DATA OUTPUT

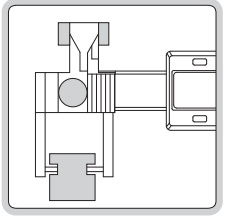
SUITABLE FOR JEWELLERY



2164-25A




VIDEO



| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| 2164-25A | 0-25mm/0-1" | 0.01mm/0.0005" | ±0.03mm |

- Non waterproof
- Buttons: zero, mm/inch, on/off
- Battery LR44
- Made of stainless steel





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DATA OUTPUT

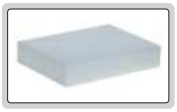
## STEP AND GAP GAUGES




**2168-12**

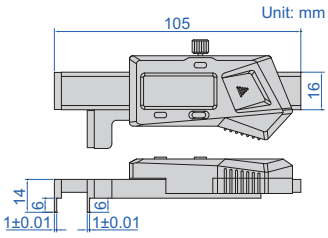
- Non waterproof
- Measure step height and gap width
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Supplied with zero setting block

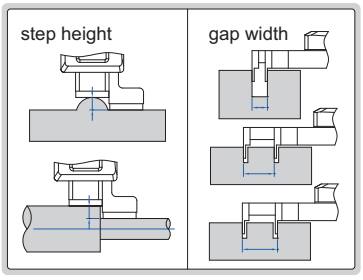
zero setting block (included)



**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **2168-12** | 0-12.7mm/0-0.5" | ±0.03mm |



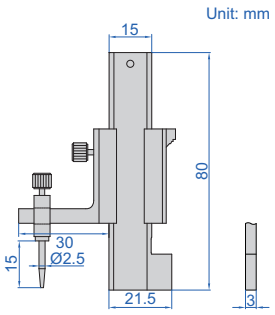

**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **2168-12WL** | 0-12.7mm/0-0.5" | ±0.03mm |

11

## MINI VERNIER HEIGHT GAUGE



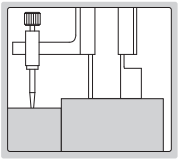



**1246-10**

- Measure height difference of two surfaces
- Graduation: 0.05mm
- Made of stainless steel
- Satin chrome plated reading surface

| Code | Range | Accuracy |
|---|---|---|
| **1246-10** | 0~±10mm | ±0.05mm |

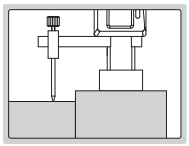
application



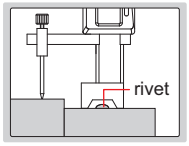
# MINI DIGITAL HEIGHT GAUGES

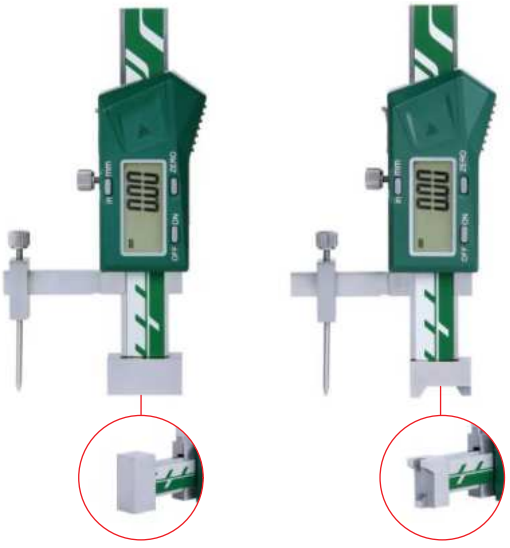
DATA OUTPUT

application of
**1146-20A/1146-20AWL**

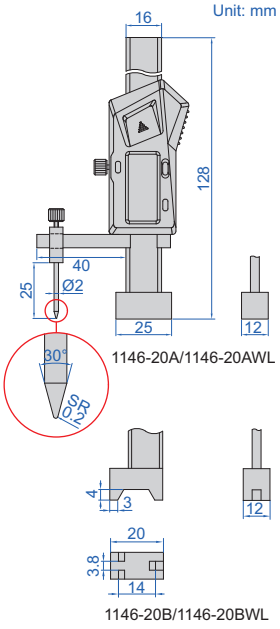


application of
**1146-20B/1146-20BWL**



**1146-20A** **1146-20B**




- Non waterproof
- Measure height difference of two surfaces (**1146-20B**, **1146-20BWL** suitable for surfaces with barrier, such as rivet)
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

**With data interface (optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20)**

| Code | Range | Accuracy |
|---|---|---|
| **1146-20A** | 0~±20mm/0~±0.8" | ±0.02mm |
| **1146-20B** | 0~±20mm/0~±0.8" | ±0.02mm |

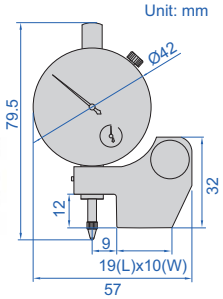
**Built-in wireless (receiver code 7315-2/3/6/7/8/9 is needed)**

| Code | Range | Accuracy |
|---|---|---|
| **1146-20AWL** | 0~±20mm/0~±0.8" | ±0.02mm |
| **1146-20BWL** | 0~±20mm/0~±0.8" | ±0.02mm |



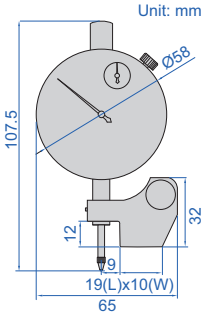
# DIAL HEIGHT GAUGES





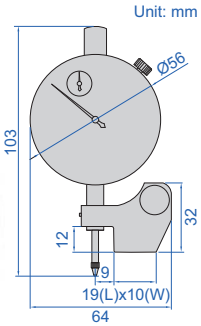

**2147-4A** 2147-4A






**2147-4B** 2147-4B

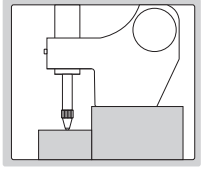





**2147-21** 2147-21

- Measure height difference of two surfaces

| Code | Range | Dial indicator stroke | Dial indicator graduation | Accuracy |
|---|---|---|---|---|
| **2147-4A** | 0~±5mm (adjustable) | 5mm | 0.01mm | ±0.014mm |
| **2147-4B** | 0~±5mm | 10mm | 0.01mm | ±0.017mm |
| **2147-21** | 0~±2mm (adjustable) | 2mm | 0.001mm | ±0.006mm |

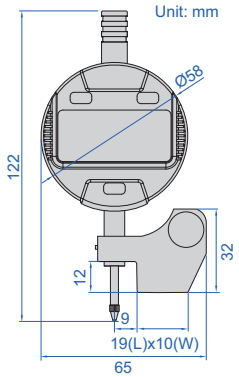


DATA OUTPUT

## DIGITAL HEIGHT GAUGES



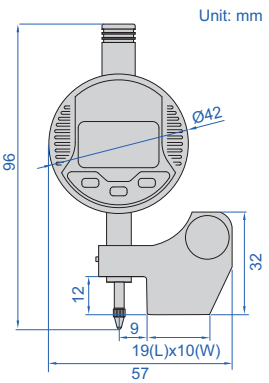
**2146-4A**




2146-4A
2146-41A



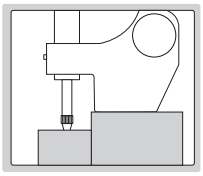
**2146-4B**



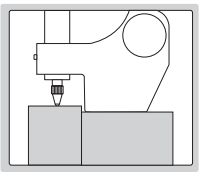

2146-4B
2146-41B

- Measure height difference of two surfaces
- Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21

measure sinked step



measure raised step

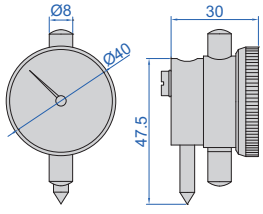


| Code | Range (adjustable) | Digital indicator stroke | Digital indicator resolution | Accuracy |
|---|---|---|---|---|
| **2146-4A** | 0~4mm/0~0.16" (sinked)<br>0~12.7mm/0~0.5" (raised) | 12.7mm/0.5" | 0.01mm/0.0005" | ±0.02mm |
| **2146-41A** | | 12.7mm/0.5" | 0.001mm/0.00005" | ±0.005mm |
| **2146-4B** | 0~4mm/0~0.16" (sinked)<br>0~5mm/0~0.2" (raised) | 5mm/0.2" | 0.01mm/0.0005" | ±0.02mm |
| **2146-41B** | | 5mm/0.2" | 0.001mm/0.00005" | ±0.005mm |

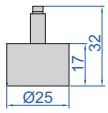
11

## CRANKSHAFT TESTERS

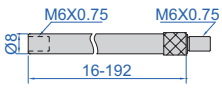
Unit: mm



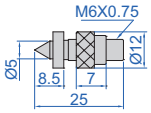

dial indicator

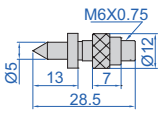


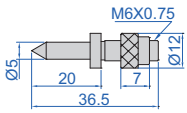

balance block




extension rods



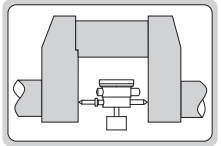




anvils



**2841-500**



- To test crankshaft deflection
- The balance block is mounted on the back of dial indicator to keep the dial indicator facing up

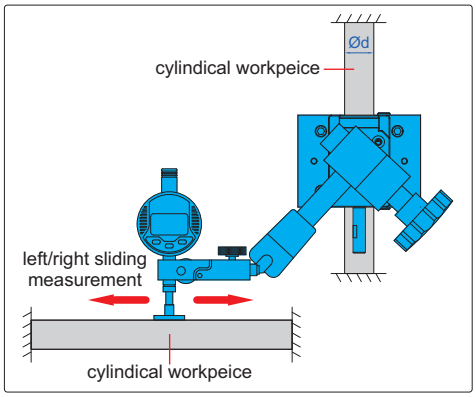
| Code | Range | Dial indicator range | Graduation | Extension rods | Accuracy |
|---|---|---|---|---|---|
| **2841-300** | 60-300mm | 3mm | 0.01mm | 16mm, 32mm, 64mm, 128mm | ±0.02mm |
| **2841-500** | 60-500mm | 3mm | 0.01mm | 16mm, 32mm, 64mm, 96mm, 128mm, 192mm | ±0.02mm |

## PERPENDICULARITY COMPARISON GAUGE

CUSTOMIZED ACCORDING TO WORKPIECES

VIDEO

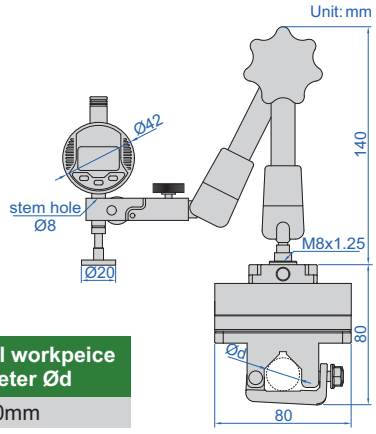
application







2253-20




- Measurement perpendicularity between two cylinders
- Optional accessory: measurement software (code **7377**)
  wireless transmission code **7213-56** (receiver is needed) page 13

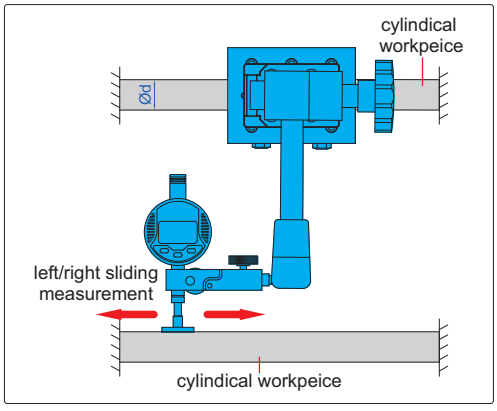
| Code | Digital indicator stroke | Digital indicator resolution | Perpendicularity | Left/right slide stroke | Cylindical workpeice diameter Ød |
|---|---|---|---|---|---|
| **2253-20** | 5mm/0.2" | 0.01mm/0.0005" | 0.01mm | 45mm | 20mm |

## PARALLELISM COMPARISON GAUGE

CUSTOMIZED ACCORDING TO WORKPIECES

VIDEO

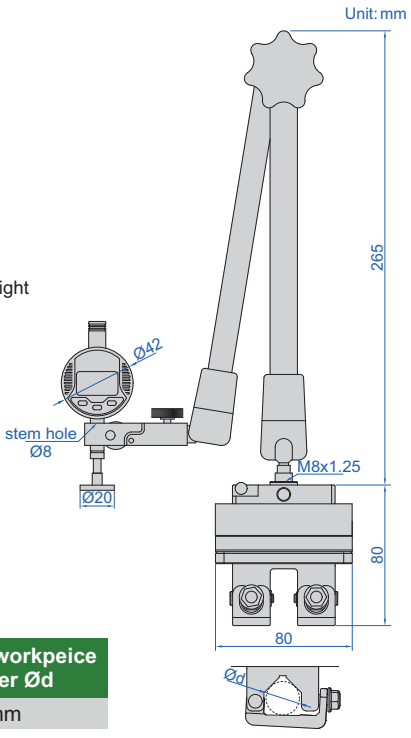
application







2254-20




- Measurement parallelism between two cylinders
- Optional accessory: measurement software (code **7377**)
  wireless transmission code **7213-56** (receiver is needed) page 13

| Code | Digital indicator stroke | Digital indicator resolution | Parallelism | Left/right slide stroke | Cylindical workpeice diameter Ød |
|---|---|---|---|---|---|
| **2254-20** | 5mm/0.2" | 0.01mm/0.0005" | 0.01mm | 45mm | 20mm |



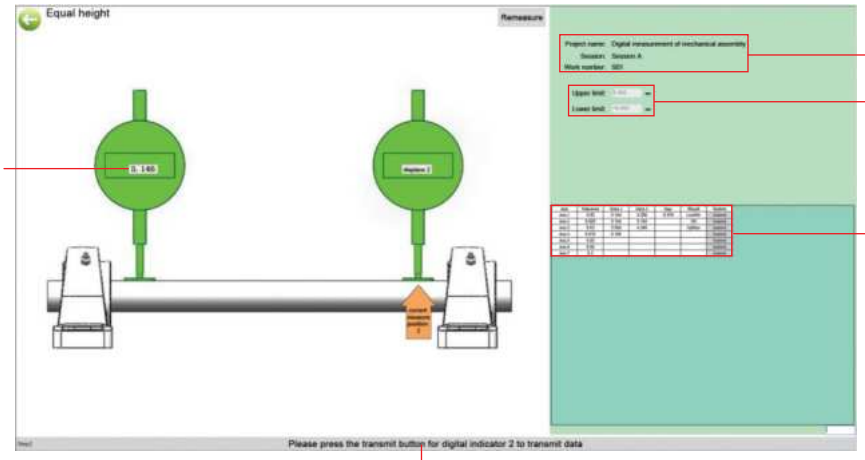
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# PARALLELISM/PERPENDICULARITY COMPARISON GAUGE SOFTWARE CODE 7377

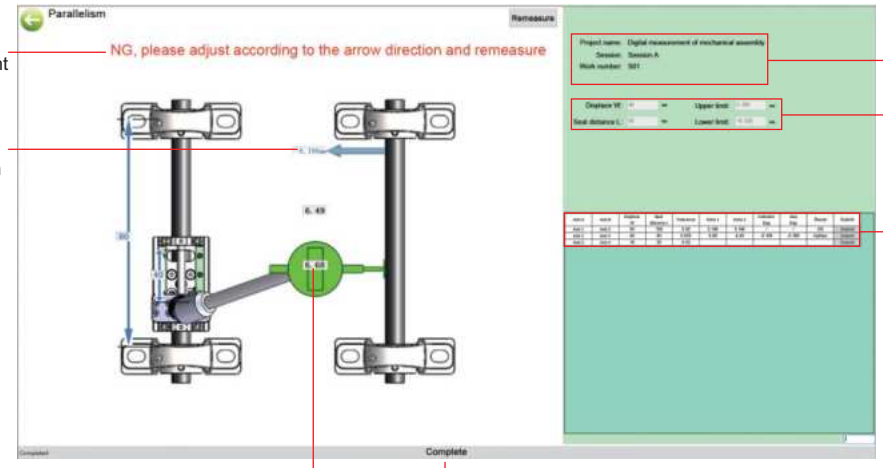
- Suitable for digital measurement of mechanical assembly such as equal height, parallelism, and perpendicularity
- Real-time collect of measurement data, automatic judgment of measurement results (out of upper tolerance, within tolerance, and out of lower tolerance), guiding measurement, prompting adjustment direction, and exporting measurement reports

VIDEO

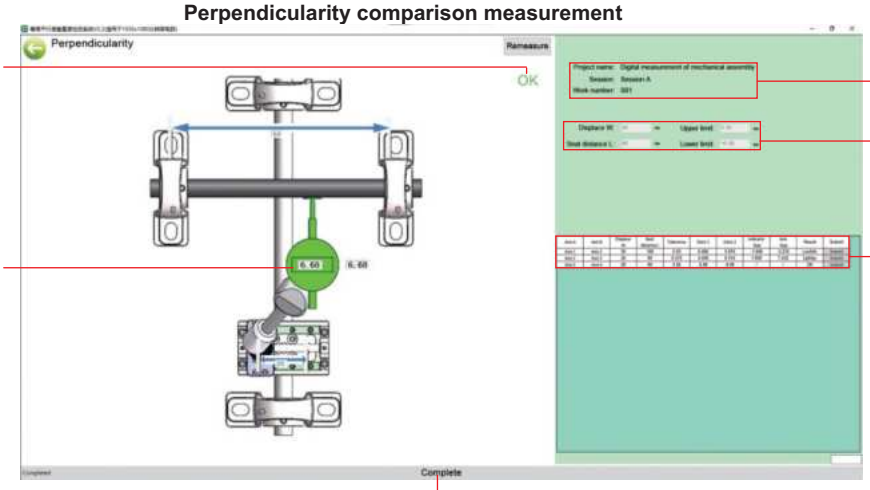
## Equal height comparison measurement




## Parallelism comparison measurement



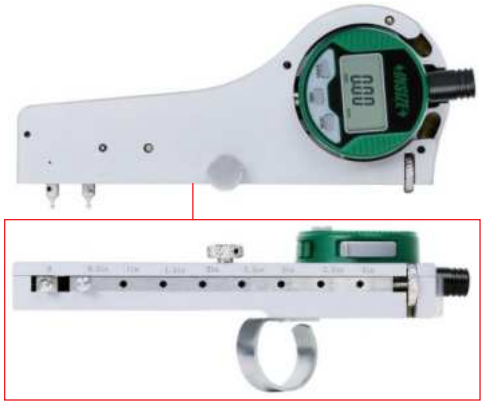

## Perpendicularity comparison measurement




11

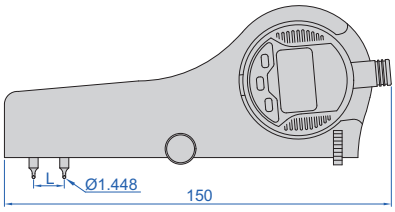
## DIGITAL THREAD PITCH MEASURING INSTRUMENT

MEET INTERNATIONAL STANDARD API5B

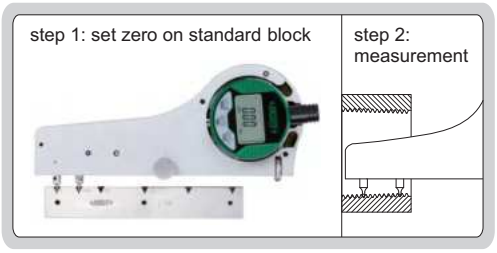


2245-4

Unit: mm




application




- Measure the pitch of external thread and internal thread with nominaldiameter larger than 5 1/2" (139.7mm)
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21,
  ball points (code **6252** series), standard pitch blocks (code **6251** series)

| Code | Range (L) | Digital indicator stroke | Resolution | Accuracy |
|---|---|---|---|---|
| **2245-4** | 0.5-4"/12.7-101.6mm | 0.2"/5mm | 0.0005"/0.01mm | 0.02mm |

11

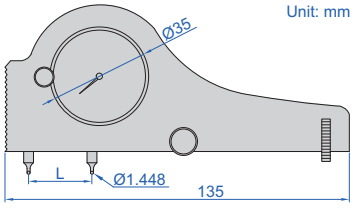
## THREAD PITCH MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

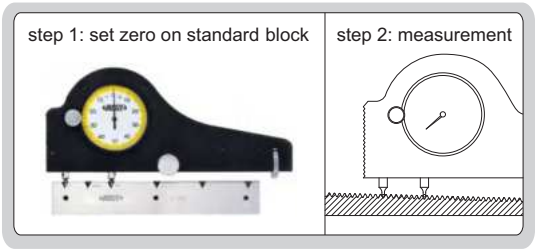
2234-4



Unit: mm




application




- Measure the pitch of external thread and internal thread with nominal diameter larger than 5 1/2" (139.7mm)
- Optional accessory: ball points (code **6252** series), standard pitch blocks (code **6251** series)

| Code | Range (L) | Dial indicator stroke | Dial indicator graduation | Accuracy |
|---|---|---|---|---|
| **2234-4** | 0.5-4"/12.7-101.6mm | 0.5mm | 0.01mm | 0.02mm |
| **2234-4E** | 0.5-4"/12.7-101.6mm | 0.025" | 0.0005" | 0.0008" |

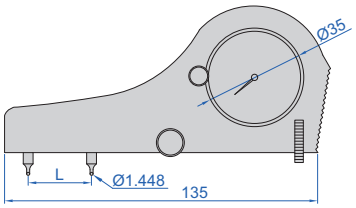
MEET INTERNATIONAL STANDARD API5B

## INTERNAL THREAD PITCH MEASURING INSTRUMENTS

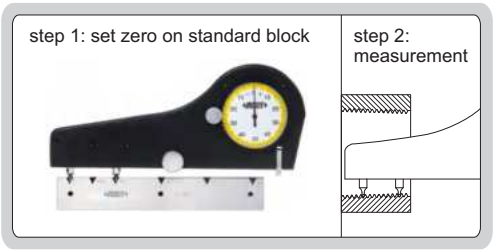


2235-4

Unit: mm




application




- Measure the pitch of internal thread with nominal diameter larger than 1 1/2" (38.1mm) and less than 5 1/2" (139.7mm)
- Optional accessory: ball points (code **6252** series), standard pitch blocks (code **6251** series)

| Code | Range (L) | Dial indicator stroke | Dial indicator graduation | Accuracy |
|---|---|---|---|---|
| **2235-4** | 0.5-4"/12.7-101.6mm | 0.5mm | 0.01mm | 0.02mm |
| **2235-4E** | 0.5-4"/12.7-101.6mm | 0.025" | 0.0005" | 0.0008" |

CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

## STANDARD PITCH BLOCKS

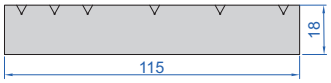
- Set zero of internal and external pitch measuring instruments (code **2234**, **2235**, **2245**)

| Code | Taper | Threads per inch |
|---|---|---|
| **6251-S8** | 1:16 | 8, 10 |
| **6251-S5** | 1:16 | 5 |
| **6251-S4** | 1:6 | 4 |



**6251-S8**

Unit: mm

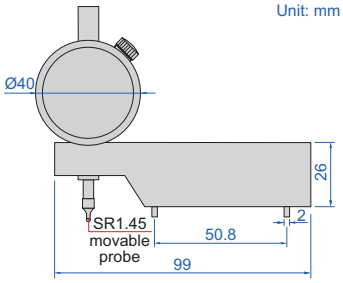



## BUTTRESS THREAD RUN-OUT GAUGE



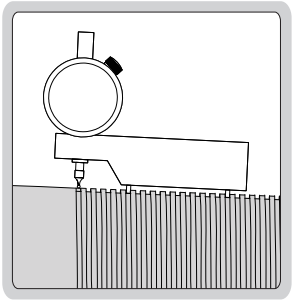
**2238-4**

Unit: mm




MEET INTERNATIONAL STANDARD API5B

application



- The run-out gauge is used to check the run-out thread root and insure that the external thread is sufficiently long and is a true run-out thread

| Code | Range | Dial indicator graduation | Dial indicator stroke | Accuracy |
|---|---|---|---|---|
| **2238-4** | 0-4mm | 0.01mm | 5mm | 0.02mm |

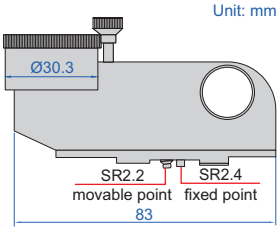
## BUTTRESS THREAD TOOTH THICKNESS GAUGES

MEET INTERNATIONAL STANDARD API5B

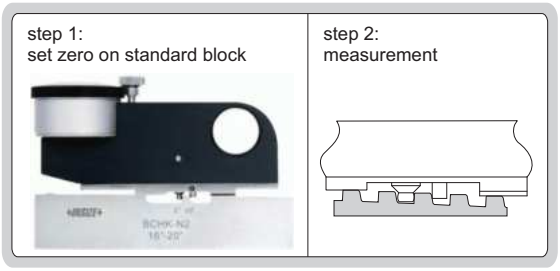


2239-21

Unit: mm




application




- Optional accessory: buttress thread tooth thickness standard blocks(code **6253** series)

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| Code | Range | Dial indicator graduation | Accuracy | Remark |
|---|---|---|---|---|
| **2239-2** | 1mm | 0.01mm | 0.02mm | can measure 4 1/2"~13 3/8" buttress thread |
| **2239-21** | 1mm | 0.01mm | 0.02mm | can measure ≥16" buttress thread |

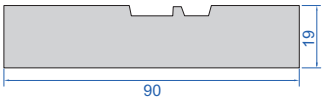
## BUTTRESS THREAD TOOTH THICKNESS STANDARD BLOCKS

CAN BE CUSTOMIZED ACCORDING TO WORKPIECES




6253-N2

Unit: mm




- Set zero of buttress thread tooth thickness gauges (code **2239** series)

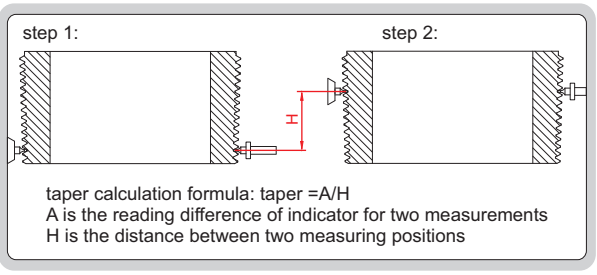
| Code | Taper | Threads per inch | Remark |
|---|---|---|---|
| **6253-N1** | 1:16 | 5 | can calibrate 4 1/2"~13 3/8" buttress internal thread gauge |
| **6253-W1** | 1:16 | 5 | can calibrate 4 1/2"~13 3/8" buttress external thread gauge |
| **6253-N2** | 1:12 | 5 | can calibrate ≥16" buttress internal thread gauge |
| **6253-W2** | 1:12 | 5 | can calibrate ≥16" buttress external thread gauge |

MEET INTERNATIONAL STANDARD API5B

## DIGITAL EXTERNAL THREAD TAPER MEASURING INSTRUMENT

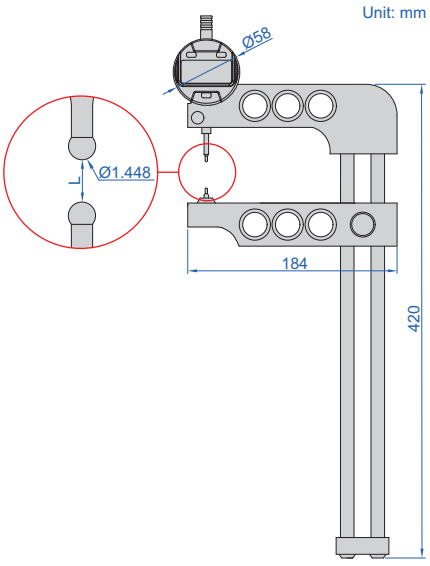
- Measure the taper of external thread
- Digital indicator stroke: 10mm/0.4"
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, ball points (code **6252** series)

principle of measurement






2240-10




| Code | Range (L) | Resolution | Accuracy |
|---|---|---|---|
| **2240-10** | 0-10"/0-254mm | 0.0005"/0.01mm | 0.03mm |

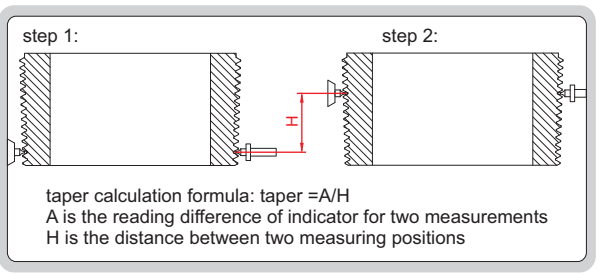
MEET INTERNATIONAL STANDARD API5B

## EXTERNAL THREAD TAPER MEASURING INSTRUMENTS

11

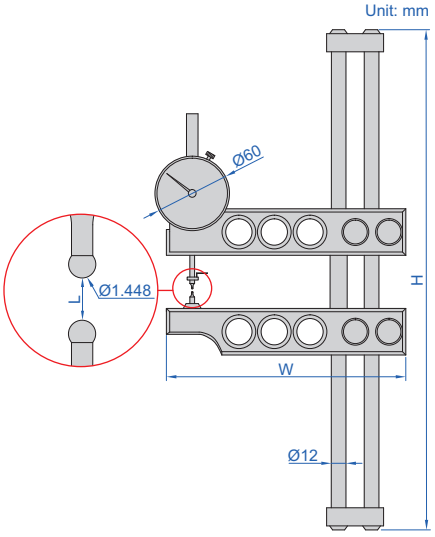
- Measure the taper of external thread
- Dial indicator stroke: 0.5"
- Dial indicator graduation: 0.001"
- Optional accessory: ball points (code **6252** series)

principle of measurement






2230-10




| Code | Range (L) | Accuracy | H | W |
|---|---|---|---|---|
| **2230-10** | 0-10"/0-254mm | 0.0015" | 400mm | 200mm |
| **2230-45** | 1-4 1/2"/25.4-114.3mm | 0.0015" | 278mm | 178mm |
| **2230-16** | 1-16"/25.4-406.4mm | 0.0015" | 600mm | 260mm |
| **2230-20** | 1-20"/25.4-508mm | 0.0015" | 680mm | 260mm |

# INTERNAL THREAD TAPER MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

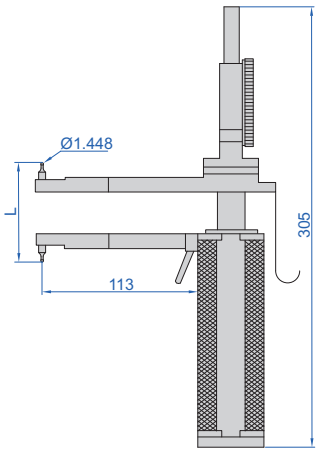


**2231-6**

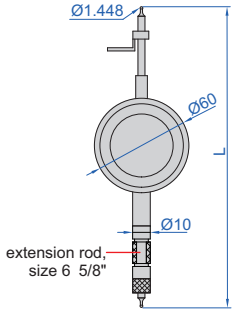


**2231-16**

Unit: mm

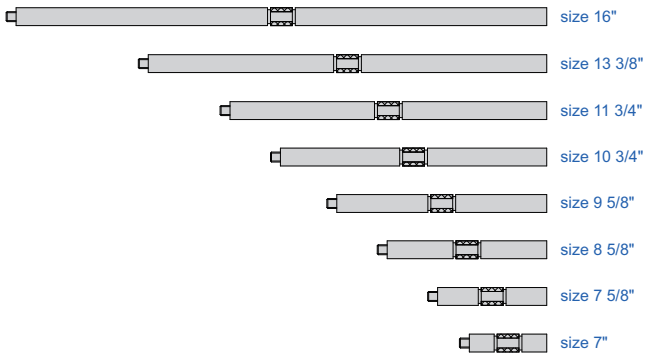



2231-6



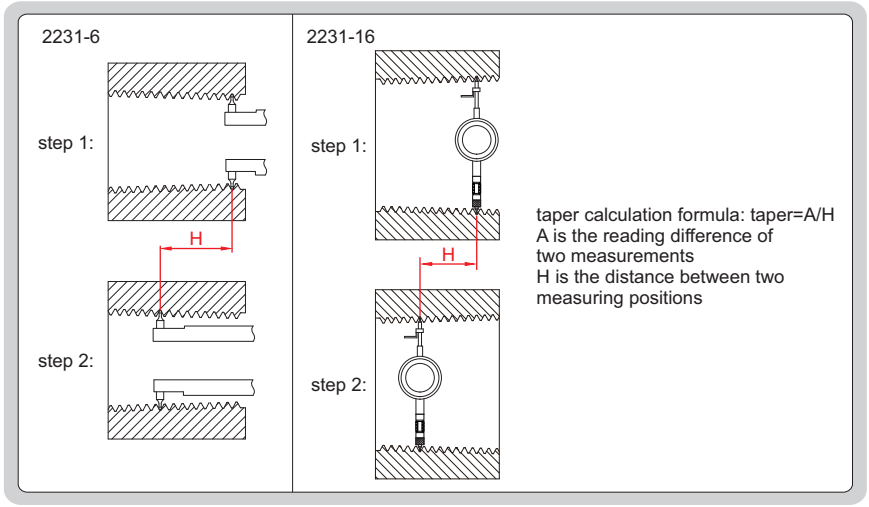

2231-16

Unit: mm




- Measure the taper of internal thread
- Optional accessory:
  ball points (code **6252** series)

principle of measurement




| Code | Range (L) | Dial indicator stroke | Dial indicator graduation | Accuracy | Remark |
|---|---|---|---|---|---|
| **2231-6** | 1.5-6"/38.1-152.4mm | 1" | 0.001" | 0.0015" | — |
| **2231-16** | 5 1/2-16"/139.7-406.4mm | 0.5" | 0.001" | 0.0015" | with 9 extension rods |

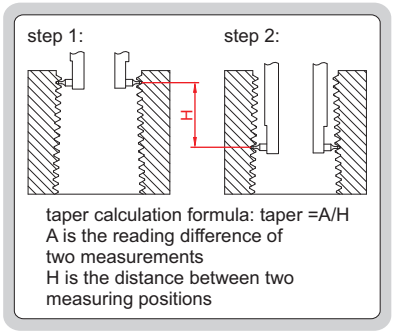


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MEET INTERNATIONAL STANDARD API5B

# DIGITAL INTERNAL THREAD TAPER MEASURING INSTRUMENT

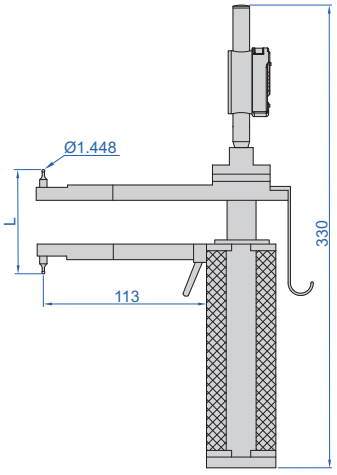
principle of measurement






**2241-6**

Unit: mm




- Measure the taper of internal thread
- Digital indicator stroke: 25.4mm/1"
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21,
  ball points (code **6252** series)

| Code | Range (L) | Resolution | Accuracy |
|---|---|---|---|
| **2241-6** | 1.5-6"/38.1-152.4mm | 0.0005"/0.01mm | 0.04mm |



# BALL POINTS

- Supplied in pair
- For taper measuring instruments (code **2230**, **2231**, **2240**, **2241**) and pitch measuring instruments (code **2234**, **2235**, **2245**)

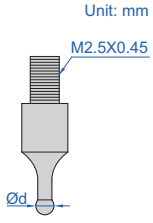


**6252-B10**

| Code | Thread type | Threads per inch | Ball dia. (Ød) | |
|---|---|---|---|---|
| | | | taper | pitch |
| **6252-B8** | round thread, line pipe | 8 | 1.829mm | 1.829mm |
| **6252-B10** | round thread, line pipe | 10 | 1.448mm | 1.448mm |
| **6252-B115** | line pipe | 11.5 | 1.27mm | 1.27mm |
| **6252-B14** | line pipe | 14 | 1.041mm | 1.041mm |
| **6252-B18** | line pipe | 18 | 0.813mm | 0.813mm |
| **6252-B27** | line pipe | 27 | 0.533mm | 0.533mm |
| **6252-B5** | buttress thread | 5 | 2.286mm | — |
| **6252-B51** | buttress thread | 5 | — | 1.575mm |
| **6252-B52** | extreme line thread | 5, 6 | 1.524mm | — |
| **6252-B53** | extreme line thread | 5 | — | 2.667mm* |
| **6252-B6** | extreme line thread | 6 | — | 2.210mm* |

*0.58mm off the top of ball

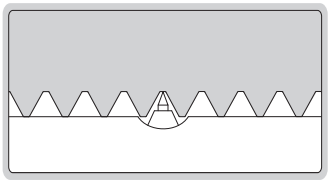
Unit: mm



## DIGITAL INTERNAL THREAD HEIGHT MEASURING INSTRUMENT

MEET INTERNATIONAL STANDARD API5B

application

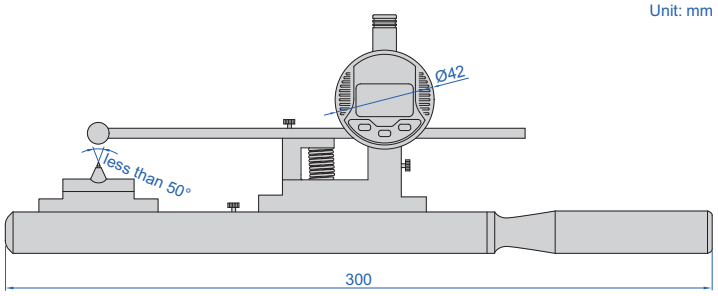




**2243-35**

- Measure the height of internal thread with nominal diameter less than 5 1/2" (139.7mm)
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-50M** page 21,
  thread height standard blocks (code **6250**)

Unit: mm



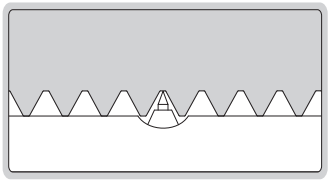

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2243-35** | 0-0.135"/0-3.5mm | 0.0005"/0.01mm | 0.02mm |

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## INTERNAL THREAD HEIGHT MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

application

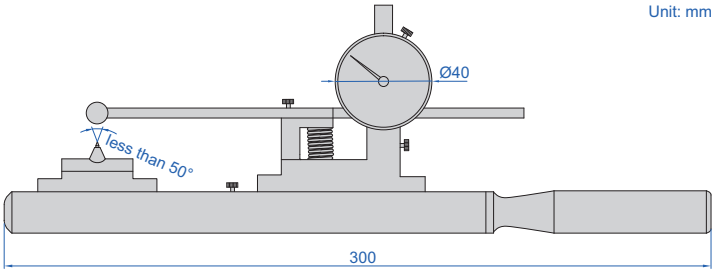




**2233-35**

- Measure the height of internal thread with nominal diameter less than 5 1/2" (139.7mm)
- Optional accessory: thread height standard blocks (code **6250**)

Unit: mm




| Code | Range | Dial indicator graduation | Accuracy |
|---|---|---|---|
| **2233-35** | 0-3.5mm | 0.01mm | 0.02mm |
| **2233-35E** | 0-1/4" | 0.0005" | 0.0008" |

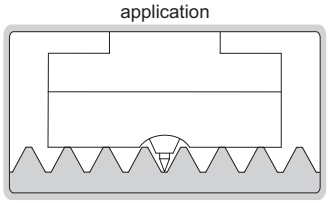


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## DIGITAL THREAD HEIGHT MEASURING INSTRUMENT

MEET INTERNATIONAL STANDARD API5B

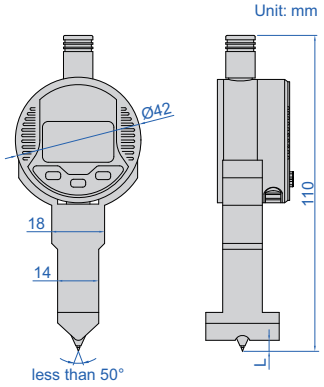
application



- Measure the height of external thread and internal thread with nominal diameter larger than 5 1/2" (139.7mm)
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, thread height standard blocks (code **6250**)



**2242-35**

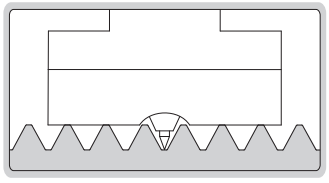



| Code | Range (L) | Resolution | Accuracy |
|---|---|---|---|
| **2242-35** | 0-0.135"/0-3.5mm | 0.0005"/0.01mm | 0.02mm |

## THREAD HEIGHT MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

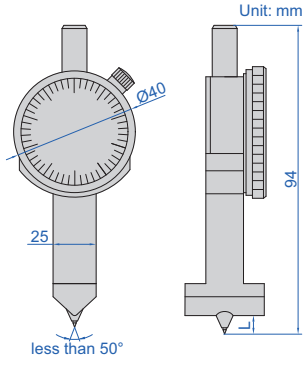
application



- Measure the height of external thread and internal thread with nominal diameter larger than 5 1/2" (139.7mm)
- Optional accessory: thread height standard blocks (code **6250**)



**2232-35**




| Code | Range (L) | Dial indicator graduation | Accuracy |
|---|---|---|---|
| **2232-35** | 0-3.5mm | 0.01mm | 0.02mm |
| **2232-35E** | 0-1/4" | 0.0005" | 0.0008" |

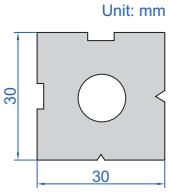
## THREAD HEIGHT STANDARD BLOCKS

CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

- Set zero of internal and external thread height measuring instruments (code **2232**, **2233**, **2242**, **2243**)



**6250-8**

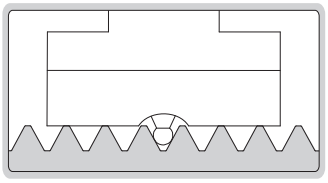



| Code | Taper | Number of thread per inch |
|---|---|---|
| **6250-4** | 1:4 | 4 |
| **6250-5** | 1:4 | 5 |
| **6250-8** | 1:16 | 8, 10 |
| **6250-51** | 1:16 | 5 |

## ROTARY SHOULDERED EXTERNAL THREAD CONNECTION HEIGHT MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API 7-2

application



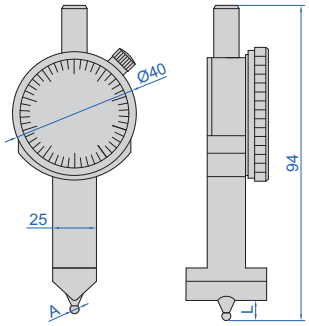
- Measure the height of rotary shouldered external thread connections
- Dial indicator graduation: 0.01mm
- Accuracy: 0.02mm
- Optional accessory: thread height standard blocks (code **6255**)

| Code | Form of thread to be inspected | Range (L) | A |
|---|---|---|---|
| **2255-038** | V-0.038R | 0-3.5mm | Ø1.829mm |
| **2255-040** | V-0.040 | 0-3.5mm | Ø0.864mm |
| **2255-050** | V-0.050 | 0-5mm | Ø1.118mm |
| **2255-055** | V-0.055 | 0-3.5mm | Ø1.829mm |



**2255-038**

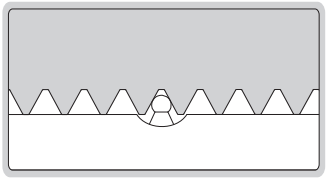
Unit: mm




## ROTARY SHOULDERED INTERNAL THREAD CONNECTION HEIGHT MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API 7-2

application





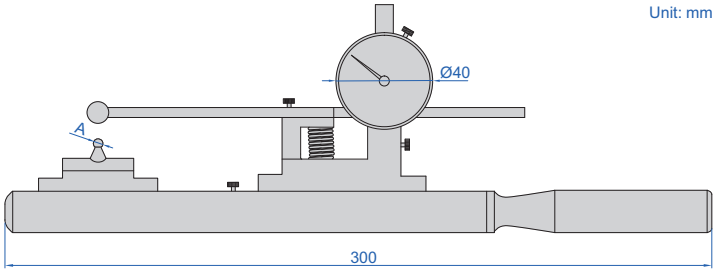


**2256-038**

- Measure the height of rotary shouldered internal thread connections
- Dial indicator graduation: 0.01mm
- Accuracy: 0.02mm
- Optional accessory: thread height standard blocks (code **6255**)

| Code | Form of thread to be inspected | Range (L) | A |
|---|---|---|---|
| **2256-038** | V-0.038R | 0-3.5mm | Ø1.829mm |
| **2256-040** | V-0.040 | 0-3.5mm | Ø0.864mm |
| **2256-050** | V-0.050 | 0-5mm | Ø1.118mm |
| **2256-055** | V-0.055 | 0-3.5mm | Ø1.829mm |

Unit: mm




## THREAD HEIGHT STANDARD BLOCKS

CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

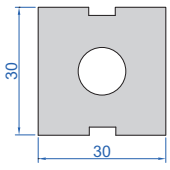
- Set zero of internal and external thread height measuring instruments (code **2255**, **2256**)

| Code | Form of thread to be inspected | Taper | Number of thread per inch |
|---|---|---|---|
| **6255-038** | V-0.038R | 1:6 and 1:4 | 4 |
| **6255-040** | V-0.040 | 1:4 | 5 |
| **6255-050** | V-0.050 | 1:6 and 1:4 | 4 |
| **6255-055** | V-0.055 | 1:8 | 6 |



**6255-038**

Unit: mm



REFER TO PAGE 97
FOR DETAILS

## DIGITAL DEPTH GAUGE (60° KNIFE EDGE BASE)



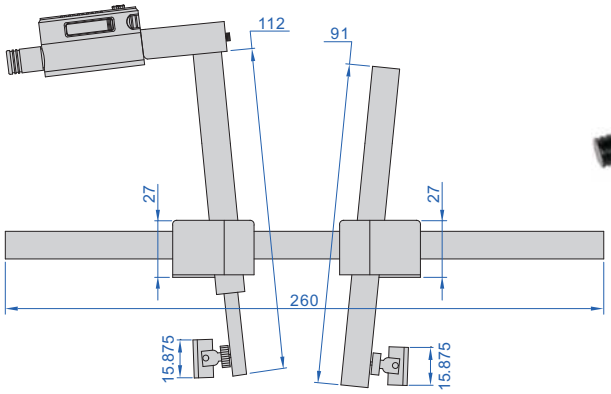

front view side view

**2143-101**

## DIGITAL INTERNAL THREAD CREST DIAMETER MEASURING INSTRUMENT

MEET INTERNATIONAL STANDARD API5B

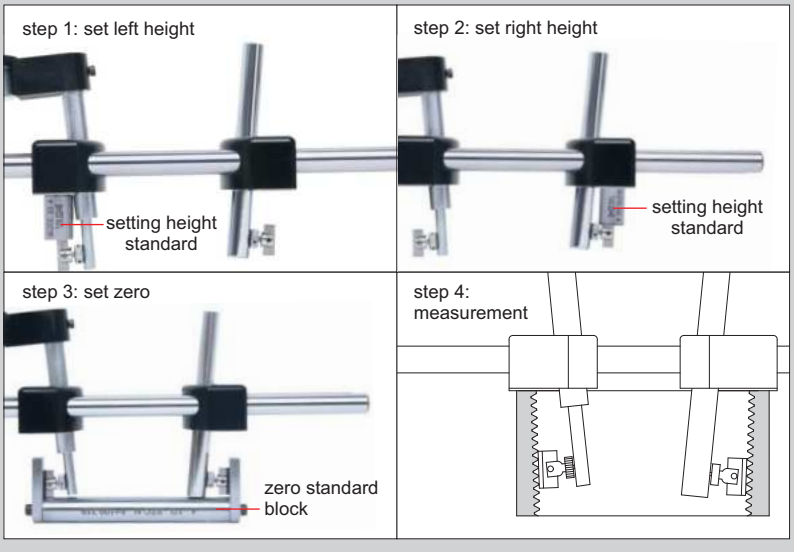
Unit: mm






**2247-5**

application




- Measure the crest diameter of internal thread with nominal diameter larger than 2 3/8" (60.325mm) and less than 5 1/2" (139.7mm)
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, height standard and zero standard block (code **2237-G□□□**, **2237-K□□□**)

| Code | Range | Digital indicator stroke | Resolution | Accuracy |
|---|---|---|---|---|
| **2247-5** | 2 3/8-5 1/2"/60.325-139.7mm | 0.2"/5mm | 0.0005"/0.01mm | 0.02mm |

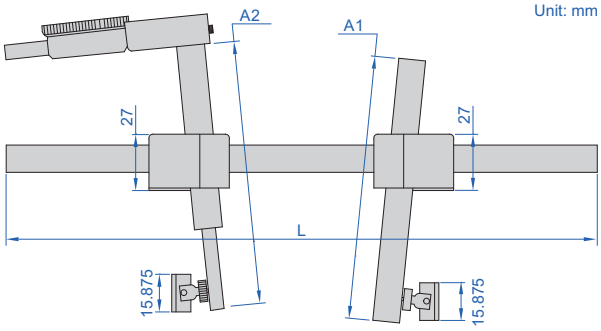
# INTERNAL THREAD CREST DIAMETER MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

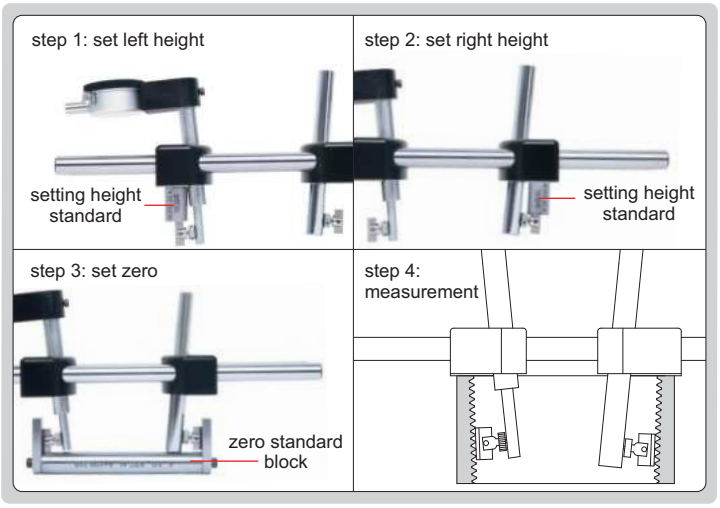


2237-5

Unit: mm




application




11

- Measure the crest diameter of internal thread with nominal diameter larger than 2 3/8" (60.325mm) and less than 20" (508mm)
- Optional accessory: height standard and zero standard block

| Code | Range | Dial indicator stroke | Dial indicator graduation | Accuracy | L | A1 | A2 |
|---|---|---|---|---|---|---|---|
| 2237-5 | 2 3/8-5 1/2"/60.325-139.7mm | 5mm | 0.01mm | 0.02mm | 260mm | 112mm | 91mm |
| 2237-5E | 2 3/8-5 1/2"/60.325-139.7mm | 0.25" | 0.0005" | 0.0008" | 260mm | 112mm | 91mm |
| 2237-20 | 4 1/2-20"/114.3-508mm | 0.50" | 0.0005" | 0.002" | 12", 18" or 24" * | 177mm | 182mm |

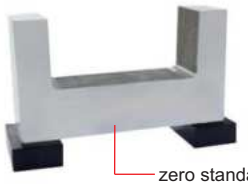
* Select suitable length of arm according to workpieces



height standard



zero standard block A



zero standard block B

**HEIGHT STANDARD AND ZERO STANDARD BLOCK (optional)**

| Code | Remark |
|---|---|
| 2237-G□□□** | including height standard and zero standard block A (without taper) |
| 2237-K□□□** | including height standard and zero standard block B (with taper) |

** Can be customized according to workpieces



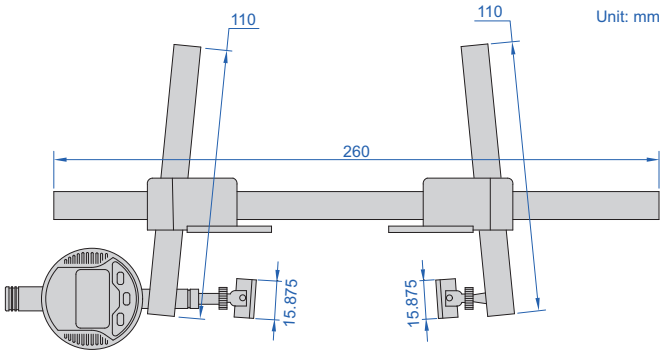
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# DIGITAL EXTERNAL THREAD CREST DIAMETER MEASURING INSTRUMENT

MEET INTERNATIONAL STANDARD API5B

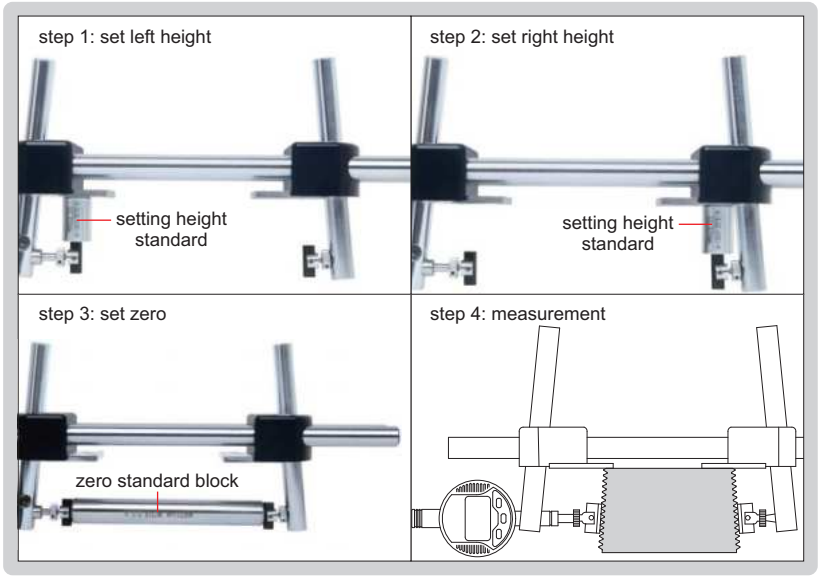


2246-5




- Measure the crest diameter of external thread with nominal diameter larger than 2 3/8" (60.325mm) and less than 5 1/2" (139.7mm)
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, height standard and zero standard block (code **2236-G□□□**, **2236-K□□□**)

application



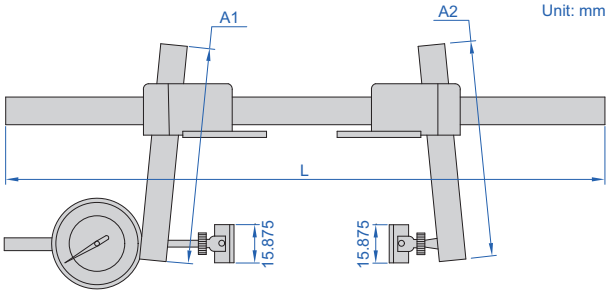

| Code | Range | Digital indicator stroke | Resolution | Accuracy |
|---|---|---|---|---|
| **2246-5** | 2 3/8-5 1/2"/60.325-139.7mm | 0.2"/5mm | 0.0005"/0.01mm | 0.02mm |

# EXTERNAL THREAD CREST DIAMETER MEASURING INSTRUMENTS

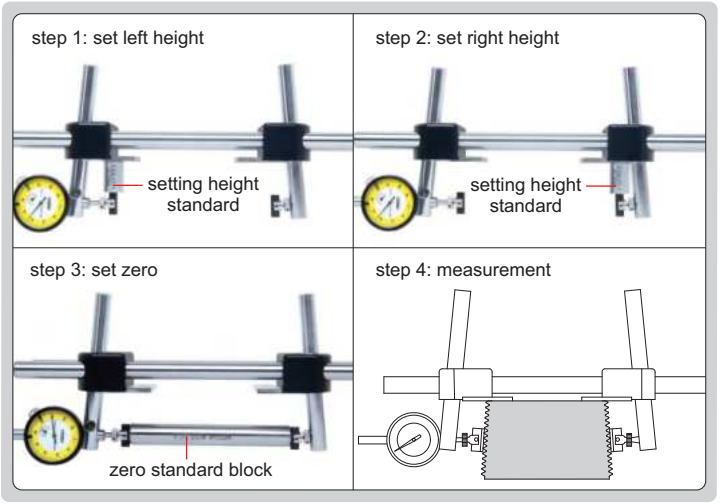
MEET INTERNATIONAL STANDARD API5B



2236-5




application




- Measure the crest diameter of external thread with nominal diameter larger than 2 3/8" (60.325mm) and less than 20" (508mm)
- Optional accessory: height standard and zero standard block

| Code | Range | Dial indicator stroke | Dial indicator graduation | Accuracy | L | A1 | A2 |
|---|---|---|---|---|---|---|---|
| 2236-5 | 2 3/8-5 1/2"/60.325-139.7mm | 5mm | 0.01mm | 0.02mm | 260mm | 110mm | 110mm |
| 2236-5E | 2 3/8-5 1/2"/60.325-139.7mm | 0.25" | 0.0005" | 0.0008" | 260mm | 110mm | 110mm |
| 2236-20 | 2 3/8-20"/60.325-508mm | 0.50" | 0.0005" | 0.002" | 12", 18" or 24" * | 177mm | 160mm |

* Select suitable length of arm according to workpieces


height standard


zero standard block A


zero standard block B

**HEIGHT STANDARD AND ZERO STANDARD BLOCK (optional)**

| Code | Remark |
|---|---|
| 2236-G□□□** | including height standard and zero standard block A (without taper) |
| 2236-K□□□** | including height standard and zero standard block B (with taper) |

** Can be customized according to workpieces

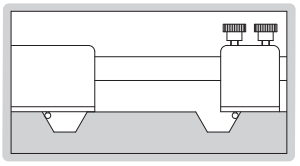
# DIGITAL GROOVE DIAMETER MEASURING INSTRUMENT

POINT DIAMETER CAN BE CUSTOM-MADE

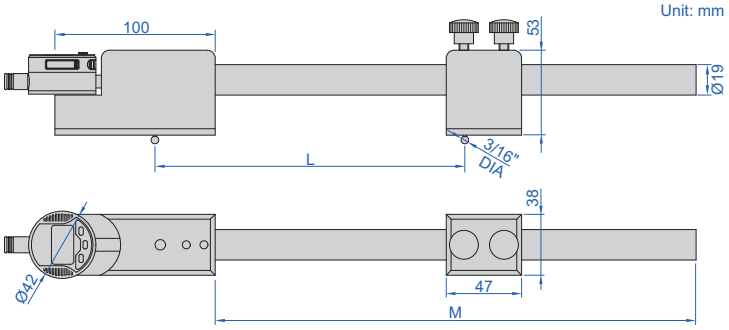



2261-5

application



Unit: mm




- Measure the groove diameter of flange ring groove
- Point height is adjustable
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21,
  groove standard block (code **6254**)

| Code | Range (L) | Movable point stroke | Resolution | Repeatability | M |
|---|---|---|---|---|---|
| **2261-5** | 2.6-13"/66-330mm | 0.2"/5mm | 0.00005"/0.001mm | 0.002mm | 12"/300mm |

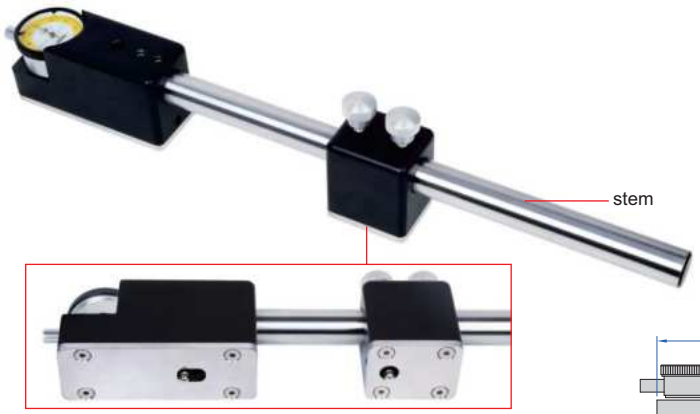
**Stem (optional)**

| Code | M |
|---|---|
| **2261-M24** | 24"/600mm |
| **2261-M30** | 30"/750mm |
| **2261-M36** | 36"/900mm |

# GROOVE DIAMETER MEASURING INSTRUMENTS

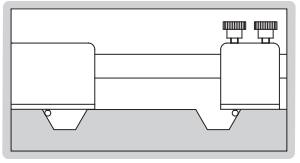


POINT DIAMETER CAN BE CUSTOM-MADE

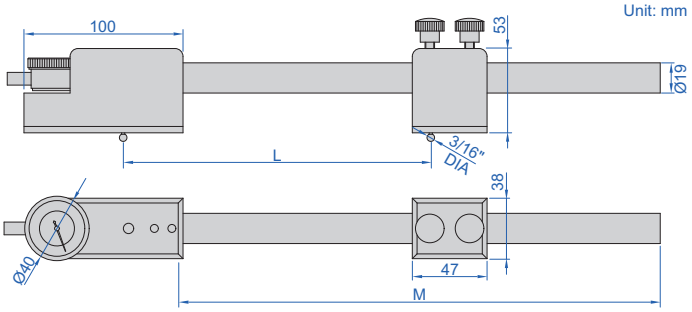



2251-5

application



Unit: mm




- Measure the groove diameter of flange ring groove
- Point height is adjustable
- Optional: groove standard block (code **6254**)

| Code | Range (L) | Movable point stroke | Graduation | Repeatability | M |
|---|---|---|---|---|---|
| **2251-5** | 2.6-13"/66-330mm | 0.2"/5mm | 0.01mm | 0.005mm | 12"/300mm |
| **2251-5E** | 2.6-13"/66-330mm | 0.2"/5mm | 0.0005" | 0.0002" | 12"/300mm |

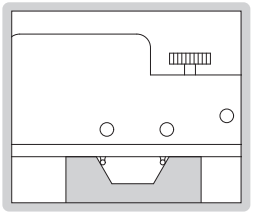
**Stem (optional)**

| Code | M |
|---|---|
| **2261-M24** | 24"/600mm |
| **2261-M30** | 30"/750mm |
| **2261-M36** | 36"/900mm |

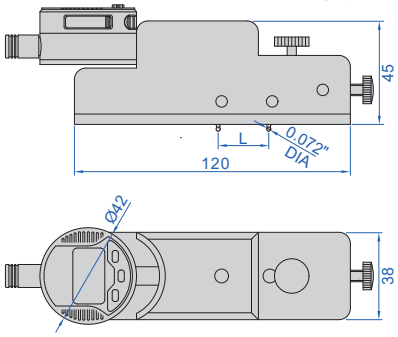
## DIGITAL GROOVE WIDTH MEASURING INSTRUMENT

POINT DIAMETER CAN BE CUSTOM-MADE

application



Unit: mm






- Measure the groove width of flange ring groove
- Point height is adjustable
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21,
  groove standard block (code **6254**)

**2260-4**

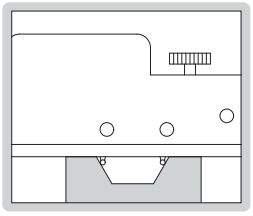
| Code | Range (L) | Movable point stroke | Resolution | Repeatability |
|---|---|---|---|---|
| **2260-4** | 0.55-1.4"/14-35.5mm | 0.16"/4mm | 0.00005"/0.001mm | 0.002mm |

## GROOVE WIDTH MEASURING INSTRUMENTS

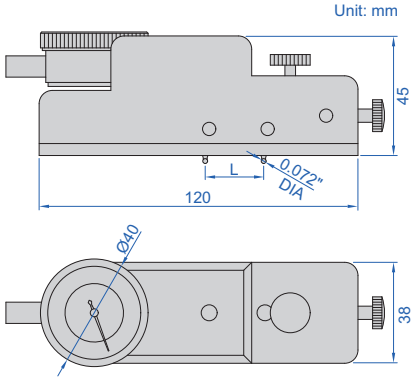
POINT DIAMETER CAN BE CUSTOM-MADE

11

application



Unit: mm






- Measure the groove width of flange ring groove
- Point height is adjustable
- Optional: groove standard block (code **6254**)

**2250-4**

| Code | Range (L) | Movable point stroke | Graduation | Repeatability |
|---|---|---|---|---|
| **2250-4** | 0.55-1.4"/14-35.5mm | 0.16"/4mm | 0.01mm | 0.005mm |
| **2250-4E** | 0.55-1.4"/14-35.5mm | 0.16"/4mm | 0.0005" | 0.0002" |

## STANDARD GROOVE BLOCK CODE 6254

CUSTOM-MADE



- Set zero of groove width and groove diameter measuring instruments (code **2250**, **2251**, **2260**, **2261**)



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REFER TO PAGE 77
FOR DETAILS

## DIGITAL CALIPERS WITH INTERCHANGEABLE BALL TIPS



1527-3001



1528-3001

REFER TO PAGE 76
FOR DETAILS

## DIGITAL RTJ RING GROOVE CALIPERS



1179-300



1179-600



REFER TO PAGE 403
FOR DETAILS

## THREAD GAUGES FOR ROTARY SHOULDERED CONNECTIONS OF PETROLEUM EQUIPMENT



4177-23

REFER TO PAGE
404~405 FOR DETAILS

## CASING, TUBING AND LINE PIPE THREAD GAUGES OF PETROLEUM AND GAS EQUIPMENT



4178-21T

# 12 STANDARDS AND GAUGE BLOCKS



Gauge Blocks
Page 347-354



Caliper Inspection Gauge Block Sets
Page 355



Micrometer Inspection Gauge Block Sets
Page 356



Cylinder Gauge Blocks
Page 357



Gauge Block Accessories
Page 358



Gauge Block Holders
Page 359



Caliper/Height Gauge Checkers
Page 360



Angle Gauge Blocks
Page 361-362



Pin Gauges
Page 362-366



Pin Gauge Handles
Page 367-369




Setting Rings
Page 370-372



Cylinder Gauges
Page 373



Adjustable Snap Gauges
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Plain Plug Gauges
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# GAUGE BLOCKS

**Accuracy according to ISO3650**

| Nominal length (mm) | Grade 0 | | Grade 1 | | Grade 2 | |
|---|---|---|---|---|---|---|
| | Limit deviation of length | Tolerance for the variation in length | Limit deviation of length | Tolerance for the variation in length | Limit deviation of length | Tolerance for the variation in length |
| over 0.5 to 10 | ±0.12μm | 0.10μm | ±0.20μm | 0.16μm | ±0.45μm | 0.30μm |
| over 10 to 25 | ±0.14μm | 0.10μm | ±0.30μm | 0.16μm | ±0.60μm | 0.30μm |
| over 25 to 50 | ±0.20μm | 0.10μm | ±0.40μm | 0.18μm | ±0.80μm | 0.30μm |
| over 50 to 75 | ±0.25μm | 0.12μm | ±0.50μm | 0.18μm | ±1.00μm | 0.35μm |
| over 75 to 100 | ±0.30μm | 0.12μm | ±0.60μm | 0.20μm | ±1.20μm | 0.35μm |
| over 100 to 150 | ±0.40μm | 0.14μm | ±0.80μm | 0.20μm | ±1.60μm | 0.40μm |
| over 150 to 200 | ±0.50μm | 0.16μm | ±1.00μm | 0.25μm | ±2.00μm | 0.40μm |
| over 200 to 250 | ±0.60μm | 0.16μm | ±1.20μm | 0.25μm | ±2.40μm | 0.45μm |
| over 250 to 300 | ±0.70μm | 0.18μm | ±1.40μm | 0.25μm | ±2.80μm | 0.50μm |
| over 300 to 400 | ±0.90μm | 0.20μm | ±1.80μm | 0.30μm | ±3.60μm | 0.50μm |
| over 400 to 500 | ±1.10μm | 0.25μm | ±2.20μm | 0.35μm | ±4.40μm | 0.60μm |
| over 500 to 600 | ±1.30μm | 0.25μm | ±2.60μm | 0.40μm | ±5.00μm | 0.70μm |
| over 600 to 700 | ±1.50μm | 0.30μm | ±3.00μm | 0.45μm | ±6.00μm | 0.70μm |
| over 700 to 800 | ±1.70μm | 0.30μm | ±3.40μm | 0.50μm | ±6.50μm | 0.80μm |
| over 800 to 900 | ±1.90μm | 0.35μm | ±3.80μm | 0.50μm | ±7.50μm | 0.90μm |
| over 900 to 1000 | ±2.00μm | 0.40μm | ±4.20μm | 0.60μm | ±8.00μm | 1.00μm |

**Grade and application**

| Grade | Application |
|---|---|
| 0 | To be used as basic standards in calibration laboratories by skilled inspection staff, to calibrate or set high accuracy measuring instruments, to calibrate gauge blocks of grade 1 and 2. |
| 1 | To be used in inspection rooms, to check gauges, inspect high accuracy parts and set measuring instruments. |
| 2 | To be used in workshops, to check production gauges, set measuring instruments and mount tools. |

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# WEAR BLOCK SETS

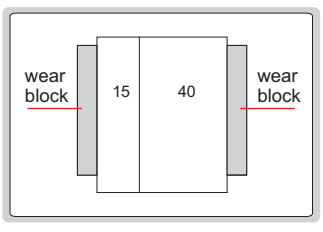
INSPECTION CERTIFICATE

- Protect the measuring surfaces of gauge blocks from excessive wear
- Meet ISO3650
- Supplied with manufacturer inspection certificate



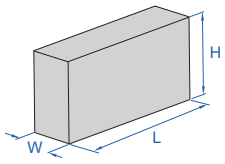

**4111-2**

| Blocks per set | Size | Material | Code | |
|---|---|---|---|---|
| | | | Grade 0 | Grade 1 |
| 2 | 1.0mm | ceramic | **4111-1** | **4111-11** |
| 2 | 1.0mm | alloy steel | **4111-1A** | **4111-11A** |
| 2 | 2.0mm | ceramic | **4111-2** | **4111-12** |
| 2 | 2.0mm | alloy steel | **4111-2A** | **4111-12A** |



INSPECTION CERTIFICATE

# CERAMIC GAUGE BLOCK SETS




Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |



**4105-87**

- Made of ceramic, extremely wear resistance and corrosion resistance, excellent dimension stability
- Meet ISO3650
- Supplied with manufacturer inspection certificate

| Blocks per set | Gauge blocks included in set | | | Code | |
|---|---|---|---|---|---|
| | Size (mm) | Step (mm) | Quantity | Grade 0 | Grade 1 |
| 112 | 1.0005 | | 1 | **4105-112** | **4105-1112** |
| | 1.001-1.009 | 0.001 | 9 | | |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-24.5 | 0.5 | 49 | | |
| | 25-100 | 25 | 4 | | |
| 103 | 1.005 | | 1 | **4105-103** | **4105-1103** |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-24.5 | 0.5 | 49 | | |
| | 25-100 | 25 | 4 | | |
| 88 | 1.0005 | | 1 | **4105-88** | **4105-188** |
| | 1.001-1.009 | 0.001 | 9 | | |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-9.5 | 0.5 | 19 | | |
| | 10-100 | 10 | 10 | | |
| 87 | 1.001-1.009 | 0.001 | 9 | **4105-87** | **4105-187** |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-9.5 | 0.5 | 19 | | |
| | 10-100 | 10 | 10 | | |
| 76 | 1.005 | | 1 | **4105-76** | **4105-176** |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-9.5 | 0.5 | 19 | | |
| | 10-40 | 10 | 4 | | |
| | 50-100 | 25 | 3 | | |
| 56 | 0.5 | | 1 | **4105-56** | **4105-156** |
| | 1.001-1.009 | 0.001 | 9 | | |
| | 1.01-1.09 | 0.01 | 9 | | |
| | 1.1-1.9 | 0.1 | 9 | | |
| | 1-24 | 1 | 24 | | |
| | 25-100 | 25 | 4 | | |

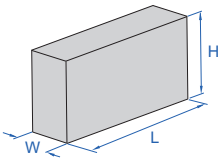
| Blocks per set | Gauge blocks included in set | | | Code | |
|---|---|---|---|---|---|
| | Size (mm) | Step (mm) | Quantity | Grade 0 | Grade 1 |
| 47 | 1.005 | | 1 | **4105-47A** | **4105-147A** |
| | 1.01-1.09 | 0.01 | 9 | | |
| | 1.1-1.9 | 0.1 | 9 | | |
| | 1-24 | 1 | 24 | | |
| | 25-100 | 25 | 4 | | |
| 47 | 1.005 | | 1 | **4105-47** | **4105-147** |
| | 1.01-1.19 | 0.01 | 19 | | |
| | 1.2-1.9 | 0.1 | 8 | | |
| | 1-9 | 1 | 9 | | |
| | 10-100 | 10 | 10 | | |
| 46 | 1.001-1.009 | 0.001 | 9 | **4105-46** | **4105-146** |
| | 1.01-1.09 | 0.01 | 9 | | |
| | 1.1-1.9 | 0.1 | 9 | | |
| | 1-9 | 1 | 9 | | |
| | 10-100 | 10 | 10 | | |
| 34 | 1.0005 | | 1 | **4105-34** | **4105-134** |
| | 1.001-1.009 | 0.001 | 9 | | |
| | 1.01-1.09 | 0.01 | 9 | | |
| | 1.1-1.9 | 0.1 | 9 | | |
| | 1-5 | 1 | 5 | | |
| | 10 | | 1 | | |
| 32 | 1.005 | | 1 | **4105-32** | **4105-132** |
| | 1.01-1.09 | 0.01 | 9 | | |
| | 1.1-1.9 | 0.1 | 9 | | |
| | 1-9 | 1 | 9 | | |
| | 10-30 | 10 | 3 | | |
| | 50 | | 1 | | |

# CERAMIC INDIVIDUAL GAUGE BLOCKS

INSPECTION CERTIFICATE



4106-A80




Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |

- Grade 0 and 1 gauge blocks are available
- Made of ceramic, extremely wear resistance and corrosion resistance
- Meet ISO3650
- Supplied with manufacturer inspection certificate

**Code explanation:**

**4106-X□□□□□**

→ **A for grade 0**

→ **B for grade 1**

**Code examples:**

| Size (L) | Grade | Code |
|---|---|---|
| **0.5mm** | **0** | **4106-AD5** |
| **10mm** | **1** | **4106-B10** |

| Size | Code |
|---|---|
| 0.5mm | **4106-XD5** |
| 1mm | **4106-X1** |
| 1.0005mm | **4106-X1D0005** |
| 1.001mm | **4106-X1D001** |
| 1.002mm | **4106-X1D002** |
| 1.003mm | **4106-X1D003** |
| 1.004mm | **4106-X1D004** |
| 1.005mm | **4106-X1D005** |
| 1.006mm | **4106-X1D006** |
| 1.007mm | **4106-X1D007** |
| 1.008mm | **4106-X1D008** |
| 1.009mm | **4106-X1D009** |
| 1.01mm | **4106-X1D01** |
| 1.02mm | **4106-X1D02** |
| 1.03mm | **4106-X1D03** |
| 1.04mm | **4106-X1D04** |
| 1.05mm | **4106-X1D05** |
| 1.06mm | **4106-X1D06** |
| 1.07mm | **4106-X1D07** |
| 1.08mm | **4106-X1D08** |
| 1.09mm | **4106-X1D09** |
| 1.1mm | **4106-X1D1** |
| 1.11mm | **4106-X1D11** |
| 1.12mm | **4106-X1D12** |
| 1.13mm | **4106-X1D13** |
| 1.14mm | **4106-X1D14** |
| 1.15mm | **4106-X1D15** |
| 1.16mm | **4106-X1D16** |
| 1.17mm | **4106-X1D17** |
| 1.18mm | **4106-X1D18** |
| 1.19mm | **4106-X1D19** |
| 1.2mm | **4106-X1D2** |
| 1.21mm | **4106-X1D21** |
| 1.22mm | **4106-X1D22** |

| Size | Code |
|---|---|
| 1.23mm | **4106-X1D23** |
| 1.24mm | **4106-X1D24** |
| 1.25mm | **4106-X1D25** |
| 1.26mm | **4106-X1D26** |
| 1.27mm | **4106-X1D27** |
| 1.28mm | **4106-X1D28** |
| 1.29mm | **4106-X1D29** |
| 1.3mm | **4106-X1D3** |
| 1.31mm | **4106-X1D31** |
| 1.32mm | **4106-X1D32** |
| 1.33mm | **4106-X1D33** |
| 1.34mm | **4106-X1D34** |
| 1.35mm | **4106-X1D35** |
| 1.36mm | **4106-X1D36** |
| 1.37mm | **4106-X1D37** |
| 1.38mm | **4106-X1D38** |
| 1.39mm | **4106-X1D39** |
| 1.4mm | **4106-X1D4** |
| 1.41mm | **4106-X1D41** |
| 1.42mm | **4106-X1D42** |
| 1.43mm | **4106-X1D43** |
| 1.44mm | **4106-X1D44** |
| 1.45mm | **4106-X1D45** |
| 1.46mm | **4106-X1D46** |
| 1.47mm | **4106-X1D47** |
| 1.48mm | **4106-X1D48** |
| 1.49mm | **4106-X1D49** |
| 1.5mm | **4106-X1D5** |
| 1.6mm | **4106-X1D6** |
| 1.7mm | **4106-X1D7** |
| 1.8mm | **4106-X1D8** |
| 1.9mm | **4106-X1D9** |
| 2mm | **4106-X2** |
| 2.5mm | **4106-X2D5** |

| Size | Code |
|---|---|
| 3mm | **4106-X3** |
| 3.5mm | **4106-X3D5** |
| 4mm | **4106-X4** |
| 4.5mm | **4106-X4D5** |
| 5mm | **4106-X5** |
| 5.1mm | **4106-X5D1** |
| 5.5mm | **4106-X5D5** |
| 6mm | **4106-X6** |
| 6.5mm | **4106-X6D5** |
| 7mm | **4106-X7** |
| 7.5mm | **4106-X7D5** |
| 7.7mm | **4106-X7D7** |
| 8mm | **4106-X8** |
| 8.5mm | **4106-X8D5** |
| 9mm | **4106-X9** |
| 9.5mm | **4106-X9D5** |
| 10mm | **4106-X10** |
| 10.3mm | **4106-X10D3** |
| 10.5mm | **4106-X10D5** |
| 11mm | **4106-X11** |
| 11.5mm | **4106-X11D5** |
| 12mm | **4106-X12** |
| 12.5mm | **4106-X12D5** |
| 12.9mm | **4106-X12D9** |
| 13mm | **4106-X13** |
| 13.5mm | **4106-X13D5** |
| 14mm | **4106-X14** |
| 14.5mm | **4106-X14D5** |
| 15mm | **4106-X15** |
| 15.5mm | **4106-X15D5** |
| 16mm | **4106-X16** |
| 16.5mm | **4106-X16D5** |
| 17mm | **4106-X17** |
| 17.5mm | **4106-X17D5** |

| Size | Code |
|---|---|
| 17.6mm | **4106-X17D6** |
| 18mm | **4106-X18** |
| 18.5mm | **4106-X18D5** |
| 19mm | **4106-X19** |
| 19.5mm | **4106-X19D5** |
| 20mm | **4106-X20** |
| 20.2mm | **4106-X20D2** |
| 20.5mm | **4106-X20D5** |
| 21mm | **4106-X21** |
| 21.5mm | **4106-X21D5** |
| 22mm | **4106-X22** |
| 22.5mm | **4106-X22D5** |
| 22.8mm | **4106-X22D8** |
| 23mm | **4106-X23** |
| 23.5mm | **4106-X23D5** |
| 24mm | **4106-X24** |
| 24.5mm | **4106-X24D5** |
| 25mm | **4106-X25** |
| 30mm | **4106-X30** |
| 40mm | **4106-X40** |
| 41.3mm | **4106-X41D3** |
| 50mm | **4106-X50** |
| 60mm | **4106-X60** |
| 70mm | **4106-X70** |
| 75mm | **4106-X75** |
| 80mm | **4106-X80** |
| 90mm | **4106-X90** |
| 100mm | **4106-X100** |
| 125mm | **4106-X125** |
| 131.4mm | **4106-X131D4** |
| 150mm | **4106-X150** |

CUSTOM-MADE
CAN SUPPLY ANY SIZES FROM
0.5 TO 100MM, SUCH AS 70.672MM

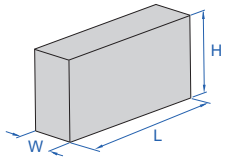
INSPECTION CERTIFICATE

# CERAMIC INDIVIDUAL GAUGE BLOCKS

INSIZE PLUS
MADE IN EUROPE



4103-A80




Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |

- Grade K, 0 and 1 gauge blocks are available
- Made of ceramic, extremely wear resistance and corrosion resistance
- Meet ISO3650
- Supplied with manufacturer inspection certificate

**Code explanation:**

**4103-X□□□□□**

- **K for grade K**
- **A for grade 0**
- **B for grade 1**

**Code examples:**

| Size (L) | Grade | Code |
|---|---|---|
| 0.5mm | K | 4103-KD5 |
| 10mm | 0 | 4103-A10 |
| 10mm | 1 | 4103-B10 |

| Size | Code |
|---|---|
| 0.5mm | 4103-XD5 |
| 1mm | 4103-X1 |
| 1.0005mm | 4103-X1D0005 |
| 1.001mm | 4103-X1D001 |
| 1.002mm | 4103-X1D002 |
| 1.003mm | 4103-X1D003 |
| 1.004mm | 4103-X1D004 |
| 1.005mm | 4103-X1D005 |
| 1.006mm | 4103-X1D006 |
| 1.007mm | 4103-X1D007 |
| 1.008mm | 4103-X1D008 |
| 1.009mm | 4103-X1D009 |
| 1.01mm | 4103-X1D01 |
| 1.02mm | 4103-X1D02 |
| 1.03mm | 4103-X1D03 |
| 1.04mm | 4103-X1D04 |
| 1.05mm | 4103-X1D05 |
| 1.06mm | 4103-X1D06 |
| 1.07mm | 4103-X1D07 |
| 1.08mm | 4103-X1D08 |
| 1.09mm | 4103-X1D09 |
| 1.1mm | 4103-X1D1 |
| 1.11mm | 4103-X1D11 |
| 1.12mm | 4103-X1D12 |
| 1.13mm | 4103-X1D13 |
| 1.14mm | 4103-X1D14 |
| 1.15mm | 4103-X1D15 |
| 1.16mm | 4103-X1D16 |
| 1.17mm | 4103-X1D17 |
| 1.18mm | 4103-X1D18 |
| 1.19mm | 4103-X1D19 |
| 1.2mm | 4103-X1D2 |
| 1.21mm | 4103-X1D21 |
| 1.22mm | 4103-X1D22 |

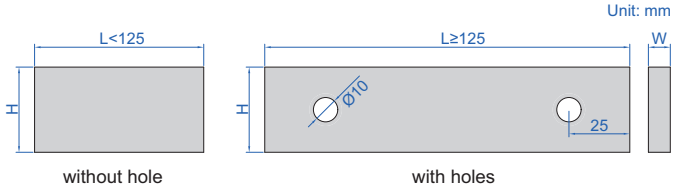
| Size | Code |
|---|---|
| 1.23mm | 4103-X1D23 |
| 1.24mm | 4103-X1D24 |
| 1.25mm | 4103-X1D25 |
| 1.26mm | 4103-X1D26 |
| 1.27mm | 4103-X1D27 |
| 1.28mm | 4103-X1D28 |
| 1.29mm | 4103-X1D29 |
| 1.3mm | 4103-X1D3 |
| 1.31mm | 4103-X1D31 |
| 1.32mm | 4103-X1D32 |
| 1.33mm | 4103-X1D33 |
| 1.34mm | 4103-X1D34 |
| 1.35mm | 4103-X1D35 |
| 1.36mm | 4103-X1D36 |
| 1.37mm | 4103-X1D37 |
| 1.38mm | 4103-X1D38 |
| 1.39mm | 4103-X1D39 |
| 1.4mm | 4103-X1D4 |
| 1.41mm | 4103-X1D41 |
| 1.42mm | 4103-X1D42 |
| 1.43mm | 4103-X1D43 |
| 1.44mm | 4103-X1D44 |
| 1.45mm | 4103-X1D45 |
| 1.46mm | 4103-X1D46 |
| 1.47mm | 4103-X1D47 |
| 1.48mm | 4103-X1D48 |
| 1.49mm | 4103-X1D49 |
| 1.5mm | 4103-X1D5 |
| 1.6mm | 4103-X1D6 |
| 1.7mm | 4103-X1D7 |
| 1.8mm | 4103-X1D8 |
| 1.9mm | 4103-X1D9 |
| 2mm | 4103-X2 |
| 2.5mm | 4103-X2D5 |

| Size | Code |
|---|---|
| 3mm | 4103-X3 |
| 3.5mm | 4103-X3D5 |
| 4mm | 4103-X4 |
| 4.5mm | 4103-X4D5 |
| 5mm | 4103-X5 |
| 5.5mm | 4103-X5D5 |
| 6mm | 4103-X6 |
| 6.5mm | 4103-X6D5 |
| 7mm | 4103-X7 |
| 7.5mm | 4103-X7D5 |
| 8mm | 4103-X8 |
| 8.5mm | 4103-X8D5 |
| 9mm | 4103-X9 |
| 9.5mm | 4103-X9D5 |
| 10mm | 4103-X10 |
| 10.5mm | 4103-X10D5 |
| 11mm | 4103-X11 |
| 11.5mm | 4103-X11D5 |
| 12mm | 4103-X12 |
| 12.5mm | 4103-X12D5 |
| 13mm | 4103-X13 |
| 13.5mm | 4103-X13D5 |
| 14mm | 4103-X14 |
| 14.5mm | 4103-X14D5 |
| 15mm | 4103-X15 |
| 15.5mm | 4103-X15D5 |
| 16mm | 4103-X16 |
| 16.5mm | 4103-X16D5 |
| 17mm | 4103-X17 |
| 17.5mm | 4103-X17D5 |
| 18mm | 4103-X18 |
| 18.5mm | 4103-X18D5 |
| 19mm | 4103-X19 |
| 19.5mm | 4103-X19D5 |

| Size | Code |
|---|---|
| 20mm | 4103-X20 |
| 20.5mm | 4103-X20D5 |
| 21mm | 4103-X21 |
| 21.5mm | 4103-X21D5 |
| 22mm | 4103-X22 |
| 22.5mm | 4103-X22D5 |
| 23mm | 4103-X23 |
| 23.5mm | 4103-X23D5 |
| 24mm | 4103-X24 |
| 24.5mm | 4103-X24D5 |
| 25mm | 4103-X25 |
| 30mm | 4103-X30 |
| 40mm | 4103-X40 |
| 50mm | 4103-X50 |
| 60mm | 4103-X60 |
| 70mm | 4103-X70 |
| 75mm | 4103-X75 |
| 80mm | 4103-X80 |
| 90mm | 4103-X90 |
| 100mm | 4103-X100 |

# STEEL GAUGE BLOCK SETS

INSPECTION CERTIFICATE




without hole　　with holes

Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |

Code example:
"**-122**" stands for "**4100-122**"



**4100-87**

POPULAR MODEL

- Made of alloy steel
- Meet ISO3650
- Gauge blocks ≥125mm have clamping holes
- Supplied with manufacturer inspection certificate

| Blocks per set | Gauge blocks included in set | | | Code (4100) | | |
|---|---|---|---|---|---|---|
| | Size (mm) | Step (mm) | Quantity | Grade 0 | Grade 1 | Grade 2 |
| 122 | 1.0005 | | 1 | -122 | -1122 | -2122 |
| | 1.001-1.009 | 0.001 | 9 | | | |
| | 1.01-1.49 | 0.01 | 49 | | | |
| | 1.6-1.9 | 0.1 | 4 | | | |
| | 0.5-24.5 | 0.5 | 49 | | | |
| | 30-100 | 10 | 8 | | | |
| | 25-75 | 50 | 2 | | | |
| 112 | 1.0005 | | 1 | -112 | -1112 | -2112 |
| | 1.001-1.009 | 0.001 | 9 | | | |
| | 1.01-1.49 | 0.01 | 49 | | | |
| | 0.5-24.5 | 0.5 | 49 | | | |
| | 25-100 | 25 | 4 | | | |
| 103 | 1.005 | | 1 | -103 | -1103 | -2103 |
| | 1.01-1.49 | 0.01 | 49 | | | |
| | 0.5-24.5 | 0.5 | 49 | | | |
| | 25-100 | 25 | 4 | | | |
| 88 | 1.0005 | | 1 | -88 | -188 | -288 |
| | 1.001-1.009 | 0.001 | 9 | | | |
| | 1.01-1.49 | 0.01 | 49 | | | |
| | 0.5-9.5 | 0.5 | 19 | | | |
| | 10-100 | 10 | 10 | | | |
| 87 | 1.001-1.009 | 0.001 | 9 | -87 | -187 | -287 |
| | 1.01-1.49 | 0.01 | 49 | | | |
| | 0.5-9.5 | 0.5 | 19 | | | |
| | 10-100 | 10 | 10 | | | |
| 83 | 0.5 | | 1 | -83 | -183 | -283 |
| | 1 | | 1 | | | |
| | 1.005 | | 1 | | | |
| | 1.01-1.49 | 0.01 | 49 | | | |
| | 1.5-1.9 | 0.1 | 5 | | | |
| | 2-9.5 | 0.5 | 16 | | | |
| | 10-100 | 10 | 10 | | | |
| 76 | 1.005 | | 1 | -76 | -176 | -276 |
| | 1.01-1.49 | 0.01 | 49 | | | |
| | 0.5-9.5 | 0.5 | 19 | | | |
| | 10-40 | 10 | 4 | | | |
| | 50-100 | 25 | 3 | | | |

| Blocks per set | Gauge blocks included in set | | | Code (4100) | | |
|---|---|---|---|---|---|---|
| | Size (mm) | Step (mm) | Quantity | Grade 0 | Grade 1 | Grade 2 |
| 56 | 0.5 | | 1 | -56 | -156 | -256 |
| | 1.001-1.009 | 0.001 | 9 | | | |
| | 1.01-1.09 | 0.01 | 9 | | | |
| | 1.1-1.9 | 0.1 | 9 | | | |
| | 1-24 | 1 | 24 | | | |
| | 25-100 | 25 | 4 | | | |
| 47 | 1.005 | | 1 | -47A | -147A | -247A |
| | 1.01-1.09 | 0.01 | 9 | | | |
| | 1.1-1.9 | 0.1 | 9 | | | |
| | 1-24 | 1 | 24 | | | |
| | 25-100 | 25 | 4 | | | |
| 47 | 1.005 | | 1 | -47 | -147 | -247 |
| | 1.01-1.19 | 0.01 | 19 | | | |
| | 1.2-1.9 | 0.1 | 8 | | | |
| | 1-9 | 1 | 9 | | | |
| | 10-100 | 10 | 10 | | | |
| 46 | 1.001-1.009 | 0.001 | 9 | -46 | -146 | -246 |
| | 1.01-1.09 | 0.01 | 9 | | | |
| | 1.1-1.9 | 0.1 | 9 | | | |
| | 1-9 | 1 | 9 | | | |
| | 10-100 | 10 | 10 | | | |
| 34 | 1.0005 | | 1 | -34 | -134 | -234 |
| | 1.001-1.009 | 0.001 | 9 | | | |
| | 1.01-1.09 | 0.01 | 9 | | | |
| | 1.1-1.9 | 0.1 | 9 | | | |
| | 1-5 | 1 | 5 | | | |
| | 10 | | 1 | | | |
| 32 | 1.005 | | 1 | -32 | -132 | -232 |
| | 1.01-1.09 | 0.01 | 9 | | | |
| | 1.1-1.9 | 0.1 | 9 | | | |
| | 1-9 | 1 | 9 | | | |
| | 10-30 | 10 | 3 | | | |
| | 50 | | 1 | | | |
| 9 | 1.001-1.009 | 0.001 | 9 | -9 | -19 | -29 |
| 9 | 0.991-0.999 | 0.001 | 9 | -9A | -19A | -29A |
| 8 | 125-175 | 25 | 3 | -8 | -18 | -28 |
| | 200-250 | 50 | 2 | | | |
| | 300-500 | 100 | 3 | | | |

# STEEL INDIVIDUAL GAUGE BLOCKS

CUSTOM-MADE
CAN SUPPLY ANY SIZES FROM
0.5 TO 1000MM, SUCH AS 72.672MM

INSPECTION CERTIFICATE



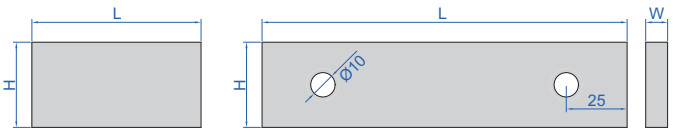
4101-A70



4101-A200

- Grade 0, 1 and 2 gauge blocks are available
- Made of alloy steel
- Meet ISO3650
- Gauge blocks with clamping holes: 125, 150, 175, 200, 250, 300, 400, 500, 600, 700, 800, 900, 1000mm
- Supplied with manufacturer inspection certificate

Unit: mm




without hole　　with holes

**Code explanation:**

4101-X□□□□□

- A for grade 0
- B for grade 1
- C for grade 2

**Code examples:**

| Size (L) | Grade | Code |
|---|---|---|
| 0.5mm | 0 | 4101-AD5 |
| 1mm | 1 | 4101-B1 |
| 10.5mm | 2 | 4101-C10D5 |

Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |

| Size | Code |
|---|---|
| 0.5mm | 4101-XD5 |
| 0.991mm | 4101-XD991 |
| 0.992mm | 4101-XD992 |
| 0.993mm | 4101-XD993 |
| 0.994mm | 4101-XD994 |
| 0.995mm | 4101-XD995 |
| 0.996mm | 4101-XD996 |
| 0.997mm | 4101-XD997 |
| 0.998mm | 4101-XD998 |
| 0.999mm | 4101-XD999 |
| 1mm | 4101-X1 |
| 1.0005mm | 4101-X1D0005 |
| 1.001mm | 4101-X1D001 |
| 1.002mm | 4101-X1D002 |
| 1.003mm | 4101-X1D003 |
| 1.004mm | 4101-X1D004 |
| 1.005mm | 4101-X1D005 |
| 1.006mm | 4101-X1D006 |
| 1.007mm | 4101-X1D007 |
| 1.008mm | 4101-X1D008 |
| 1.009mm | 4101-X1D009 |
| 1.01mm | 4101-X1D01 |
| 1.02mm | 4101-X1D02 |
| 1.03mm | 4101-X1D03 |
| 1.04mm | 4101-X1D04 |
| 1.05mm | 4101-X1D05 |
| 1.06mm | 4101-X1D06 |
| 1.07mm | 4101-X1D07 |
| 1.08mm | 4101-X1D08 |
| 1.09mm | 4101-X1D09 |
| 1.1mm | 4101-X1D1 |
| 1.11mm | 4101-X1D11 |
| 1.12mm | 4101-X1D12 |
| 1.13mm | 4101-X1D13 |
| 1.14mm | 4101-X1D14 |
| 1.15mm | 4101-X1D15 |
| 1.16mm | 4101-X1D16 |
| 1.17mm | 4101-X1D17 |
| 1.18mm | 4101-X1D18 |

| Size | Code |
|---|---|
| 1.19mm | 4101-X1D19 |
| 1.2mm | 4101-X1D2 |
| 1.21mm | 4101-X1D21 |
| 1.22mm | 4101-X1D22 |
| 1.23mm | 4101-X1D23 |
| 1.24mm | 4101-X1D24 |
| 1.25mm | 4101-X1D25 |
| 1.26mm | 4101-X1D26 |
| 1.27mm | 4101-X1D27 |
| 1.28mm | 4101-X1D28 |
| 1.29mm | 4101-X1D29 |
| 1.3mm | 4101-X1D3 |
| 1.31mm | 4101-X1D31 |
| 1.32mm | 4101-X1D32 |
| 1.33mm | 4101-X1D33 |
| 1.34mm | 4101-X1D34 |
| 1.35mm | 4101-X1D35 |
| 1.36mm | 4101-X1D36 |
| 1.37mm | 4101-X1D37 |
| 1.38mm | 4101-X1D38 |
| 1.39mm | 4101-X1D39 |
| 1.4mm | 4101-X1D4 |
| 1.41mm | 4101-X1D41 |
| 1.42mm | 4101-X1D42 |
| 1.43mm | 4101-X1D43 |
| 1.44mm | 4101-X1D44 |
| 1.45mm | 4101-X1D45 |
| 1.46mm | 4101-X1D46 |
| 1.47mm | 4101-X1D47 |
| 1.48mm | 4101-X1D48 |
| 1.49mm | 4101-X1D49 |
| 1.5mm | 4101-X1D5 |
| 1.6mm | 4101-X1D6 |
| 1.7mm | 4101-X1D7 |
| 1.8mm | 4101-X1D8 |
| 1.9mm | 4101-X1D9 |
| 2mm | 4101-X2 |
| 2.5mm | 4101-X2D5 |
| 3mm | 4101-X3 |

| Size | Code |
|---|---|
| 3.5mm | 4101-X3D5 |
| 4mm | 4101-X4 |
| 4.5mm | 4101-X4D5 |
| 5mm | 4101-X5 |
| 5.1mm | 4101-X5D1 |
| 5.5mm | 4101-X5D5 |
| 6mm | 4101-X6 |
| 6.5mm | 4101-X6D5 |
| 7mm | 4101-X7 |
| 7.5mm | 4101-X7D5 |
| 7.7mm | 4101-X7D7 |
| 8mm | 4101-X8 |
| 8.5mm | 4101-X8D5 |
| 9mm | 4101-X9 |
| 9.5mm | 4101-X9D5 |
| 10mm | 4101-X10 |
| 10.3mm | 4101-X10D3 |
| 10.5mm | 4101-X10D5 |
| 11mm | 4101-X11 |
| 11.5mm | 4101-X11D5 |
| 12mm | 4101-X12 |
| 12.5mm | 4101-X12D5 |
| 12.9mm | 4101-X12D9 |
| 13mm | 4101-X13 |
| 13.5mm | 4101-X13D5 |
| 14mm | 4101-X14 |
| 14.5mm | 4101-X14D5 |
| 15mm | 4101-X15 |
| 15.5mm | 4101-X15D5 |
| 16mm | 4101-X16 |
| 16.5mm | 4101-X16D5 |
| 17mm | 4101-X17 |
| 17.5mm | 4101-X17D5 |
| 17.6mm | 4101-X17D6 |
| 18mm | 4101-X18 |
| 18.5mm | 4101-X18D5 |
| 19mm | 4101-X19 |
| 19.5mm | 4101-X19D5 |
| 20mm | 4101-X20 |

| Size | Code |
|---|---|
| 20.2mm | 4101-X20D2 |
| 20.5mm | 4101-X20D5 |
| 21mm | 4101-X21 |
| 21.5mm | 4101-X21D5 |
| 22mm | 4101-X22 |
| 22.5mm | 4101-X22D5 |
| 22.8mm | 4101-X22D8 |
| 23mm | 4101-X23 |
| 23.5mm | 4101-X23D5 |
| 24mm | 4101-X24 |
| 24.5mm | 4101-X24D5 |
| 25mm | 4101-X25 |
| 30mm | 4101-X30 |
| 35mm | 4101-X35 |
| 40mm | 4101-X40 |
| 41.3mm | 4101-X41D3 |
| 45mm | 4101-X45 |
| 50mm | 4101-X50 |
| 60mm | 4101-X60 |
| 70mm | 4101-X70 |
| 75mm | 4101-X75 |
| 80mm | 4101-X80 |
| 90mm | 4101-X90 |
| 100mm | 4101-X100 |
| 125mm | 4101-X125 |
| 131.4mm | 4101-X131D4 |
| 150mm | 4101-X150 |
| 175mm | 4101-X175 |
| 200mm | 4101-X200 |
| 250mm | 4101-X250 |
| 300mm | 4101-X300 |
| 400mm | 4101-X400 |
| 500mm | 4101-X500 |
| 600mm | 4101-X600 |
| 700mm | 4101-X700 |
| 750mm | 4101-X750 |
| 800mm | 4101-X800 |
| 900mm | 4101-X900 |
| 1000mm | 4101-X1000 |

# STEEL INDIVIDUAL GAUGE BLOCKS

INSIZE PLUS
MADE IN EUROPE

INSPECTION CERTIFICATE

CUSTOM-MADE
CAN SUPPLY ANY SIZES FROM
0.1 TO 1000MM, SUCH AS 72.672MM



4104-A70



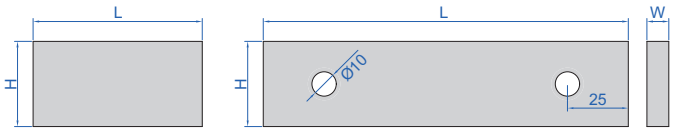
4104-A200

**Code explanation:**

4104-X□□□□□

- K for grade K
- A for grade 0
- B for grade 1

Unit: mm




**Code examples:**

| Size (L) | Grade | Code |
|---|---|---|
| 0.5mm | K | 4104-KD5 |
| 1mm | 0 | 4104-A1 |
| 10.5mm | 1 | 4104-B10D5 |

Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |

- Grade K, 0 and 1 gauge blocks are available
- Made of alloy steel
- Meet ISO3650
- Gauge blocks with clamping holes: 125, 150, 175, 200, 250, 300, 400, 500, 600, 700, 800, 900, 1000mm
- Supplied with manufacturer inspection certificate

| Size | Code |
|---|---|
| 0.1mm | 4104-XD1 |
| 0.2mm | 4104-XD2 |
| 0.3mm | 4104-XD3 |
| 0.4mm | 4104-XD4 |
| 0.5mm | 4104-XD5 |
| 1mm | 4104-X1 |
| 1.0005mm | 4104-X1D0005 |
| 1.001mm | 4104-X1D001 |
| 1.002mm | 4104-X1D002 |
| 1.003mm | 4104-X1D003 |
| 1.004mm | 4104-X1D004 |
| 1.005mm | 4104-X1D005 |
| 1.006mm | 4104-X1D006 |
| 1.007mm | 4104-X1D007 |
| 1.008mm | 4104-X1D008 |
| 1.009mm | 4104-X1D009 |
| 1.01mm | 4104-X1D01 |
| 1.02mm | 4104-X1D02 |
| 1.03mm | 4104-X1D03 |
| 1.04mm | 4104-X1D04 |
| 1.05mm | 4104-X1D05 |
| 1.06mm | 4104-X1D06 |
| 1.07mm | 4104-X1D07 |
| 1.08mm | 4104-X1D08 |
| 1.09mm | 4104-X1D09 |
| 1.1mm | 4104-X1D1 |
| 1.11mm | 4104-X1D11 |
| 1.12mm | 4104-X1D12 |
| 1.13mm | 4104-X1D13 |
| 1.14mm | 4104-X1D14 |
| 1.15mm | 4104-X1D15 |
| 1.16mm | 4104-X1D16 |
| 1.17mm | 4104-X1D17 |
| 1.18mm | 4104-X1D18 |
| 1.19mm | 4104-X1D19 |
| 1.2mm | 4104-X1D2 |

| Size | Code |
|---|---|
| 1.21mm | 4104-X1D21 |
| 1.22mm | 4104-X1D22 |
| 1.23mm | 4104-X1D23 |
| 1.24mm | 4104-X1D24 |
| 1.25mm | 4104-X1D25 |
| 1.26mm | 4104-X1D26 |
| 1.27mm | 4104-X1D27 |
| 1.28mm | 4104-X1D28 |
| 1.29mm | 4104-X1D29 |
| 1.3mm | 4104-X1D3 |
| 1.31mm | 4104-X1D31 |
| 1.32mm | 4104-X1D32 |
| 1.33mm | 4104-X1D33 |
| 1.34mm | 4104-X1D34 |
| 1.35mm | 4104-X1D35 |
| 1.36mm | 4104-X1D36 |
| 1.37mm | 4104-X1D37 |
| 1.38mm | 4104-X1D38 |
| 1.39mm | 4104-X1D39 |
| 1.4mm | 4104-X1D4 |
| 1.41mm | 4104-X1D41 |
| 1.42mm | 4104-X1D42 |
| 1.43mm | 4104-X1D43 |
| 1.44mm | 4104-X1D44 |
| 1.45mm | 4104-X1D45 |
| 1.46mm | 4104-X1D46 |
| 1.47mm | 4104-X1D47 |
| 1.48mm | 4104-X1D48 |
| 1.49mm | 4104-X1D49 |
| 1.5mm | 4104-X1D5 |
| 1.6mm | 4104-X1D6 |
| 1.7mm | 4104-X1D7 |
| 1.8mm | 4104-X1D8 |
| 1.9mm | 4104-X1D9 |
| 2mm | 4104-X2 |
| 2.5mm | 4104-X2D5 |

| Size | Code |
|---|---|
| 3mm | 4104-X3 |
| 3.5mm | 4104-X3D5 |
| 4mm | 4104-X4 |
| 4.5mm | 4104-X4D5 |
| 5mm | 4104-X5 |
| 5.5mm | 4104-X5D5 |
| 6mm | 4104-X6 |
| 6.5mm | 4104-X6D5 |
| 7mm | 4104-X7 |
| 7.5mm | 4104-X7D5 |
| 8mm | 4104-X8 |
| 8.5mm | 4104-X8D5 |
| 9mm | 4104-X9 |
| 9.5mm | 4104-X9D5 |
| 10mm | 4104-X10 |
| 10.5mm | 4104-X10D5 |
| 11mm | 4104-X11 |
| 11.5mm | 4104-X11D5 |
| 12mm | 4104-X12 |
| 12.5mm | 4104-X12D5 |
| 13mm | 4104-X13 |
| 13.5mm | 4104-X13D5 |
| 14mm | 4104-X14 |
| 14.5mm | 4104-X14D5 |
| 15mm | 4104-X15 |
| 15.5mm | 4104-X15D5 |
| 16mm | 4104-X16 |
| 16.5mm | 4104-X16D5 |
| 17mm | 4104-X17 |
| 17.5mm | 4104-X17D5 |
| 18mm | 4104-X18 |
| 18.5mm | 4104-X18D5 |
| 19mm | 4104-X19 |
| 19.5mm | 4104-X19D5 |
| 20mm | 4104-X20 |
| 20.5mm | 4104-X20D5 |

| Size | Code |
|---|---|
| 21mm | 4104-X21 |
| 21.5mm | 4104-X21D5 |
| 22mm | 4104-X22 |
| 22.5mm | 4104-X22D5 |
| 23mm | 4104-X23 |
| 23.5mm | 4104-X23D5 |
| 24mm | 4104-X24 |
| 24.5mm | 4104-X24D5 |
| 25mm | 4104-X25 |
| 30mm | 4104-X30 |
| 40mm | 4104-X40 |
| 50mm | 4104-X50 |
| 60mm | 4104-X60 |
| 70mm | 4104-X70 |
| 75mm | 4104-X75 |
| 80mm | 4104-X80 |
| 90mm | 4104-X90 |
| 100mm | 4104-X100 |
| 125mm | 4104-X125 |
| 131.4mm | 4104-X131D4 |
| 150mm | 4104-X150 |
| 175mm | 4104-X175 |
| 200mm | 4104-X200 |
| 243.5mm | 4104-X243D5 |
| 250mm | 4104-X250 |
| 281.2mm | 4104-X281D2 |
| 300mm | 4104-X300 |
| 400mm | 4104-X400 |
| 481.1mm | 4104-X481D1 |
| 500mm | 4104-X500 |
| 550mm | 4104-X550 |
| 600mm | 4104-X600 |
| 700mm | 4104-X700 |
| 800mm | 4104-X800 |
| 900mm | 4104-X900 |
| 1000mm | 4104-X1000 |





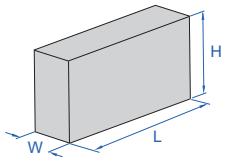
info@insz.sk | +421 944 367 573 | www.insz.sk

INSPECTION CERTIFICATE

# CARBIDE GAUGE BLOCK SETS



4164-32




- Made of carbide, extremely wear resistance and corrosion resistance, excellent dimension stability
- Meet ISO3650
- Supplied with manufacturer inspection certificate

Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |

| Blocks per set | Gauge blocks included in set | | | Code | |
|---|---|---|---|---|---|
| | Size (mm) | Step (mm) | Quantity | Grade 0 | Grade 1 |
| 122 | 1.0005 | | 1 | 4164-122 | 4164-1122 |
| | 1.001-1.009 | 0.001 | 9 | | |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 1.6-1.9 | 0.1 | 4 | | |
| | 0.5-24.5 | 0.5 | 49 | | |
| | 30-100 | 10 | 8 | | |
| | 25-75 | 50 | 2 | | |
| 112 | 1.0005 | | 1 | 4164-112 | 4164-1112 |
| | 1.001-1.009 | 0.001 | 9 | | |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-24.5 | 0.5 | 49 | | |
| | 25-100 | 25 | 4 | | |
| 103 | 1.005 | | 1 | 4164-103 | 4164-1103 |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-24.5 | 0.5 | 49 | | |
| | 25-100 | 25 | 4 | | |
| 87 | 1.001-1.009 | 0.001 | 9 | 4164-87 | 4164-187 |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-9.5 | 0.5 | 19 | | |
| | 10-100 | 10 | 10 | | |
| 83 | 0.5 | | 1 | 4164-83 | 4164-183 |
| | 1 | | 1 | | |
| | 1.005 | | 1 | | |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 1.5-1.9 | 0.1 | 5 | | |
| | 2-9.5 | 0.5 | 16 | | |
| | 10-100 | 10 | 10 | | |

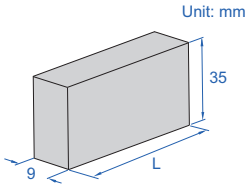
| Blocks per set | Gauge blocks included in set | | | Code | |
|---|---|---|---|---|---|
| | Size (mm) | Step (mm) | Quantity | Grade 0 | Grade 1 |
| 76 | 1.005 | | 1 | 4164-76 | 4164-176 |
| | 1.01-1.49 | 0.01 | 49 | | |
| | 0.5-9.5 | 0.5 | 19 | | |
| | 10-40 | 10 | 4 | | |
| | 50-100 | 25 | 3 | | |
| 47 | 1.005 | | 1 | 4164-47A | 4164-147A |
| | 1.01-1.09 | 0.01 | 9 | | |
| | 1.1-1.9 | 0.1 | 9 | | |
| | 1-24 | 1 | 24 | | |
| | 25-100 | 25 | 4 | | |
| 47 | 1.005 | | 1 | 4164-47 | 4164-147 |
| | 1.01-1.19 | 0.01 | 19 | | |
| | 1.2-1.9 | 0.1 | 8 | | |
| | 1-9 | 1 | 9 | | |
| | 10-100 | 10 | 10 | | |
| 46 | 1.001-1.009 | 0.001 | 9 | 4164-46 | 4164-146 |
| | 1.01-1.09 | 0.01 | 9 | | |
| | 1.1-1.9 | 0.1 | 9 | | |
| | 1-9 | 1 | 9 | | |
| | 10-100 | 10 | 10 | | |
| 32 | 1.005 | | 1 | 4164-32 | 4164-132 |
| | 1.01-1.09 | 0.01 | 9 | | |
| | 1.1-1.9 | 0.1 | 9 | | |
| | 1-9 | 1 | 9 | | |
| | 10-30 | 10 | 3 | | |
| | 50 | | 1 | | |

## CALIPER INSPECTION GAUGE BLOCK SET

INSPECTION CERTIFICATE



4108-3005




- Meet ISO3650/grade 2
- Supplied with manufacturer inspection certificate

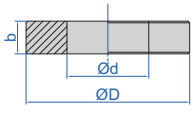
(mm)

| Code | Material | Gauge blocks included in set (L) | Applicable calipers |
|---|---|---|---|
| **4108-3005** | alloy steel | 30, 41.3, 131.4, 243.5, 281.2 | 0-150, 0-200, 0-300 |

## CALIPER INSPECTION GAUGE BLOCK AND RING GAUGE SETS

INSPECTION CERTIFICATE





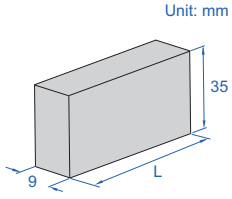

Ring gauge sizes:

| diameter (Ød) * | b | ØD |
|---|---|---|
| Ø10mm | 8mm | 32mm |
| Ø25mm | 14mm | 53mm |

* The size of the ring gauge actually supplied may have deviation. For example, the size Ø25mm may be 24.996mm



4176-30




- Gauge blocks meet ISO3650, ring gauges meet DIN2250-1:2008
- Supplied with manufacturer inspection certificate

**Grade of gauge blocks: 2** (mm)

| Code | Material | Gauge blocks included in set (L) | Ring gauges included in set (Ød) | Applicable calipers |
|---|---|---|---|---|
| **4176-30** | alloy steel | 30, 41.3, 131.4 | 10, 25 | 0-150 |

**Grade of gauge blocks: 1** (mm)

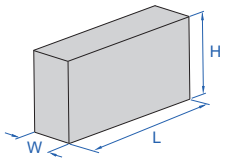
| Code | Material | Gauge blocks included in set (L) | Ring gauges included in set (Ød) | Applicable calipers |
|---|---|---|---|---|
| **4176-301** | alloy steel | 30, 41.3, 131.4 | 10, 25 | 0-150 |

INSPECTION CERTIFICATE

# MICROMETER INSPECTION GAUGE BLOCK SETS



4107-10




- One piece of optical flat is included in **4107-10** and **4107-101**
- Meet ISO3650/grade 0
- Supplied with manufacturer inspection certificate

Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |

| Code | Material | Gauge blocks included in set (mm) | Applicable micrometer | Optical flat |
|---|---|---|---|---|
| **4107-10** | ceramic | 2.5, 5.1, 7.7, 10.3, 12.9, 15, 17.6, 20.2, 22.8, 25, optical flat | 0-25mm | included |
| **4107-101** | alloy steel | 2.5, 5.1, 7.7, 10.3, 12.9, 15, 17.6, 20.2, 22.8, 25, optical flat | 0-25mm | included |
| **4107-112** | alloy steel | 25, 27.5, 30.1, 32.7, 35.3, 37.9, 40, 42.6, 45.2, 47.8, 50 | 25-50mm | not included |
| **4107-113** | alloy steel | 50, 52.5, 55.1, 57.7, 60.3, 62.9, 65, 67.6, 70.2, 72.8, 75 | 50-75mm | not included |
| **4107-114** | alloy steel | 75, 77.5, 80.1, 82.7, 85.3, 87.9, 90, 92.6, 95.2, 97.8, 100 | 75-100mm | not included |
| **4107-115** | alloy steel | 5.12, 10.24, 15.36, 21.5, 25, 30.12, 35.24, 40.36, 46.5, 50, 55.12, 60.24, 65.36, 71.5, 75, 80.12, 85.24, 90.36, 96.5, 100 | 0-100mm | not included |

INSPECTION CERTIFICATE

# MICROMETER INSPECTION GAUGE BLOCK SET

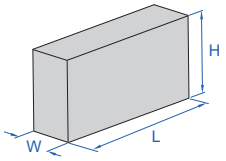


application





4160-10




Dimension:

| Size (L) | W | H |
|---|---|---|
| 0.5≤L≤10mm | 9mm | 30mm |
| L>10mm | 9mm | 35mm |

- Meet ISO3650/grade 0
- One piece of optical flat is included (size Ø30x12mm)
- Supplied with manufacturer inspection certificate

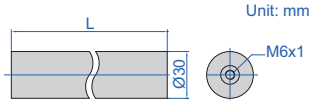
optical flat (included)



| Code | Material | Gauge blocks included in set | Applicable micrometer |
|---|---|---|---|
| **4160-10** | alloy steel | 2.5mm, 5.1mm, 7.7mm, 10.3mm, 12.9mm, 15mm, 17.6mm, 20.2mm, 22.8mm, 25mm | 0-25mm |

# CYLINDER GAUGE BLOCKS

CUSTOM-MADE
CAN SUPPLY ANY LENGTH, SUCH AS 80.672MM




INSPECTION CERTIFICATE

VIDEO

- Made of special alloy steel, hardness HRC64, high stability, wear resistance and easy combination
- Meet ISO3650 grade 1
- Can be connected with M6x1 screw and combined to any sizes up to 4m

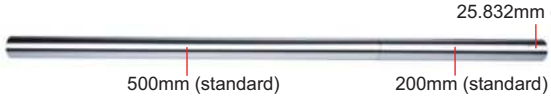


| Code | Length (L) |
|---|---|
| 4001-25* | 25mm |
| 4001-50* | 50mm |
| 4001-75* | 75mm |
| 4001-100* | 100mm |
| 4001-200* | 200mm |
| 4001-300* | 300mm |
| 4001-400* | 400mm |
| 4001-500* | 500mm |

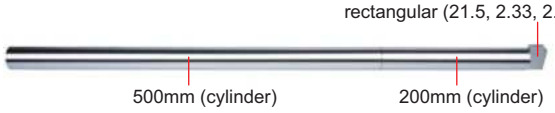
*Supplied with manufacturer inspection certificate

can be combined to any sizes up to 4m

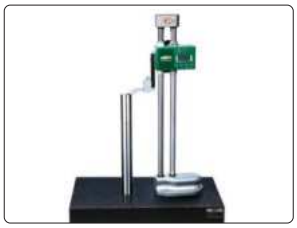
Combination 1: combined by several standard size cylinder gauge blocks and one custom size cylinder gauge block
For example: 500 (standard) + 200 (standard) + 25.832 (custom)=725.832mm
Note: in order to reduce cost, custom size should be within 100mm



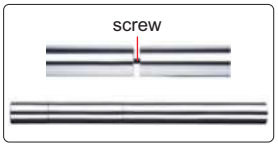

Combination 2: combined by standard size cylinder gauge blocks and rectangular gauge blocks
For example: 500 (cylinder) + 200 (cylinder) + 21.5 (rectangular) + 2.33 (rectangular) + 2.002 (rectangular)=725.832mm




high stability in vertical position, suitable for checking height gauges



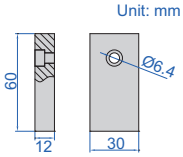
connected with M6x1mm screw




## INTERNAL BLOCKS



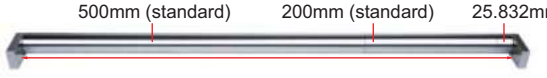
4001-A



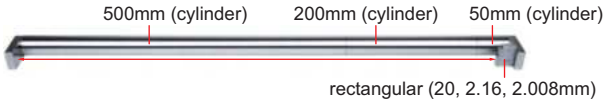

- Can be attached to cylinder and rectangular gauge blocks
- Made of special alloy steel, hardness HRC64, high stability, wear resistance and easy combination
- Supplied in a matched pair

| Code | Size | Flatness |
|---|---|---|
| 4001-A | 12mm | 0.2μm |

Combination 1: combined by several standard size cylinder gauge blocks and one custom size cylinder gauge block
For example: 500 (standard) + 200 (standard) + 25.832 (custom)=725.832mm
Note: in order to reduce cost, custom size should be within 100mm



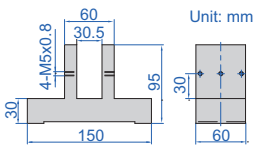

Combination 2: combined by standard size cylinder gauge blocks and rectangular gauge blocks
For example: 500 (cylinder) + 200 (cylinder) + 50 (rectangular) - 20 (rectangular) - 2.16 (rectangular) - 2.008 (rectangular)=725.832mm




## BASE

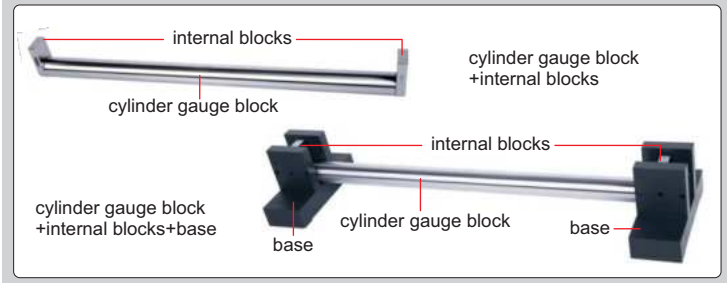


4001-B




| Code | Remark |
|---|---|
| 4001-B | supplied in pair |

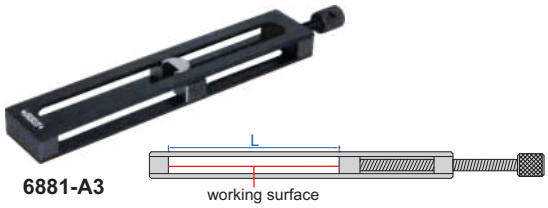
working with base






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# GAUGE BLOCK ACCESSORIES



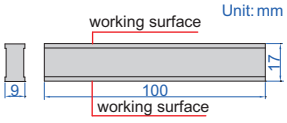

6881-A3

| Code | Name | Clamping range* (L) |
|---|---|---|
| 6881-A1 | holder | 3.5-29mm |
| 6881-A2 | holder | 29-50mm |
| 6881-A3 | holder | 50-100mm |
| 6881-A4 | holder | 100-200mm |
| 6881-A5 | holder | 200-300mm |
| 6881-A6** | holder | 300-500mm |
| 6881-A7** | holder | 500-750mm |
| 6881-A8** | holder | 750-1000mm |

*The actual clamping range should deduct the width of jaws
**Not suitable for base **6881-B**



6881-D




| Code | Name | Remark |
|---|---|---|
| 6881-D | parallel jaw | made of carbide |



6881-S17

**GAUGE BLOCK ACCESSORY SET**

| Code | Remark |
|---|---|
| 6881-S17 | 17 pcs (including below items) |

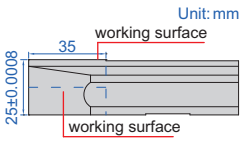
| | |
|---|---|
| holder, 0-25mm (code 6881-A1) | 1 pc |
| holder, 25-50mm (code 6881-A2) | 1 pc |
| holder, 50-100mm (code 6881-A3) | 1 pc |
| holder, 100-200mm (code 6881-A4) | 1 pc |
| holder, 200-300mm (code 6881-A5) | 1 pc |
| base (code 6881-B) | 1 pc |
| plain jaw (code 6881-C) | 1 pair |
| parallel jaw (code 6881-D) | 1 pc |
| half round jaw, 2.5mm (code 6881-E1) | 1 pair |
| half round jaw, 5.0mm (code 6881-E2) | 1 pair |
| half round jaw, 6.0mm (code 6881-E3) | 1 pair |
| scriber (code 6881-F) | 1 pc |
| centre point (code 6881-G) | 1 pc |

VIDEO

| Code | Name |
|---|---|
| 6881-B | base |

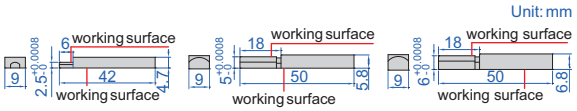


6881-B





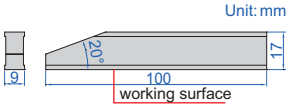

6881-E2




| Code | Name | Size | Remark |
|---|---|---|---|
| 6881-E1 | half round jaw | 2.5mm | made of carbide, supplied in pair |
| 6881-E2 | half round jaw | 5.0mm | made of carbide, supplied in pair |
| 6881-E3 | half round jaw | 6.0mm | made of carbide, supplied in pair |



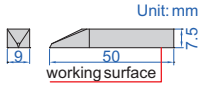
6881-C




| Code | Name | Remark |
|---|---|---|
| 6881-C | plain jaw | made of carbide, supplied in pair |



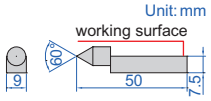
6881-F




| Code | Name | Remark |
|---|---|---|
| 6881-F | scriber | made of carbide |

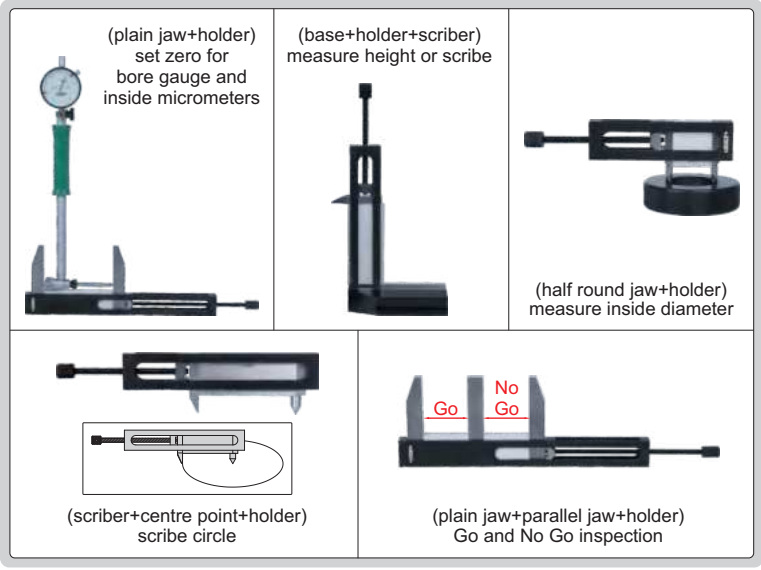


6881-G




| Code | Name | Remark |
|---|---|---|
| 6881-G | centre point | the tip is made of carbide |

application

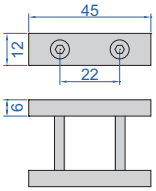


## GAUGE BLOCK HOLDERS



6883-4

Unit: mm




- Made of aluminum
- To be used with individual steel gauge blocks (code **4101**) as Go and No-Go gauge

| Code | Applicable gauge block size |
|---|---|
| 6883-1 | 1.5-5mm |
| 6883-2 | 5-10mm |
| 6883-3 | 10-15mm |
| 6883-4 | 15-20mm |
| 6883-5 | 20-25mm |

to be used as Go and No-Go gauge



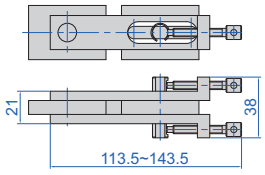
## GAUGE BLOCK HOLDER

VIDEO



6886-1

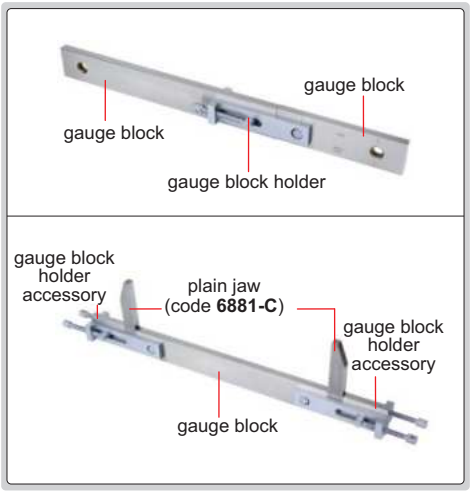
Unit: mm




- For gauge blocks over 125mm with clamping holes
- Optional accessory: gauge block holder accessory, gauge block accessory (code **6881**)

| Code |
|---|
| 6886-1 |

application



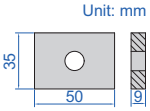

## GAUGE BLOCK HOLDER ACCESSORY

| Code |
|---|
| 6886-A |



6886-A

Unit: mm



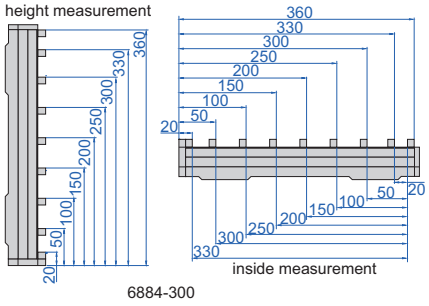



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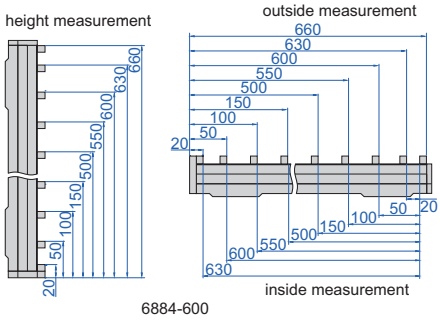
INSPECTION CERTIFICATE

# CALIPER/HEIGHT GAUGE CHECKERS

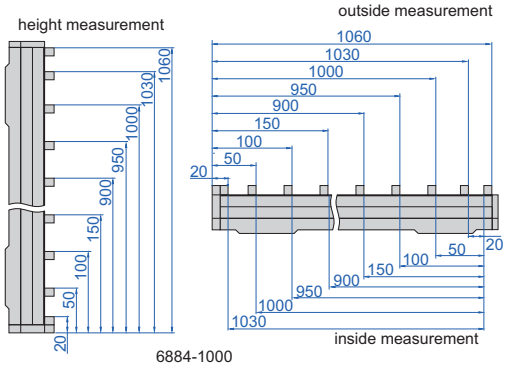
Unit: mm




6884-300




6884-600




6884-1000



horizontal use

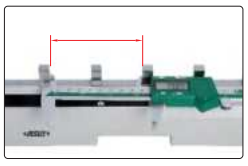


vertical use

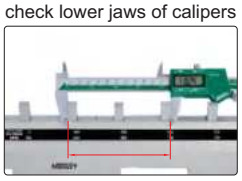
**6884-300**

- To check calipers and height gauges
- Constructed with steel gauge blocks

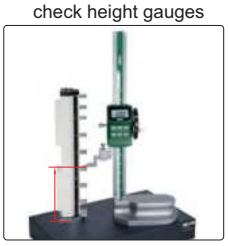
check upper jaws of calipers



check lower jaws of calipers



check height gauges



12

(mm)

| Code | Size | Range of inside measurement | Range of outside measurement | Range of height measurement | Accuracy |
|---|---|---|---|---|---|
| **6884-300*** | 0-300mm | 20, 50, 100, 150, 200, 250, 300, 330 | 20, 50, 100, 150, 200, 250, 300, 330, 360 | 20, 50, 100, 150, 200, 250, 300, 330, 360 | ±3μm |
| **6884-600*** | 0-600mm | 20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 630 | 20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 630, 660 | 20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 630, 660 | ±5μm |
| **6884-1000*** | 0-1000mm | 20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1030 | 20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1030, 1060 | 20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1030, 1060 | ±7μm |

## INSIDE MICROMETER ACCESSORY

- Supplied with a pair of 5mm carbide gauge blocks

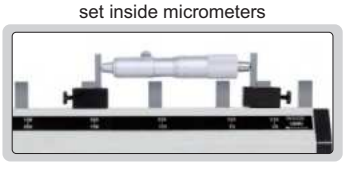
| Code |
|---|
| **6884-A10*** |

*Supplied with manufacturer inspection certificate



**6884-A10**

set inside micrometers



# ANGLE GAUGE BLOCKS

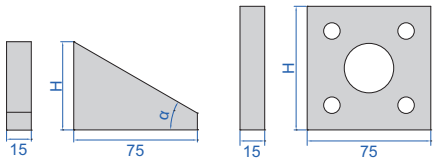
INSPECTION CERTIFICATE



4002-15

- Accuracy: ±2"
- To inspect protractor, taper gauge, index plate, index head and goniometer, can also be used to set angle
- Made of special alloy steel, hardness HRC64, high stability, wear resistance and easy combination
- Can be combined to any angle with interval 6 seconds after combination (6", 12", 18", ... , 360°)

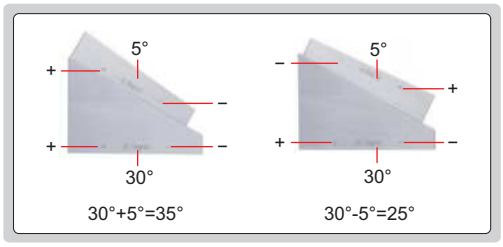
Unit: mm




**Individual**

| Code | Angle (α) | H (mm) |
|---|---|---|
| 4002-A1* | 1° | 11.5 |
| 4002-A3* | 3° | 14.0 |
| 4002-A5* | 5° | 16.5 |
| 4002-A9* | 9° | 22.0 |
| 4002-A15* | 15° | 30. 5 |
| 4002-A27* | 27° | 48.0 |
| 4002-A30* | 30° | 53.5 |
| 4002-A41* | 41° | 75.0 |
| 4002-A45* | 45° | 84.0 |
| 4002-B1* | 1' | 10.0 |
| 4002-B3* | 3' | 10.0 |
| 4002-B5* | 5' | 10.0 |
| 4002-B9* | 9' | 10.0 |
| 4002-B20* | 20' | 10.0 |
| 4002-B27* | 27' | 10.0 |
| 4002-B30* | 30' | 10.0 |
| 4002-C6* | 6" | 10.0 |
| 4002-C12* | 12" | 10.0 |
| 4002-C18* | 18" | 10.0 |
| 4002-C30* | 30" | 10.0 |
| 4002-D* | 90°/90°/90°/90° | 75.0 |

combination



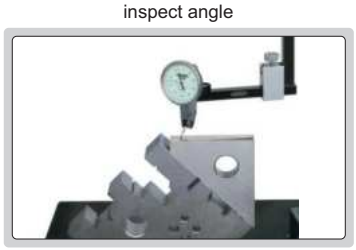

set angle of plate



**Set**

| Code | Angle (α) | Total quantity |
|---|---|---|
| 4002-13* | 1°, 3°, 9°, 27°, 41°, 1', 3', 9', 27', 6", 18", 30", 90°/90°/90°/90° | 13 |
| 4002-15* | 1°, 3°, 5°, 15°, 30°, 45°, 1', 3', 5', 20', 30', 6", 12", 30", 90°/90°/90°/90° | 15 |

inspect angle

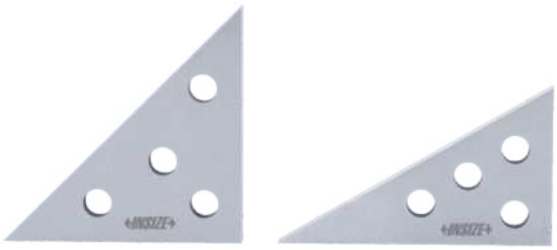


*Supplied with manufacturer inspection certificate



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## ANGLE BLOCK SET

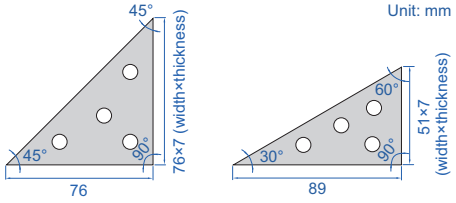


6540-1

- For angle set-up in tooling, production and inspection
- Accuracy of angle: ±9 seconds
- Made of alloy steel
- Hardness HRC60±2

| Code | Angle plates included | Angle |
|---|---|---|
| 6540-1 | 2 | 45°, 45°, 90° |
| | | 30°, 60°, 90° |

Unit: mm




## CARBIDE PIN GAUGE SETS

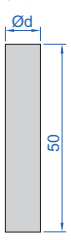


4194-10D

- Meet DIN2269, grade 1
- Made of carbide
- Hardness HRA90-90.5
- Diameter accuracy: ±1μm

| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4194-1S | 0.30, 0.31, 0.32, ···· 1.00 | 0.01mm | 71 |
| 4194-2S | 1.00, 1.01, 1.02, ···· 2.00 | 0.01mm | 101 |
| 4194-3S | 2.00, 2.01, 2.02, ···· 3.00 | 0.01mm | 101 |
| 4194-4S | 3.00, 3.01, 3.02, ···· 4.00 | 0.01mm | 101 |
| 4194-5S | 4.00, 4.01, 4.02, ···· 5.00 | 0.01mm | 101 |
| 4194-6S | 5.00, 5.01, 5.02, ···· 6.00 | 0.01mm | 101 |
| 4194-7S | 6.00, 6.01, 6.02, ···· 7.00 | 0.01mm | 101 |
| 4194-8S | 7.00, 7.01, 7.02, ···· 8.00 | 0.01mm | 101 |
| 4194-9S | 8.00, 8.01, 8.02, ···· 9.00 | 0.01mm | 101 |
| 4194-10S | 9.00, 9.01, 9.02, ···· 10.00 | 0.01mm | 101 |
| 4194-10D | 10.00, 10.01, 10.02, ···· 10.50 | 0.01mm | 51 |
| 4194-11 | 10.50, 10.51, 10.52, ···· 11.00 | 0.01mm | 51 |
| 4194-11D | 11.00, 11.01, 11.02, ···· 11.50 | 0.01mm | 51 |
| 4194-12 | 11.50, 11.51, 11.52, ···· 12.00 | 0.01mm | 51 |
| 4194-12D | 12.00, 12.01, 12.02, ···· 12.50 | 0.01mm | 51 |
| 4194-13 | 12.50, 12.51, 12.52, ···· 13.00 | 0.01mm | 51 |
| 4194-13D | 13.00, 13.01, 13.02, ···· 13.50 | 0.01mm | 51 |
| 4194-14 | 13.50, 13.51, 13.52, ···· 14.00 | 0.01mm | 51 |
| 4194-14D | 14.00, 14.01, 14.02, ···· 14.50 | 0.01mm | 51 |
| 4194-15 | 14.50, 14.51, 14.52, ···· 15.00 | 0.01mm | 51 |

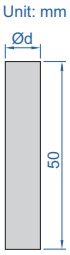
Unit: mm



# STEEL PIN GAUGE SETS

POPULAR MODEL

- Meet DIN2269, grade 1
- Made of alloy steel
- Hardness HRC62-65
- Diameter accuracy: ±1μm






4166-10

| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4166-2S | 1.00, 1.01, 1.02, ···· 2.00 | 0.01mm | 101 |
| 4166-3S | 2.00, 2.01, 2.02, ···· 3.00 | 0.01mm | 101 |
| 4166-4S | 3.00, 3.01, 3.02, ···· 4.00 | 0.01mm | 101 |
| 4166-5S | 4.00, 4.01, 4.02, ···· 5.00 | 0.01mm | 101 |
| 4166-6S | 5.00, 5.01, 5.02, ···· 6.00 | 0.01mm | 101 |
| 4166-7S | 6.00, 6.01, 6.02, ···· 7.00 | 0.01mm | 101 |
| 4166-8S | 7.00, 7.01, 7.02, ···· 8.00 | 0.01mm | 101 |
| 4166-9S | 8.00, 8.01, 8.02, ···· 9.00 | 0.01mm | 101 |
| 4166-10S | 9.00, 9.01, 9.02, ···· 10.00 | 0.01mm | 101 |

| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4166-411 | 1.0, 1.1, 1.2, ···· 5.0 | 0.1mm | 41 |
| 4166-511 | 5.0, 5.1, 5.2, ···· 10.0 | 0.1mm | 51 |
| 4166-512 | 10.0, 10.1, 10.2, ···· 15.0 | 0.1mm | 51 |
| 4166-513 | 15.0, 15.1, 15.2, ···· 20.0 | 0.1mm | 51 |

| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4166-0D | 0.20, 0.21, 0.22, ···· 0.50 | 0.01mm | 31 |
| 4166-1 | 0.50, 0.51, 0.52, ···· 1.00 | 0.01mm | 51 |
| 4166-1D | 1.00, 1.01, 1.02, ···· 1.50 | 0.01mm | 51 |
| 4166-2 | 1.50, 1.51, 1.52, ···· 2.00 | 0.01mm | 51 |
| 4166-2D | 2.00, 2.01, 2.02, ···· 2.50 | 0.01mm | 51 |
| 4166-3 | 2.50, 2.51, 2.52, ···· 3.00 | 0.01mm | 51 |
| 4166-3D | 3.00, 3.01, 3.02, ···· 3.50 | 0.01mm | 51 |
| 4166-4 | 3.50, 3.51, 3.52, ···· 4.00 | 0.01mm | 51 |
| 4166-4D | 4.00, 4.01, 4.02, ···· 4.50 | 0.01mm | 51 |
| 4166-5 | 4.50, 4.51, 4.52, ···· 5.00 | 0.01mm | 51 |
| 4166-5D | 5.00, 5.01, 5.02, ···· 5.50 | 0.01mm | 51 |
| 4166-6 | 5.50, 5.51, 5.52, ···· 6.00 | 0.01mm | 51 |
| 4166-6D | 6.00, 6.01, 6.02, ···· 6.50 | 0.01mm | 51 |
| 4166-7 | 6.50, 6.51, 6.52, ···· 7.00 | 0.01mm | 51 |
| 4166-7D | 7.00, 7.01, 7.02, ···· 7.50 | 0.01mm | 51 |
| 4166-8 | 7.50, 7.51, 7.52, ···· 8.00 | 0.01mm | 51 |
| 4166-8D | 8.00, 8.01, 8.02, ···· 8.50 | 0.01mm | 51 |
| 4166-9 | 8.50, 8.51, 8.52, ···· 9.00 | 0.01mm | 51 |
| 4166-9D | 9.00, 9.01, 9.02, ···· 9.50 | 0.01mm | 51 |
| 4166-10 | 9.50, 9.51, 9.52, ···· 10.00 | 0.01mm | 51 |

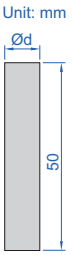
| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4166-10D | 10.00, 10.01, 10.02, ···· 10.50 | 0.01mm | 51 |
| 4166-11 | 10.50, 10.51, 10.52, ···· 11.00 | 0.01mm | 51 |
| 4166-11D | 11.00, 11.01, 11.02, ···· 11.50 | 0.01mm | 51 |
| 4166-12 | 11.50, 11.51, 11.52, ···· 12.00 | 0.01mm | 51 |
| 4166-12D | 12.00, 12.01, 12.02, ···· 12.50 | 0.01mm | 51 |
| 4166-13 | 12.50, 12.51, 12.52, ···· 13.00 | 0.01mm | 51 |
| 4166-13D | 13.00, 13.01, 13.02, ···· 13.50 | 0.01mm | 51 |
| 4166-14 | 13.50, 13.51, 13.52, ···· 14.00 | 0.01mm | 51 |
| 4166-14D | 14.00, 14.01, 14.02, ···· 14.50 | 0.01mm | 51 |
| 4166-15 | 14.50, 14.51, 14.52, ···· 15.00 | 0.01mm | 51 |
| 4166-15D | 15.00, 15.01, 15.02, ···· 15.50 | 0.01mm | 51 |
| 4166-16 | 15.50, 15.51, 15.52, ···· 16.00 | 0.01mm | 51 |
| 4166-16D | 16.00, 16.01, 16.02, ···· 16.50 | 0.01mm | 51 |
| 4166-17 | 16.50, 16.51, 16.52, ···· 17.00 | 0.01mm | 51 |
| 4166-17D | 17.00, 17.01, 17.02, ···· 17.50 | 0.01mm | 51 |
| 4166-18 | 17.50, 17.51, 17.52, ···· 18.00 | 0.01mm | 51 |
| 4166-18D | 18.00, 18.01, 18.02, ···· 18.50 | 0.01mm | 51 |
| 4166-19 | 18.50, 18.51, 18.52, ···· 19.00 | 0.01mm | 51 |
| 4166-19D | 19.00, 19.01, 19.02, ···· 19.50 | 0.01mm | 51 |
| 4166-20 | 19.50, 19.51, 19.52, ···· 20.00 | 0.01mm | 51 |

# CERAMIC PIN GAUGE SETS

- Meet DIN2269, grade 1
- Made of ceramic, extremely wear resistance, corrosion resistance and dimensional stability
- Diameter accuracy: ±1μm



4169-3




| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4169-2S | 1.00, 1.01, 1.02, ···· 2.00 | 0.01mm | 101 |
| 4169-3S | 2.00, 2.01, 2.02, ···· 3.00 | 0.01mm | 101 |
| 4169-4S | 3.00, 3.01, 3.02, ···· 4.00 | 0.01mm | 101 |
| 4169-5S | 4.00, 4.01, 4.02, ···· 5.00 | 0.01mm | 101 |
| 4169-6S | 5.00, 5.01, 5.02, ···· 6.00 | 0.01mm | 101 |
| 4169-7S | 6.00, 6.01, 6.02, ···· 7.00 | 0.01mm | 101 |
| 4169-8S | 7.00, 7.01, 7.02, ···· 8.00 | 0.01mm | 101 |
| 4169-9S | 8.00, 8.01, 8.02, ···· 9.00 | 0.01mm | 101 |
| 4169-10S | 9.00, 9.01, 9.02, ···· 10.00 | 0.01mm | 101 |

| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4169-411 | 1.0, 1.1, 1.2, ···· 5.0 | 0.1mm | 41 |
| 4169-511 | 5.0, 5.1, 5.2, ···· 10.0 | 0.1mm | 51 |
| 4169-512 | 10.0, 10.1, 10.2, ···· 15.0 | 0.1mm | 51 |
| 4169-513 | 15.0, 15.1, 15.2, ···· 20.0 | 0.1mm | 51 |



| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4169-0D | 0.30, 0.31, 0.32, ···· 0.50 | 0.01mm | 21 |
| 4169-1 | 0.50, 0.51, 0.52, ···· 1.00 | 0.01mm | 51 |
| 4169-1D | 1.00, 1.01, 1.02, ···· 1.50 | 0.01mm | 51 |
| 4169-2 | 1.50, 1.51, 1.52, ···· 2.00 | 0.01mm | 51 |
| 4169-2D | 2.00, 2.01, 2.02, ···· 2.50 | 0.01mm | 51 |
| 4169-3 | 2.50, 2.51, 2.52, ···· 3.00 | 0.01mm | 51 |
| 4169-3D | 3.00, 3.01, 3.02, ···· 3.50 | 0.01mm | 51 |
| 4169-4 | 3.50, 3.51, 3.52, ···· 4.00 | 0.01mm | 51 |
| 4169-4D | 4.00, 4.01, 4.02, ···· 4.50 | 0.01mm | 51 |
| 4169-5 | 4.50, 4.51, 4.52, ···· 5.00 | 0.01mm | 51 |
| 4169-5D | 5.00, 5.01, 5.02, ···· 5.50 | 0.01mm | 51 |
| 4169-6 | 5.50, 5.51, 5.52, ···· 6.00 | 0.01mm | 51 |
| 4169-6D | 6.00, 6.01, 6.02, ···· 6.50 | 0.01mm | 51 |
| 4169-7 | 6.50, 6.51, 6.52, ···· 7.00 | 0.01mm | 51 |
| 4169-7D | 7.00, 7.01, 7.02, ···· 7.50 | 0.01mm | 51 |
| 4169-8 | 7.50, 7.51, 7.52, ···· 8.00 | 0.01mm | 51 |
| 4169-8D | 8.00, 8.01, 8.02, ···· 8.50 | 0.01mm | 51 |
| 4169-9 | 8.50, 8.51, 8.52, ···· 9.00 | 0.01mm | 51 |
| 4169-9D | 9.00, 9.01, 9.02, ···· 9.50 | 0.01mm | 51 |
| 4169-10 | 9.50, 9.51, 9.52, ···· 10.00 | 0.01mm | 51 |

| Code | Diameter Ød (mm) | Step | Pin gauges per set |
|---|---|---|---|
| 4169-10D | 10.00, 10.01, 10.02, ···· 10.50 | 0.01mm | 51 |
| 4169-11 | 10.50, 10.51, 10.52, ···· 11.00 | 0.01mm | 51 |
| 4169-11D | 11.00, 11.01, 11.02, ···· 11.50 | 0.01mm | 51 |
| 4169-12 | 11.50, 11.51, 11.52, ···· 12.00 | 0.01mm | 51 |
| 4169-12D | 12.00, 12.01, 12.02, ···· 12.50 | 0.01mm | 51 |
| 4169-13 | 12.50, 12.51, 12.52, ···· 13.00 | 0.01mm | 51 |
| 4169-13D | 13.00, 13.01, 13.02, ···· 13.50 | 0.01mm | 51 |
| 4169-14 | 13.50, 13.51, 13.52, ···· 14.00 | 0.01mm | 51 |
| 4169-14D | 14.00, 14.01, 14.02, ···· 14.50 | 0.01mm | 51 |
| 4169-15 | 14.50, 14.51, 14.52, ···· 15.00 | 0.01mm | 51 |
| 4169-15D | 15.00, 15.01, 15.02, ···· 15.50 | 0.01mm | 51 |
| 4169-16 | 15.50, 15.51, 15.52, ···· 16.00 | 0.01mm | 51 |
| 4169-16D | 16.00, 16.01, 16.02, ···· 16.50 | 0.01mm | 51 |
| 4169-17 | 16.50, 16.51, 16.52, ···· 17.00 | 0.01mm | 51 |
| 4169-17D | 17.00, 17.01, 17.02, ···· 17.50 | 0.01mm | 51 |
| 4169-18 | 17.50, 17.51, 17.52, ···· 18.00 | 0.01mm | 51 |
| 4169-18D | 18.00, 18.01, 18.02, ···· 18.50 | 0.01mm | 51 |
| 4169-19 | 18.50, 18.51, 18.52, ···· 19.00 | 0.01mm | 51 |
| 4169-19D | 19.00, 19.01, 19.02, ···· 19.50 | 0.01mm | 51 |
| 4169-20 | 19.50, 19.51, 19.52, ···· 20.00 | 0.01mm | 51 |

## CARBIDE INDIVIDUAL PIN GAUGES

INSPECTION CERTIFICATE

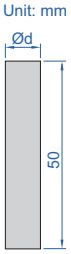
- Meet DIN2269, grade 1
- Diameter range: Ø0.300~Ø30.000mm with three decimal, for example 0.311mm, 5.562mm, 16.298mm
- Diameter accuracy: ±1μm
- Made of carbide
- Hardness HRA90-90.5

| Code | Diameter range Ød (mm) |
|---|---|
| **4193-□□□□□*** | 0.300~30.000 |

*Supplied with manufacturer inspection certificate



**4193-8D015**




**Ordering examples**:

| Diameter | Code |
|---|---|
| 0.311mm | 4193-0D311 |
| 5.562mm | 4193-5D562 |
| 16.298mm | 4193-16D298 |

Note: “D” stands for “.”

## STEEL INDIVIDUAL PIN GAUGES WITH TWO DECIMAL PLACES (0.01MM STEP)

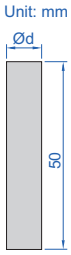
**Ordering examples:**

| Diameter | Code |
|---|---|
| 0.21mm | 4110-0D21 |
| 5.56mm | 4110-5D56 |
| 16.00mm | 4110-16D00 |

Note: “D” stands for “.”



**4110-9D98**




- Meet DIN2269, grade 1
- Diameter range: Ø0.20~Ø20.00mm
- Diameter accuracy: ±1μm
- Made of alloy steel
- Hardness HRC62-65

| Code |
|---|
| **4110-□□□□** |

| Diameter Ød (mm) |
|---|
| 0.20, 0.21, 0.22, 0.23, ···· 1.00 |
| 1.01, 1.02, 1.03, 1.04, ···· 2.00 |
| 2.01, 2.02, 2.03, 2.04, ···· 3.00 |
| 3.01, 3.02, 3.03, 3.04, ···· 4.00 |
| 4.01, 4.02, 4.03, 4.04, ···· 5.00 |
| 5.01, 5.02, 5.03, 5.04, ···· 6.00 |
| 6.01, 6.02, 6.03, 6.04, ···· 7.00 |
| 7.01, 7.02, 7.03, 7.04, ···· 8.00 |
| 8.01, 8.02, 8.03, 8.04, ···· 9.00 |
| 9.01, 9.02, 9.03, 9.04, ···· 10.00 |
| 10.01, 10.02, 10.03, 10.04, ···· 11.00 |
| 11.01, 11.02, 11.03, 11.04, ···· 12.00 |
| 12.01, 12.02, 12.03, 12.04, ···· 13.00 |
| 13.01, 13.02, 13.03, 13.04, ···· 14.00 |
| 14.01, 14.02, 14.03, 14.04, ···· 15.00 |
| 15.01, 15.02, 15.03, 15.04, ···· 16.00 |
| 16.01, 16.02, 16.03, 16.04, ···· 17.00 |
| 17.01, 17.02, 17.03, 17.04, ···· 18.00 |
| 18.01, 18.02, 18.03, 18.04, ···· 19.00 |
| 19.01, 19.02, 19.03, 19.04, ···· 20.00 |

## STEEL INDIVIDUAL PIN GAUGES WITH THREE DECIMAL PLACES (0.001MM STEP)

INSPECTION CERTIFICATE

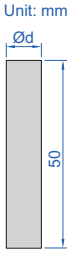
- Meet DIN2269, grade 1
- Diameter range: Ø0.200~Ø30.000mm with three decimal, for example 0.211mm, 5.562mm, 16.298mm
- Diameter accuracy: ±1μm
- Made of alloy steel
- Hardness HRC62-65

| Code | Diameter range Ød (mm) |
|---|---|
| **4118-□□□□□*** | 0.200~30.000 |

*Supplied with manufacturer inspection certificate



**4118-8D015**




**Ordering examples**:

| Diameter | Code |
|---|---|
| 0.211mm | 4118-0D211 |
| 5.562mm | 4118-5D562 |
| 16.298mm | 4118-16D298 |

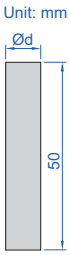
Note: “D” stands for “.”

## CERAMIC INDIVIDUAL PIN GAUGES WITH TWO DECIMAL PLACES (0.01MM STEP)

- Meet DIN2269, grade 1
- Diameter range: Ø0.30~Ø20.00mm
- Diameter accuracy: ±1μm
- Made of ceramic, extremely wear resistance, corrosion resistance and dimensional stability



4113-10D00




**Ordering examples:**

| Diameter | Code |
|---|---|
| 1.21mm | 4113-1D21 |
| 5.56mm | 4113-5D56 |
| 15.00mm | 4113-15D00 |

Note: “D” stands for “.”

| Code |
|---|
| **4113-□□□□** |

| Diameter Ød (mm) |
|---|
| 0.30, 0.31, 0.32, 0.33, ···· 1.00 |
| 1.01, 1.02, 1.03, 1.04, ···· 2.00 |
| 2.01, 2.02, 2.03, 2.04, ···· 3.00 |
| 3.01, 3.02, 3.03, 3.04, ···· 4.00 |
| 4.01, 4.02, 4.03, 4.04, ···· 5.00 |
| 5.01, 5.02, 5.03, 5.04, ···· 6.00 |
| 6.01, 6.02, 6.03, 6.04, ···· 7.00 |
| 7.01, 7.02, 7.03, 7.04, ···· 8.00 |
| 8.01, 8.02, 8.03, 8.04, ···· 9.00 |
| 9.01, 9.02, 9.03, 9.04, ···· 10.00 |

| Diameter Ød (mm) |
|---|
| 10.01, 10.02, 10.03, 10.04, ···· 11.00 |
| 11.01, 11.02, 11.03, 11.04, ···· 12.00 |
| 12.01, 12.02, 12.03, 12.04, ···· 13.00 |
| 13.01, 13.02, 13.03, 13.04, ···· 14.00 |
| 14.01, 14.02, 14.03, 14.04, ···· 15.00 |
| 15.01, 15.02, 15.03, 15.04, ···· 16.00 |
| 16.01, 16.02, 16.03, 16.04, ···· 17.00 |
| 17.01, 17.02, 17.03, 17.04, ···· 18.00 |
| 18.01, 18.02, 18.03, 18.04, ···· 19.00 |
| 19.01, 19.02, 19.03, 19.04, ···· 20.00 |

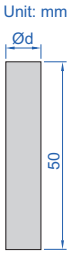
## CERAMIC INDIVIDUAL PIN GAUGES WITH THREE DECIMAL PLACES (0.001MM STEP)

- Meet DIN2269, grade 1
- Diameter range: Ø0.300~Ø30.000mm
- With three decimal, for example 1.211mm, 5.562mm, 14.955mm
- Diameter accuracy: ±1μm
- Made of ceramic, extremely wear resistance, corrosion resistance and dimensional stability

| Code | Diameter range Ød (mm) |
|---|---|
| **4192-□□□□** | 0.300-30.000 |



4192-10D000




**Ordering examples:**

| Diameter | Code |
|---|---|
| 1.211mm | 4192-1D211 |
| 5.562mm | 4192-5D562 |
| 14.955mm | 4192-14D955 |

Note: “D” stands for “.”

## BOXES FOR PIN GAUGES

- For individual pin gauges (**4110, 4118, 4192, 4113** and **4193** series)

| Code | Applicable pin gauge diameter Ød | Quantity of pin gauges |
|---|---|---|
| **7340** | 0.20-10.00mm | 51 pcs |
| **7340-101** | 0.20-10.00mm | 101 pcs |
| **7340-201** | 10.00-15.00mm | 51 pcs |
| **7340-202** | 15.00-20.00mm | 51 pcs |



7340

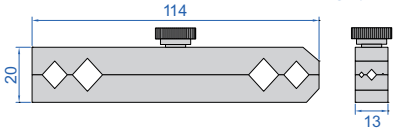
## PIN GAUGE HANDLE




**7345-13**

- Operated without wrench
- Made of aluminum

Unit: mm




application



| Code | Applicable pin gauge diameter |
|---|---|
| 7345-13 | 1~13mm |

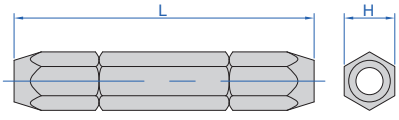
## PIN GAUGE HANDLES (OPERATED WITHOUT WRENCH)






**7342-M1**

- Operated without wrench
- Made of aluminum
- Pin gauges can be installed




**(mm)**

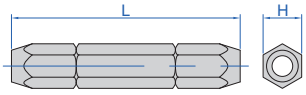
| Code | Applicable pin gauge diameter | H | L |
|---|---|---|---|
| 7342-M0 | 0.30-1.50mm/0.011-0.049" | 10 | 112 |
| 7342-M1 | 1.51-6.35mm/0.050-0.250" | 24 | 131 |
| 7342-M2 | 6.36-12.70mm/0.251-0.500" | 32 | 152 |
| 7342-M3 | 12.71-15.88mm/0.501-0.625" | 37 | 152 |
| 7342-M4 | 15.89-19.00mm/0.626-0.750" | 37 | 152 |
| 7342-M5 | 19.01-21.13mm/0.751-0.832" | 40 | 158 |
| 7342-M6 | 21.14-23.27mm/0.833-0.916" | 40 | 158 |
| 7342-M7 | 23.28-25.40mm/0.917-1.000" | 40 | 158 |

application



# PIN GAUGE HANDLES (OPERATED WITH WRENCH)







handle



brass clamping bush
(0.2~7.14mm)



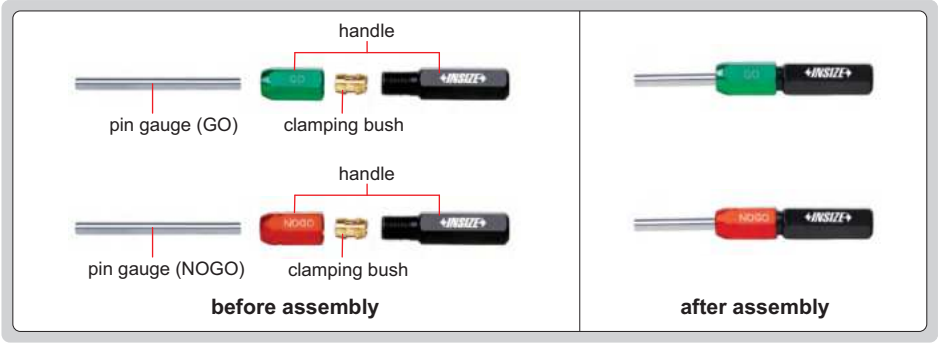
aluminum clamping bush
(7.14~24.80mm)

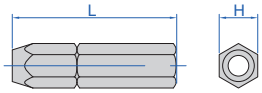
- Wrench is needed to install pins
- Clamping bushes (0.2~7.14mm) are made of brass, clamping bushes (7.14~24.80mm) are made of aluminum

(mm)

| Code | Applicable pin gauge diameter | Including | | H | L |
|---|---|---|---|---|---|
| | | handle | clamping bush (mm) | | |
| **7341-0S** | 0.2-1.02mm | 1 pc | 6 pairs (the clamping range are 0.2-0.38, 0.38-0.51, 0.51-0.64, 0.64-0.76, 0.76-0.89, 0.89-1.02) | 7 | 57 |
| **7341-1S** | 1.02-1.91mm | 1 pc | 7 pairs (the clamping range are 1.02-1.14, 1.14-1.27, 1.27-1.40, 1.40-1.52, 1.52-1.65, 1.65-1.78, 1.78-1.91) | 7 | 57 |
| **7341-2S** | 1.91-3.33mm | 1 pc | 8 pairs (the clamping range are 1.91-2.08, 2.08-2.26, 2.26-2.44, 2.44-2.62, 2.62-2.79, 2.79-2.97, 2.97-3.15, 3.15-3.33) | 9 | 73 |
| **7341-3S** | 3.33-4.57mm | 1 pc | 7 pairs (the clamping range are 3.33-3.51, 3.51-3.68, 3.68-3.86, 3.86-4.04, 4.04-4.22, 4.22-4.39, 4.39-4.57) | 9 | 73 |
| **7341-4S** | 4.57-5.79mm | 1 pc | 6 pairs (the clamping range are 4.57-4.78, 4.78-4.98, 4.98-5.18, 5.18-5.38, 5.38-5.59, 5.59-5.79) | 14 | 79 |
| **7341-5S** | 5.79-7.14mm | 1 pc | 6 pairs (the clamping range are 5.79-5.99, 5.99-6.20, 6.20-6.40, 6.40-6.63, 6.63-6.88, 6.88-7.14) | 14 | 79 |
| **7341-6S** | 7.14-8.66mm | 1 pc | 6 pairs (the clamping range are 7.14-7.39, 7.39-7.65, 7.65-7.90, 7.90-8.15, 8.15-8.41, 8.41-8.66) | 19 | 91 |
| **7341-7S** | 8.66-10.31mm | 1 pc | 6 pairs (the clamping range are 8.66-8.92, 8.9 -9.17, 9.17-9.42, 9.42-9.70, 9.70-10.01, 10.01-10.31) | 19 | 91 |
| **7341-8S** | 10.31-11.81mm | 1 pc | 4 pairs (the clamping range are 10.31-10.67, 10.67-11.05, 11.05-11.43, 11.43-11.81) | 22 | 106 |
| **7341-9S** | 11.81-12.95mm | 1 pc | 3 pairs (the clamping range are 11.81-12.19, 12.19-12.57, 12.57-12.95) | 22 | 106 |
| **7341-10S** | 12.95-14.71mm | 1 pc | 4 pairs (the clamping range are 12.95-13.51, 13.51-13.89, 13.89-14.30, 14.30-14.71) | 24 | 115 |
| **7341-11S** | 14.71-16.13mm | 1 pc | 4 pairs (the clamping range are 14.71-15.09, 15.09-15.49, 15.49-15.88, 15.88-16.13) | 24 | 115 |
| **7341-12S** | 16.13-17.88mm | 1 pc | 4 pairs (the clamping range are 16.13-16.66, 16.66-17.07, 17.07-17.48, 17.48-17.88) | 27 | 118 |
| **7341-13S** | 17.88-19.30mm | 1 pc | 4 pairs (the clamping range are 17.88-18.26, 18.26-18.67, 18.67-19.05, 19.05-19.30) | 27 | 118 |
| **7341-15S** | 19.30-24.80mm | 1 pc | 8 pairs (the clamping range are 19.30-19.84, 19.84-20.62, 20.62-21.41, 21.41-22.23, 22.23-23.03, 23.03-23.80, 23.80-24.59, 24.59-24.80) | 32 | 133 |

# SINGLE END PIN GAUGE HANDLES (OPERATED WITH WRENCH)




- Wrench is needed to install pins
- Clamping bushes (0.2~7.14mm) are made of brass, clamping bushes (7.14~24.80mm) are made of aluminum




**7344-4G**
green (GO)




**7344-4R**
red (NOGO)



brass clamping bush
(0.2~7.14mm)



aluminum clamping bush
(7.14~24.80mm)

(mm)

| Code | | Including | | Applicable pin gauge diameter | H | L |
|---|---|---|---|---|---|---|
| green (GO) | red (NOGO) | handle | clamping bush (mm) | | | |
| 7344-0G | 7344-0R | 1 pc | 6 pcs (the clamping range are 0.2-0.38, 0.38-0.51, 0.51-0.64, 0.64-0.76, 0.76-0.89, 0.89-1.02) | 0.2-1.02mm | 7 | 52 |
| 7344-1G | 7344-1R | 1 pc | 7 pcs (the clamping range are 1.02-1.14, 1.14-1.27, 1.27-1.40, 1.40-1.52, 1.52-1.65, 1.65-1.78, 1.78-1.91) | 1.02-1.91mm | 7 | 52 |
| 7344-2G | 7344-2R | 1 pc | 8 pcs (the clamping range are 1.91-2.08, 2.08-2.26, 2.26-2.44, 2.44-2.62, 2.62-2.79, 2.79-2.97, 2.97-3.15, 3.15 -3.33) | 1.91-3.33mm | 9 | 68 |
| 7344-3G | 7344-3R | 1 pc | 7 pcs (the clamping range are 3.33-3.51, 3.51-3.68, 3.68-3.86, 3.86-4.04, 4.04-4.22, 4.22-4.39, 4.39-4.57) | 3.33-4.57mm | 9 | 68 |
| 7344-4G | 7344-4R | 1 pc | 6 pcs (the clamping range are 4.57-4.78, 4.78-4.98, 4.98-5.18, 5.18-5.38, 5.38-5.59, 5.59-5.79) | 4.57-5.79mm | 14 | 73 |
| 7344-5G | 7344-5R | 1 pc | 6 pcs (the clamping range are 5.79-5.99, 5.99-6.20, 6.20-6.40, 6.40-6.63, 6.63-6.88, 6.88-7.14) | 5.79-7.14mm | 14 | 73 |
| 7344-6G | 7344-6R | 1 pc | 6 pcs (the clamping range are 7.14-7.39, 7.39-7.65, 7.65-7.90, 7.90-8.15, 8.15-8.41, 8.41-8.66) | 7.14-8.66mm | 19 | 79 |
| 7344-7G | 7344-7R | 1 pc | 6 pcs (the clamping range are 8.66-8.92, 8.92-9.17, 9.17-9.42, 9.42-9.70, 9.70-10.01, 10.01-10.31) | 8.66-10.31mm | 19 | 79 |
| 7344-8G | 7344-8R | 1 pc | 4 pcs (the clamping range are 10.31-10.67, 10.67-11.05, 11.05-11.43, 11.43-11.81) | 10.31-11.81mm | 22 | 93 |
| 7344-9G | 7344-9R | 1 pc | 3 pcs (the clamping range are 11.81-12.19, 12.19-12.57, 12.57-12.95) | 11.81-12.95mm | 22 | 93 |
| 7344-10G | 7344-10R | 1 pc | 4 pcs (the clamping range are 12.95-13.51, 13.51-13.89, 13.89-14.30, 14.30-14.71) | 12.95-14.71mm | 24 | 98 |
| 7344-11G | 7344-11R | 1 pc | 4 pcs (the clamping range are 14.71-15.09, 15.09-15.49, 15.49-15.88, 15.88-16.13) | 14.71-16.13mm | 24 | 98 |
| 7344-12G | 7344-12R | 1 pc | 4 pcs (the clamping range are 16.13-16.66, 16.66-17.07, 17.07-17.48, 17.48-17.88) | 16.13-17.88mm | 27 | 110 |
| 7344-13G | 7344-13R | 1 pc | 4 pcs (the clamping range are 17.88-18.26, 18.26-18.67, 18.67-19.05, 19.05-19.30) | 17.88-19.30mm | 27 | 110 |
| 7344-15G | 7344-15R | 1 pc | 8 pcs (the clamping range are 19.30-19.84, 19.84-20.62, 20.62-21.41, 21.41-22.23, 22.23-23.03, 23.03-23.80, 23.80-24.59, 24.59-24.80) | 19.30-24.80mm | 32 | 118 |

INSPECTION CERTIFICATE

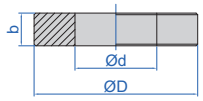
CAN SUPPLY CUSTOM SETTING RINGS FROM Ø1.50MM TO Ø400.00MM, FOR EXAMPLE, Ø17.08MM

# SETTING RINGS

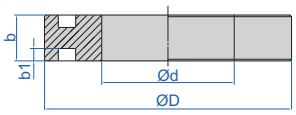
- For zero setting of inside micrometers, three points internal micrometers and bore gauges
- The size marked on the setting ring is checked at the direction of the marking line
- Size difference (difference between the ordered size and the size marked on the setting ring when supplied): For example, the ordered size is Ø10.12mm, the size marked on the setting ring when supplied may be Ø10.130mm




6312-20




Ø1.5mm-100mm




Ø100mm-400mm

(mm)

| Diameter d ** | b | ØD | Size difference | Roundness and cylindricity |
|---|---|---|---|---|
| Ø1.5-2.5 | 4 | 22 | ±10.0μm | 0.3μm |
| Ø2.5-3 | 5 | 22 | ±10.0μm | 0.3μm |
| Ø3-5 | 5 | 22 | ±10.0μm | 0.4μm |
| Ø5-10 | 8 | 32 | ±10.0μm | 0.4μm |
| Ø10-15 | 10 | 38 | ±10.0μm | 0.5μm |
| Ø15-18 | 12 | 45 | ±10.0μm | 0.5μm |
| Ø18-20 | 12 | 45 | ±10.0μm | 0.6μm |
| Ø20-25 | 14 | 53 | ±10.0μm | 0.6μm |
| Ø25-30 | 16 | 63 | ±10.0μm | 0.6μm |
| Ø30-32 | 16 | 63 | ±10.0μm | 0.7μm |
| Ø32-40 | 18 | 71 | ±10.0μm | 0.7μm |
| Ø40-50 | 20 | 85 | ±10.0μm | 0.7μm |
| Ø50-60 | 20 | 100 | ±10.0μm | 0.8μm |
| Ø60-70 | 24 | 112 | ±10.0μm | 0.8μm |
| Ø70-80 | 24 | 125 | ±10.0μm | 0.8μm |
| Ø80-90 | 24 | 140 | ±10.0μm | 1.0μm |
| Ø90-100 | 24 | 160 | ±10.0μm | 1.0μm |

** For example Ø3-5mm means Ø3mm<diameter d≤Ø5mm

(mm)

| Diameter d ** | b | b1 | ØD | Size difference | Roundness and cylindricity |
|---|---|---|---|---|---|
| Ø100-110 | 30 | 8 | 164 | ±10.0μm | 1.0μm |
| Ø110-130 | 34 | 10 | 192 | ±10.0μm | 1.0μm |
| Ø130-150 | 34 | 10 | 220 | ±10.0μm | 1.2μm |
| Ø150-170 | 36 | 10 | 248 | ±10.0μm | 1.5μm |
| Ø170-190 | 36 | 10 | 276 | ±10.0μm | 1.5μm |
| Ø190-210 | 38 | 10 | 300 | ±10.0μm | 1.5μm |
| Ø210-230 | 38 | 10 | 324 | ±10.0μm | 2.5μm |
| Ø230-250 | 40 | 12 | 350 | ±10.0μm | 2.5μm |
| Ø250-270 | 40 | 12 | 375 | ±10.0μm | 3.0μm |
| Ø270-290 | 42 | 12 | 400 | ±10.0μm | 3.0μm |
| Ø290-300 | 42 | 12 | 425 | ±10.0μm | 3.0μm |
| Ø300-320 | 42 | 12 | 430 | ±10.0μm | 4.0μm |
| Ø320-330 | 42 | 12 | 440 | ±10.0μm | 4.0μm |
| Ø330-340 | 42 | 12 | 450 | ±10.0μm | 4.0μm |
| Ø340-350 | 42 | 12 | 460 | ±10.0μm | 4.0μm |
| Ø350-360 | 42 | 12 | 470 | ±10.0μm | 4.0μm |
| Ø360-370 | 42 | 12 | 480 | ±10.0μm | 4.0μm |
| Ø370-380 | 42 | 12 | 490 | ±10.0μm | 4.0μm |
| Ø380-390 | 42 | 12 | 500 | ±10.0μm | 4.0μm |
| Ø390-400 | 42 | 12 | 510 | ±10.0μm | 4.0μm |

(mm)

| Code | Size |
|---|---|
| 6312-1D5 * | Ø1.5 |
| 6312-2 * | Ø2 |
| 6312-2D5 * | Ø2.5 |
| 6312-3 * | Ø3 |
| 6312-3D5 * | Ø3.5 |
| 6312-4 * | Ø4 |
| 6312-4D5 * | Ø4.5 |
| 6312-5 * | Ø5 |
| 6312-5D5 * | Ø5.5 |
| 6312-6 * | Ø6 |
| 6312-6D5 * | Ø6.5 |
| 6312-7 * | Ø7 |
| 6312-7D5 * | Ø7.5 |
| 6312-8 * | Ø8 |
| 6312-8D5 * | Ø8.5 |
| 6312-9 * | Ø9 |
| 6312-9D5 * | Ø9.5 |
| 6312-10 * | Ø10 |
| 6312-10D5 * | Ø10.5 |
| 6312-11 * | Ø11 |
| 6312-11D5 * | Ø11.5 |
| 6312-12 * | Ø12 |

(mm)

| Code | Size |
|---|---|
| 6312-12D5 * | Ø12.5 |
| 6312-13 * | Ø13 |
| 6312-13D5 * | Ø13.5 |
| 6312-14 * | Ø14 |
| 6312-14D5 * | Ø14.5 |
| 6312-15 * | Ø15 |
| 6312-15D5 * | Ø15.5 |
| 6312-16 * | Ø16 |
| 6312-16D5 * | Ø16.5 |
| 6312-17 * | Ø17 |
| 6312-17D5 * | Ø17.5 |
| 6312-18 * | Ø18 |
| 6312-18D5 * | Ø18.5 |
| 6312-19 * | Ø19 |
| 6312-19D5 * | Ø19.5 |
| 6312-20 * | Ø20 |
| 6312-20D5 * | Ø20.5 |
| 6312-21 * | Ø21 |
| 6312-21D5 * | Ø21.5 |
| 6312-22 * | Ø22 |
| 6312-22D5 * | Ø22.5 |
| 6312-23 * | Ø23 |

(mm)

| Code | Size |
|---|---|
| 6312-23D5 * | Ø23.5 |
| 6312-24 * | Ø24 |
| 6312-24D5 * | Ø24.5 |
| 6312-25 * | Ø25 |
| 6312-25D5 * | Ø25.5 |
| 6312-26 * | Ø26 |
| 6312-26D5 * | Ø26.5 |
| 6312-27 * | Ø27 |
| 6312-27D5 * | Ø27.5 |
| 6312-28 * | Ø28 |
| 6312-28D5 * | Ø28.5 |
| 6312-29 * | Ø29 |
| 6312-29D5 * | Ø29.5 |
| 6312-30 * | Ø30 |
| 6312-31 * | Ø31 |
| 6312-32 * | Ø32 |
| 6312-33 * | Ø33 |
| 6312-34 * | Ø34 |
| 6312-35 * | Ø35 |
| 6312-36 * | Ø36 |
| 6312-37 * | Ø37 |
| 6312-38 * | Ø38 |

(mm)

| Code | Size |
|---|---|
| 6312-39 * | Ø39 |
| 6312-40 * | Ø40 |
| 6312-41 * | Ø41 |
| 6312-42 * | Ø42 |
| 6312-43 * | Ø43 |
| 6312-44 * | Ø44 |
| 6312-45 * | Ø45 |
| 6312-46 * | Ø46 |
| 6312-47 * | Ø47 |
| 6312-48 * | Ø48 |
| 6312-49 * | Ø49 |
| 6312-50 * | Ø50 |
| 6312-55 * | Ø55 |
| 6312-60 * | Ø60 |
| 6312-62 * | Ø62 |
| 6312-65 * | Ø65 |
| 6312-70 * | Ø70 |
| 6312-75 * | Ø75 |
| 6312-80 * | Ø80 |
| 6312-85 * | Ø85 |
| 6312-87 * | Ø87 |
| 6312-90 * | Ø90 |

(mm)

| Code | Size |
|---|---|
| 6312-95 * | Ø95 |
| 6312-100 * | Ø100 |
| 6312-112D5 * | Ø112.5 |
| 6312-125 * | Ø125 |
| 6312-137D5 * | Ø137.5 |
| 6312-150 * | Ø150 |
| 6312-162D5 * | Ø162.5 |
| 6312-175 * | Ø175 |
| 6312-187D5 * | Ø187.5 |
| 6312-200 * | Ø200 |
| 6312-212D5 * | Ø212.5 |
| 6312-225 * | Ø225 |
| 6312-237D5 * | Ø237.5 |
| 6312-250 * | Ø250 |
| 6312-262D5 * | Ø262.5 |
| 6312-275 * | Ø275 |
| 6312-287D5 * | Ø287.5 |
| 6312-300 * | Ø300 |
| 6312-350 * | Ø350 |
| 6312-400 * | Ø400 |

* Supplied with manufacturer inspection certificate

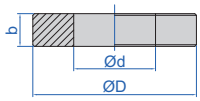
# CARBIDE SETTING RINGS

CAN SUPPLY CUSTOM SETTING RINGS FROM Ø0.40MM TO Ø50.00MM, FOR EXAMPLE, Ø17.08MM

INSPECTION CERTIFICATE




6317-10




- For zero setting of inside micrometers, three points internal micrometers and bore gauges
- Size difference (difference between the ordered size and the size marked on the setting ring when supplied): For example, the ordered size is Ø10.00mm, the size marked on the setting ring when supplied may be Ø10.002mm
- Meet DIN2250-1:2008

(mm)

| Diameter d ** | b | ØD | Size difference | Roundness and cylindricity |
|---|---|---|---|---|
| Ø0.4-0.5 | 4 | 10 | ±10μm | 0.3μm |
| Ø0.5-1.6 | 6 | 10 | ±10μm | 0.3μm |
| Ø1.6-12.1 | 8 | 30 | ±10μm | 0.3μm |
| Ø12.1-18.1 | 12 | 40 | ±10μm | 0.4μm |
| Ø18.1-25 | 15 | 50 | ±10μm | 0.4μm |
| Ø25-30 | 15 | 60 | ±10μm | 0.4μm |
| Ø30-35 | 18 | 80 | ±10μm | 0.4μm |
| Ø35-40 | 20 | 80 | ±10μm | 0.4μm |
| Ø40-45 | 20 | 90 | ±10μm | 0.4μm |
| Ø45-50 | 20 | 100 | ±10μm | 0.4μm |

**For example Ø0.4-0.5mm means Ø0.4mm<diameter d≤Ø0.5mm

12

| Code | Size |
|---|---|
| 6317-0D5 * | Ø0.5mm |
| 6317-1 * | Ø1mm |
| 6317-1D5 * | Ø1.5mm |
| 6317-2 * | Ø2mm |
| 6317-2D5 * | Ø2.5mm |
| 6317-3 * | Ø3mm |
| 6317-3D5 * | Ø3.5mm |
| 6317-4 * | Ø4mm |
| 6317-4D5 * | Ø4.5mm |
| 6317-5 * | Ø5mm |
| 6317-5D5 * | Ø5.5mm |
| 6317-6 * | Ø6mm |
| 6317-6D5 * | Ø6.5mm |
| 6317-7 * | Ø7mm |
| 6317-7D5 * | Ø7.5mm |
| 6317-8 * | Ø8mm |
| 6317-8D5 * | Ø8.5mm |
| 6317-9 * | Ø9mm |
| 6317-9D5 * | Ø9.5mm |
| 6317-10 * | Ø10mm |

| Code | Size |
|---|---|
| 6317-10D5 * | Ø10.5mm |
| 6317-11 * | Ø11mm |
| 6317-11D5 * | Ø11.5mm |
| 6317-12 * | Ø12mm |
| 6317-12D5 * | Ø12.5mm |
| 6317-13 * | Ø13mm |
| 6317-13D5 * | Ø13.5mm |
| 6317-14 * | Ø14mm |
| 6317-14D5 * | Ø14.5mm |
| 6317-15 * | Ø15mm |
| 6317-15D5 * | Ø15.5mm |
| 6317-16 * | Ø16mm |
| 6317-16D5 * | Ø16.5mm |
| 6317-17 * | Ø17mm |
| 6317-17D5 * | Ø17.5mm |
| 6317-18 * | Ø18mm |
| 6317-18D5 * | Ø18.5mm |
| 6317-19 * | Ø19mm |
| 6317-19D5 * | Ø19.5mm |
| 6317-20 * | Ø20mm |

| Code | Size |
|---|---|
| 6317-20D5 * | Ø20.5mm |
| 6317-21 * | Ø21mm |
| 6317-21D5 * | Ø21.5mm |
| 6317-22 * | Ø22mm |
| 6317-22D5 * | Ø22.5mm |
| 6317-23 * | Ø23mm |
| 6317-23D5 * | Ø23.5mm |
| 6317-24 * | Ø24mm |
| 6317-24D5 * | Ø24.5mm |
| 6317-25 * | Ø25mm |
| 6317-25D5 * | Ø25.5mm |
| 6317-26 * | Ø26mm |
| 6317-26D5 * | Ø26.5mm |
| 6317-27 * | Ø27mm |
| 6317-27D5 * | Ø27.5mm |
| 6317-28 * | Ø28mm |
| 6317-28D5 * | Ø28.5mm |
| 6317-29 * | Ø29mm |
| 6317-29D5 * | Ø29.5mm |
| 6317-30 * | Ø30mm |

| Code | Size |
|---|---|
| 6317-31 * | Ø31mm |
| 6317-32 * | Ø32mm |
| 6317-33 * | Ø33mm |
| 6317-34 * | Ø34mm |
| 6317-35 * | Ø35mm |
| 6317-36 * | Ø36mm |
| 6317-37 * | Ø37mm |
| 6317-38 * | Ø38mm |
| 6317-39 * | Ø39mm |
| 6317-40 * | Ø40mm |
| 6317-41 * | Ø41mm |
| 6317-42 * | Ø42mm |
| 6317-43 * | Ø43mm |
| 6317-44 * | Ø44mm |
| 6317-45 * | Ø45mm |
| 6317-46 * | Ø46mm |
| 6317-47 * | Ø47mm |
| 6317-48 * | Ø48mm |
| 6317-49 * | Ø49mm |
| 6317-50 * | Ø50mm |

*Supplied with manufacturer inspection certificate



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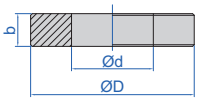
# CERAMIC SETTING RINGS

CAN SUPPLY CUSTOM SETTING RINGS FROM Ø1.30MM TO Ø50.00MM, FOR EXAMPLE, Ø17.08MM

INSPECTION CERTIFICATE




6319-10




- For zero setting of inside micrometers, three points internal micrometers and bore gauges
- Size difference (difference between the ordered size and the size marked on the setting ring when supplied): For example, the ordered size is Ø10.12mm, the size marked on the setting ring when supplied may be Ø10.130mm
- Made of ceramic, extremely wear resistance and corrosion resistance, dimensional stability
- Meet DIN2250-1:2008

(mm)

| Diameter d ** | b | ØD | Size difference | Roundness and cylindricity |
|---|---|---|---|---|
| Ø1.3-2.7 | 6 | 20 | ±10μm | 0.3μm |
| Ø2.7-12.1 | 8 | 30 | ±10μm | 0.3μm |
| Ø12.1-18.1 | 12 | 40 | ±10μm | 0.4μm |
| Ø18.1-25 | 15 | 50 | ±10μm | 0.4μm |
| Ø25-30 | 15 | 60 | ±10μm | 0.4μm |
| Ø30-35 | 18 | 80 | ±10μm | 0.4μm |
| Ø35-40 | 20 | 80 | ±10μm | 0.4μm |
| Ø40-45 | 20 | 90 | ±10μm | 0.4μm |
| Ø45-50 | 20 | 100 | ±10μm | 0.4μm |

**For example Ø1.3-2.7mm means Ø1.3mm<diameter d≤Ø2.7mm

| Code | Size |
|---|---|
| 6319-1D5 * | Ø1.5mm |
| 6319-2 * | Ø2mm |
| 6319-2D5 * | Ø2.5mm |
| 6319-3 * | Ø3mm |
| 6319-3D5 * | Ø3.5mm |
| 6319-4 * | Ø4mm |
| 6319-4D5 * | Ø4.5mm |
| 6319-5 * | Ø5mm |
| 6319-5D5 * | Ø5.5mm |
| 6319-6 * | Ø6mm |
| 6319-6D5 * | Ø6.5mm |
| 6319-7 * | Ø7mm |
| 6319-7D5 * | Ø7.5mm |
| 6319-8 * | Ø8mm |
| 6319-8D5 * | Ø8.5mm |
| 6319-9 * | Ø9mm |
| 6319-9D5 * | Ø9.5mm |
| 6319-10 * | Ø10mm |
| 6319-10D5 * | Ø10.5mm |

| Code | Size |
|---|---|
| 6319-11 * | Ø11mm |
| 6319-11D5 * | Ø11.5mm |
| 6319-12 * | Ø12mm |
| 6319-12D5 * | Ø12.5mm |
| 6319-13 * | Ø13mm |
| 6319-13D5 * | Ø13.5mm |
| 6319-14 * | Ø14mm |
| 6319-14D5 * | Ø14.5mm |
| 6319-15 * | Ø15mm |
| 6319-15D5 * | Ø15.5mm |
| 6319-16 * | Ø16mm |
| 6319-16D5 * | Ø16.5mm |
| 6319-17 * | Ø17mm |
| 6319-17D5 * | Ø17.5mm |
| 6319-18 * | Ø18mm |
| 6319-18D5 * | Ø18.5mm |
| 6319-19 * | Ø19mm |
| 6319-19D5 * | Ø19.5mm |
| 6319-20 * | Ø20mm |

| Code | Size |
|---|---|
| 6319-20D5 * | Ø20.5mm |
| 6319-21 * | Ø21mm |
| 6319-21D5 * | Ø21.5mm |
| 6319-22 * | Ø22mm |
| 6319-22D5 * | Ø22.5mm |
| 6319-23 * | Ø23mm |
| 6319-23D5 * | Ø23.5mm |
| 6319-24 * | Ø24mm |
| 6319-24D5 * | Ø24.5mm |
| 6319-25 * | Ø25mm |
| 6319-25D5 * | Ø25.5mm |
| 6319-26 * | Ø26mm |
| 6319-26D5 * | Ø26.5mm |
| 6319-27 * | Ø27mm |
| 6319-27D5 * | Ø27.5mm |
| 6319-28 * | Ø28mm |
| 6319-28D5 * | Ø28.5mm |
| 6319-29 * | Ø29mm |
| 6319-29D5 * | Ø29.5mm |
| 6319-30 * | Ø30mm |

| Code | Size |
|---|---|
| 6319-31 * | Ø31mm |
| 6319-32 * | Ø32mm |
| 6319-33 * | Ø33mm |
| 6319-34 * | Ø34mm |
| 6319-35 * | Ø35mm |
| 6319-36 * | Ø36mm |
| 6319-37 * | Ø37mm |
| 6319-38 * | Ø38mm |
| 6319-39 * | Ø39mm |
| 6319-40 * | Ø40mm |
| 6319-41 * | Ø41mm |
| 6319-42 * | Ø42mm |
| 6319-43 * | Ø43mm |
| 6319-44 * | Ø44mm |
| 6319-45 * | Ø45mm |
| 6319-46 * | Ø46mm |
| 6319-47 * | Ø47mm |
| 6319-48 * | Ø48mm |
| 6319-49 * | Ø49mm |
| 6319-50 * | Ø50mm |

*Supplied with manufacturer inspection certificate

# CYLINDER GAUGES

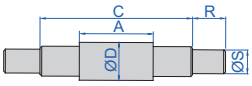
CAN SUPPLY CUSTOM SIZES FROM Ø3.000mm TO Ø200.000mm, FOR EXAMPLE, Ø20.218mm

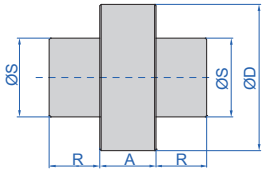
INSPECTION CERTIFICATE

- Made of tungsten steel, quenched, ultra-low temperature treatment
- Wear resistant, long life, dimension stability
- Hardness HRC60-62



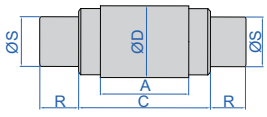
6316-30




(mm)

| Diameter ØD ** | A | C | R | ØS | Size *** difference | Roundness and cylindricity |
|---|---|---|---|---|---|---|
| 3.0-3.81 | 9.52 | 17.46 | 11.1 | 2.4 | ±5μm | 0.5μm |
| 3.81-5.84 | 11.11 | 19.05 | 11.1 | 3.2 | ±5μm | 0.5μm |
| 5.84-9.27 | 12.7 | 20.64 | 11.1 | 5.6 | ±5μm | 0.5μm |




(mm)

| Diameter ØD ** | A | C | R | ØS | Size *** difference | Roundness and cylindricity |
|---|---|---|---|---|---|---|
| 9.27-12.95 | 14.29 | 22.22 | 12.7 | 8.7 | ±5μm | 0.5μm |
| 12.95-20.96 | 15.88 | 23.81 | 12.7 | 12.7 | ±5μm | 0.5μm |
| 20.96-28.83 | 17.46 | 25.4 | 15.9 | 19 | ±5μm | 0.7μm |
| 28.83-38.35 | 20.64 | 28.58 | 15.9 | 25.4 | ±5μm | 0.7μm |

(mm)

| Diameter ØD ** | A | ØS | R | Size *** difference | Roundness and cylindricity |
|---|---|---|---|---|---|
| 38.35-51.05 | 31.8 | 22.2 | 15.8 | ±5μm | 1μm |
| 51.05-63.75 | 31.8 | 22.2 | 15.8 | ±5μm | 1μm |
| 63.75-76.45 | 38.1 | 25.4 | 39.8 | ±5μm | 1.2μm |
| 76.45-89.15 | 38.1 | 25.4 | 39.8 | ±5μm | 1.2μm |
| 89.15-101.85 | 38.1 | 25.4 | 39.8 | ±5μm | 1.2μm |
| 101.85-114.55 | 38.1 | 25.4 | 39.8 | ±5μm | 1.2μm |
| 114.55-127.25 | 38.1 | 25.4 | 39.8 | ±5μm | 1.6μm |
| 127.25-139.95 | 38.1 | 25.4 | 39.8 | ±5μm | 1.6μm |
| 139.95-152.62 | 38.1 | 25.4 | 39.8 | ±5μm | 1.6μm |
| 152.65-165.35 | 38.1 | 25.4 | 39.8 | ±5μm | 1.6μm |
| 165.35-178.05 | 38.1 | 25.4 | 39.8 | ±5μm | 2μm |
| 178.05-190.75 | 38.1 | 25.4 | 39.8 | ±5μm | 2μm |
| 190.75-203.45 | 38.1 | 25.4 | 39.8 | ±5μm | 2μm |

** For example, 3-3.81 indicates 3mm<D≤3.8mm

*** Size difference (difference between the ordered size and the size marked on the cylinder gauges when supplied).
For example, the ordered size is Ø3.000mm, the size marked on the cylinder gauges when supplied may be Ø3.003mm

| Code | ØD |
|---|---|
| 6316-3* | Ø3mm |
| 6316-4* | Ø4mm |
| 6316-5* | Ø5mm |
| 6316-6* | Ø6mm |
| 6316-7* | Ø7mm |
| 6316-8* | Ø8mm |
| 6316-9* | Ø9mm |
| 6316-10* | Ø10mm |
| 6316-11* | Ø11mm |
| 6316-12* | Ø12mm |
| 6316-13* | Ø13mm |
| 6316-14* | Ø14mm |
| 6316-15* | Ø15mm |

| Code | ØD |
|---|---|
| 6316-16* | Ø16mm |
| 6316-17* | Ø17mm |
| 6316-18* | Ø18mm |
| 6316-19* | Ø19mm |
| 6316-20* | Ø20mm |
| 6316-21* | Ø21mm |
| 6316-22* | Ø22mm |
| 6316-23* | Ø23mm |
| 6316-24* | Ø24mm |
| 6316-25* | Ø25mm |
| 6316-26* | Ø26mm |
| 6316-27* | Ø27mm |
| 6316-28* | Ø28mm |

| Code | ØD |
|---|---|
| 6316-29* | Ø29mm |
| 6316-30* | Ø30mm |
| 6316-31* | Ø31mm |
| 6316-32* | Ø32mm |
| 6316-33* | Ø33mm |
| 6316-34* | Ø34mm |
| 6316-35* | Ø35mm |
| 6316-36* | Ø36mm |
| 6316-37* | Ø37mm |
| 6316-38* | Ø38mm |
| 6316-39* | Ø39mm |
| 6316-40* | Ø40mm |
| 6316-41* | Ø41mm |

| Code | ØD |
|---|---|
| 6316-42* | Ø42mm |
| 6316-43* | Ø43mm |
| 6316-44* | Ø44mm |
| 6316-45* | Ø45mm |
| 6316-46* | Ø46mm |
| 6316-47* | Ø47mm |
| 6316-48* | Ø48mm |
| 6316-49* | Ø49mm |
| 6316-50* | Ø50mm |
| 6316-55* | Ø55mm |
| 6316-60* | Ø60mm |
| 6316-62* | Ø62mm |
| 6316-65* | Ø65mm |

| Code | ØD |
|---|---|
| 6316-70* | Ø70mm |
| 6316-75* | Ø75mm |
| 6316-80* | Ø80mm |
| 6316-85* | Ø85mm |
| 6316-87* | Ø87mm |
| 6316-90* | Ø90mm |
| 6316-95* | Ø95mm |
| 6316-100* | Ø100mm |
| 6316-125* | Ø125mm |
| 6316-150* | Ø150mm |
| 6316-175* | Ø175mm |
| 6316-200* | Ø200mm |

*Supplied with manufacturer inspection certificate

FAST AND ACCURATE MEASUREMENT OF CYLINDERS

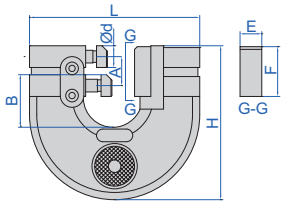
# ADJUSTABLE SNAP GAUGES

VIDEO

- Used as Go/No-Go gauge by setting upper and lower limits
- Flatness of anvil: 1.5μm
- Parallelism of measuring faces:
  range 0-32mm: 3μm
  range 32-89mm: 4μm
  range 89-300mm: 5μm



2187-19




(mm)

| Code | Range | L | A | B | E | F | H | Ød |
|---|---|---|---|---|---|---|---|---|
| **2187-6** | 0-6mm | 74 | 15 | 17.5 | 12.2 | 27.2 | 71.5 | 7 |
| **2187-13** | 6-13mm | 85 | 15 | 26 | 12.2 | 27.2 | 79.5 | 12.3 |
| **2187-19** | 13-19mm | 93 | 15 | 27 | 12.2 | 27.2 | 83 | 12.3 |
| **2187-25** | 19-25mm | 100 | 15 | 33.5 | 12.2 | 27.2 | 89.5 | 12.3 |
| **2187-32** | 25-32mm | 111 | 18 | 38.5 | 15.2 | 35.2 | 104 | 15.3 |
| **2187-38** | 32-38mm | 117 | 18 | 41.5 | 15.2 | 35.2 | 105 | 15.3 |
| **2187-44** | 38-44mm | 123 | 18 | 44.5 | 15.2 | 35.2 | 109 | 15.3 |
| **2187-51** | 44-51mm | 130 | 18 | 48 | 15.2 | 35.2 | 117 | 15.3 |
| **2187-57** | 51-57mm | 136 | 18 | 45 | 15.2 | 35.2 | 119 | 15.3 |
| **2187-63** | 57-63mm | 143 | 18 | 50 | 15.2 | 35.2 | 122 | 15.3 |
| **2187-70** | 63-70mm | 156 | 20 | 58 | 15.2 | 35.2 | 132 | 15.3 |
| **2187-76** | 70-76mm | 163 | 20 | 60.5 | 15.2 | 35.2 | 137 | 15.3 |
| **2187-82** | 76-82mm | 169 | 20 | 64.5 | 15.2 | 35.2 | 140 | 15.3 |
| **2187-89** | 82-89mm | 175 | 20 | 66.5 | 15.2 | 35.2 | 146 | 15.3 |
| **2187-95** | 89-95mm | 181 | 20 | 69.5 | 15.2 | 35.2 | 149 | 15.3 |
| **2187-101** | 95-101mm | 188 | 20 | 70 | 15.2 | 35.2 | 154 | 15.3 |
| **2187-108** | 101-108mm | 198 | 24 | 79 | 15.2 | 39.2 | 166 | 15.3 |
| **2187-114** | 108-114mm | 204 | 24 | 81 | 15.2 | 39.2 | 172 | 15.3 |
| **2187-120** | 114-120mm | 210 | 24 | 86 | 15.2 | 39.2 | 179 | 15.3 |
| **2187-127** | 120-127mm | 217 | 24 | 89.5 | 15.2 | 39.2 | 186 | 15.3 |
| **2187-133** | 127-133mm | 223 | 24 | 92.5 | 15.2 | 39.2 | 192 | 15.3 |
| **2187-139** | 133-139mm | 229 | 24 | 95.5 | 15.2 | 39.2 | 197 | 15.3 |
| **2187-146** | 139-146mm | 235 | 24 | 98.5 | 15.2 | 39.2 | 201 | 15.3 |
| **2187-152** | 146-152mm | 242 | 24 | 102 | 15.2 | 39.2 | 205 | 15.3 |
| **2187-163** | 152-163mm | 273 | 21.4 | 106.7 | 18.2 | 39.2 | 211 | 18.3 |
| **2187-175** | 163-175mm | 273 | 21.4 | 106.7 | 18.2 | 39.2 | 211 | 18.3 |
| **2187-188** | 175-188mm | 298.5 | 21.4 | 119.7 | 18.2 | 39.2 | 227 | 18.3 |
| **2187-200** | 188-200mm | 298.5 | 21.4 | 119.7 | 18.2 | 39.2 | 227 | 18.3 |
| **2187-213** | 200-213mm | 324 | 21.4 | 131.7 | 18.2 | 39.2 | 242 | 18.3 |
| **2187-225** | 213-225mm | 324 | 21.4 | 131.7 | 18.2 | 39.2 | 242 | 18.3 |
| **2187-238** | 225-238mm | 349.5 | 21.4 | 144.7 | 18.2 | 39.2 | 250 | 18.3 |
| **2187-250** | 238-250mm | 349.5 | 21.4 | 149 | 18.2 | 39.2 | 250 | 18.3 |
| **2187-263** | 250-263mm | 375.5 | 21.4 | 157.7 | 18.2 | 39.2 | 278 | 18.3 |
| **2187-275** | 263-275mm | 375.5 | 21.4 | 157.7 | 18.2 | 39.2 | 278 | 18.3 |
| **2187-288** | 275-288mm | 400 | 21.4 | 170.7 | 18.2 | 39.2 | 291 | 18.3 |
| **2187-300** | 288-300mm | 400 | 21.4 | 170.7 | 18.2 | 39.2 | 291 | 18.3 |

# PLAIN PLUG GAUGES

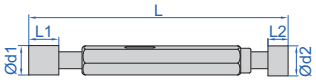
**CUSTOM-MADE**
**OTHER CLASSES ARE AVAILABLE, SUCH AS H8, H9**
**OTHER DIAMETERS ARE AVAILABLE, SUCH AS 19.003mm**
**OTHER LENGTHS ARE AVAILABLE, SUCH AS 70mm**




**4124-12**

**type A**

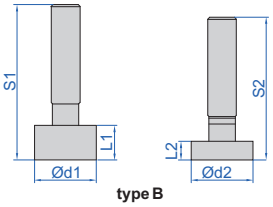





**type A**

**type B**






**type B**

- Supplied with Go and No-Go gauges together
- Class H7
- Hardness HRC 60±2
- Standard DIN7150-2

**Size tolerance of H7** **(mm)**

| Diameter Ød | Type | Size tolerance of Go gauge (μm) | Size tolerance of No-Go gauge (μm) | L1 | L2 | L | S1, S2 |
|---|---|---|---|---|---|---|---|
| ≥2, ≤3 | A | +0.5/+2.5 | +9/+11 | 6.5 | 4.5 | 62 | – |
| >3, ≤6 | A | +0.75/+3.25 | +10.75/+13.25 | 8 | 6 | 74 | – |
| >6, ≤10 | A | +0.75/+3.25 | +13.75/+16.25 | 10 | 7 | 87 | – |
| >10, ≤14 | A | +1/+4 | +16.5/+19.5 | 12 | 8 | 99 | – |
| >14, ≤18 | A | +1/+4 | +16.5/+19.5 | 14 | 10 | 114 | – |
| >18, ≤24 | A | +1/+5 | +19/+23 | 16 | 12 | 132 | – |
| >24, ≤30 | A | +1/+5 | +19/+23 | 18 | 14 | 136 | – |
| >30, ≤40 | A | +1.5/+5.5 | +23/+27 | 20 | 15 | 155 | – |
| >40, ≤50 | A | +1.5/+5.5 | +23/+27 | 25 | 18 | 169 | – |
| >50, ≤65 | B | +1.5/+6.5 | +27.5/+32.5 | 30 | 18 | – | 164, 152 |
| >65, ≤80 | B | +1.5/+6.5 | +27.5/+32.5 | 35 | 25 | – | 169, 159 |
| >80, ≤100 | B | +2/+8 | +32/+38 | 35 | 25 | – | 169, 159 |

| Code | Diameter | Type |
|---|---|---|
| **4124-2** | 2mm | A |
| **4124-3** | 3mm | A |
| **4124-4** | 4mm | A |
| **4124-5** | 5mm | A |
| **4124-6** | 6mm | A |
| **4124-7** | 7mm | A |
| **4124-8** | 8mm | A |
| **4124-9** | 9mm | A |
| **4124-10** | 10mm | A |
| **4124-11** | 11mm | A |
| **4124-12** | 12mm | A |
| **4124-13** | 13mm | A |
| **4124-14** | 14mm | A |
| **4124-15** | 15mm | A |
| **4124-16** | 16mm | A |

| Code | Diameter | Type |
|---|---|---|
| **4124-17** | 17mm | A |
| **4124-18** | 18mm | A |
| **4124-19** | 19mm | A |
| **4124-20** | 20mm | A |
| **4124-21** | 21mm | A |
| **4124-22** | 22mm | A |
| **4124-23** | 23mm | A |
| **4124-24** | 24mm | A |
| **4124-25** | 25mm | A |
| **4124-26** | 26mm | A |
| **4124-27** | 27mm | A |
| **4124-28** | 28mm | A |
| **4124-29** | 29mm | A |
| **4124-30** | 30mm | A |
| **4124-31** | 31mm | A |

| Code | Diameter | Type |
|---|---|---|
| **4124-32** | 32mm | A |
| **4124-33** | 33mm | A |
| **4124-34** | 34mm | A |
| **4124-35** | 35mm | A |
| **4124-36** | 36mm | A |
| **4124-37** | 37mm | A |
| **4124-38** | 38mm | A |
| **4124-39** | 39mm | A |
| **4124-40** | 40mm | A |
| **4124-41** | 41mm | A |
| **4124-42** | 42mm | A |
| **4124-43** | 43mm | A |
| **4124-44** | 44mm | A |
| **4124-45** | 45mm | A |
| **4124-46** | 46mm | A |

| Code | Diameter | Type |
|---|---|---|
| **4124-47** | 47mm | A |
| **4124-48** | 48mm | A |
| **4124-49** | 49mm | A |
| **4124-50** | 50mm | A |
| **4124-52** | 52mm | B |
| **4124-55** | 55mm | B |
| **4124-60** | 60mm | B |
| **4124-65** | 65mm | B |
| **4124-70** | 70mm | B |
| **4124-75** | 75mm | B |
| **4124-80** | 80mm | B |
| **4124-85** | 85mm | B |
| **4124-90** | 90mm | B |
| **4124-95** | 95mm | B |
| **4124-100** | 100mm | B |



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# CARBIDE PLAIN PLUG GAUGES

**CUSTOM-MADE**
**OTHER CLASSES ARE AVAILABLE, SUCH AS H8, H9, G7**
**OTHER DIAMETERS ARE AVAILABLE, SUCH AS 19.003mm**
**OTHER LENGTHS ARE AVAILABLE, SUCH AS 70mm**

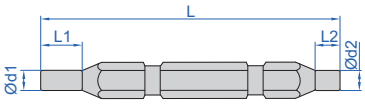
INSPECTION CERTIFICATE



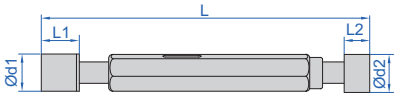

**4128-3**




**4128-50**




**type A**




**type B**

- Supplied with Go and No-Go gauges together
- Standard DIN7150-2

**Size tolerance of H7** **(mm)**

| Diameter | Size tolerance of Go gauge Ød1 (μm) | Size tolerance of No-Go gauge Ød2 (μm) | L1 | L2 | L |
|---|---|---|---|---|---|
| ≥1, ≤1.9 | +0.5/+2.5 | +9/+11 | 15 | 12 | 67 |
| >1.9, ≤3 | +0.5/+2.5 | +9/+11 | 15 | 12 | 79 |
| >3, ≤4.7 | +0.75/+3.25 | +10.75/+13.25 | 15 | 12 | 79 |
| >4.7, ≤6 | +0.75/+3.25 | +10.75/+13.25 | 15 | 12 | 88.5 |
| >6, ≤7.1 | +0.75/+3.25 | +13.75/+16.25 | 15 | 12 | 88.5 |
| >7.1, ≤8 | +0.75/+3.25 | +13.75/+16.25 | 15 | 12 | 99 |
| >8, ≤10 | +0.75/+3.25 | +13.75/+16.25 | 12 | 7 | 75 |
| >10, ≤14 | +1/+4 | +16.5/+19.5 | 12 | 7 | 82 |
| >14, ≤18 | +1/+4 | +16.5/+19.5 | 17 | 10 | 97 |
| >18, ≤24 | +1/+5 | +19/+23 | 17 | 12 | 109 |
| >24, ≤30 | +1/+5 | +19/+23 | 17 | 14 | 111 |
| >30, ≤40 | +1.5/+5.5 | +23/+27 | 20 | 15 | 115 |
| >40, ≤50 | +1.5/+5.5 | +23/+27 | 20 | 15 | 160 |
| >50, ≤60 | +1.5/+6.5 | +27.5/+32.5 | 20 | 15 | 160 |

**H7** **(mm)**

| Code | Diameter | Type |
|---|---|---|
| **4128-1*** | 1 | A |
| **4128-2*** | 2 | A |
| **4128-3*** | 3 | A |
| **4128-4*** | 4 | A |
| **4128-5*** | 5 | A |
| **4128-6*** | 6 | A |
| **4128-7*** | 7 | A |
| **4128-8*** | 8 | A |
| **4128-9*** | 9 | B |
| **4128-10*** | 10 | B |
| **4128-11*** | 11 | B |
| **4128-12*** | 12 | B |
| **4128-13*** | 13 | B |

| Code | Diameter | Type |
|---|---|---|
| **4128-14*** | 14 | B |
| **4128-15*** | 15 | B |
| **4128-16*** | 16 | B |
| **4128-17*** | 17 | B |
| **4128-18*** | 18 | B |
| **4128-19*** | 19 | B |
| **4128-20*** | 20 | B |
| **4128-21*** | 21 | B |
| **4128-22*** | 22 | B |
| **4128-23*** | 23 | B |
| **4128-24*** | 24 | B |
| **4128-25*** | 25 | B |
| **4128-26*** | 26 | B |

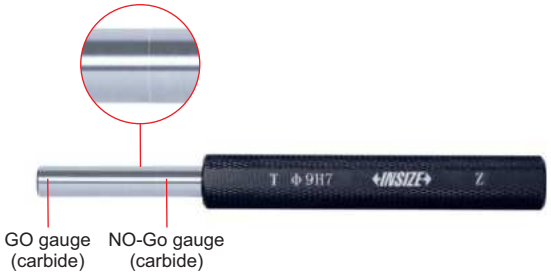
| Code | Diameter | Type |
|---|---|---|
| **4128-27*** | 27 | B |
| **4128-28*** | 28 | B |
| **4128-29*** | 29 | B |
| **4128-30*** | 30 | B |
| **4128-31*** | 31 | B |
| **4128-32*** | 32 | B |
| **4128-33*** | 33 | B |
| **4128-34*** | 34 | B |
| **4128-35*** | 35 | B |
| **4128-36*** | 36 | B |
| **4128-37*** | 37 | B |
| **4128-38*** | 38 | B |
| **4128-39*** | 39 | B |

| Code | Diameter | Type |
|---|---|---|
| **4128-40*** | 40 | B |
| **4128-41*** | 41 | B |
| **4128-42*** | 42 | B |
| **4128-43*** | 43 | B |
| **4128-44*** | 44 | B |
| **4128-45*** | 45 | B |
| **4128-46*** | 46 | B |
| **4128-47*** | 47 | B |
| **4128-48*** | 48 | B |
| **4128-49*** | 49 | B |
| **4128-50*** | 50 | B |
| **4128-52*** | 52 | B |
| **4128-55*** | 55 | B |
| **4128-60*** | 60 | B |

*Supplied with manufacturer inspection certificate

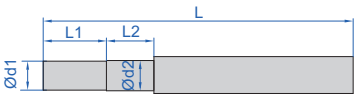
## CARBIDE PLAIN PLUG GAUGES (SINGLE END)

INSPECTION CERTIFICATE




6331-9

- Supplied with Go and No-Go gauges together
- Standard DIN7150-2




**Size tolerance of H7** (mm)

| Diameter | Size tolerance of Go gauge Ød1 (μm) | Size tolerance of No-Go gauge Ød2 (μm) | L1 | L2 | L |
|---|---|---|---|---|---|
| ≥0.5, ≤3 | +0.5/+2.5 | +9/+11 | 20 | 15 | 95 |
| >3, ≤6 | +0.75/+3.25 | +10.75/+13.25 | 20 | 15 | 95 |
| >6, ≤10 | +0.75/+3.25 | +13.75/+16.25 | 20 | 15 | 95 |
| >10, ≤15 | +1/+4 | +16.5/+19.5 | 20 | 15 | 95 |
| >15, ≤18 | +1/+4 | +16.5/+19.5 | 20 | 15 | 115 |
| >18, ≤30 | +1/+5 | +19/+23 | 20 | 15 | 115 |
| >30, ≤40 | +1.5/+5.5 | +23/+27 | 20 | 15 | 115 |

**CUSTOM-MADE**
OTHER CLASSES ARE AVAILABLE, SUCH AS H8, H9, G7
OTHER DIAMETERS ARE AVAILABLE, SUCH AS 19.003mm
OTHER LENGTHS ARE AVAILABLE, SUCH AS 70mm

H7 (mm)

| Code | Diameter | Code | Diameter |
|---|---|---|---|
| 6331-1 * | 1 | 6331-21 * | 21 |
| 6331-2 * | 2 | 6331-22 * | 22 |
| 6331-3 * | 3 | 6331-23 * | 23 |
| 6331-4 * | 4 | 6331-24 * | 24 |
| 6331-5 * | 5 | 6331-25 * | 25 |
| 6331-6 * | 6 | 6331-26 * | 26 |
| 6331-7 * | 7 | 6331-27 * | 27 |
| 6331-8 * | 8 | 6331-28 * | 28 |
| 6331-9 * | 9 | 6331-29 * | 29 |
| 6331-10 * | 10 | 6331-30 * | 30 |
| 6331-11 * | 11 | 6331-31 * | 31 |
| 6331-12 * | 12 | 6331-32 * | 32 |
| 6331-13 * | 13 | 6331-33 * | 33 |
| 6331-14 * | 14 | 6331-34 * | 34 |
| 6331-15 * | 15 | 6331-35 * | 35 |
| 6331-16 * | 16 | 6331-36 * | 36 |
| 6331-17 * | 17 | 6331-37 * | 37 |
| 6331-18 * | 18 | 6331-38 * | 38 |
| 6331-19 * | 19 | 6331-39 * | 39 |
| 6331-20 * | 20 | 6331-40 * | 40 |

*Supplied with manufacturer inspection certificate

## CERAMIC PLAIN PLUG GAUGES (SINGLE END)

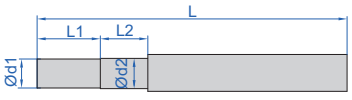
12

INSPECTION CERTIFICATE




6333-10

- Supplied with Go and No-Go gauges together
- Made of ceramic, extremely wear resistance and corrosion resistance, dimensional stability
- Standard DIN7150-2




**Size tolerance of H7** (mm)

| Diameter | Size tolerance of Go gauge Ød1 (μm) | Size tolerance of No-Go gauge Ød2 (μm) | L1 | L2 | L |
|---|---|---|---|---|---|
| ≥0.5, ≤3 | +0.5/+2.5 | +9/+11 | 20 | 15 | 95 |
| >3, ≤6 | +0.75/+3.25 | +10.75/+13.25 | 20 | 15 | 95 |
| >6, ≤10 | +0.75/+3.25 | +13.75/+16.25 | 20 | 15 | 95 |
| >10, ≤15 | +1/+4 | +16.5/+19.5 | 20 | 15 | 95 |
| >15, ≤18 | +1/+4 | +16.5/+19.5 | 20 | 15 | 115 |
| >18, ≤30 | +1/+5 | +19/+23 | 20 | 15 | 115 |
| >30, ≤40 | +1.5/+5.5 | +23/+27 | 20 | 15 | 115 |

**CUSTOM-MADE**
OTHER CLASSES ARE AVAILABLE, SUCH AS H8, H9, G7
OTHER DIAMETERS ARE AVAILABLE, SUCH AS 19.003mm
OTHER LENGTHS ARE AVAILABLE, SUCH AS 70mm

H7 (mm)

| Code | Diameter | Code | Diameter |
|---|---|---|---|
| 6333-1 * | 1 | 6333-21 * | 21 |
| 6333-2 * | 2 | 6333-22 * | 22 |
| 6333-3 * | 3 | 6333-23 * | 23 |
| 6333-4 * | 4 | 6333-24 * | 24 |
| 6333-5 * | 5 | 6333-25 * | 25 |
| 6333-6 * | 6 | 6333-26 * | 26 |
| 6333-7 * | 7 | 6333-27 * | 27 |
| 6333-8 * | 8 | 6333-28 * | 28 |
| 6333-9 * | 9 | 6333-29 * | 29 |
| 6333-10 * | 10 | 6333-30 * | 30 |
| 6333-11 * | 11 | 6333-31 * | 31 |
| 6333-12 * | 12 | 6333-32 * | 32 |
| 6333-13 * | 13 | 6333-33 * | 33 |
| 6333-14 * | 14 | 6333-34 * | 34 |
| 6333-15 * | 15 | 6333-35 * | 35 |
| 6333-16 * | 16 | 6333-36 * | 36 |
| 6333-17 * | 17 | 6333-37 * | 37 |
| 6333-18 * | 18 | 6333-38 * | 38 |
| 6333-19 * | 19 | 6333-39 * | 39 |
| 6333-20 * | 20 | 6333-40 * | 40 |

*Supplied with manufacturer inspection certificate



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INSPECTION CERTIFICATE

# CERAMIC PLAIN PLUG GAUGES

**CUSTOM-MADE**
**OTHER CLASSES ARE AVAILABLE, SUCH AS H8, H9, G7**
**OTHER DIAMETERS ARE AVAILABLE, SUCH AS 19.003mm**
**OTHER LENGTHS ARE AVAILABLE, SUCH AS 70mm**

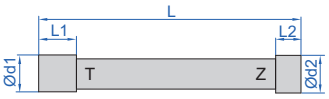



GO gauge (ceramic) — **6332-17** — NO-GO gauge (ceramic)

- Supplied with Go and No-Go gauges together
- Made of ceramic, extremely wear resistance and corrosion resistance, dimensional stability
- Standard DIN7150-2

**Size tolerance of H7** **(mm)**

| Diameter | Size tolerance of Go gauge Ød1 (µm) | Size tolerance of No-Go gauge Ød2 (µm) | L1 | L2 | L |
|---|---|---|---|---|---|
| ≥0.5, ≤3 | +0.5/+2.5 | +9/+11 | 20 | 15 | 95 |
| >3, ≤6 | +0.75/+3.25 | +10.75/+13.25 | 20 | 15 | 95 |
| >6, ≤10 | +0.75/+3.25 | +13.75/+16.25 | 20 | 15 | 95 |
| >10, ≤15 | +1/+4 | +16.5/+19.5 | 20 | 15 | 95 |
| >15, ≤18 | +1/+4 | +16.5/+19.5 | 20 | 15 | 115 |
| >18, ≤30 | +1/+5 | +19/+23 | 20 | 15 | 115 |
| >30, ≤40 | +1.5/+5.5 | +23/+27 | 20 | 15 | 115 |




**H7** **(mm)**

| Code | Diameter | Code | Diameter | Code | Diameter | Code | Diameter | Code | Diameter |
|---|---|---|---|---|---|---|---|---|---|
| **6332-1*** | 1 | **6332-11*** | 11 | **6332-21*** | 21 | **6332-31*** | 31 | **6332-41*** | 41 |
| **6332-2*** | 2 | **6332-12*** | 12 | **6332-22*** | 22 | **6332-32*** | 32 | **6332-42*** | 42 |
| **6332-3*** | 3 | **6332-13*** | 13 | **6332-23*** | 23 | **6332-33*** | 33 | **6332-43*** | 43 |
| **6332-4*** | 4 | **6332-14*** | 14 | **6332-24*** | 24 | **6332-34*** | 34 | **6332-44*** | 44 |
| **6332-5*** | 5 | **6332-15*** | 15 | **6332-25*** | 25 | **6332-35*** | 35 | **6332-45*** | 45 |
| **6332-6*** | 6 | **6332-16*** | 16 | **6332-26*** | 26 | **6332-36*** | 36 | **6332-46*** | 46 |
| **6332-7*** | 7 | **6332-17*** | 17 | **6332-27*** | 27 | **6332-37*** | 37 | **6332-47*** | 47 |
| **6332-8*** | 8 | **6332-18*** | 18 | **6332-28*** | 28 | **6332-38*** | 38 | **6332-48*** | 48 |
| **6332-9*** | 9 | **6332-19*** | 19 | **6332-29*** | 29 | **6332-39*** | 39 | **6332-49*** | 49 |
| **6332-10*** | 10 | **6332-20*** | 20 | **6332-30*** | 30 | **6332-40*** | 40 | **6332-50*** | 50 |

*Supplied with manufacturer inspection certificate



**CUSTOM-MADE**

# SPLINE PLUG GAUGES CODE 6341



- Suitable for pass or fail inspection of internal splines
- Made of high carbon alloy tool steel
- Hardness HRC60-62
- Information required for order: number of teeth, module, pressure angle and lerance grade of splines

## SPLINE RING GAUGES
## CODE 6342

CUSTOM-MADE




- Suitable for pass or fail inspection of external splines
- Made of high carbon alloy tool steel
- Hardness HRC60-62
- Information required for order: number of teeth, module, pressure angle and lerance grade of splines

## CARBIDE MEASURING BALLS

INSPECTION CERTIFICATE

- To measure angle and diameter of taper holes
- Material: carbide
- Hardness: ≥HRA87
- Diameter accuracy: ±3μm
- Roundness: 1μm
- Supplied with manufacturer inspection certificate



4172-20

12

**Individual**

| Code | Diameter |
|---|---|
| 4172-2 | 2mm |
| 4172-2D5 | 2.5mm |
| 4172-3 | 3mm |
| 4172-3D5 | 3.5mm |
| 4172-4 | 4mm |
| 4172-4D5 | 4.5mm |
| 4172-5 | 5mm |
| 4172-6 | 6mm |
| 4172-6D5 | 6.5mm |
| 4172-8 | 8mm |

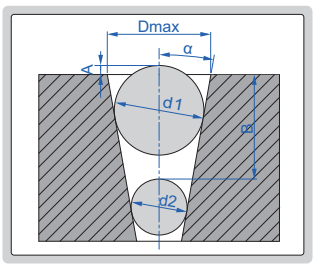
**Individual**

| Code | Diameter |
|---|---|
| 4172-8D5 | 8.5mm |
| 4172-10 | 10mm |
| 4172-12 | 12mm |
| 4172-14 | 14mm |
| 4172-15 | 15mm |
| 4172-16 | 16mm |
| 4172-18 | 18mm |
| 4172-20 | 20mm |
| 4172-30 | 30mm |

**Set (19 pairs)**

| Code | Carbide balls included (one pair per size) |
|---|---|
| 4172-S19 | 2mm, 2.5mm, 3mm, 3.5mm, 4mm, 4.5mm, 5mm, 6mm, 6.5mm, 8mm, 8.5mm, 10mm, 12mm, 14mm, 15mm, 16mm, 18mm, 20mm, 30mm |

Calculate angle (α) and diameter (Dmax) according to the ball diameter (d1, d2), height (A) and depth (B)



INSPECTION CERTIFICATE

# CERAMIC MEASURING BALLS



4190-40D000

- Zirconia material, high strength and hardness, extremely wear resistance and corrosion resistance, good insulation, antistatic and magnetic resistance
- Mirror surface without holes
- Supplied with manufacturer inspection certificate

**Individual**

| Code | Diameter | Accuracy | Roundness |
|---|---|---|---|
| 4190-1D000 | 1.000mm | ±2μm | 0.5μm |
| 4190-1D200 | 1.200mm | ±2μm | 0.5μm |
| 4190-1D300 | 1.300mm | ±2μm | 0.5μm |
| 4190-1D340 | 1.340mm | ±2μm | 0.5μm |
| 4190-1D500 | 1.500mm | ±2μm | 0.5μm |
| 4190-1D588 | 1.588mm (1/16") | ±2μm | 0.5μm |
| 4190-1D750 | 1.750mm | ±2μm | 0.5μm |
| 4190-2D000 | 2.000mm | ±2μm | 0.5μm |
| 4190-2D381 | 2.381mm (3/32") | ±2μm | 0.5μm |
| 4190-2D500 | 2.500mm | ±2μm | 0.5μm |
| 4190-2D778 | 2.778mm (7/64") | ±2μm | 0.5μm |
| 4190-3D000 | 3.000mm | ±2μm | 0.5μm |
| 4190-3D175 | 3.175mm (1/8") | ±2μm | 0.5μm |
| 4190-3D500 | 3.500mm | ±2μm | 0.5μm |
| 4190-3D969 | 3.969mm (5/32") | ±2μm | 0.5μm |
| 4190-4D000 | 4.000mm | ±2μm | 0.5μm |
| 4190-4D500 | 4.500mm | ±2μm | 0.5μm |
| 4190-4D763 | 4.763mm (3/16") | ±2μm | 0.5μm |
| 4190-5D000 | 5.000mm | ±2μm | 0.5μm |
| 4190-5D556 | 5.556mm (7/32") | ±2μm | 0.5μm |
| 4190-5D953 | 5.953mm (15/64") | ±2μm | 0.5μm |
| 4190-6D000 | 6.000mm | ±2μm | 0.5μm |
| 4190-6D350 | 6.350mm (1/4") | ±2μm | 0.5μm |
| 4190-6D500 | 6.500mm | ±2μm | 0.5μm |
| 4190-6D747 | 6.747mm (17/64") | ±2μm | 0.5μm |
| 4190-7D000 | 7.000mm | ±2μm | 0.5μm |
| 4190-7D144 | 7.144mm (9/32") | ±2μm | 0.5μm |
| 4190-7D500 | 7.500mm | ±2μm | 0.5μm |
| 4190-7D938 | 7.938mm (5/16") | ±2μm | 0.5μm |
| 4190-8D000 | 8.000mm | ±2μm | 0.5μm |
| 4190-8D731 | 8.731mm (11/32") | ±2μm | 0.5μm |

**Individual**

| Code | Diameter | Accuracy | Roundness |
|---|---|---|---|
| 4190-9D525 | 9.525mm (3/8") | ±2μm | 0.5μm |
| 4190-10D000 | 10.000mm | ±2μm | 0.5μm |
| 4190-10D318 | 10.318mm (13/32") | ±2μm | 0.5μm |
| 4190-11D000 | 11.000mm | ±2μm | 0.5μm |
| 4190-11D113 | 11.113mm (7/16") | ±2μm | 0.5μm |
| 4190-11D509 | 11.509mm (29/64") | ±2μm | 0.5μm |
| 4190-11D906 | 11.906mm (15/32") | ±2μm | 0.5μm |
| 4190-12D000 | 12.000mm | ±2μm | 0.5μm |
| 4190-12D303 | 12.303mm (31/64") | ±2μm | 0.5μm |
| 4190-12D700 | 12.700mm (1/2") | ±2μm | 0.5μm |
| 4190-13D000 | 13.000mm | ±2μm | 0.6μm |
| 4190-13D494 | 13.494mm (17/32") | ±2μm | 0.6μm |
| 4190-14D000 | 14.000mm | ±2μm | 0.6μm |
| 4190-14D288 | 14.288mm (9/16") | ±2μm | 0.6μm |
| 4190-15D000 | 15.000mm | ±2μm | 0.6μm |
| 4190-15D081 | 15.081mm (19/32") | ±2.5μm | 0.6μm |
| 4190-15D875 | 15.875mm (5/8 ") | ±2.5μm | 0.6μm |
| 4190-16D000 | 16.000mm | ±2.5μm | 0.6μm |
| 4190-16D669 | 16.669mm (21/32") | ±2.5μm | 0.6μm |
| 4190-17D462 | 17.462mm (11/16") | ±2.5μm | 0.6μm |
| 4190-18D000 | 18.000mm | ±2.5μm | 0.6μm |
| 4190-18D256 | 18.256mm (23/32") | ±2.5μm | 0.6μm |
| 4190-19D050 | 19.050mm (3/4") | ±2.5μm | 0.6μm |
| 4190-19D844 | 19.844mm (25/32") | ±2.5μm | 0.6μm |
| 4190-20D000 | 20.000mm | ±2.5μm | 0.6μm |
| 4190-22D000 | 22.000mm | ±2.5μm | 1μm |
| 4190-22D225 | 22.225mm (7/8") | ±2.5μm | 1μm |
| 4190-23D812 | 23.812mm (15/16") | ±2.5μm | 1μm |
| 4190-25D000 | 25.000mm | ±2.5μm | 1μm |
| 4190-40D000 | 40.000mm | ±2.5μm | 1.5μm |

**Set (25 pairs)**

| Code | Ceramic balls included (one pair per size) |
|---|---|
| 4190-S25 | 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 6.5, 7, 7.5, 8, 10, 11, 12, 13, 14, 15, 16, 18, 20, 22, 25mm |

## STEEL MEASURING BALLS

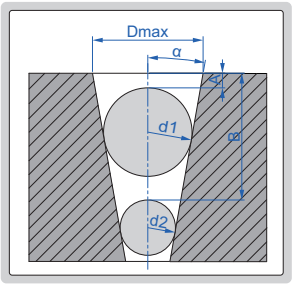
INSPECTION CERTIFICATE

- To measure angle and diameter of taper holes
- Material: tool steel
- Hardness: HRC63
- Diameter accuracy: ±3μm
- Roundness: 1μm
- Supplied with manufacturer inspection certificate



4168-S25

calculate angle (α) and diameter (Dmax) according to the ball diameter (d1, d2), height (A) and depth (B)




**Individual**

| Code | Diameter |
|---|---|
| 4168-01 | 1mm |
| 4168-02 | 2mm |
| 4168-03 | 3mm |
| 4168-04 | 4mm |
| 4168-05 | 5mm |
| 4168-06 | 6mm |
| 4168-07 | 7mm |
| 4168-08 | 8mm |
| 4168-09 | 9mm |
| 4168-10 | 10mm |
| 4168-11 | 11mm |
| 4168-12 | 12mm |
| 4168-13 | 13mm |

**Individual**

| Code | Diameter |
|---|---|
| 4168-14 | 14mm |
| 4168-15 | 15mm |
| 4168-16 | 16mm |
| 4168-17 | 17mm |
| 4168-18 | 18mm |
| 4168-19 | 19mm |
| 4168-20 | 20mm |
| 4168-21 | 21mm |
| 4168-22 | 22mm |
| 4168-23 | 23mm |
| 4168-24 | 24mm |
| 4168-25 | 25mm |

**Set (25 pairs)**

| Code | Steel balls included (one pair per size) |
|---|---|
| 4168-S25 | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25mm |

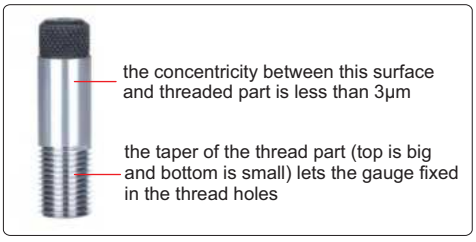
## THREADED HOLE LOCATION GAUGES

INSIZE PLUS
MADE IN EUROPE

ANY SIZE WITHIN THE RANGE OF M3-M150MM CAN BE CUSTOMIZED

ACCURACY CLASS CAN BE CUSTOMIZED

VIDEO



the concentricity between this surface and threaded part is less than 3μm

the taper of the thread part (top is big and bottom is small) lets the gauge fixed in the thread holes

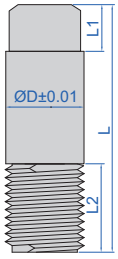


4662-12R



4662-3

Unit: mm

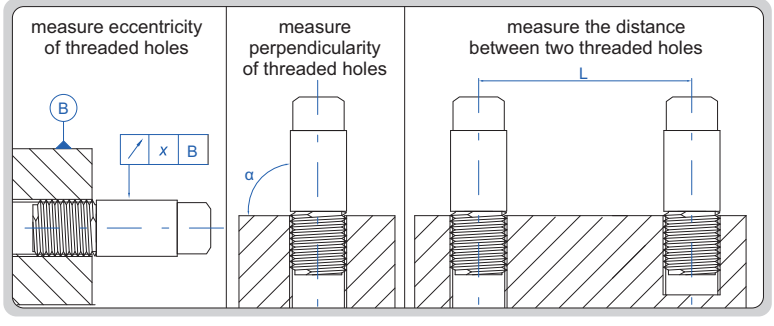



**(mm)**

| Code | Size | L | L1 | L2 | ØD |
|---|---|---|---|---|---|
| 4662-3 | M3×0.5-6H | 29 | 8 | 6 | 3 |
| 4662-4 | M4×0.7-6H | 31.4 | 8 | 8.4 | 4 |
| 4662-5 | M5×0.8-6H | 32.6 | 8 | 9.6 | 5 |
| 4662-6 | M6×1-6H | 47 | 10 | 12 | 6 |
| 4662-8 | M8×1.25-6H | 50 | 10 | 15 | 8 |
| 4662-8P | M8×1-6H | 47 | 10 | 12 | 8 |
| 4662-10 | M10×1.5-6H | 53 | 10 | 18 | 10 |
| 4662-10P | M10×1-6H | 47 | 10 | 12 | 10 |
| 4662-12 | M12×1.75-6H | 56 | 10 | 21 | 12 |
| 4662-12P | M12×1-6H | 47 | 10 | 12 | 12 |
| 4662-12R | M12×1.5-6H | 53 | 10 | 18 | 12 |
| 4662-14 | M14×2-6H | 59 | 10 | 24 | 14 |
| 4662-14P | M14×1-6H | 47 | 10 | 12 | 14 |
| 4662-14R | M14×1.5-6H | 53 | 10 | 18 | 14 |
| 4662-16 | M16×2-6H | 59 | 10 | 24 | 16 |
| 4662-16P | M16×1-6H | 47 | 10 | 12 | 16 |
| 4662-16R | M16×1.5-6H | 53 | 10 | 18 | 16 |
| 4662-20 | M20×2.5-6H | 65 | 10 | 30 | 20 |
| 4662-20P | M20×1-6H | 47 | 10 | 12 | 20 |
| 4662-20R | M20×1.5-6H | 53 | 10 | 18 | 20 |

- Hardness: HRC60-63

application





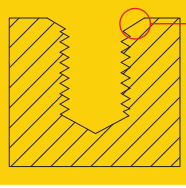

info@insz.sk | +421 944 367 573 | www.insz.sk

# THREADED HOLE LOCATION GAUGES

INSIZE PLUS
MADE IN EUROPE

VIDEO

**ATTENTION: ONLY FOR THE WORKPIECES THAT THE CHAMFER IS CONCENTRIC WITH THE SCREW PART**

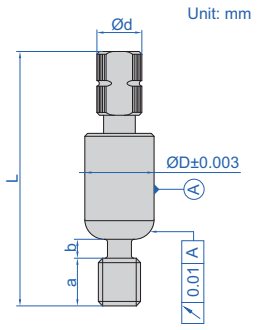





the concentricity between this surface and threaded part is less than 0.01mm

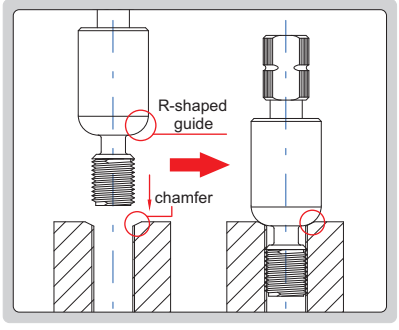


**4676-12**

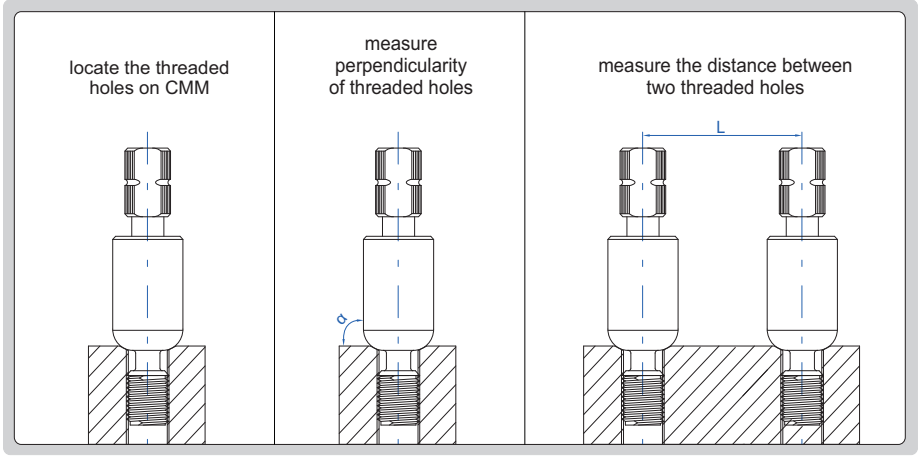



- Only for the workpieces that the chamfer is concentric with the screw part

there is a R-shaped guide, which leads the gauge to the center of the threaded holes by fitting the R-shaped guide on the chamfer of the threaded holes




application




12

(mm)

| Code | Size | Ød | ØD | a | b | L |
|---|---|---|---|---|---|---|
| **4676-3** | M3×0.5 | 4 | 7 | 4 | 2 | 26 |
| **4676-4** | M4×0.7 | 4 | 7 | 4 | 2 | 26 |
| **4676-5** | M5×0.8 | 5.5 | 9 | 6 | 2 | 33 |
| **4676-6** | M6×1.0 | 5.5 | 9 | 6 | 2 | 33 |
| **4676-8** | M8×1.25 | 8.5 | 13 | 9 | 3.5 | 48 |
| **4676-10** | M10×1.5 | 8.5 | 13 | 9 | 3.5 | 48 |
| **4676-12** | M12×1.75 | 12 | 17 | 10 | 3.5 | 55 |

# DIGITAL THREAD DEPTH GAUGES

INSIZE PLUS
MADE IN EUROPE

INSPECTION CERTIFICATE

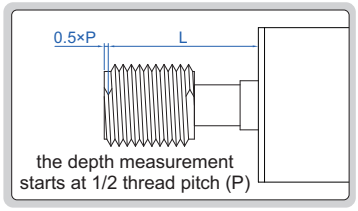
DATA OUTPUT

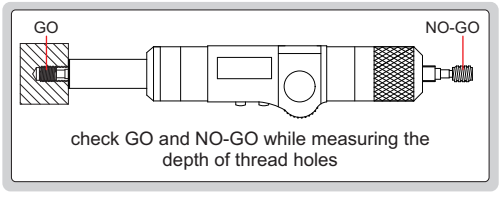
VIDEO



4649-6

- Supplied with GO and NO-GO gauges together
- Check GO and NO-GO while measuring the depth of thread holes
- Resolution: 0.01mm/0.0005"
- Depth 0-40mm: accuracy ±0.04mm; Depth 40-80mm: accuracy ±0.06mm
- Data output
- Button function: on/off, inch/metric conversion, reading hold, data preset, absolute/incremental measurement
- Battery CR2032, automatic power off, move the digital unit to turn on power
- The GO gauge can be replaced after wear
- Optional accessory: data output cable (code **7302-85**), zero block (code **4668-SETTER**), removal tool (code **4668-TOOL**)






**Metric thread**

| Code | Size (mm) | Depth range |
|---|---|---|
| **4649-2*** | M2x0.4-6H | 0-8mm |
| **4649-2D5*** | M2.5x0.45-6H | 0-10mm |
| **4649-3*** | M3x0.5-6H | 0-12mm |
| **4649-3D5*** | M3.5x0.6-6H | 0-14mm |
| **4649-4*** | M4x0.7-6H | 0-16mm |
| **4649-5*** | M5x0.8-6H | 0-20mm |
| **4649-6*** | M6x1-6H | 0-24mm |
| **4649-7*** | M7x1-6H | 0-28mm |
| **4649-8*** | M8x1.25-6H | 0-32mm |
| **4649-10*** | M10x1.5-6H | 0-40mm |
| **4649-12*** | M12x1.75-6H | 0-48mm |
| **4649-14*** | M14x2-6H | 0-56mm |
| **4649-16*** | M16x2-6H | 0-64mm |
| **4649-18*** | M18x2.5-6H | 0-72mm |
| **4649-20*** | M20x2.5-6H | 0-80mm |
| **4649-22*** | M22x2.5-6H | 0-80mm |
| **4649-24*** | M24x3-6H | 0-80mm |
| **4649-27*** | M27x3-6H | 0-80mm |
| **4649-30*** | M30x3.5-6H | 0-80mm |

**Metric fine thread**

| Code | Size (mm) | Depth range |
|---|---|---|
| **4649-8P*** | M8x1-6H | 0-32mm |
| **4649-10P*** | M10x1-6H | 0-40mm |
| **4649-10T*** | M10x1.25-6H | 0-40mm |
| **4649-12P*** | M12x1-6H | 0-48mm |
| **4649-12T*** | M12x1.25-6H | 0-48mm |
| **4649-12R*** | M12x1.5-6H | 0-48mm |
| **4649-14P*** | M14x1-6H | 0-56mm |
| **4649-14T*** | M14x1.25-6H | 0-56mm |
| **4649-14R*** | M14x1.5-6H | 0-56mm |
| **4649-16P*** | M16x1-6H | 0-64mm |
| **4649-16R*** | M16x1.5-6H | 0-64mm |
| **4649-18P*** | M18x1-6H | 0-72mm |
| **4649-18R*** | M18x1.5-6H | 0-72mm |
| **4649-20P*** | M20x1-6H | 0-80mm |
| **4649-20R*** | M20x1.5-6H | 0-80mm |
| **4649-22P*** | M22x1-6H | 0-80mm |
| **4649-22R*** | M22x1.5-6H | 0-80mm |
| **4649-24P*** | M24x1-6H | 0-80mm |
| **4649-24R*** | M24x1.5-6H | 0-80mm |

*Supplied with manufacturer inspection certificate

# THREAD DEPTH GAUGES

INSIZE PLUS
MADE IN EUROPE

INSPECTION CERTIFICATE

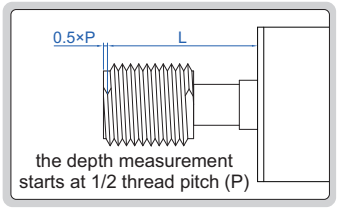


4666-6

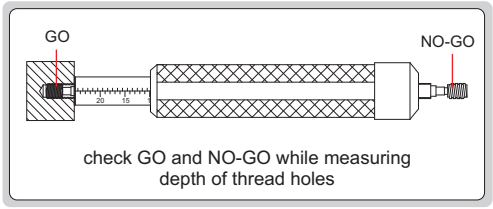
- Supplied with GO and NO-GO gauges together
- Check GO and NO-GO while measuring the depth thread holes
- The GO gauge can be replaced after wear
- Optional accessory: zero block (code **4668-SETTER**), removal tool (code **4668-TOOL**)




4666-14PA




the depth measurement starts at 1/2 thread pitch (P)




check GO and NO-GO while measuring depth of thread holes

**Metric thread** (without vernier reading, graduation: 0.5mm, accuracy: ±0.25mm)

| Code | Size (mm) | Depth range |
|---|---|---|
| **4666-2*** | M2x0.4-6H | 0-8mm |
| **4666-2D5*** | M2.5x0.45-6H | 0-10mm |
| **4666-3*** | M3x0.5-6H | 0-11mm |
| **4666-3D5*** | M3.5x0.6-6H | 0-14mm |
| **4666-4*** | M4x0.7-6H | 0-15mm |
| **4666-5*** | M5x0.8-6H | 0-20mm |
| **4666-6*** | M6x1-6H | 0-24mm |
| **4666-7*** | M7x1-6H | 0-28mm |
| **4666-8*** | M8x1.25-6H | 0-32mm |
| **4666-10*** | M10x1.5-6H | 0-40mm |
| **4666-12*** | M12x1.75-6H | 0-48mm |
| **4666-14*** | M14x2-6H | 0-56mm |
| **4666-16*** | M16x2-6H | 0-64mm |
| **4666-18*** | M18x2.5-6H | 0-72mm |
| **4666-20*** | M20x2.5-6H | 0-80mm |
| **4666-22*** | M22x2.5-6H | 0-80mm |
| **4666-24*** | M24x3-6H | 0-80mm |
| **4666-27*** | M27x3-6H | 0-80mm |
| **4666-30*** | M30x3.5-6H | 0-80mm |

**Metric thread** (with vernier reading, graduation: 0.1mm, accuracy: ±0.1mm)

| Code | Size (mm) | Depth range |
|---|---|---|
| **4666-2A*** | M2x0.4-6H | 0-8mm |
| **4666-2D5A*** | M2.5x0.45-6H | 0-10mm |
| **4666-3A*** | M3x0.5-6H | 0-11mm |
| **4666-3D5A*** | M3.5x0.6-6H | 0-14mm |
| **4666-4A*** | M4x0.7-6H | 0-15mm |
| **4666-5A*** | M5x0.8-6H | 0-20mm |
| **4666-6A*** | M6x1-6H | 0-24mm |
| **4666-7A*** | M7x1-6H | 0-28mm |
| **4666-8A*** | M8x1.25-6H | 0-32mm |
| **4666-10A*** | M10x1.5-6H | 0-40mm |
| **4666-12A*** | M12x1.75-6H | 0-48mm |
| **4666-14A*** | M14x2-6H | 0-56mm |
| **4666-16A*** | M16x2-6H | 0-64mm |
| **4666-18A*** | M18x2.5-6H | 0-72mm |
| **4666-20A*** | M20x2.5-6H | 0-80mm |
| **4666-22A*** | M22x2.5-6H | 0-80mm |
| **4666-24A*** | M24x3-6H | 0-80mm |
| **4666-27A*** | M27x3-6H | 0-80mm |
| **4666-30A*** | M30x3.5-6H | 0-80mm |

VIDEO

**Metric fine thread** (without vernier reading, graduation: 0.5mm, accuracy: ±0.25mm)

| Code | Size (mm) | Depth range |
|---|---|---|
| **4666-8P*** | M8x1-6H | 0-32mm |
| **4666-10P*** | M10x1-6H | 0-40mm |
| **4666-10T*** | M10x1.25-6H | 0-40mm |
| **4666-12P*** | M12x1-6H | 0-48mm |
| **4666-12T*** | M12x1.25-6H | 0-48mm |
| **4666-12R*** | M12x1.5-6H | 0-48mm |
| **4666-14P*** | M14x1-6H | 0-56mm |
| **4666-14T*** | M14x1.25-6H | 0-56mm |
| **4666-14R*** | M14x1.5-6H | 0-56mm |
| **4666-16P*** | M16x1-6H | 0-64mm |
| **4666-16R*** | M16x1.5-6H | 0-64mm |
| **4666-18P*** | M18x1-6H | 0-72mm |
| **4666-18R*** | M18x1.5-6H | 0-72mm |
| **4666-20P*** | M20x1-6H | 0-80mm |
| **4666-20R*** | M20x1.5-6H | 0-80mm |
| **4666-22P*** | M22x1-6H | 0-80mm |
| **4666-22R*** | M22x1.5-6H | 0-80mm |
| **4666-24P*** | M24x1-6H | 0-80mm |
| **4666-24R*** | M24x1.5-6H | 0-80mm |

**Metric fine thread** (with vernier reading, graduation: 0.1mm, accuracy: ±0.1mm)

| Code | Size (mm) | Depth range |
|---|---|---|
| **4666-8PA*** | M8x1-6H | 0-32mm |
| **4666-10PA*** | M10x1-6H | 0-40mm |
| **4666-10TA*** | M10x1.25-6H | 0-40mm |
| **4666-12PA*** | M12x1-6H | 0-48mm |
| **4666-12TA*** | M12x1.25-6H | 0-48mm |
| **4666-12RA*** | M12x1.5-6H | 0-48mm |
| **4666-14PA*** | M14x1-6H | 0-56mm |
| **4666-14TA*** | M14x1.25-6H | 0-56mm |
| **4666-14RA*** | M14x1.5-6H | 0-56mm |
| **4666-16PA*** | M16x1-6H | 0-64mm |
| **4666-16RA*** | M16x1.5-6H | 0-64mm |
| **4666-18PA*** | M18x1-6H | 0-72mm |
| **4666-18RA*** | M18x1.5-6H | 0-72mm |
| **4666-20PA*** | M20x1-6H | 0-80mm |
| **4666-20RA*** | M20x1.5-6H | 0-80mm |
| **4666-22PA*** | M22x1-6H | 0-80mm |
| **4666-22RA*** | M22x1.5-6H | 0-80mm |
| **4666-24PA*** | M24x1-6H | 0-80mm |
| **4666-24RA*** | M24x1.5-6H | 0-80mm |

*Supplied with manufacturer inspection certificate

# DLC COATED THREAD RING GAUGES AND PLUG GAUGES




DLC coated GO ring gauge




DLC coated GO plug gauge

- The DLC coating has the following advantages:
  — High hardness, extremely wear resistance
  — Low friction coefficient
  — Corrosion resistance
- Plug gauges: GO is coated, NO-GO is not;
  Ring gauges: GO is coated, NO-GO is not
- The following thread ring gauges and plug gauges are available with DLC coating:
  Metric fine thread ring gauges and plug gauges (**4139, 4129** series);
  Metric thread ring gauges and plug gauges (**4130, 4120** series);
  American standard thread ring gauges and plug gauges (**4131, 4121** series)

**Code example:**

| Original code | DLC coating code |
|---|---|
| **4120-12** | **4120-12-DLC** |
| **4130-4** | **4130-4-DLC** |

**DLC coating characteristics**

| | |
|---|---|
| **Hardness** | 6000HV |
| **Friction coefficient** | 0.15 |
| **Coating color** | interference color |

# METRIC THREAD PLUG GAUGES

**WARNING: LIFE TIME IS LIMITED, CAN BE USED ABOUT 2000 TIMES**

- Supplied with Go and No-Go gauges together
- Standard ISO1502
- Supplied with manufacturer inspection certificate




**4130-10**

INSPECTION CERTIFICATE

**Individual**

| Size (mm) | | Code | | |
|---|---|---|---|---|
| Nominal diameter | Pitch | Class 6H | Class 6G | Class 4H |
| M0.8 | 0.2 | **4130-D8** | **4130-D8G** | **4130-D8H** |
| M0.9 | 0.225 | **4130-D9** | **4130-D9G** | **4130-D9H** |
| M1 | 0.25 | **4130-1** | **4130-1G** | **4130-1H** |
| M1.1 | 0.25 | **4130-1D1** | **4130-1D1G** | **4130-1D1H** |
| M1.2 | 0.25 | **4130-1D2** | **4130-1D2G** | **4130-1D2H** |
| M1.4 | 0.3 | **4130-1D4** | **4130-1D4G** | **4130-1D4H** |
| M1.6 | 0.35 | **4130-1D6** | **4130-1D6G** | **4130-1D6H** |
| M1.7 | 0.35 | **4130-1D7** | **4130-1D7G** | **4130-1D7H** |
| M1.8 | 0.35 | **4130-1D8** | **4130-1D8G** | **4130-1D8H** |
| M2 | 0.4 | **4130-2** | **4130-2G** | **4130-2H** |
| M2.2 | 0.45 | **4130-2D2** | **4130-2D2G** | **4130-2D2H** |
| M2.3 | 0.4 | **4130-2D3** | **4130-2D3G** | **4130-2D3H** |
| M2.5 | 0.45 | **4130-2D5** | **4130-2D5G** | **4130-2D5H** |
| M2.6 | 0.45 | **4130-2D6** | **4130-2D6G** | **4130-2D6H** |
| M3 | 0.5 | **4130-3** | **4130-3G** | **4130-3H** |
| M3.5 | 0.6 | **4130-3D5** | **4130-3D5G** | **4130-3D5H** |
| M4 | 0.7 | **4130-4** | **4130-4G** | **4130-4H** |
| M4.5 | 0.75 | **4130-4D5** | **4130-4D5G** | **4130-4D5H** |
| M5 | 0.8 | **4130-5** | **4130-5G** | **4130-5H** |
| M6 | 1 | **4130-6** | **4130-6G** | **4130-6H** |
| M7 | 1 | **4130-7** | **4130-7G** | **4130-7H** |
| M8 | 1.25 | **4130-8** | **4130-8G** | **4130-8H** |

**Individual**

| Size (mm) | | Code | | |
|---|---|---|---|---|
| Nominal diameter | Pitch | Class 6H | Class 6G | Class 4H |
| M9 | 1.25 | **4130-9** | **4130-9G** | **4130-9H** |
| M10 | 1.5 | **4130-10** | **4130-10G** | **4130-10H** |
| M11 | 1.5 | **4130-11** | **4130-11G** | **4130-11H** |
| M12 | 1.75 | **4130-12** | **4130-12G** | **4130-12H** |
| M14 | 2 | **4130-14** | **4130-14G** | **4130-14H** |
| M16 | 2 | **4130-16** | **4130-16G** | **4130-16H** |
| M18 | 2.5 | **4130-18** | **4130-18G** | **4130-18H** |
| M20 | 2.5 | **4130-20** | **4130-20G** | **4130-20H** |
| M22 | 2.5 | **4130-22** | **4130-22G** | **4130-22H** |
| M24 | 3 | **4130-24** | **4130-24G** | **4130-24H** |
| M27 | 3 | **4130-27** | **4130-27G** | **4130-27H** |
| M30 | 3.5 | **4130-30** | **4130-30G** | **4130-30H** |
| M33 | 3.5 | **4130-33** | **4130-33G** | **4130-33H** |
| M36 | 4 | **4130-36** | **4130-36G** | **4130-36H** |
| M39 | 4 | **4130-39** | **4130-39G** | **4130-39H** |
| M42 | 4.5 | **4130-42** | **4130-42G** | **4130-42H** |
| M45 | 4.5 | **4130-45** | **4130-45G** | **4130-45H** |
| M48 | 5 | **4130-48** | **4130-48G** | **4130-48H** |
| M52 | 5 | **4130-52** | **4130-52G** | **4130-52H** |
| M56 | 5.5 | **4130-56** | **4130-56G** | **4130-56H** |
| M60 | 5.5 | **4130-60** | **4130-60G** | **4130-60H** |
| M64 | 6 | **4130-64** | **4130-64G** | **4130-64H** |
| M68 | 6 | **4130-68** | **4130-68G** | **4130-68H** |

**Set (class 6H)**

| Code | Thread plug gauges included (mm) |
|---|---|
| **4130-S7** | M3x0.5 (**4130-3**), M4x0.7 (**4130-4**), M5x0.8 (**4130-5**), M6x1 (**4130-6**), M8x1.25 (**4130-8**), M10x1.5 (**4130-10**), M12x1.75 (**4130-12**) |

WARNING: LIFE TIME IS LIMITED, CAN BE USED ABOUT 2000 TIMES

INSPECTION CERTIFICATE

# METRIC FINE THREAD PLUG GAUGES




**4139-20G**

- Supplied with Go and No-Go gauges together
- Standard ISO1502
- Supplied with manufacturer inspection certificate

Code example:
"**-1A**" stands for "**4139-1A**"

| Size (mm) | | Code (4139) | | |
|---|---|---|---|---|
| Nominal diameter | Pitch | Class 6H | Class 6G | Class 4H |
| M1 | 0.2 | -1A | -1AG | -1AH |
| M1.2 | 0.2 | -1D2A | -1D2AG | -1D2AH |
| M1.4 | 0.2 | -1D4A | -1D4AG | -1D4AH |
| M1.6 | 0.2 | -1D6A | -1D6AG | -1D6AH |
| M1.8 | 0.2 | -1D8A | -1D8AG | -1D8AH |
| M2 | 0.2 | -2A | -2AG | -2AH |
| | 0.25 | -2B | -2BG | -2BH |
| M2.5 | 0.2 | -2D5A | -2D5AG | -2D5AH |
| | 0.25 | -2D5B | -2D5BG | -2D5BH |
| | 0.35 | -2D5D | -2D5DG | -2D5DH |
| M3 | 0.25 | -3B | -3BG | -3BH |
| | 0.35 | -3D | -3DG | -3DH |
| M3.5 | 0.25 | -3D5B | -3D5BG | -3D5BH |
| | 0.35 | -3D5D | -3D5DG | -3D5DH |
| | 0.5 | -3D5G | -3D5GG | -3D5GH |
| M4 | 0.25 | -4B | -4BG | -4BH |
| | 0.35 | -4D | -4DG | -4DH |
| | 0.5 | -4G | -4GG | -4GH |
| M4.5 | 0.35 | -4D5D | -4D5DG | -4D5DH |
| | 0.5 | -4D5G | -4D5GG | -4D5GH |
| M5 | 0.25 | -5B | -5BG | -5BH |
| | 0.35 | -5D | -5DG | -5DH |
| | 0.5 | -5G | -5GG | -5GH |
| M5.5 | 0.5 | -5D5G | -5D5GG | -5D5GH |
| M6 | 0.25 | -6B | -6BG | -6BH |
| | 0.35 | -6D | -6DG | -6DH |
| | 0.5 | -6G | -6GG | -6GH |
| M6.5 | 0.5 | -6D5G | -6D5GG | -6D5GH |
| M7 | 0.35 | -7D | -7DG | -7DH |
| | 0.5 | -7G | -7GG | -7GH |
| M7.5 | 0.5 | -7D5G | -7D5GG | -7D5GH |
| M8 | 0.35 | -8D | -8DG | -8DH |
| | 0.5 | -8G | -8GG | -8GH |

| Size (mm) | | Code (4139) | | |
|---|---|---|---|---|
| Nominal diameter | Pitch | Class 6H | Class 6G | Class 4H |
| M8 | 1 | -8P | -8PG | -8PH |
| M8.5 | 0.5 | -8D5G | -8D5GG | -8D5GH |
| M9 | 0.35 | -9D | -9DG | -9DH |
| | 0.5 | -9G | -9GG | -9GH |
| | 0.75 | -9L | -9LG | -9LH |
| | 1 | -9P | -9PG | -9PH |
| M10 | 0.35 | -10D | -10DG | -10DH |
| | 0.5 | -10G | -10GG | -10GH |
| | 1 | -10P | -10PG | -10PH |
| | 1.25 | -10Q | -10QG | -10QH |
| M11 | 0.5 | -11G | -11GG | -11GH |
| | 1 | -11P | -11PG | -11PH |
| M12 | 0.5 | -12G | -12GG | -12GH |
| | 1 | -12P | -12PG | -12PH |
| | 1.25 | -12Q | -12QG | -12QH |
| | 1.5 | -12R | -12RG | -12RH |
| M13 | 0.5 | -13G | -13GG | -13GH |
| | 1 | -13P | -13PG | -13PH |
| | 1.5 | -13R | -13RG | -13RH |
| M14 | 0.5 | -14G | -14GG | -14GH |
| | 1 | -14P | -14PG | -14PH |
| | 1.25 | -14Q | -14QG | -14QH |
| | 1.5 | -14R | -14RG | -14RH |
| M15 | 0.5 | -15G | -15GG | -15GH |
| | 1 | -15P | -15PG | -15PH |
| | 1.5 | -15R | -15RG | -15RH |
| M16 | 0.5 | -16G | -16GG | -16GH |
| | 1 | -16P | -16PG | -16PH |
| | 1.25 | -16Q | -16QG | -16QH |
| | 1.5 | -16R | -16RG | -16RH |
| M17 | 0.5 | -17G | -17GG | -17GH |
| | 1 | -17P | -17PG | -17PH |
| | 1.5 | -17R | -17RG | -17RH |



To be continued

Continued from previous page

| Size (mm) | | Code (4139) | | |
|---|---|---|---|---|
| Nominal diameter | Pitch | Class 6H | Class 6G | Class 4H |
| M18 | 0.5 | -18G | -18GG | -18GH |
| | 1 | -18P | -18PG | -18PH |
| | 1.25 | -18Q | -18QG | -18QH |
| | 1.5 | -18R | -18RG | -18RH |
| | 2 | -18T | -18TG | -18TH |
| M19 | 0.5 | -19G | -19GG | -19GH |
| | 1 | -19P | -19PG | -19PH |
| | 1.5 | -19R | -19RG | -19RH |
| M20 | 0.5 | -20G | -20GG | -20GH |
| | 1 | -20P | -20PG | -20PH |
| | 1.25 | -20Q | -20QG | -20QH |
| | 1.5 | -20R | -20RG | -20RH |
| | 2 | -20T | -20TG | -20TH |
| M21 | 0.5 | -21G | -21GG | -21GH |
| | 1 | -21P | -21PG | -21PH |
| | 1.5 | -21R | -21RG | -21RH |
| M22 | 0.5 | -22G | -22GG | -22GH |
| | 1 | -22P | -22PG | -22PH |
| | 1.25 | -22Q | -22QG | -22QH |
| | 1.5 | -22R | -22RG | -22RH |
| | 2 | -22T | -22TG | -22TH |
| M23 | 0.5 | -23G | -23GG | -23GH |
| | 1 | -23P | -23PG | -23PH |
| M24 | 0.5 | -24G | -24GG | -24GH |
| | 1 | -24P | -24PG | -24PH |
| | 1.25 | -24Q | -24QG | -24QH |
| | 1.5 | -24R | -24RG | -24RH |
| | 2 | -24T | -24TG | -24TH |
| M25 | 0.5 | -25G | -25GG | -25GH |
| | 1 | -25P | -25PG | -25PH |
| | 1.5 | -25R | -25RG | -25RH |
| | 2 | -25T | -25TG | -25TH |
| M26 | 0.5 | -26G | -26GG | -26GH |
| | 1 | -26P | -26PG | -26PH |
| | 1.5 | -26R | -26RG | -26RH |
| | 2 | -26T | -26TG | -26TH |
| M27 | 0.5 | -27G | -27GG | -27GH |
| | 1 | -27P | -27PG | -27PH |
| | 1.5 | -27R | -27RG | -27RH |
| | 2 | -27T | -27TG | -27TH |
| M28 | 0.5 | -28G | -28GG | -28GH |
| | 1 | -28P | -28PG | -28PH |
| | 1.5 | -28R | -28RG | -28RH |
| | 2 | -28T | -28TG | -28TH |
| M29 | 0.5 | -29G | -29GG | -29GH |
| | 0.75 | -29L | -29LG | -29LH |
| | 1 | -29P | -29PG | -29PH |
| M30 | 0.5 | -30G | -30GG | -30GH |
| | 0.75 | -30L | -30LG | -30LH |
| | 1 | -30P | -30PG | -30PH |
| | 1.5 | -30R | -30RG | -30RH |
| | 2 | -30T | -30TG | -30TH |
| | 3 | -30V | -30VG | -30VH |

| Size (mm) | | Code (4139) | | |
|---|---|---|---|---|
| Nominal diameter | Pitch | Class 6H | Class 6G | Class 4H |
| M31 | 0.5 | -31G | -31GG | -31GH |
| | 0.75 | -31L | -31LG | -31LH |
| M32 | 0.5 | -32G | -32GG | -32GH |
| | 0.75 | -32L | -32LG | -32LH |
| | 1 | -32P | -32PG | -32PH |
| | 1.5 | -32R | -32RG | -32RH |
| | 2 | -32T | -32TG | -32TH |
| M33 | 0.5 | -33G | -33GG | -33GH |
| | 0.75 | -33L | -33LG | -33LH |
| | 1 | -33P | -33PG | -33PH |
| | 1.5 | -33R | -33RG | -33RH |
| | 2 | -33T | -33TG | -33TH |
| | 3 | -33V | -33VG | -33VH |
| M34 | 0.75 | -34L | -34LG | -34LH |
| | 1 | -34P | -34PG | -34PH |
| | 1.5 | -34R | -34RG | -34RH |
| | 2 | -34T | -34TG | -34TH |
| M35 | 0.75 | -35L | -35LG | -35LH |
| | 1 | -35P | -35PG | -35PH |
| | 1.5 | -35R | -35RG | -35RH |
| | 2 | -35T | -35TG | -35TH |
| M36 | 0.75 | -36L | -36LG | -36LH |
| | 1 | -36P | -36PG | -36PH |
| | 1.5 | -36R | -36RG | -36RH |
| | 2 | -36T | -36TG | -36TH |
| | 3 | -36V | -36VG | -36VH |
| M37 | 0.75 | -37L | -37LG | -37LH |
| M38 | 0.75 | -38L | -38LG | -38LH |
| | 1 | -38P | -38PG | -38PH |
| | 1.5 | -38R | -38RG | -38RH |
| | 2 | -38T | -38TG | -38TH |
| M39 | 0.75 | -39L | -39LG | -39LH |
| | 1 | -39P | -39PG | -39PH |
| | 1.5 | -39R | -39RG | -39RH |
| | 2 | -39T | -39TG | -39TH |
| | 3 | -39V | -39VG | -39VH |
| M40 | 0.75 | -40L | -40LG | -40LH |
| | 1 | -40P | -40PG | -40PH |
| | 1.5 | -40R | -40RG | -40RH |
| | 2 | -40T | -40TG | -40TH |
| | 3 | -40V | -40VG | -40VH |
| M42 | 1 | -42P | -42PG | -42PH |
| | 1.5 | -42R | -42RG | -42RH |
| | 2 | -42T | -42TG | -42TH |
| | 3 | -42V | -42VG | -42VH |
| M45 | 1 | -45P | -45PG | -45PH |
| | 1.5 | -45R | -45RG | -45RH |
| | 2 | -45T | -45TG | -45TH |
| | 3 | -45V | -45VG | -45VH |
| M48 | 1 | -48P | -48PG | -48PH |
| | 1.5 | -48R | -48RG | -48RH |
| | 2 | -48T | -48TG | -48TH |
| | 3 | -48V | -48VG | -48VH |

To be continued

Continued from previous page

| Size (mm) | | Code (4139) | | |
|---|---|---|---|---|
| Nominal diameter | Pitch | Class 6H | Class 6G | Class 4H |
| M50 | 1 | -50P | -50PG | -50PH |
| | 1.5 | -50R | -50RG | -50RH |
| | 2 | -50T | -50TG | -50TH |
| | 3 | -50V | -50VG | -50VH |
| M52 | 1 | -52P | -52PG | -52PH |
| | 1.5 | -52R | -52RG | -52RH |
| | 2 | -52T | -52TG | -52TH |
| | 3 | -52V | -52VG | -52VH |
| | 4 | -52X | -52XG | -52XH |
| M55 | 1 | -55P | -55PG | -55PH |
| | 1.5 | -55R | -55RG | -55RH |
| | 2 | -55T | -55TG | -55TH |
| | 3 | -55V | -55VG | -55VH |
| | 4 | -55X | -55XG | -55XH |
| M56 | 1 | -56P | -56PG | -56PH |
| | 1.5 | -56R | -56RG | -56RH |
| | 2 | -56T | -56TG | -56TH |
| | 3 | -56V | -56VG | -56VH |
| | 4 | -56X | -56XG | -56XH |
| M58 | 1 | -58P | -58PG | -58PH |
| | 1.5 | -58R | -58RG | -58RH |
| | 2 | -58T | -58TG | -58TH |
| | 3 | -58V | -58VG | -58VH |
| | 4 | -58X | -58XG | -58XH |
| M60 | 1 | -60P | -60PG | -60PH |
| | 1.5 | -60R | -60RG | -60RH |
| | 2 | -60T | -60TG | -60TH |
| | 3 | -60V | -60VG | -60VH |
| | 4 | -60X | -60XG | -60XH |
| M62 | 1.5 | -62R | -62RG | -62RH |
| | 2 | -62T | -62TG | -62TH |
| | 3 | -62V | -62VG | -62VH |
| | 4 | -62X | -62XG | -62XH |
| M64 | 1.5 | -64R | -64RG | -64RH |
| | 2 | -64T | -64TG | -64TH |
| | 3 | -64V | -64VG | -64VH |
| | 4 | -64X | -64XG | -64XH |
| M65 | 1.5 | -65R | -65RG | -65RH |
| | 2 | -65T | -65TG | -65TH |
| | 3 | -65V | -65VG | -65VH |
| | 4 | -65X | -65XG | -65XH |
| M68 | 1.5 | -68R | -68RG | -68RH |
| | 2 | -68T | -68TG | -68TH |
| | 3 | -68V | -68VG | -68VH |
| | 4 | -68X | -68XG | -68XH |
| M70 | 1.5 | -70R | -70RG | -70RH |
| | 2 | -70T | -70TG | -70TH |
| | 3 | -70V | -70VG | -70VH |
| | 4 | -70X | -70XG | -70XH |
| | 6 | -70O | -70OG | -70OH |
| M72 | 1.5 | -72R | -72RG | -72RH |

| Size (mm) | | Code (4139) | | |
|---|---|---|---|---|
| Nominal diameter | Pitch | Class 6H | Class 6G | Class 4H |
| M72 | 2 | -72T | -72TG | -72TH |
| | 3 | -72V | -72VG | -72VH |
| | 4 | -72X | -72XG | -72XH |
| | 6 | -72O | -72OG | -72OH |
| M75 | 1.5 | -75R | -75RG | -75RH |
| | 2 | -75T | -75TG | -75TH |
| | 3 | -75V | -75VG | -75VH |
| | 4 | -75X | -75XG | -75XH |
| M76 | 1.5 | -76R | -76RG | -76RH |
| | 2 | -76T | -76TG | -76TH |
| | 3 | -76V | -76VG | -76VH |
| | 4 | -76X | -76XG | -76XH |
| | 6 | -76O | -76OG | -76OH |
| M78 | 2 | -78T | -78TG | -78TH |
| M80 | 1.5 | -80R | -80RG | -80RH |
| | 2 | -80T | -80TG | -80TH |
| | 3 | -80V | -80VG | -80VH |
| | 4 | -80X | -80XG | -80XH |
| | 6 | -80O | -80OG | -80OH |
| M82 | 2 | -82T | -82TG | -82TH |
| M85 | 2 | -85T | -85TG | -85TH |
| | 3 | -85V | -85VG | -85VH |
| | 4 | -85X | -85XG | -85XH |
| | 6 | -85O | -85OG | -85OH |
| M90 | 2 | -90T | -90TG | -90TH |
| | 3 | -90V | -90VG | -90VH |
| | 4 | -90X | -90XG | -90XH |
| | 6 | -90O | -90OG | -90OH |
| M95 | 2 | -95T | -95TG | -95TH |
| | 3 | -95V | -95VG | -95VH |
| | 4 | -95X | -95XG | -95XH |
| | 6 | -95O | -95OG | -95OH |
| M100 | 2 | -100T | -100TG | -100TH |
| | 3 | -100V | -100VG | -100VH |
| | 4 | -100X | -100XG | -100XH |
| | 6 | -100O | -100OG | -100OH |
| M105 | 2 | -105T | -105TG | -105TH |
| | 3 | -105V | -105VG | -105VH |
| | 4 | -105X | -105XG | -105XH |
| | 6 | -105O | -105OG | -105OH |
| M110 | 2 | -110T | -110TG | -110TH |
| | 3 | -110V | -110VG | -110VH |
| | 4 | -110X | -110XG | -110XH |
| | 6 | -110O | -110OG | -110OH |
| M115 | 2 | -115T | -115TG | -115TH |
| | 3 | -115V | -115VG | -115VH |
| | 4 | -115X | -115XG | -115XH |
| | 6 | -115O | -115OG | -115OH |
| M120 | 2 | -120T | -120TG | -120TH |
| | 3 | -120V | -120VG | -120VH |
| | 4 | -120X | -120XG | -120XH |
| | 6 | -120O | -120OG | -120OH |

# METRIC THREAD RING GAUGES

WARNING: LIFE TIME IS LIMITED, CAN BE USED ABOUT 2000 TIMES

INSPECTION CERTIFICATE

- Standard ISO1502
- Supplied with manufacturer inspection certificate




4120-16




4120-16N

Code example:
"**-2**" stands for "**4120-2**"

**Individual**

| Size (mm) | | Code (4120) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M2 | 0.4 | **-2** | **-2N** | **-2E** | **-2EN** | **-2H** | **-2HN** |
| M2.2 | 0.45 | **-2D2** | **-2D2N** | **-2D2E** | **-2D2EN** | **-2D2H** | **-2D2HN** |
| M2.3 | 0.4 | **-2D3** | **-2D3N** | **-2D3E** | **-2D3EN** | **-2D3H** | **-2D3HN** |
| M2.5 | 0.45 | **-2D5** | **-2D5N** | **-2D5E** | **-2D5EN** | **-2D5H** | **-2D5HN** |
| M2.6 | 0.45 | **-2D6** | **-2D6N** | **-2D6E** | **-2D6EN** | **-2D6H** | **-2D6HN** |
| M3 | 0.5 | **-3** | **-3N** | **-3E** | **-3EN** | **-3H** | **-3HN** |
| M3.5 | 0.6 | **-3D5** | **-3D5N** | **-3D5E** | **-3D5EN** | **-3D5H** | **-3D5HN** |
| M4 | 0.7 | **-4** | **-4N** | **-4E** | **-4EN** | **-4H** | **-4HN** |
| M4.5 | 0.75 | **-4D5** | **-4D5N** | **-4D5E** | **-4D5EN** | **-4D5H** | **-4D5HN** |
| M5 | 0.8 | **-5** | **-5N** | **-5E** | **-5EN** | **-5H** | **-5HN** |
| M6 | 1 | **-6** | **-6N** | **-6E** | **-6EN** | **-6H** | **-6HN** |
| M7 | 1 | **-7** | **-7N** | **-7E** | **-7EN** | **-7H** | **-7HN** |
| M8 | 1.25 | **-8** | **-8N** | **-8E** | **-8EN** | **-8H** | **-8HN** |
| M9 | 1.25 | **-9** | **-9N** | **-9E** | **-9EN** | **-9H** | **-9HN** |
| M10 | 1.5 | **-10** | **-10N** | **-10E** | **-10EN** | **-10H** | **-10HN** |
| M11 | 1.5 | **-11** | **-11N** | **-11E** | **-11EN** | **-11H** | **-11HN** |
| M12 | 1.75 | **-12** | **-12N** | **-12E** | **-12EN** | **-12H** | **-12HN** |
| M14 | 2 | **-14** | **-14N** | **-14E** | **-14EN** | **-14H** | **-14HN** |
| M16 | 2 | **-16** | **-16N** | **-16E** | **-16EN** | **-16H** | **-16HN** |
| M18 | 2.5 | **-18** | **-18N** | **-18E** | **-18EN** | **-18H** | **-18HN** |
| M20 | 2.5 | **-20** | **-20N** | **-20E** | **-20EN** | **-20H** | **-20HN** |
| M22 | 2.5 | **-22** | **-22N** | **-22E** | **-22EN** | **-22H** | **-22HN** |
| M24 | 3 | **-24** | **-24N** | **-24E** | **-24EN** | **-24H** | **-24HN** |
| M27 | 3 | **-27** | **-27N** | **-27E** | **-27EN** | **-27H** | **-27HN** |
| M30 | 3.5 | **-30** | **-30N** | **-30E** | **-30EN** | **-30H** | **-30HN** |
| M33 | 3.5 | **-33** | **-33N** | **-33E** | **-33EN** | **-33H** | **-33HN** |
| M36 | 4 | **-36** | **-36N** | **-36E** | **-36EN** | **-36H** | **-36HN** |
| M39 | 4 | **-39** | **-39N** | **-39E** | **-39EN** | **-39H** | **-39HN** |
| M42 | 4.5 | **-42** | **-42N** | **-42E** | **-42EN** | **-42H** | **-42HN** |
| M45 | 4.5 | **-45** | **-45N** | **-45E** | **-45EN** | **-45H** | **-45HN** |
| M48 | 5 | **-48** | **-48N** | **-48E** | **-48EN** | **-48H** | **-48HN** |
| M52 | 5 | **-52** | **-52N** | **-52E** | **-52EN** | **-52H** | **-52HN** |
| M56 | 5.5 | **-56** | **-56N** | **-56E** | **-56EN** | **-56H** | **-56HN** |
| M60 | 5.5 | **-60** | **-60N** | **-60E** | **-60EN** | **-60H** | **-60HN** |
| M64 | 6 | **-64** | **-64N** | **-64E** | **-64EN** | **-64H** | **-64HN** |
| M68 | 6 | **-68** | **-68N** | **-68E** | **-68EN** | **-68H** | **-68HN** |

**Go ring gauge set (Class 6g)**

| Code | Thread ring gauges included (mm) |
|---|---|
| **4120-S7** | M3x0.5 (**4120-3**), M4x0.7 (**4120-4**), M5x0.8 (**4120-5**), M6x1 (**4120-6**), M8x1.25 (**4120-8**), M10x1.5 (**4120-10**), M12x1.75 (**4120-12**) |

**No Go ring gauge set (Class 6g)**

| Code | Thread ring gauges included (mm) |
|---|---|
| **4120-S7N** | M3x0.5 (**4120-3N**), M4x0.7 (**4120-4N**), M5x0.8 (**4120-5N**), M6x1 (**4120-6N**), M8x1.25 (**4120-8N**), M10x1.5 (**4120-10N**), M12x1.75 (**4120-12N**) |

INSPECTION CERTIFICATE

WARNING: LIFE TIME IS LIMITED, CAN BE USED ABOUT 2000 TIMES

# METRIC FINE THREAD RING GAUGES

- Standard ISO1502
- Supplied with manufacturer inspection certificate (except gauges larger than M100)




4129-10P




4129-10PN

Code example:
"**-3D5G**" stands for "**4129-3D5G**"

| Size (mm) | | Code (4129) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M3.5 | 0.5 | -3D5G | -3D5GN | -3D5GE | -3D5GEN | -3D5GH | -3D5GHN |
| M4 | 0.5 | -4G | -4GN | -4GE | -4GEN | -4GH | -4GHN |
| M4.5 | 0.5 | -4D5G | -4D5GN | -4D5GE | -4D5GEN | -4D5GH | -4D5GHN |
| M5 | 0.5 | -5G | -5GN | -5GE | -5GEN | -5GH | -5GHN |
| M5.5 | 0.5 | -5D5G | -5D5GN | -5D5GE | -5D5GEN | -5D5GH | -5D5GHN |
| M6 | 0.5 | -6G | -6GN | -6GE | -6GEN | -6GH | -6GHN |
| | 0.75 | -6L | -6LN | -6LE | -6LEN | -6LH | -6LHN |
| M6.5 | 0.5 | -6D5G | -6D5GN | -6D5GE | -6D5GEN | -6D5GH | -6D5GHN |
| M7 | 0.5 | -7G | -7GN | -7GE | -7GEN | -7GH | -7GHN |
| | 0.75 | -7L | -7LN | -7LE | -7LEN | -7LH | -7LHN |
| M7.5 | 0.5 | -7D5G | -7D5GN | -7D5GE | -7D5GEN | -7D5GH | -7D5GHN |
| M8 | 0.5 | -8G | -8GN | -8GE | -8GEN | -8GH | -8GHN |
| | 0.75 | -8L | -8LN | -8LE | -8LEN | -8LH | -8LHN |
| | 1 | -8P | -8PN | -8PE | -8PEN | -8PH | -8PHN |
| M8.5 | 0.5 | -8D5G | -8D5GN | -8D5GE | -8D5GEN | -8D5GH | -8D5GHN |
| M9 | 0.5 | -9G | -9GN | -9GE | -9GEN | -9GH | -9GHN |
| | 0.75 | -9L | -9LN | -9LE | -9LEN | -9LH | -9LHN |
| | 1 | -9P | -9PN | -9PE | -9PEN | -9PH | -9PHN |
| M10 | 0.5 | -10G | -10GN | -10GE | -10GEN | -10GH | -10GHN |
| | 0.75 | -10L | -10LN | -10LE | -10LEN | -10LH | -10LHN |
| | 1 | -10P | -10PN | -10PE | -10PEN | -10PH | -10PHN |
| | 1.25 | -10Q | -10QN | -10QE | -10QEN | -10QH | -10QHN |
| M11 | 0.5 | -11G | -11GN | -11GE | -11GEN | -11GH | -11GHN |
| | 0.75 | -11L | -11LN | -11LE | -11LEN | -11LH | -11LHN |
| | 1 | -11P | -11PN | -11PE | -11PEN | -11PH | -11PHN |
| M12 | 0.5 | -12G | -12GN | -12GE | -12GEN | -12GH | -12GHN |
| | 0.75 | -12L | -12LN | -12LE | -12LEN | -12LH | -12LHN |
| | 1 | -12P | -12PN | -12PE | -12PEN | -12PH | -12PHN |
| | 1.25 | -12Q | -12QN | -12QE | -12QEN | -12QH | -12QHN |
| | 1.5 | -12R | -12RN | -12RE | -12REN | -12RH | -12RHN |
| M13 | 0.5 | -13G | -13GN | -13GE | -13GEN | -13GH | -13GHN |
| | 0.75 | -13L | -13LN | -13LE | -13LEN | -13LH | -13LHN |
| | 1 | -13P | -13PN | -13PE | -13PEN | -13PH | -13PHN |
| | 1.5 | -13R | -13RN | -13RE | -13REN | -13RH | -13RHN |
| M14 | 0.5 | -14G | -14GN | -14GE | -14GEN | -14GH | -14GHN |
| | 0.75 | -14L | -14LN | -14LE | -14LEN | -14LH | -14LHN |
| | 1 | -14P | -14PN | -14PE | -14PEN | -14PH | -14PHN |
| | 1.25 | -14Q | -14QN | -14QE | -14QEN | -14QH | -14QHN |
| | 1.5 | -14R | -14RN | -14RE | -14REN | -14RH | -14RHN |

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| Size (mm) | | Code (4129) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M15 | 0.5 | -15G | -15GN | -15GE | -15GEN | -15GH | -15GHN |
| | 0.75 | -15L | -15LN | -15LE | -15LEN | -15LH | -15LHN |
| | 1 | -15P | -15PN | -15PE | -15PEN | -15PH | -15PHN |
| | 1.5 | -15R | -15RN | -15RE | -15REN | -15RH | -15RHN |
| M16 | 0.5 | -16G | -16GN | -16GE | -16GEN | -16GH | -16GHN |
| | 0.75 | -16L | -16LN | -16LE | -16LEN | -16LH | -16LHN |
| | 1 | -16P | -16PN | -16PE | -16PEN | -16PH | -16PHN |
| | 1.25 | -16Q | -16QN | -16QE | -16QEN | -16QH | -16QHN |
| | 1.5 | -16R | -16RN | -16RE | -16REN | -16RH | -16RHN |
| M17 | 0.5 | -17G | -17GN | -17GE | -17GEN | -17GH | -17GHN |
| | 0.75 | -17L | -17LN | -17LE | -17LEN | -17LH | -17LHN |
| | 1 | -17P | -17PN | -17PE | -17PEN | -17PH | -17PHN |
| | 1.5 | -17R | -17RN | -17RE | -17REN | -17RH | -17RHN |
| M18 | 0.5 | -18G | -18GN | -18GE | -18GEN | -18GH | -18GHN |
| | 0.75 | -18L | -18LN | -18LE | -18LEN | -18LH | -18LHN |
| | 1 | -18P | -18PN | -18PE | -18PEN | -18PH | -18PHN |
| | 1.25 | -18Q | -18QN | -18QE | -18QEN | -18QH | -18QHN |
| | 1.5 | -18R | -18RN | -18RE | -18REN | -18RH | -18RHN |
| | 2 | -18T | -18TN | -18TE | -18TEN | -18TH | -18THN |
| M19 | 0.5 | -19G | -19GN | -19GE | -19GEN | -19GH | -19GHN |
| | 0.75 | -19L | -19LN | -19LE | -19LEN | -19LH | -19LHN |
| | 1 | -19P | -19PN | -19PE | -19PEN | -19PH | -19PHN |
| | 1.5 | -19R | -19RN | -19RE | -19REN | -19RH | -19RHN |
| M20 | 0.5 | -20G | -20GN | -20GE | -20GEN | -20GH | -20GHN |
| | 0.75 | -20L | -20LN | -20LE | -20LEN | -20LH | -20LHN |
| | 1 | -20P | -20PN | -20PE | -20PEN | -20PH | -20PHN |
| | 1.25 | -20Q | -20QN | -20QE | -20QEN | -20QH | -20QHN |
| | 1.5 | -20R | -20RN | -20RE | -20REN | -20RH | -20RHN |
| | 2 | -20T | -20TN | -20TE | -20TEN | -20TH | -20THN |
| M21 | 0.75 | -21L | -21LN | -21LE | -21LEN | -21LH | -21LHN |
| | 1 | -21P | -21PN | -21PE | -21PEN | -21PH | -21PHN |
| | 1.5 | -21R | -21RN | -21RE | -21REN | -21RH | -21RHN |
| M22 | 0.75 | -22L | -22LN | -22LE | -22LEN | -22LH | -22LHN |
| | 1 | -22P | -22PN | -22PE | -22PEN | -22PH | -22PHN |
| | 1.25 | -22Q | -22QN | -22QE | -22QEN | -22QH | -22QHN |
| | 1.5 | -22R | -22RN | -22RE | -22REN | -22RH | -22RHN |
| | 2 | -22T | -22TN | -22TE | -22TEN | -22TH | -22THN |
| M23 | 0.75 | -23L | -23LN | -23LE | -23LEN | -23LH | -23LHN |
| | 1 | -23P | -23PN | -23PE | -23PEN | -23PH | -23PHN |
| M24 | 0.75 | -24L | -24LN | -24LE | -24LEN | -24LH | -24LHN |
| | 1 | -24P | -24PN | -24PE | -24PEN | -24PH | -24PHN |
| | 1.25 | -24Q | -24QN | -24QE | -24QEN | -24QH | -24QHN |
| | 1.5 | -24R | -24RN | -24RE | -24REN | -24RH | -24RHN |
| | 2 | -24T | -24TN | -24TE | -24TEN | -24TH | -24THN |
| M25 | 0.75 | -25L | -25LN | -25LE | -25LEN | -25LH | -25LHN |
| | 1 | -25P | -25PN | -25PE | -25PEN | -25PH | -25PHN |
| | 1.5 | -25R | -25RN | -25RE | -25REN | -25RH | -25RHN |
| | 2 | -25T | -25TN | -25TE | -25TEN | -25TH | -25THN |
| M26 | 0.75 | -26L | -26LN | -26LE | -26LEN | -26LH | -26LHN |
| | 1 | -26P | -26PN | -26PE | -26PEN | -26PH | -26PHN |
| | 1.5 | -26R | -26RN | -26RE | -26REN | -26RH | -26RHN |
| | 2 | -26T | -26TN | -26TE | -26TEN | -26TH | -26THN |



To be continued

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| Size (mm) | | Code (4129) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M27 | 0.75 | -27L | -27LN | -27LE | -27LEN | -27LH | -27LHN |
| | 1 | -27P | -27PN | -27PE | -27PEN | -27PH | -27PHN |
| | 1.5 | -27R | -27RN | -27RE | -27REN | -27RH | -27RHN |
| | 2 | -27T | -27TN | -27TE | -27TEN | -27TH | -27THN |
| M28 | 0.75 | -28L | -28LN | -28LE | -28LEN | -28LH | -28LHN |
| | 1 | -28P | -28PN | -28PE | -28PEN | -28PH | -28PHN |
| | 1.5 | -28R | -28RN | -28RE | -28REN | -28RH | -28RHN |
| | 2 | -28T | -28TN | -28TE | -28TEN | -28TH | -28THN |
| M29 | 0.75 | -29L | -29LN | -29LE | -29LEN | -29LH | -29LHN |
| | 1 | -29P | -29PN | -29PE | -29PEN | -29PH | -29PHN |
| M30 | 0.75 | -30L | -30LN | -30LE | -30LEN | -30LH | -30LHN |
| | 1 | -30P | -30PN | -30PE | -30PEN | -30PH | -30PHN |
| | 1.5 | -30R | -30RN | -30RE | -30REN | -30RH | -30RHN |
| | 2 | -30T | -30TN | -30TE | -30TEN | -30TH | -30THN |
| | 3 | -30V | -30VN | -30VE | -30VEN | -30VH | -30VHN |
| M31 | 0.75 | -31L | -31LN | -31LE | -31LEN | -31LH | -31LHN |
| M32 | 0.75 | -32L | -32LN | -32LE | -32LEN | -32LH | -32LHN |
| | 1 | -32P | -32PN | -32PE | -32PEN | -32PH | -32PHN |
| | 1.5 | -32R | -32RN | -32RE | -32REN | -32RH | -32RHN |
| | 2 | -32T | -32TN | -32TE | -32TEN | -32TH | -32THN |
| M33 | 0.75 | -33L | -33LN | -33LE | -33LEN | -33LH | -33LHN |
| | 1 | -33P | -33PN | -33PE | -33PEN | -33PH | -33PHN |
| | 1.5 | -33R | -33RN | -33RE | -33REN | -33RH | -33RHN |
| | 2 | -33T | -33TN | -33TE | -33TEN | -33TH | -33THN |
| | 3 | -33V | -33VN | -33VE | -33VEN | -33VH | -33VHN |
| M34 | 1 | -34P | -34PN | -34PE | -34PEN | -34PH | -34PHN |
| | 1.5 | -34R | -34RN | -34RE | -34REN | -34RH | -34RHN |
| | 2 | -34T | -34TN | -34TE | -34TEN | -34TH | -34THN |
| M35 | 1 | -35P | -35PN | -35PE | -35PEN | -35PH | -35PHN |
| | 1.5 | -35R | -35RN | -35RE | -35REN | -35RH | -35RHN |
| | 2 | -35T | -35TN | -35TE | -35TEN | -35TH | -35THN |
| M36 | 1 | -36P | -36PN | -36PE | -36PEN | -36PH | -36PHN |
| | 1.5 | -36R | -36RN | -36RE | -36REN | -36RH | -36RHN |
| | 2 | -36T | -36TN | -36TE | -36TEN | -36TH | -36THN |
| | 3 | -36V | -36VN | -36VE | -36VEN | -36VH | -36VHN |
| M38 | 1 | -38P | -38PN | -38PE | -38PEN | -38PH | -38PHN |
| | 1.5 | -38R | -38RN | -38RE | -38REN | -38RH | -38RHN |
| | 2 | -38T | -38TN | -38TE | -38TEN | -38TH | -38THN |
| M39 | 1 | -39P | -39PN | -39PE | -39PEN | -39PH | -39PHN |
| | 1.5 | -39R | -39RN | -39RE | -39REN | -39RH | -39RHN |
| | 2 | -39T | -39TN | -39TE | -39TEN | -39TH | -39THN |
| | 3 | -39V | -39VN | -39VE | -39VEN | -39VH | -39VHN |
| M40 | 1.5 | -40R | -40RN | -40RE | -40REN | -40RH | -40RHN |
| | 2 | -40T | -40TN | -40TE | -40TEN | -40TH | -40THN |
| | 3 | -40V | -40VN | -40VE | -40VEN | -40VH | -40VHN |
| M42 | 1.5 | -42R | -42RN | -42RE | -42REN | -42RH | -42RHN |
| | 2 | -42T | -42TN | -42TE | -42TEN | -42TH | -42THN |
| | 3 | -42V | -42VN | -42VE | -42VEN | -42VH | -42VHN |
| M45 | 1.5 | -45R | -45RN | -45RE | -45REN | -45RH | -45RHN |
| | 2 | -45T | -45TN | -45TE | -45TEN | -45TH | -45THN |
| | 3 | -45V | -45VN | -45VE | -45VEN | -45VH | -45VHN |



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| Size (mm) | | Code (4129) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M48 | 1.5 | -48R | -48RN | -48RE | -48REN | -48RH | -48RHN |
| | 2 | -48T | -48TN | -48TE | -48TEN | -48TH | -48THN |
| | 3 | -48V | -48VN | -48VE | -48VEN | -48VH | -48VHN |
| M50 | 1.5 | -50R | -50RN | -50RE | -50REN | -50RH | -50RHN |
| | 2 | -50T | -50TN | -50TE | -50TEN | -50TH | -50THN |
| | 3 | -50V | -50VN | -50VE | -50VEN | -50VH | -50VHN |
| M52 | 1.5 | -52R | -52RN | -52RE | -52REN | -52RH | -52RHN |
| | 2 | -52T | -52TN | -52TE | -52TEN | -52TH | -52THN |
| | 3 | -52V | -52VN | -52VE | -52VEN | -52VH | -52VHN |
| | 4 | -52X | -52XN | -52XE | -52XEN | -52XH | -52XHN |
| M55 | 1.5 | -55R | -55RN | -55RE | -55REN | -55RH | -55RHN |
| | 2 | -55T | -55TN | -55TE | -55TEN | -55TH | -55THN |
| | 3 | -55V | -55VN | -55VE | -55VEN | -55VH | -55VHN |
| | 4 | -55X | -55XN | -55XE | -55XEN | -55XH | -55XHN |
| M56 | 1.5 | -56R | -56RN | -56RE | -56REN | -56RH | -56RHN |
| | 2 | -56T | -56TN | -56TE | -56TEN | -56TH | -56THN |
| | 3 | -56V | -56VN | -56VE | -56VEN | -56VH | -56VHN |
| | 4 | -56X | -56XN | -56XE | -56XEN | -56XH | -56XHN |
| M58 | 1.5 | -58R | -58RN | -58RE | -58REN | -58RH | -58RHN |
| | 2 | -58T | -58TN | -58TE | -58TEN | -58TH | -58THN |
| | 3 | -58V | -58VN | -58VE | -58VEN | -58VH | -58VHN |
| | 4 | -58X | -58XN | -58XE | -58XEN | -58XH | -58XHN |
| M60 | 1.5 | -60R | -60RN | -60RE | -60REN | -60RH | -60RHN |
| | 2 | -60T | -60TN | -60TE | -60TEN | -60TH | -60THN |
| | 3 | -60V | -60VN | -60VE | -60VEN | -60VH | -60VHN |
| | 4 | -60X | -60XN | -60XE | -60XEN | -60XH | -60XHN |
| M62 | 1.5 | -62R | -62RN | -62RE | -62REN | -62RH | -62RHN |
| | 2 | -62T | -62TN | -62TE | -62TEN | -62TH | -62THN |
| | 3 | -62V | -62VN | -62VE | -62VEN | -62VH | -62VHN |
| | 4 | -62X | -62XN | -62XE | -62XEN | -62XH | -62XHN |
| M64 | 1.5 | -64R | -64RN | -64RE | -64REN | -64RH | -64RHN |
| | 2 | -64T | -64TN | -64TE | -64TEN | -64TH | -64THN |
| | 3 | -64V | -64VN | -64VE | -64VEN | -64VH | -64VHN |
| | 4 | -64X | -64XN | -64XE | -64XEN | -64XH | -64XHN |
| M65 | 1.5 | -65R | -65RN | -65RE | -65REN | -65RH | -65RHN |
| | 2 | -65T | -65TN | -65TE | -65TEN | -65TH | -65THN |
| | 3 | -65V | -65VN | -65VE | -65VEN | -65VH | -65VHN |
| | 4 | -65X | -65XN | -65XE | -65XEN | -65XH | -65XHN |
| M68 | 1.5 | -68R | -68RN | -68RE | -68REN | -68RH | -68RHN |
| | 2 | -68T | -68TN | -68TE | -68TEN | -68TH | -68THN |
| | 3 | -68V | -68VN | -68VE | -68VEN | -68VH | -68VHN |
| | 4 | -68X | -68XN | -68XE | -68XEN | -68XH | -68XHN |
| M70 | 1.5 | -70R | -70RN | -70RE | -70REN | -70RH | -70RHN |
| | 2 | -70T | -70TN | -70TE | -70TEN | -70TH | -70THN |
| | 3 | -70V | -70VN | -70VE | -70VEN | -70VH | -70VHN |
| | 4 | -70X | -70XN | -70XE | -70XEN | -70XH | -70XHN |
| | 6 | -70O | -70ON | -70OE | -70OEN | -70OH | -70OHN |
| M72 | 1.5 | -72R | -72RN | -72RE | -72REN | -72RH | -72RHN |
| | 2 | -72T | -72TN | -72TE | -72TEN | -72TH | -72THN |

To be continued

Continued from previous page

| Size (mm) | | Code (4129) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M72 | 3 | -72V | -72VN | -72VE | -72VEN | -72VH | -72VHN |
| | 4 | -72X | -72XN | -72XE | -72XEN | -72XH | -72XHN |
| | 6 | -72O | -72ON | -72OE | -72OEN | -72OH | -72OHN |
| M75 | 1.5 | -75R | -75RN | -75RE | -75REN | -75RH | -75RHN |
| | 2 | -75T | -75TN | -75TE | -75TEN | -75TH | -75THN |
| | 3 | -75V | -75VN | -75VE | -75VEN | -75VH | -75VHN |
| | 4 | -75X | -75XN | -75XE | -75XEN | -75XH | -75XHN |
| M76 | 1.5 | -76R | -76RN | -76RE | -76REN | -76RH | -76RHN |
| | 2 | -76T | -76TN | -76TE | -76TEN | -76TH | -76THN |
| | 3 | -76V | -76VN | -76VE | -76VEN | -76VH | -76VHN |
| | 4 | -76X | -76XN | -76XE | -76XEN | -76XH | -76XHN |
| | 6 | -76O | -76ON | -76OE | -76OEN | -76OH | -76OHN |
| M78 | 2 | -78T | -78TN | -78TE | -78TEN | -78TH | -78THN |
| M80 | 1.5 | -80R | -80RN | -80RE | -80REN | -80RH | -80RHN |
| | 2 | -80T | -80TN | -80TE | -80TEN | -80TH | -80THN |
| | 3 | -80V | -80VN | -80VE | -80VEN | -80VH | -80VHN |
| | 4 | -80X | -80XN | -80XE | -80XEN | -80XH | -80XHN |
| | 6 | -80O | -80ON | -80OE | -80OEN | -80OH | -80OHN |
| M82 | 2 | -82T | -82TN | -82TE | -82TEN | -82TH | -82THN |
| M85 | 2 | -85T | -85TN | -85TE | -85TEN | -85TH | -85THN |
| | 3 | -85V | -85VN | -85VE | -85VEN | -85VH | -85VHN |
| | 4 | -85X | -85XN | -85XE | -85XEN | -85XH | -85XHN |
| | 6 | -85O | -85ON | -85OE | -85OEN | -85OH | -85OHN |
| M90 | 2 | -90T | -90TN | -90TE | -90TEN | -90TH | -90THN |
| | 3 | -90V | -90VN | -90VE | -90VEN | -90VH | -90VHN |
| | 4 | -90X | -90XN | -90XE | -90XEN | -90XH | -90XHN |
| | 6 | -90O | -90ON | -90OE | -90OEN | -90OH | -90OHN |
| M95 | 2 | -95T | -95TN | -95TE | -95TEN | -95TH | -95THN |
| | 3 | -95V | -95VN | -95VE | -95VEN | -95VH | -95VHN |
| | 4 | -95X | -95XN | -95XE | -95XEN | -95XH | -95XHN |
| | 6 | -95O | -95ON | -95OE | -95OEN | -95OH | -95OHN |
| M100 | 2 | -100T | -100TN | -100TE | -100TEN | -100TH | -100THN |
| | 3 | -100V | -100VN | -100VE | -100VEN | -100VH | -100VHN |
| | 4 | -100X | -100XN | -100XE | -100XEN | -100XH | -100XHN |
| | 6 | -100O | -100ON | -100OE | -100OEN | -100OH | -100OHN |
| M105 | 2 | -105T | -105TN | -105TE | -105TEN | -105TH | -105THN |
| | 3 | -105V | -105VN | -105VE | -105VEN | -105VH | -105VHN |
| | 4 | -105X | -105XN | -105XE | -105XEN | -105XH | -105XHN |
| | 6 | -105O | -105ON | -105OE | -105OEN | -105OH | -105OHN |
| M110 | 2 | -110T | -110TN | -110TE | -110TEN | -110TH | -110THN |
| | 3 | -110V | -110VN | -110VE | -110VEN | -110VH | -110VHN |
| | 4 | -110X | -110XN | -110XE | -110XEN | -110XH | -110XHN |
| | 6 | -110O | -110ON | -110OE | -110OEN | -110OH | -110OHN |
| M115 | 2 | -115T | -115TN | -115TE | -115TEN | -115TH | -115THN |
| | 3 | -115V | -115VN | -115VE | -115VEN | -115VH | -115VHN |
| | 4 | -115X | -115XN | -115XE | -115XEN | -115XH | -115XHN |
| | 6 | -115O | -115ON | -115OE | -115OEN | -115OH | -115OHN |
| M120 | 2 | -120T | -120TN | -120TE | -120TEN | -120TH | -120THN |
| | 3 | -120V | -120VN | -120VE | -120VEN | -120VH | -120VHN |
| | 4 | -120X | -120XN | -120XE | -120XEN | -120XH | -120XHN |
| | 6 | -120O | -120ON | -120OE | -120OEN | -120OH | -120OHN |

# AMERICAN STANDARD THREAD PLUG GAUGES

WARNING: LIFE TIME IS LIMITED, CAN BE USED ABOUT 2000 TIMES

INSPECTION CERTIFICATE




**4131-102**

- Supplied with Go and No-Go gauges together
- Standard ANSI/ASME B1.2
- Supplied with manufacturer inspection certificate

| Size | Code | |
|---|---|---|
| | Class 2B | Class 3B |
| No. 0-80UNF | 4131-02 | 4131-02B |
| No. 1-64UNC | 4131-11 | 4131-11B |
| No. 1-72UNF | 4131-12 | 4131-12B |
| No. 2-56UNC | 4131-21 | 4131-21B |
| No. 2-64UNF | 4131-22 | 4131-22B |
| No. 3-48UNC | 4131-31 | 4131-31B |
| No. 3-56UNF | 4131-32 | 4131-32B |
| No. 4-40UNC | 4131-41 | 4131-41B |
| No. 4-48UNF | 4131-42 | 4131-42B |
| No. 5-40UNC | 4131-51 | 4131-51B |
| No. 5-44UNF | 4131-52 | 4131-52B |
| No. 6-32UNC | 4131-61 | 4131-61B |
| No. 6-40UNF | 4131-62 | 4131-62B |
| No. 8-32UNC | 4131-81 | 4131-81B |
| No. 8-36UNF | 4131-82 | 4131-82B |
| No. 10-24UNC | 4131-101 | 4131-101B |
| No. 10-32UNF | 4131-102 | 4131-102B |
| No. 12-24UNC | 4131-121 | 4131-121B |
| No. 12-28UNF | 4131-122 | 4131-122B |
| No. 12-32UNEF | 4131-123 | 4131-123B |
| 1/4-20UNC | 4131-1B1 | 4131-1B1B |
| 1/4-28UNF | 4131-1B2 | 4131-1B2B |
| 1/4-32UNEF | 4131-1B3 | 4131-1B3B |
| 1/4-36UNS | 4131-1B4 | 4131-1B4B |
| 5/16-18UNC | 4131-5D1 | 4131-5D1B |
| 5/16-24UNF | 4131-5D2 | 4131-5D2B |
| 5/16-32UNEF | 4131-5D3 | 4131-5D3B |
| 3/8-16UNC | 4131-3C1 | 4131-3C1B |
| 3/8-24UNF | 4131-3C2 | 4131-3C2B |
| 3/8-32UNEF | 4131-3C3 | 4131-3C3B |
| 7/16-14UNC | 4131-7D1 | 4131-7D1B |
| 7/16-20UNF | 4131-7D2 | 4131-7D2B |
| 7/16-28UNEF | 4131-7D3 | 4131-7D3B |
| 1/2-13UNC | 4131-1A1 | 4131-1A1B |
| 1/2-20UNF | 4131-1A2 | 4131-1A2B |
| 1/2-28UNEF | 4131-1A3 | 4131-1A3B |

| Size | Code | |
|---|---|---|
| | Class 2B | Class 3B |
| 9/16-12UNC | 4131-9D1 | 4131-9D1B |
| 9/16-18UNF | 4131-9D2 | 4131-9D2B |
| 9/16-24UNEF | 4131-9D3 | 4131-9D3B |
| 5/8-11UNC | 4131-5C1 | 4131-5C1B |
| 5/8-18UNF | 4131-5C2 | 4131-5C2B |
| 5/8-24UNEF | 4131-5C3 | 4131-5C3B |
| 11/16-16UN | 4131-11D516 | 4131-11D516B |
| 11/16-24UNEF | 4131-11D3 | 4131-11D3B |
| 3/4-10UNC | 4131-3B1 | 4131-3B1B |
| 3/4-16UNF | 4131-3B2 | 4131-3B2B |
| 3/4-20UNEF | 4131-3B3 | 4131-3B3B |
| 13/16-16UN | 4131-13D516 | 4131-13D516B |
| 13/16-20UNEF | 4131-13D3 | 4131-13D3B |
| 7/8-9UNC | 4131-7C1 | 4131-7C1B |
| 7/8-14UNF | 4131-7C2 | 4131-7C2B |
| 7/8-16UN | 4131-7C516 | 4131-7C516B |
| 7/8-20UNEF | 4131-7C3 | 4131-7C3B |
| 15/16-20UNEF | 4131-15D3 | 4131-15D3B |
| 1-8UNC | 4131-2A1 | 4131-2A1B |
| 1-12UNF | 4131-2A2 | 4131-2A2B |
| 1-14UNS | 4131-2A514 | 4131-2A514B |
| 1-20UNEF | 4131-2A3 | 4131-2A3B |
| 1-32UN | 4131-2A532 | 4131-2A532B |
| 1 1/16-12UN | 4131-1E512 | 4131-1E512B |
| 1 1/16-18UNEF | 4131-1E3 | 4131-1E3B |
| 1 1/8-7UNC | 4131-1F1 | 4131-1F1B |
| 1 1/8-8UN | 4131-1F58 | 4131-1F58B |
| 1 1/8-12UNF | 4131-1F2 | 4131-1F2B |
| 1 1/8-18UNEF | 4131-1F3 | 4131-1F3B |
| 1 3/16-12UN | 4131-3E512 | 4131-3E512B |
| 1 3/16-18UNEF | 4131-3E3 | 4131-3E3B |
| 1 1/4-7UNC | 4131-1G1 | 4131-1G1B |
| 1 1/4-8UN | 4131-1G58 | 4131-1G58B |
| 1 1/4-12UNF | 4131-1G2 | 4131-1G2B |
| 1 1/4-18UNEF | 4131-1G3 | 4131-1G3B |
| 1 5/16-12UN | 4131-5E512 | 4131-5E512B |

INSPECTION CERTIFICATE

WARNING: LIFE TIME IS LIMITED, CAN BE USED ABOUT 2000 TIMES

# AMERICAN STANDARD THREAD RING GAUGES




front back

**4121-1B1**




front back

**4121-1B1N**

- Standard ANSI/ASME B1.2
- Class 2A
- Supplied with manufacturer inspection certificate

| Size | Code | |
|---|---|---|
| | GO | NOGO |
| No. 4-40UNC | **4121-41** | **4121-41N** |
| No. 4-48UNF | **4121-42** | **4121-42N** |
| No. 5-40UNC | **4121-51** | **4121-51N** |
| No. 5-44UNF | **4121-52** | **4121-52N** |
| No. 6-32UNC | **4121-61** | **4121-61N** |
| No. 6-40UNF | **4121-62** | **4121-62N** |
| No. 8-32UNC | **4121-81** | **4121-81N** |
| No. 8-36UNF | **4121-82** | **4121-82N** |
| No. 10-24UNC | **4121-101** | **4121-101N** |
| No. 10-32UNF | **4121-102** | **4121-102N** |
| No. 12-24UNC | **4121-121** | **4121-121N** |
| No. 12-28UNF | **4121-122** | **4121-122N** |
| No. 12-32UNEF | **4121-123** | **4121-123N** |
| 1/4-20UNC | **4121-1B1** | **4121-1B1N** |
| 1/4-28UNF | **4121-1B2** | **4121-1B2N** |
| 1/4-32UNEF | **4121-1B3** | **4121-1B3N** |
| 1/4-36UNS | **4121-1B4** | **4121-1B4N** |
| 5/16-18UNC | **4121-5D1** | **4121-5D1N** |
| 5/16-24UNF | **4121-5D2** | **4121-5D2N** |
| 5/16-32UNEF | **4121-5D3** | **4121-5D3N** |
| 3/8-16UNC | **4121-3C1** | **4121-3C1N** |
| 3/8-24UNF | **4121-3C2** | **4121-3C2N** |
| 3/8-32UNEF | **4121-3C3** | **4121-3C3N** |
| 7/16-14UNC | **4121-7D1** | **4121-7D1N** |
| 7/16-20UNF | **4121-7D2** | **4121-7D2N** |
| 7/16-28UNEF | **4121-7D3** | **4121-7D3N** |
| 1/2-13UNC | **4121-1A1** | **4121-1A1N** |
| 1/2-20UNF | **4121-1A2** | **4121-1A2N** |
| 1/2-28UNEF | **4121-1A3** | **4121-1A3N** |
| 9/16-12UNC | **4121-9D1** | **4121-9D1N** |
| 9/16-18UNF | **4121-9D2** | **4121-9D2N** |
| 9/16-24UNEF | **4121-9D3** | **4121-9D3N** |

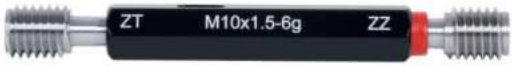
| Size | Code | |
|---|---|---|
| | GO | NOGO |
| 5/8-11UNC | **4121-5C1** | **4121-5C1N** |
| 5/8-18UNF | **4121-5C2** | **4121-5C2N** |
| 5/8-24UNEF | **4121-5C3** | **4121-5C3N** |
| 11/16-16UN | **4121-11D516** | **4121-11D516N** |
| 11/16-24UNEF | **4121-11D3** | **4121-11D3N** |
| 3/4-10UNC | **4121-3B1** | **4121-3B1N** |
| 3/4-16UNF | **4121-3B2** | **4121-3B2N** |
| 3/4-20UNEF | **4121-3B3** | **4121-3B3N** |
| 13/16-16UN | **4121-13D516** | **4121-13D516N** |
| 13/16-20UNEF | **4121-13D3** | **4121-13D3N** |
| 7/8-9UNC | **4121-7C1** | **4121-7C1N** |
| 7/8-14UNF | **4121-7C2** | **4121-7C2N** |
| 7/8-16UN | **4121-7C516** | **4121-7C516N** |
| 7/8-20UNEF | **4121-7C3** | **4121-7C3N** |
| 15/16-20UNEF | **4121-15D3** | **4121-15D3N** |
| 1-8UNC | **4121-2A1** | **4121-2A1N** |
| 1-12UNF | **4121-2A2** | **4121-2A2N** |
| 1-14UNS | **4121-2A514** | **4121-2A514N** |
| 1-20UNEF | **4121-2A3** | **4121-2A3N** |
| 1-32UN | **4121-2A532** | **4121-2A532N** |
| 1 1/16-12UN | **4121-1E512** | **4121-1E512N** |
| 1 1/16-18UNEF | **4121-1E3** | **4121-1E3N** |
| 1 1/8-7UNC | **4121-1F1** | **4121-1F1N** |
| 1 1/8-8UN | **4121-1F58** | **4121-1F58N** |
| 1 1/8-12UNF | **4121-1F2** | **4121-1F2N** |
| 1 1/8-18UNEF | **4121-1F3** | **4121-1F3N** |
| 1 3/16-12UN | **4121-3E512** | **4121-3E512N** |
| 1 3/16-18UNEF | **4121-3E3** | **4121-3E3N** |
| 1 1/4-7UNC | **4121-1G1** | **4121-1G1N** |
| 1 1/4-8UN | **4121-1G58** | **4121-1G58N** |
| 1 1/4-12UNF | **4121-1G2** | **4121-1G2N** |
| 1 1/4-18UNEF | **4121-1G3** | **4121-1G3N** |
| 1 5/16-12UN | **4121-5E512** | **4121-5E512N** |

# CHECK PLUGS FOR METRIC THREAD RING GAUGES

INSPECTION CERTIFICATE




4647-10




4647-10N

- Standard ISO1502
- Check thread ring gauges
- Supplied with manufacturer inspection certificate

Code example:
"**-2**" stands for "**4647-2**"

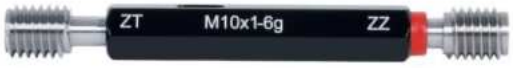
| Size (mm) | | Code (4647) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M2 | 0.4 | -2 | -2N | -2E | -2EN | -2H | -2HN |
| M2.2 | 0.45 | -2D2 | -2D2N | -2D2E | -2D2EN | -2D2H | -2D2HN |
| M2.3 | 0.4 | -2D3 | -2D3N | -2D3E | -2D3EN | -2D3H | -2D3HN |
| M2.5 | 0.45 | -2D5 | -2D5N | -2D5E | -2D5EN | -2D5H | -2D5HN |
| M2.6 | 0.45 | -2D6 | -2D6N | -2D6E | -2D6EN | -2D6H | -2D6HN |
| M3 | 0.5 | -3 | -3N | -3E | -3EN | -3H | -3HN |
| M3.5 | 0.6 | -3D5 | -3D5N | -3D5E | -3D5EN | -3D5H | -3D5HN |
| M4 | 0.7 | -4 | -4N | -4E | -4EN | -4H | -4HN |
| M4.5 | 0.75 | -4D5 | -4D5N | -4D5E | -4D5EN | -4D5H | -4D5HN |
| M5 | 0.8 | -5 | -5N | -5E | -5EN | -5H | -5HN |
| M6 | 1 | -6 | -6N | -6E | -6EN | -6H | -6HN |
| M7 | 1 | -7 | -7N | -7E | -7EN | -7H | -7HN |
| M8 | 1.25 | -8 | -8N | -8E | -8EN | -8H | -8HN |
| M9 | 1.25 | -9 | -9N | -9E | -9EN | -9H | -9HN |
| M10 | 1.5 | -10 | -10N | -10E | -10EN | -10H | -10HN |
| M11 | 1.5 | -11 | -11N | -11E | -11EN | -11H | -11HN |
| M12 | 1.75 | -12 | -12N | -12E | -12EN | -12H | -12HN |
| M14 | 2 | -14 | -14N | -14E | -14EN | -14H | -14HN |
| M16 | 2 | -16 | -16N | -16E | -16EN | -16H | -16HN |
| M18 | 2.5 | -18 | -18N | -18E | -18EN | -18H | -18HN |
| M20 | 2.5 | -20 | -20N | -20E | -20EN | -20H | -20HN |
| M22 | 2.5 | -22 | -22N | -22E | -22EN | -22H | -22HN |
| M24 | 3 | -24 | -24N | -24E | -24EN | -24H | -24HN |
| M27 | 3 | -27 | -27N | -27E | -27EN | -27H | -27HN |
| M30 | 3.5 | -30 | -30N | -30E | -30EN | -30H | -30HN |
| M33 | 3.5 | -33 | -33N | -33E | -33EN | -33H | -33HN |
| M36 | 4 | -36 | -36N | -36E | -36EN | -36H | -36HN |
| M39 | 4 | -39 | -39N | -39E | -39EN | -39H | -39HN |
| M42 | 4.5 | -42 | -42N | -42E | -42EN | -42H | -42HN |
| M45 | 4.5 | -45 | -45N | -45E | -45EN | -45H | -45HN |
| M48 | 5 | -48 | -48N | -48E | -48EN | -48H | -48HN |
| M52 | 5 | -52 | -52N | -52E | -52EN | -52H | -52HN |
| M56 | 5.5 | -56 | -56N | -56E | -56EN | -56H | -56HN |
| M60 | 5.5 | -60 | -60N | -60E | -60EN | -60H | -60HN |
| M64 | 6 | -64 | -64N | -64E | -64EN | -64H | -64HN |
| M68 | 6 | -68 | -68N | -68E | -68EN | -68H | -68HN |

INSPECTION CERTIFICATE

# CHECK PLUGS FOR METRIC FINE THREAD RING GAUGES




4677-10P




4677-10PN

- Standard ISO1502
- Check thread ring gauges
- Supplied with manufacturer inspection certificate

Code example:
"**-3D5G**" stands for "**4677-3D5G**"

| Size (mm) | | Code (4677) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M3.5 | 0.5 | -3D5G | -3D5GN | -3D5GE | -3D5GEN | -3D5GH | -3D5GHN |
| M4 | 0.5 | -4G | -4GN | -4GE | -4GEN | -4GH | -4GHN |
| M4.5 | 0.5 | -4D5G | -4D5GN | -4D5GE | -4D5GEN | -4D5GH | -4D5GHN |
| M5 | 0.5 | -5G | -5GN | -5GE | -5GEN | -5GH | -5GHN |
| M5.5 | 0.5 | -5D5G | -5D5GN | -5D5GE | -5D5GEN | -5D5GH | -5D5GHN |
| M6 | 0.5 | -6G | -6GN | -6GE | -6GEN | -6GH | -6GHN |
| | 0.75 | -6L | -6LN | -6LE | -6LEN | -6LH | -6LHN |
| M6.5 | 0.5 | -6D5G | -6D5GN | -6D5GE | -6D5GEN | -6D5GH | -6D5GHN |
| M7 | 0.5 | -7G | -7GN | -7GE | -7GEN | -7GH | -7GHN |
| | 0.75 | -7L | -7LN | -7LE | -7LEN | -7LH | -7LHN |
| M7.5 | 0.5 | -7D5G | -7D5GN | -7D5GE | -7D5GEN | -7D5GH | -7D5GHN |
| M8 | 0.5 | -8G | -8GN | -8GE | -8GEN | -8GH | -8GHN |
| | 0.75 | -8L | -8LN | -8LE | -8LEN | -8LH | -8LHN |
| | 1 | -8P | -8PN | -8PE | -8PEN | -8PH | -8PHN |
| M8.5 | 0.5 | -8D5G | -8D5GN | -8D5GE | -8D5GEN | -8D5GH | -8D5GHN |
| M9 | 0.5 | -9G | -9GN | -9GE | -9GEN | -9GH | -9GHN |
| | 0.75 | -9L | -9LN | -9LE | -9LEN | -9LH | -9LHN |
| | 1 | -9P | -9PN | -9PE | -9PEN | -9PH | -9PHN |
| M10 | 0.5 | -10G | -10GN | -10GE | -10GEN | -10GH | -10GHN |
| | 0.75 | -10L | -10LN | -10LE | -10LEN | -10LH | -10LHN |
| | 1 | -10P | -10PN | -10PE | -10PEN | -10PH | -10PHN |
| | 1.25 | -10Q | -10QN | -10QE | -10QEN | -10QH | -10QHN |
| M11 | 0.5 | -11G | -11GN | -11GE | -11GEN | -11GH | -11GHN |
| | 0.75 | -11L | -11LN | -11LE | -11LEN | -11LH | -11LHN |
| | 1 | -11P | -11PN | -11PE | -11PEN | -11PH | -11PHN |
| M12 | 0.5 | -12G | -12GN | -12GE | -12GEN | -12GH | -12GHN |
| | 0.75 | -12L | -12LN | -12LE | -12LEN | -12LH | -12LHN |
| | 1 | -12P | -12PN | -12PE | -12PEN | -12PH | -12PHN |
| | 1.25 | -12Q | -12QN | -12QE | -12QEN | -12QH | -12QHN |
| | 1.5 | -12R | -12RN | -12RE | -12REN | -12RH | -12RHN |
| M13 | 0.5 | -13G | -13GN | -13GE | -13GEN | -13GH | -13GHN |
| | 0.75 | -13L | -13LN | -13LE | -13LEN | -13LH | -13LHN |
| | 1 | -13P | -13PN | -13PE | -13PEN | -13PH | -13PHN |
| | 1.5 | -13R | -13RN | -13RE | -13REN | -13RH | -13RHN |
| M14 | 0.5 | -14G | -14GN | -14GE | -14GEN | -14GH | -14GHN |
| | 0.75 | -14L | -14LN | -14LE | -14LEN | -14LH | -14LHN |
| | 1 | -14P | -14PN | -14PE | -14PEN | -14PH | -14PHN |
| | 1.25 | -14Q | -14QN | -14QE | -14QEN | -14QH | -14QHN |
| | 1.5 | -14R | -14RN | -14RE | -14REN | -14RH | -14RHN |

To be continued

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| Size (mm) | | Code (4677) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M15 | 0.5 | -15G | -15GN | -15GE | -15GEN | -15GH | -15GHN |
| | 0.75 | -15L | -15LN | -15LE | -15LEN | -15LH | -15LHN |
| | 1 | -15P | -15PN | -15PE | -15PEN | -15PH | -15PHN |
| | 1.5 | -15R | -15RN | -15RE | -15REN | -15RH | -15RHN |
| M16 | 0.5 | -16G | -16GN | -16GE | -16GEN | -16GH | -16GHN |
| | 0.75 | -16L | -16LN | -16LE | -16LEN | -16LH | -16LHN |
| | 1 | -16P | -16PN | -16PE | -16PEN | -16PH | -16PHN |
| | 1.25 | -16Q | -16QN | -16QE | -16QEN | -16QH | -16QHN |
| | 1.5 | -16R | -16RN | -16RE | -16REN | -16RH | -16RHN |
| M17 | 0.5 | -17G | -17GN | -17GE | -17GEN | -17GH | -17GHN |
| | 0.75 | -17L | -17LN | -17LE | -17LEN | -17LH | -17LHN |
| | 1 | -17P | -17PN | -17PE | -17PEN | -17PH | -17PHN |
| | 1.5 | -17R | -17RN | -17RE | -17REN | -17RH | -17RHN |
| M18 | 0.5 | -18G | -18GN | -18GE | -18GEN | -18GH | -18GHN |
| | 0.75 | -18L | -18LN | -18LE | -18LEN | -18LH | -18LHN |
| | 1 | -18P | -18PN | -18PE | -18PEN | -18PH | -18PHN |
| | 1.25 | -18Q | -18QN | -18QE | -18QEN | -18QH | -18QHN |
| | 1.5 | -18R | -18RN | -18RE | -18REN | -18RH | -18RHN |
| | 2 | -18T | -18TN | -18TE | -18TEN | -18TH | -18THN |
| M19 | 0.5 | -19G | -19GN | -19GE | -19GEN | -19GH | -19GHN |
| | 0.75 | -19L | -19LN | -19LE | -19LEN | -19LH | -19LHN |
| | 1 | -19P | -19PN | -19PE | -19PEN | -19PH | -19PHN |
| | 1.5 | -19R | -19RN | -19RE | -19REN | -19RH | -19RHN |
| M20 | 0.5 | -20G | -20GN | -20GE | -20GEN | -20GH | -20GHN |
| | 0.75 | -20L | -20LN | -20LE | -20LEN | -20LH | -20LHN |
| | 1 | -20P | -20PN | -20PE | -20PEN | -20PH | -20PHN |
| | 1.25 | -20Q | -20QN | -20QE | -20QEN | -20QH | -20QHN |
| | 1.5 | -20R | -20RN | -20RE | -20REN | -20RH | -20RHN |
| | 2 | -20T | -20TN | -20TE | -20TEN | -20TH | -20THN |
| M21 | 0.75 | -21L | -21LN | -21LE | -21LEN | -21LH | -21LHN |
| | 1 | -21P | -21PN | -21PE | -21PEN | -21PH | -21PHN |
| | 1.5 | -21R | -21RN | -21RE | -21REN | -21RH | -21RHN |
| M22 | 0.75 | -22L | -22LN | -22LE | -22LEN | -22LH | -22LHN |
| | 1 | -22P | -22PN | -22PE | -22PEN | -22PH | -22PHN |
| | 1.25 | -22Q | -22QN | -22QE | -22QEN | -22QH | -22QHN |
| | 1.5 | -22R | -22RN | -22RE | -22REN | -22RH | -22RHN |
| | 2 | -22T | -22TN | -22TE | -22TEN | -22TH | -22THN |
| M23 | 0.75 | -23L | -23LN | -23LE | -23LEN | -23LH | -23LHN |
| | 1 | -23P | -23PN | -23PE | -23PEN | -23PH | -23PHN |
| M24 | 0.75 | -24L | -24LN | -24LE | -24LEN | -24LH | -24LHN |
| | 1 | -24P | -24PN | -24PE | -24PEN | -24PH | -24PHN |
| | 1.25 | -24Q | -24QN | -24QE | -24QEN | -24QH | -24QHN |
| | 1.5 | -24R | -24RN | -24RE | -24REN | -24RH | -24RHN |
| | 2 | -24T | -24TN | -24TE | -24TEN | -24TH | -24THN |
| M25 | 0.75 | -25L | -25LN | -25LE | -25LEN | -25LH | -25LHN |
| | 1 | -25P | -25PN | -25PE | -25PEN | -25PH | -25PHN |
| | 1.5 | -25R | -25RN | -25RE | -25REN | -25RH | -25RHN |
| | 2 | -25T | -25TN | -25TE | -25TEN | -25TH | -25THN |
| M26 | 0.75 | -26L | -26LN | -26LE | -26LEN | -26LH | -26LHN |
| | 1 | -26P | -26PN | -26PE | -26PEN | -26PH | -26PHN |
| | 1.5 | -26R | -26RN | -26RE | -26REN | -26RH | -26RHN |
| | 2 | -26T | -26TN | -26TE | -26TEN | -26TH | -26THN |



To be continued

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| Size (mm) | | Code (4677) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M27 | 0.75 | -27L | -27LN | -27LE | -27LEN | -27LH | -27LHN |
| | 1 | -27P | -27PN | -27PE | -27PEN | -27PH | -27PHN |
| | 1.5 | -27R | -27RN | -27RE | -27REN | -27RH | -27RHN |
| | 2 | -27T | -27TN | -27TE | -27TEN | -27TH | -27THN |
| M28 | 0.75 | -28L | -28LN | -28LE | -28LEN | -28LH | -28LHN |
| | 1 | -28P | -28PN | -28PE | -28PEN | -28PH | -28PHN |
| | 1.5 | -28R | -28RN | -28RE | -28REN | -28RH | -28RHN |
| | 2 | -28T | -28TN | -28TE | -28TEN | -28TH | -28THN |
| M29 | 0.75 | -29L | -29LN | -29LE | -29LEN | -29LH | -29LHN |
| | 1 | -29P | -29PN | -29PE | -29PEN | -29PH | -29PHN |
| M30 | 0.75 | -30L | -30LN | -30LE | -30LEN | -30LH | -30LHN |
| | 1 | -30P | -30PN | -30PE | -30PEN | -30PH | -30PHN |
| | 1.5 | -30R | -30RN | -30RE | -30REN | -30RH | -30RHN |
| | 2 | -30T | -30TN | -30TE | -30TEN | -30TH | -30THN |
| | 3 | -30V | -30VN | -30VE | -30VEN | -30VH | -30VHN |
| M31 | 0.75 | -31L | -31LN | -31LE | -31LEN | -31LH | -31LHN |
| M32 | 0.75 | -32L | -32LN | -32LE | -32LEN | -32LH | -32LHN |
| | 1 | -32P | -32PN | -32PE | -32PEN | -32PH | -32PHN |
| | 1.5 | -32R | -32RN | -32RE | -32REN | -32RH | -32RHN |
| | 2 | -32T | -32TN | -32TE | -32TEN | -32TH | -32THN |
| M33 | 0.75 | -33L | -33LN | -33LE | -33LEN | -33LH | -33LHN |
| | 1 | -33P | -33PN | -33PE | -33PEN | -33PH | -33PHN |
| | 1.5 | -33R | -33RN | -33RE | -33REN | -33RH | -33RHN |
| | 2 | -33T | -33TN | -33TE | -33TEN | -33TH | -33THN |
| | 3 | -33V | -33VN | -33VE | -33VEN | -33VH | -33VHN |
| M34 | 1 | -34P | -34PN | -34PE | -34PEN | -34PH | -34PHN |
| | 1.5 | -34R | -34RN | -34RE | -34REN | -34RH | -34RHN |
| | 2 | -34T | -34TN | -34TE | -34TEN | -34TH | -34THN |
| M35 | 1 | -35P | -35PN | -35PE | -35PEN | -35PH | -35PHN |
| | 1.5 | -35R | -35RN | -35RE | -35REN | -35RH | -35RHN |
| | 2 | -35T | -35TN | -35TE | -35TEN | -35TH | -35THN |
| M36 | 1 | -36P | -36PN | -36PE | -36PEN | -36PH | -36PHN |
| | 1.5 | -36R | -36RN | -36RE | -36REN | -36RH | -36RHN |
| | 2 | -36T | -36TN | -36TE | -36TEN | -36TH | -36THN |
| | 3 | -36V | -36VN | -36VE | -36VEN | -36VH | -36VHN |
| M38 | 1 | -38P | -38PN | -38PE | -38PEN | -38PH | -38PHN |
| | 1.5 | -38R | -38RN | -38RE | -38REN | -38RH | -38RHN |
| | 2 | -38T | -38TN | -38TE | -38TEN | -38TH | -38THN |
| M39 | 1 | -39P | -39PN | -39PE | -39PEN | -39PH | -39PHN |
| | 1.5 | -39R | -39RN | -39RE | -39REN | -39RH | -39RHN |
| | 2 | -39T | -39TN | -39TE | -39TEN | -39TH | -39THN |
| | 3 | -39V | -39VN | -39VE | -39VEN | -39VH | -39VHN |
| M40 | 1.5 | -40R | -40RN | -40RE | -40REN | -40RH | -40RHN |
| | 2 | -40T | -40TN | -40TE | -40TEN | -40TH | -40THN |
| | 3 | -40V | -40VN | -40VE | -40VEN | -40VH | -40VHN |
| M42 | 1.5 | -42R | -42RN | -42RE | -42REN | -42RH | -42RHN |
| | 2 | -42T | -42TN | -42TE | -42TEN | -42TH | -42THN |
| | 3 | -42V | -42VN | -42VE | -42VEN | -42VH | -42VHN |
| M45 | 1.5 | -45R | -45RN | -45RE | -45REN | -45RH | -45RHN |
| | 2 | -45T | -45TN | -45TE | -45TEN | -45TH | -45THN |
| | 3 | -45V | -45VN | -45VE | -45VEN | -45VH | -45VHN |

To be continued

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| Size (mm) | | Code (4677) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M48 | 1.5 | -48R | -48RN | -48RE | -48REN | -48RH | -48RHN |
| | 2 | -48T | -48TN | -48TE | -48TEN | -48TH | -48THN |
| | 3 | -48V | -48VN | -48VE | -48VEN | -48VH | -48VHN |
| M50 | 1.5 | -50R | -50RN | -50RE | -50REN | -50RH | -50RHN |
| | 2 | -50T | -50TN | -50TE | -50TEN | -50TH | -50THN |
| | 3 | -50V | -50VN | -50VE | -50VEN | -50VH | -50VHN |
| M52 | 1.5 | -52R | -52RN | -52RE | -52REN | -52RH | -52RHN |
| | 2 | -52T | -52TN | -52TE | -52TEN | -52TH | -52THN |
| | 3 | -52V | -52VN | -52VE | -52VEN | -52VH | -52VHN |
| | 4 | -52X | -52XN | -52XE | -52XEN | -52XH | -52XHN |
| M55 | 1.5 | -55R | -55RN | -55RE | -55REN | -55RH | -55RHN |
| | 2 | -55T | -55TN | -55TE | -55TEN | -55TH | -55THN |
| | 3 | -55V | -55VN | -55VE | -55VEN | -55VH | -55VHN |
| | 4 | -55X | -55XN | -55XE | -55XEN | -55XH | -55XHN |
| M56 | 1.5 | -56R | -56RN | -56RE | -56REN | -56RH | -56RHN |
| | 2 | -56T | -56TN | -56TE | -56TEN | -56TH | -56THN |
| | 3 | -56V | -56VN | -56VE | -56VEN | -56VH | -56VHN |
| | 4 | -56X | -56XN | -56XE | -56XEN | -56XH | -56XHN |
| M58 | 1.5 | -58R | -58RN | -58RE | -58REN | -58RH | -58RHN |
| | 2 | -58T | -58TN | -58TE | -58TEN | -58TH | -58THN |
| | 3 | -58V | -58VN | -58VE | -58VEN | -58VH | -58VHN |
| | 4 | -58X | -58XN | -58XE | -58XEN | -58XH | -58XHN |
| M60 | 1.5 | -60R | -60RN | -60RE | -60REN | -60RH | -60RHN |
| | 2 | -60T | -60TN | -60TE | -60TEN | -60TH | -60THN |
| | 3 | -60V | -60VN | -60VE | -60VEN | -60VH | -60VHN |
| | 4 | -60X | -60XN | -60XE | -60XEN | -60XH | -60XHN |
| M62 | 1.5 | -62R | -62RN | -62RE | -62REN | -62RH | -62RHN |
| | 2 | -62T | -62TN | -62TE | -62TEN | -62TH | -62THN |
| | 3 | -62V | -62VN | -62VE | -62VEN | -62VH | -62VHN |
| | 4 | -62X | -62XN | -62XE | -62XEN | -62XH | -62XHN |
| M64 | 1.5 | -64R | -64RN | -64RE | -64REN | -64RH | -64RHN |
| | 2 | -64T | -64TN | -64TE | -64TEN | -64TH | -64THN |
| | 3 | -64V | -64VN | -64VE | -64VEN | -64VH | -64VHN |
| | 4 | -64X | -64XN | -64XE | -64XEN | -64XH | -64XHN |
| M65 | 1.5 | -65R | -65RN | -65RE | -65REN | -65RH | -65RHN |
| | 2 | -65T | -65TN | -65TE | -65TEN | -65TH | -65THN |
| | 3 | -65V | -65VN | -65VE | -65VEN | -65VH | -65VHN |
| | 4 | -65X | -65XN | -65XE | -65XEN | -65XH | -65XHN |
| M68 | 1.5 | -68R | -68RN | -68RE | -68REN | -68RH | -68RHN |
| | 2 | -68T | -68TN | -68TE | -68TEN | -68TH | -68THN |
| | 3 | -68V | -68VN | -68VE | -68VEN | -68VH | -68VHN |
| | 4 | -68X | -68XN | -68XE | -68XEN | -68XH | -68XHN |
| M70 | 1.5 | -70R | -70RN | -70RE | -70REN | -70RH | -70RHN |
| | 2 | -70T | -70TN | -70TE | -70TEN | -70TH | -70THN |
| | 3 | -70V | -70VN | -70VE | -70VEN | -70VH | -70VHN |
| | 4 | -70X | -70XN | -70XE | -70XEN | -70XH | -70XHN |
| | 6 | -70O | -70ON | -70OE | -70OEN | -70OH | -70OHN |
| M72 | 1.5 | -72R | -72RN | -72RE | -72REN | -72RH | -72RHN |
| | 2 | -72T | -72TN | -72TE | -72TEN | -72TH | -72THN |
| | 3 | -72V | -72VN | -72VE | -72VEN | -72VH | -72VHN |

To be continued

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| Size (mm) | | Code (4677) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Class 6g | | Class 6e | | Class 6h | |
| Nominal diameter | Pitch | GO | NOGO | GO | NOGO | GO | NOGO |
| M72 | 4 | -72X | -72XN | -72XE | -72XEN | -72XH | -72XHN |
| | 6 | -72O | -72ON | -72OE | -72OEN | -72OH | -72OHN |
| M75 | 1.5 | -75R | -75RN | -75RE | -75REN | -75RH | -75RHN |
| | 2 | -75T | -75TN | -75TE | -75TEN | -75TH | -75THN |
| | 3 | -75V | -75VN | -75VE | -75VEN | -75VH | -75VHN |
| | 4 | -75X | -75XN | -75XE | -75XEN | -75XH | -75XHN |
| M76 | 1.5 | -76R | -76RN | -76RE | -76REN | -76RH | -76RHN |
| | 2 | -76T | -76TN | -76TE | -76TEN | -76TH | -76THN |
| | 3 | -76V | -76VN | -76VE | -76VEN | -76VH | -76VHN |
| | 4 | -76X | -76XN | -76XE | -76XEN | -76XH | -76XHN |
| | 6 | -76O | -76ON | -76OE | -76OEN | -76OH | -76OHN |
| M78 | 2 | -78T | -78TN | -78TE | -78TEN | -78TH | -78THN |
| M80 | 1.5 | -80R | -80RN | -80RE | -80REN | -80RH | -80RHN |
| | 2 | -80T | -80TN | -80TE | -80TEN | -80TH | -80THN |
| | 3 | -80V | -80VN | -80VE | -80VEN | -80VH | -80VHN |
| | 4 | -80X | -80XN | -80XE | -80XEN | -80XH | -80XHN |
| | 6 | -80O | -80ON | -80OE | -80OEN | -80OH | -80OHN |
| M82 | 2 | -82T | -82TN | -82TE | -82TEN | -82TH | -82THN |
| M85 | 2 | -85T | -85TN | -85TE | -85TEN | -85TH | -85THN |
| | 3 | -85V | -85VN | -85VE | -85VEN | -85VH | -85VHN |
| | 4 | -85X | -85XN | -85XE | -85XEN | -85XH | -85XHN |
| | 6 | -85O | -85ON | -85OE | -85OEN | -85OH | -85OHN |
| M90 | 2 | -90T | -90TN | -90TE | -90TEN | -90TH | -90THN |
| | 3 | -90V | -90VN | -90VE | -90VEN | -90VH | -90VHN |
| | 4 | -90X | -90XN | -90XE | -90XEN | -90XH | -90XHN |
| | 6 | -90O | -90ON | -90OE | -90OEN | -90OH | -90OHN |
| M95 | 2 | -95T | -95TN | -95TE | -95TEN | -95TH | -95THN |
| | 3 | -95V | -95VN | -95VE | -95VEN | -95VH | -95VHN |
| | 4 | -95X | -95XN | -95XE | -95XEN | -95XH | -95XHN |
| | 6 | -95O | -95ON | -95OE | -95OEN | -95OH | -95OHN |
| M100 | 2 | -100T | -100TN | -100TE | -100TEN | -100TH | -100THN |
| | 3 | -100V | -100VN | -100VE | -100VEN | -100VH | -100VHN |
| | 4 | -100X | -100XN | -100XE | -100XEN | -100XH | -100XHN |
| | 6 | -100O | -100ON | -100OE | -100OEN | -100OH | -100OHN |
| M105 | 2 | -105T | -105TN | -105TE | -105TEN | -105TH | -105THN |
| | 3 | -105V | -105VN | -105VE | -105VEN | -105VH | -105VHN |
| | 4 | -105X | -105XN | -105XE | -105XEN | -105XH | -105XHN |
| | 6 | -105O | -105ON | -105OE | -105OEN | -105OH | -105OHN |
| M110 | 2 | -110T | -110TN | -110TE | -110TEN | -110TH | -110THN |
| | 3 | -110V | -110VN | -110VE | -110VEN | -110VH | -110VHN |
| | 4 | -110X | -110XN | -110XE | -110XEN | -110XH | -110XHN |
| | 6 | -110O | -110ON | -110OE | -110OEN | -110OH | -110OHN |
| M115 | 2 | -115T | -115TN | -115TE | -115TEN | -115TH | -115THN |
| | 3 | -115V | -115VN | -115VE | -115VEN | -115VH | -115VHN |
| | 4 | -115X | -115XN | -115XE | -115XEN | -115XH | -115XHN |
| | 6 | -115O | -115ON | -115OE | -115OEN | -115OH | -115OHN |
| M120 | 2 | -120T | -120TN | -120TE | -120TEN | -120TH | -120THN |
| | 3 | -120V | -120VN | -120VE | -120VEN | -120VH | -120VHN |
| | 4 | -120X | -120XN | -120XE | -120XEN | -120XH | -120XHN |
| | 6 | -120O | -120ON | -120OE | -120OEN | -120OH | -120OHN |

# THREAD GAUGES FOR ROTARY SHOULDERED CONNECTIONS OF PETROLEUM EQUIPMENT

API PRODUCTION LICENSE



- Measure the thread of rotary shouldered connections

4177-23

**Number style gauges**

| Code | Gauge code | Form of thread to be inspected | Number of thread per inch | Taper | Angle of thread | Basic pitch dia |
|---|---|---|---|---|---|---|
| **4177-10** | NC10 | V-0.055 | 6 | 1:8 | 60° | 27.000mm |
| **4177-12** | NC12 | V-0.055 | 6 | 1:8 | 60° | 32.121mm |
| **4177-13** | NC13 | V-0.055 | 6 | 1:8 | 60° | 35.331mm |
| **4177-16** | NC16 | V-0.055 | 6 | 1:8 | 60° | 40.869mm |
| **4177-23** | NC23 | V-0.038R | 4 | 1:6 | 60° | 59.817mm |
| **4177-26** | NC26 | V-0.038R | 4 | 1:6 | 60° | 67.767mm |
| **4177-31** | NC31 | V-0.038R | 4 | 1:6 | 60° | 80.848mm |
| **4177-35** | NC35 | V-0.038R | 4 | 1:6 | 60° | 89.687mm |
| **4177-38** | NC38 | V-0.038R | 4 | 1:6 | 60° | 96.723mm |
| **4177-40** | NC40 | V-0.038R | 4 | 1:6 | 60° | 103.429mm |
| **4177-44** | NC44 | V-0.038R | 4 | 1:6 | 60° | 112.192mm |
| **4177-46** | NC46 | V-0.038R | 4 | 1:6 | 60° | 117.500mm |
| **4177-50** | NC50 | V-0.038R | 4 | 1:6 | 60° | 128.059mm |
| **4177-56** | NC56 | V-0.038R | 4 | 1:4 | 60° | 142.646mm |
| **4177-61** | NC61 | V-0.038R | 4 | 1:4 | 60° | 156.921mm |
| **4177-70** | NC70 | V-0.038R | 4 | 1:4 | 60° | 179.146mm |
| **4177-77** | NC77 | V-0.038R | 4 | 1:4 | 60° | 196.621mm |

**Regular style gauges**

| Code | Gauge code | Form of thread to be inspected | Number of thread per inch | Taper | Angle of thread | Basic pitch dia |
|---|---|---|---|---|---|---|
| **4177-2R** | 2 3/8 REG | V-0.040 | 5 | 1:4 | 60° | 60.080mm |
| **4177-21R** | 2 7/8 REG | V-0.040 | 5 | 1:4 | 60° | 69.605mm |
| **4177-3R** | 3 1/2 REG | V-0.040 | 5 | 1:4 | 60° | 82.293mm |
| **4177-4R** | 4 1/2 REG | V-0.040 | 5 | 1:4 | 60° | 110.868mm |
| **4177-5R** | 5 1/2 REG | V-0.050 | 4 | 1:4 | 60° | 132.944mm |
| **4177-6R** | 6 5/8 REG | V-0.050 | 4 | 1:6 | 60° | 146.248mm |
| **4177-7R** | 7 5/8 REG | V-0.050 | 4 | 1:4 | 60° | 170.549mm |
| **4177-8R** | 8 5/8 REG | V-0.050 | 4 | 1:4 | 60° | 194.731mm |

**Full-hole style gauges**

| Code | Gauge code | Form of thread to be inspected | Number of thread per inch | Taper | Angle of thread | Basic pitch dia |
|---|---|---|---|---|---|---|
| **4177-3H** | 3 1/2 FH | V-0.040 | 5 | 1:4 | 60° | 94.844mm |
| **4177-4H** | 4 1/2 FH | V-0.040 | 5 | 1:4 | 60° | 115.113mm |
| **4177-5H** | 5 1/2 FH | V-0.050 | 4 | 1:6 | 60° | 142.011mm |
| **4177-6H** | 6 5/8 FH | V-0.050 | 4 | 1:6 | 60° | 165.598mm |

**Internal-flush style gauge**

| Code | Gauge code | Form of thread to be inspected | Number of thread per inch | Taper | Angle of thread | Basic pitch dia |
|---|---|---|---|---|---|---|
| **4177-5F** | 5 1/2 IF | V-0.065 | 4 | 1:6 | 60° | 157.201mm |





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# CASING, TUBING AND LINE PIPE THREAD GAUGES OF PETROLEUM AND GAS EQUIPMENT

**Casing round thread gauges**

| Code | Gauge code | Outer dia | Number of thread per inch | Taper | Angle of thread |
|---|---|---|---|---|---|
| **4178-4** | 4 1/2 CSG | 114.30mm | 8 | 1:16 | 60° |
| **4178-4L** | 4 1/2 LCSG | | | | |
| **4178-5** | 5 CSG | 127.00mm | 8 | 1:16 | 60° |
| **4178-5L** | 5 LCSG | | | | |
| **4178-51** | 5 1/2 CSG | 139.70mm | 8 | 1:16 | 60° |
| **4178-51L** | 5 1/2 LCSG | | | | |
| **4178-6** | 6 5/8 CSG | 168.28mm | 8 | 1:16 | 60° |
| **4178-6L** | 6 5/8 LCSG | | | | |
| **4178-7** | 7 CSG | 177.80mm | 8 | 1:16 | 60° |
| **4178-7L** | 7 LCSG | | | | |
| **4178-71** | 7 5/8 CSG | 193.68mm | 8 | 1:16 | 60° |
| **4178-71L** | 7 5/8 LCSG | | | | |
| **4178-8** | 8 5/8 CSG | 219.08mm | 8 | 1:16 | 60° |
| **4178-8L** | 8 5/8 LCSG | | | | |
| **4178-9** | 9 5/8 CSG | 244.48mm | 8 | 1:16 | 60° |
| **4178-9L** | 9 5/8 LCSG | | | | |
| **4178-10** | 10 3/4 CSG | 273.05mm | 8 | 1:16 | 60° |
| **4178-10L** | 10 3/4 LCSG | | | | |
| **4178-11** | 11 3/4 CSG | 298.45mm | 8 | 1:16 | 60° |
| **4178-11L** | 11 3/4 LCSG | | | | |
| **4178-13** | 13 3/8 CSG | 339.73mm | 8 | 1:16 | 60° |
| **4178-13L** | 13 3/8 LCSG | | | | |
| **4178-16** | 16 CSG | 406.40mm | 8 | 1:16 | 60° |
| **4178-16L** | 16 LCSG | | | | |



**4178-21T**

- Measure the casing, tubing and line pipe threads

**Non-upset tubing thread gauges**

| Code | Gauge code | Outer dia | Number of thread per inch | Taper | Angle of thread |
|---|---|---|---|---|---|
| **4178-11T** | 1.050 TBG | 26.67mm | 10 | 1:16 | 60° |
| **4178-13T** | 1.315 TBG | 33.40mm | 10 | 1:16 | 60° |
| **4178-16T** | 1.660 TBG | 42.16mm | 10 | 1:16 | 60° |
| **4178-19T** | 1.900 TBG | 48.26mm | 10 | 1:16 | 60° |
| **4178-2T** | 2 3/8 TBG | 60.33mm | 10 | 1:16 | 60° |
| **4178-21T** | 2 7/8 TBG | 73.03mm | 10 | 1:16 | 60° |
| **4178-3T** | 3 1/2 TBG | 88.90mm | 10 | 1:16 | 60° |
| **4178-4T** | 4 TBG | 101.60mm | 8 | 1:16 | 60° |
| **4178-41T** | 4 1/2 TBG | 114.30mm | 8 | 1:16 | 60° |

**External-upset tubing thread gauges**

| Code | Gauge code | Outer dia | Number of thread per inch | Taper | Angle of thread |
|---|---|---|---|---|---|
| **4178-11U** | 1.050 UP TBG | 26.67mm | 10 | 1:16 | 60° |
| **4178-13U** | 1.315 UP TBG | 33.40mm | 10 | 1:16 | 60° |
| **4178-16U** | 1.660 UP TBG | 42.16mm | 10 | 1:16 | 60° |
| **4178-19U** | 1.900 UP TBG | 48.26mm | 10 | 1:16 | 60° |
| **4178-2U** | 2 3/8 UP TBG | 60.33mm | 8 | 1:16 | 60° |
| **4178-21U** | 2 7/8 UP TBG | 73.03mm | 8 | 1:16 | 60° |
| **4178-3U** | 3 1/2 UP TBG | 88.90mm | 8 | 1:16 | 60° |
| **4178-4U** | 4 UP TBG | 101.60mm | 8 | 1:16 | 60° |
| **4178-41U** | 4 1/2 UP TBG | 114.30mm | 8 | 1:16 | 60° |

To be continued

Continued from previous page

**Buttress casing thread gauges**

| Code | Gauge code | Outer dia | Number of thread per inch | Taper | Angle of thread |
|---|---|---|---|---|---|
| **4178-4B** | 4 1/2 BCSG | 114.30mm | 5 | 1:16 | 3°, 10° |
| **4178-5B** | 5 BCSG | 127.00mm | 5 | 1:16 | 3°, 10° |
| **4178-51B** | 5 1/2 BCSG | 139.70mm | 5 | 1:16 | 3°, 10° |
| **4178-6B** | 6 5/8 BCSG | 168.28mm | 5 | 1:16 | 3°, 10° |
| **4178-7B** | 7 BCSG | 177.80mm | 5 | 1:16 | 3°, 10° |
| **4178-71B** | 7 5/8 BCSG | 193.68mm | 5 | 1:16 | 3°, 10° |
| **4178-8B** | 8 5/8 BCSG | 219.08mm | 5 | 1:16 | 3°, 10° |
| **4178-9B** | 9 5/8 BCSG | 244.48mm | 5 | 1:16 | 3°, 10° |
| **4178-10B** | 10 3/4 BCSG | 273.05mm | 5 | 1:16 | 3°, 10° |
| **4178-11B** | 11 3/4 BCSG | 298.45mm | 5 | 1:16 | 3°, 10° |
| **4178-13B** | 13 3/8 BCSG | 339.73mm | 5 | 1:16 | 3°, 10° |
| **4178-16B** | 16 BCSG | 406.40mm | 5 | 1:12 | 3°, 10° |

**Line pipe thread gauges**

| Code | Gauge code | Outer dia | Number of thread per inch | Taper | Angle of thread |
|---|---|---|---|---|---|
| **4178-01P** | 1/8 LP | 3.18mm | 27 | 1:16 | 60° |
| **4178-02P** | 1/4 LP | 6.35mm | 18 | 1:16 | 60° |
| **4178-03P** | 3/8 LP | 9.53mm | 18 | 1:16 | 60° |
| **4178-05P** | 1/2 LP | 12.70mm | 14 | 1:16 | 60° |
| **4178-07P** | 3/4 LP | 19.05mm | 14 | 1:16 | 60° |
| **4178-10P** | 1 LP | 25.40mm | 11 1/2 | 1:16 | 60° |
| **4178-12P** | 1 1/4 LP | 31.75mm | 11 1/2 | 1:16 | 60° |
| **4178-15P** | 1 1/2 LP | 38.10mm | 11 1/2 | 1:16 | 60° |
| **4178-20P** | 2 LP | 50.80mm | 11 1/2 | 1:16 | 60° |
| **4178-25P** | 2 1/2 LP | 63.50mm | 8 | 1:16 | 60° |
| **4178-30P** | 3 LP | 76.20mm | 8 | 1:16 | 60° |
| **4178-35P** | 3 1/2 LP | 88.90mm | 8 | 1:16 | 60° |
| **4178-40P** | 4 LP | 101.60mm | 8 | 1:16 | 60° |
| **4178-50P** | 5 LP | 127.00mm | 8 | 1:16 | 60° |
| **4178-60P** | 6 LP | 152.40mm | 8 | 1:16 | 60° |
| **4178-80P** | 8 LP | 203.20mm | 8 | 1:16 | 60° |
| **4178-100P** | 10 LP | 254.00mm | 8 | 1:16 | 60° |



## SEMI-AUTOMATIC THREAD INSPECTOR CODE TGI

VIDEO

CUSTOM-MADE

- Rapid inspection of thread
- Speed and torque are adjustable
- Reverse button: if abnormal thread is detected, thread gauge will be stuck, press the reverse button to exit
- Different thread gauges and workpiece fixtures can be replaced
- Thread gauges with DLC coating, excellent wear resistance
- For different lenght of thread by adjusting the position of approach switch
- Optional accessory: GO thread plug gauges, GO thread ring gauges, thread plug gauge fixtures, custom-made workpiece fixtures




**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | external thread: M5~M20 (Go thread ring gauges) |
| | internal thread: M3~M36 (Go thread plug gauges) |
| **Torque range** | clearance fit: 0.1~0.35Nm, interference fit: 0.4~1.4Nm |
| **Speed range** | 100~2200r/min |
| **Power supply** | power adapter |
| **Rated power** | 24W |
| **Weight** | 3kg |
| **Dimension** | 160×190×250mm |

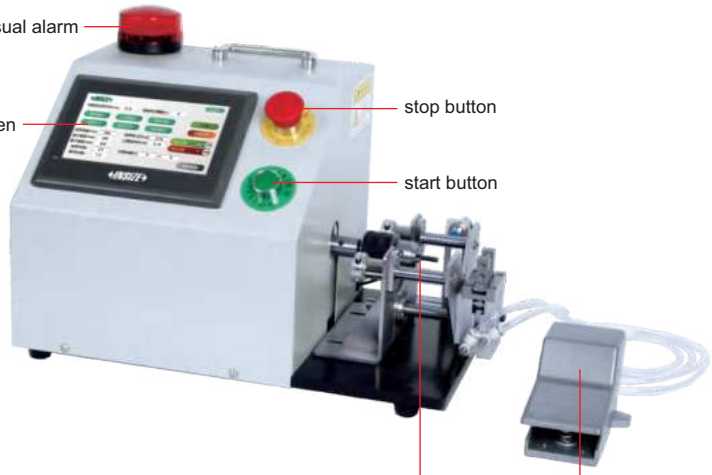
GO thread ring gauge (**optional**)



CUSTOM-MADE

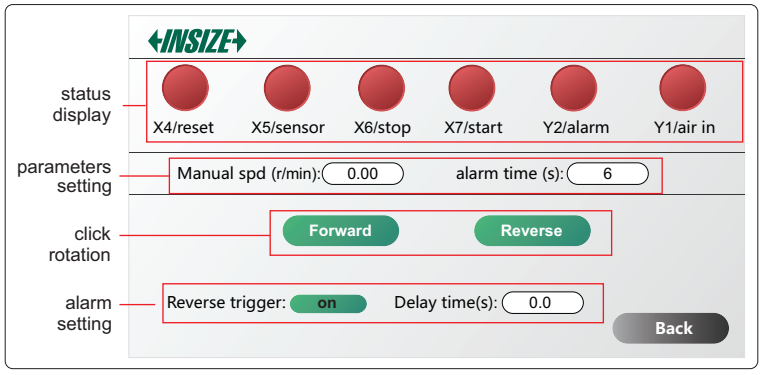
# AUTOMATIC THREAD INSPECTION MACHINE
# CODE TCM

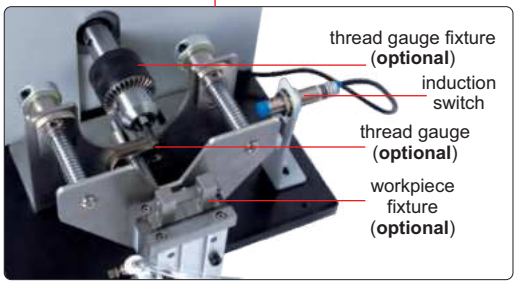
VIDEO

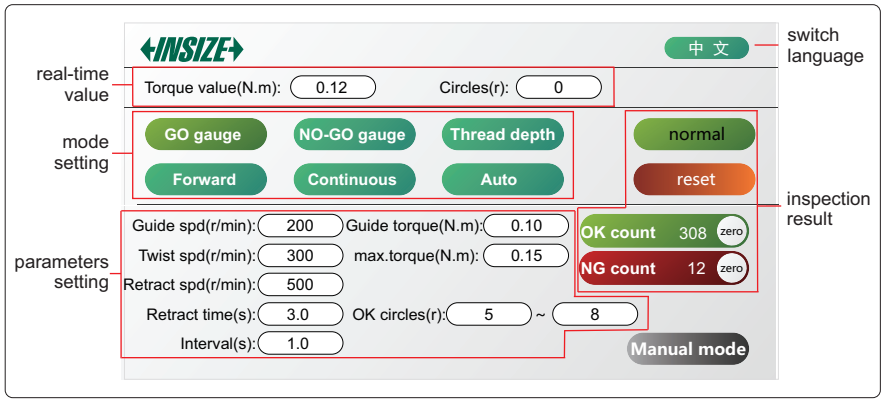



- For inspection of GO, NO-GO and depth of threads
- Can be for repair of thread defects
- Real-time display of torque, circles, OK and NG counts
- If NG thread is detected, audible and visual alarm are activated and the motor is automatically reversed to exit the thread gauge
- Different thread gauges and workpiece fixtures can be replaced
- For different length of thread by adjusting the induction switch
- Thread gauges with DLC coating, excellent wear resistance
- Optional accessory: thread plug gauges, thread ring gauges thread gauge fixtures, custom-made workpiece fixtures, foot switch (code **TCM-T20-01**)

manual mode




thread plug gauges (**optional**)



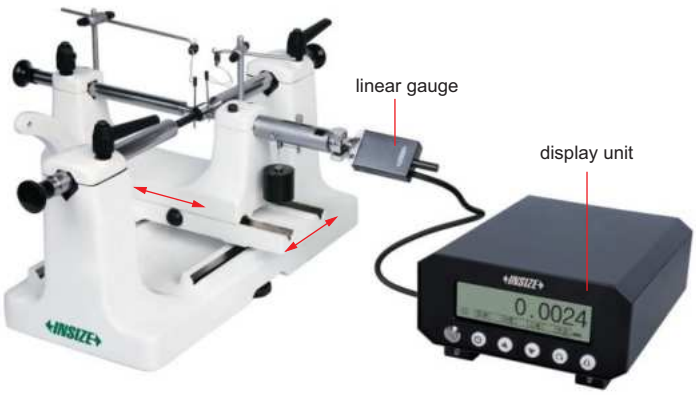
thread ring gauges (**optional**)



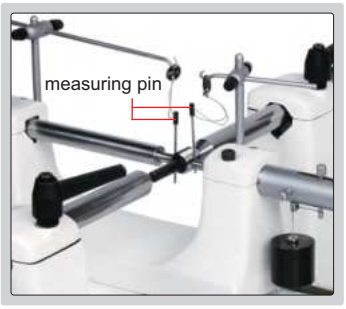
## SPECIFICATION

| | |
|---|---|
| **Measuring range** | thread: M1~M30 |
| **Reprocessing range** | thread: M1~M20 |
| **Torque range** | guide torque: 0~1.27N.m, max. torque: 0~1.27N.m |
| **Speed range** | 0~3000 r/min |
| **Time range** | retract time: 0.1~99s, interval: 0.1~99s |
| **Power supply** | 220V, 50/60Hz |
| **Rated power** | 400W |
| **Weight** | 13kg |
| **Dimension** | 460x290x330mm |

# EXTERNAL THREAD MEASURING DEVICE
# CODE ISQ-TE100




measure pitch diameter of thread




- Quickly measure major, pitch and minor diameters of external thread
- Suitable for metric, inch, whitworth, NPT and BSPT

## SPECIFICATION

| Code | Range | Resolution | Accuracy | Repeatability |
|---|---|---|---|---|
| ISQ-TE100 | 0-100mm | 0.1μm | 2μm | 0.5μm |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Measuring pin | ISQ-TE100-A |
| Measuring prism | ISQ-TE100-B |
| Female center | ISQ-TE100-C |
| Clamp | ISQ-TE100-D |
| Setting disc | ISQ-TE100-E |
| 60° find pointer | ISQ-TE100-F |
| 55° find pointer | ISQ-TE100-G |
| Display unit | 7131-1A |
| Linear gauge | 7131-01 |

### Measuring pin (optional)



- To measure pitch diameter of external thread
- Each size is supplied in pair
- Hardness: 60±2HRC

| Code | Pins included | Pin diameter (mm) |
|---|---|---|
| ISQ-TE100-A | 21 pairs | 0.170, 0.195, 0.220, 0.250, 0.290, 0.335, 0.390, 0.455, 0.530, 0.620, 0.725, 0.895, 1.100, 1.350, 1.650, 2.050, 2.550, 3.200, 4.000, 5.050, 6.350 |

### Measuring prism (optional)



- To measure minor diameter of external thread
- Each size is supplied in pair

| Code | Prisms included | Size |
|---|---|---|
| ISQ-TE100-B | 4 pairs | A, B, C, D (for different types and sizes of thread) |

### Setting disc (optional)



- To set initial value

| Code | Discs included | Disc diameter (mm) |
|---|---|---|
| ISQ-TE100-E | 22 pcs | 3, 5, 8, 12, 16, 20, 24, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100 |

To be continued



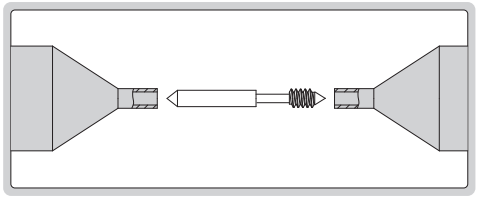


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### Female center (optional)





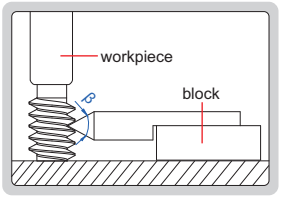
- With small holes to support small workpieces without female centers
- Supplied in pair

| Code |
|---|
| ISQ-TE100-C |

### Find pointer (optional)



- To find measuring point of NPT or BSPT




| Code | Angle β | Applicable thread |
|---|---|---|
| ISQ-TE100-F | 60° | NPT |
| ISQ-TE100-G | 55° | BSPT |

### Display unit (optional)

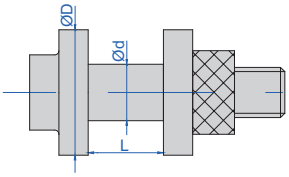


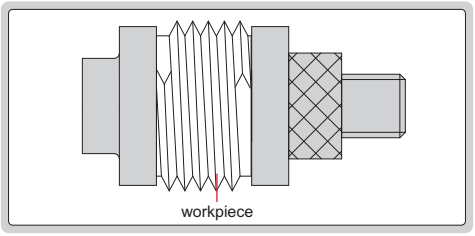



| Code | 7131-1A |
|---|---|
| Display mode | 4" LCD |
| Display unit | mm, μm |
| Resolution | 0.1μm |

### Clamp (optional)





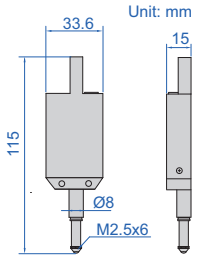

- To hold large workpieces with inner bore

(mm)

| Code | Clamps included | Ød | ØD | L |
|---|---|---|---|---|
| ISQ-TE100-D | 3 pcs | 13.5 | 30 | 0-18 |
| | | 23 | 60 | 0-18 |
| | | 23 | 75 | 0-18 |

### Linear gauge (optional)






| Code | 7131-01 |
|---|---|
| Measuring range | 12.5mm |
| Resolution | 0.1μm |
| Accuracy | 1μm |
| Repeatability | 0.2μm |

# 13 ANGLE, STRAIGHTNESS, FLATNESS MEASURING TOOLS



**Angle Meters**
**Page 410**



**Protractors**
**Page 410-415**



**Granite Squares**
**Page 415-416**



**Cylinder Squares**
**Page 416**



**Perpendicularity Testers**
**Page 417**



**Squares**
**Page 417-423**



**Straight Edges**
**Page 423**



**Straight Edges**
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**Optical Flats**
**Page 425**



**Flatness Measurement Stands**
**Page 426**



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INSPECTION CERTIFICATE

VIDEO

# DIGITAL ANGLE METER
# CODE 2177-121

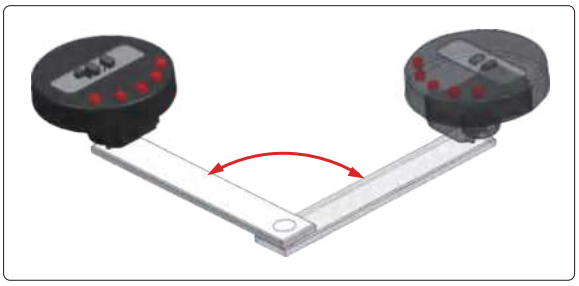






- Clockwise and counter-clockwise operation
- 9 target angle values can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when angle value is 80%~99.5% of target angle
  – Both green and red LED light on and buzzer sounds when angle value is over 99.5% of target angle
- Memory of 250 results, can upload to the computer
- Back with magnet
- Power off in 2 minutes automatically

measurement of angle rotation in any direction (gyro technique)



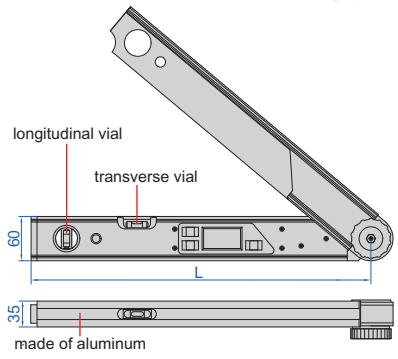
**SPECIFICATION**

| | |
|---|---|
| **Display range** | 0~999° |
| **Setting range** | 1~360° (increment 1°) |
| **Resolution** | 0.1° |
| **Accuracy** | ±2° for 90° rotation @30°/sec |
| **Power supply** | 2×1.5V AAA batteries |
| **Dimension** | 58×58×41mm |
| **Weight** | 70g |

# WATERPROOF DIGITAL PROTRACTOR (HEAVY DUTY)

AUTOMATIC BACKLIGHT | ABSOLUTE LEVEL | IP54 WATERPROOF

Unit: mm

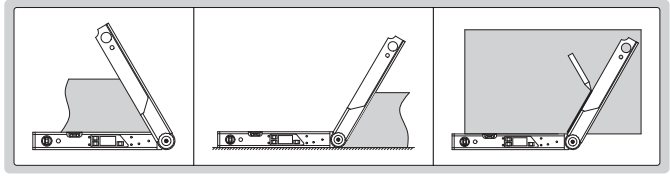





**2174-225**

- Suitable for setting horizontal and vertical mitre angles of cutting machines
- Buttons: ON/OFF, HOLD/SUP, SPR/CNR/MTR/BVL
- IP54 dust/waterproof
- With transverse and longitudinal vials
- 2xAAA batteries
- Absolute level, zero setting is not needed when batteries are replaced
- Backlight turns off in one minute after reading is stable, automatic power off in 5 minutes

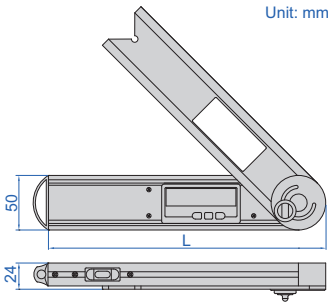
| Code | Size (L) | Range | Resolution | Accuracy |
|---|---|---|---|---|
| **2174-225** | 460mm | 0-225° | 0.05° | ±0.10° |

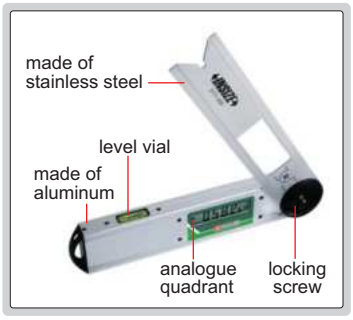


## DIGITAL PROTRACTOR

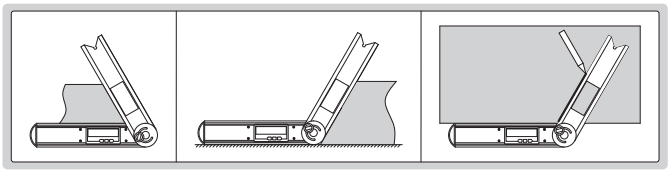


2171-250




- Buttons: on/off, hold (keep the reading), zero, ABS (absolute and incremental measurement)
- Fix the locking screw at 4 positions for different measuring ranges: 0°~225°, -225°~0°, -45°~180°, -180°~45°
- Remove the locking screw for 360° range
- With level vial
- Battery CR2032, automatic power off

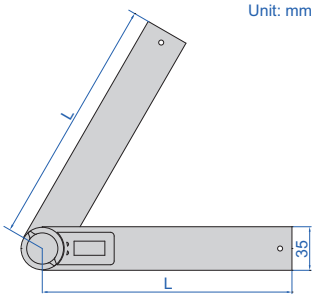


| Code | Size (L) | Range | Resolution | Accuracy |
|---|---|---|---|---|
| 2171-250 | 250mm | 0-360° | 0.05° | ±0.15° |

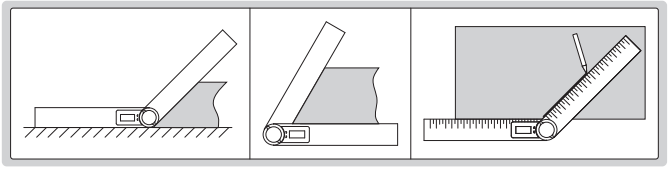
## DIGITAL PROTRACTORS



2176-200




- Buttons: on/off, zero
- With clamping screw to lock the blades
- Graduation of blade: 1mm and 1/32"
- Made of stainless steel
- CR2032 battery
- Automatic power off



| Code | Size (L) | Range | Resolution | Accuracy |
|---|---|---|---|---|
| 2176-200 | 200mm | 0-360° | 0.1° | ±0.3° |
| 2176-300 | 300mm | 0-360° | 0.1° | ±0.3° |

## DIGITAL LEVELS AND SLOPE METERS

REFER TO PAGE
541~545 FOR DETAILS



2179-360



2175-360



2199-1



2170-1



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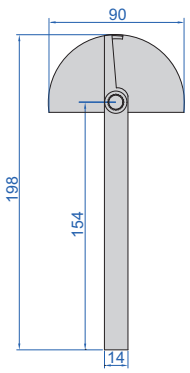
## PROTRACTOR (ECONOMIC TYPE)

- Graduation: 1°
- Made of stainless steel
- With clamping screw



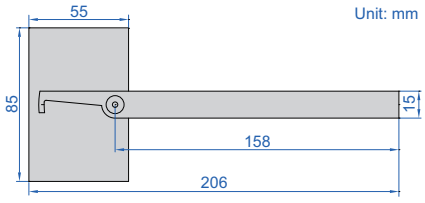
4780-85A

Unit: mm




| Code | Size | Range | Accuracy |
|---|---|---|---|
| **4780-85A** | 90x154mm | 0-180° | ±0.5° |

## PROTRACTOR

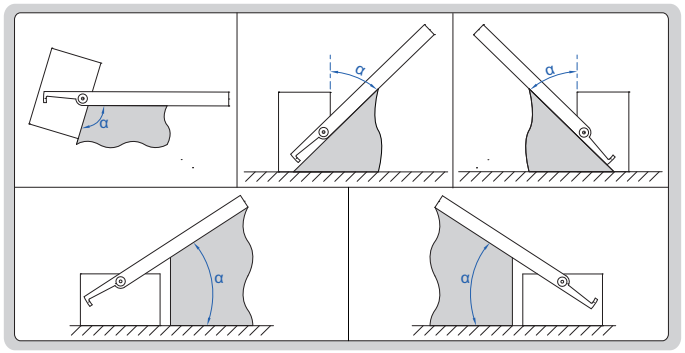



Unit: mm



4781-85A

- Made of stainless steel
- Satin chrome plated scale
- With clamping screw



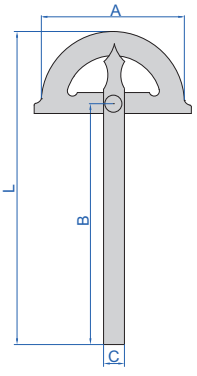

| Code | Size | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **4781-85A** | 85x158mm | 0-180° | 1° | ±0.3° |

## PROTRACTORS

- Graduation: 1°
- Made of stainless steel
  (**4799-1300** is made of carbon steel)
- Satin chrome plated scale
- With clamping screw



4799-180




| Code | Size (AxB) | Range | Accuracy | L | C |
|---|---|---|---|---|---|
| **4799-180** | 80x120mm | 0-180° | ±0.3° | 168mm | 11mm |
| **4799-1120** | 120x150mm | 0-180° | ±0.3° | 220mm | 14mm |
| **4799-1150** | 150x200mm | 0-180° | ±0.3° | 285mm | 16mm |
| **4799-1200** | 200x300mm | 0-180° | ±0.3° | 413mm | 20mm |
| **4799-1300** | 300x500mm | 0-180° | ±0.3° | 675mm | 30mm |

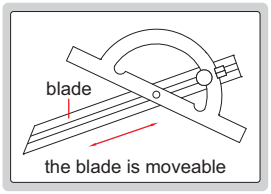
## PROTRACTORS

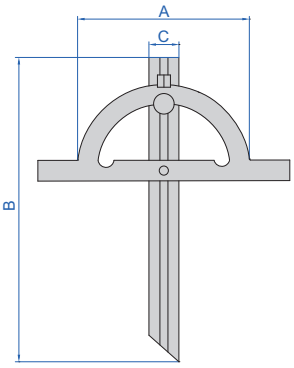
- Graduation: 1°
- Made of carbon steel
- Satin chrome plated
- With clamping screw
- The blade is moveable



4797-100

| Code | Size (AxB) | Range | Accuracy | C |
|---|---|---|---|---|
| **4797-100** | 100x150mm | 10-170° | ±0.3° | 18mm |
| **4797-150** | 150x300mm | 10-170° | ±0.3° | 22mm |
| **4797-200** | 200x400mm | 10-170° | ±0.3° | 24mm |
| **4797-250** | 250x500mm | 10-170° | ±0.3° | 28mm |
| **4797-300** | 300x600mm | 10-170° | ±0.3° | 32mm |

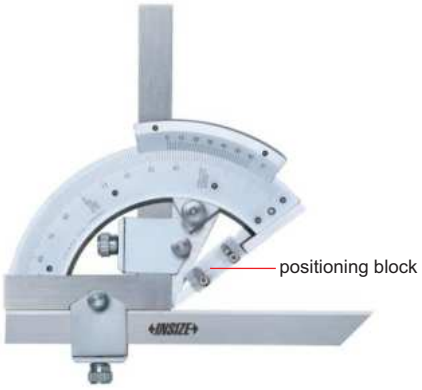


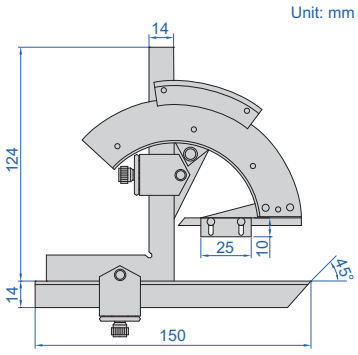

## PROTRACTORS



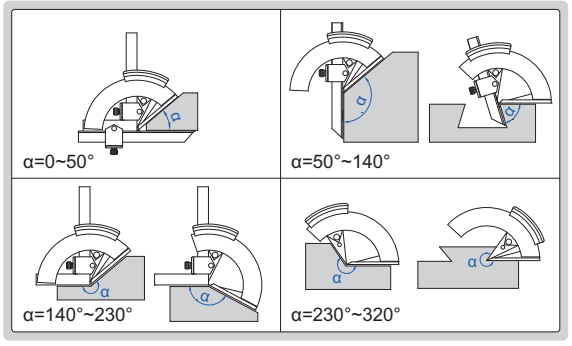
2374-320




2374-320D




- Made of stainless steel
- Satin chrome plated scale




application of **2374-320D**



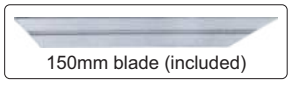
the positioning block can be moved down for positioning, and moved up when not in use

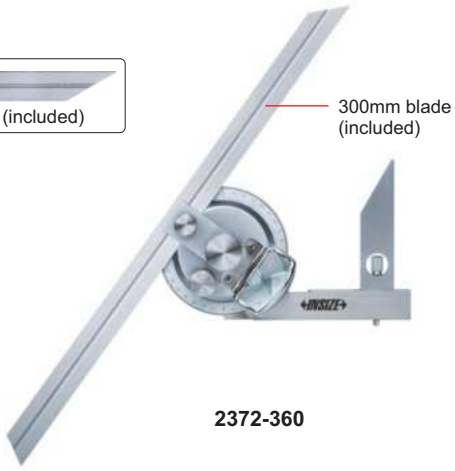
| Code | Range | Graduation | Accuracy | Remark |
|---|---|---|---|---|
| **2374-320** | 0-320° | 2' | ±2' | without positioning block |
| **2374-320D** | 0-320° | 2' | ±2' | with positioning block |



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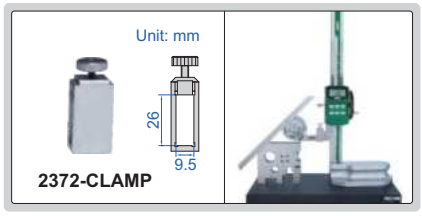
# UNIVERSAL PROTRACTOR

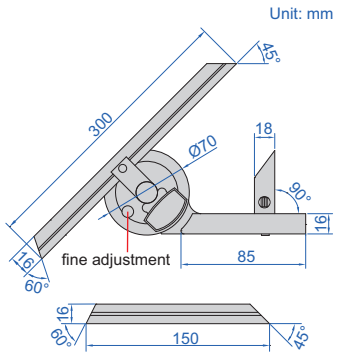



**2372-360**

clamp for height gauges (**optional**)

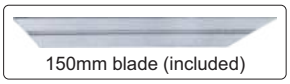


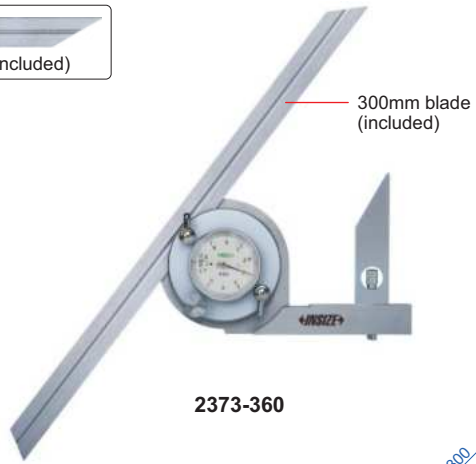




- Parallax-free reading
- Made of stainless steel
- Optional accessory: clamp (code **2372-CLAMP**), suitable for height gauges **1156**, **1150-300**, **1351**, **1250** and **1151**

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **2372-360** | 0-360° | 5' | ±5' |

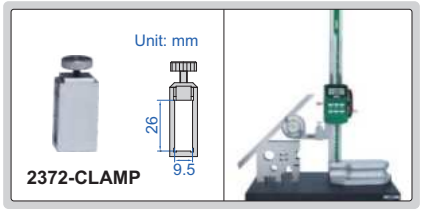
# DIAL PROTRACTOR

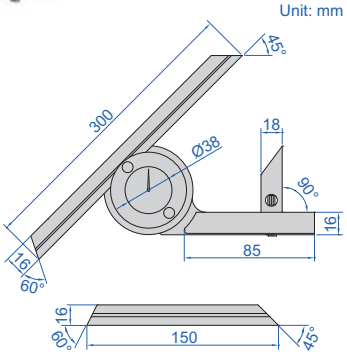



**2373-360**

clamp for height gauges (**optional**)



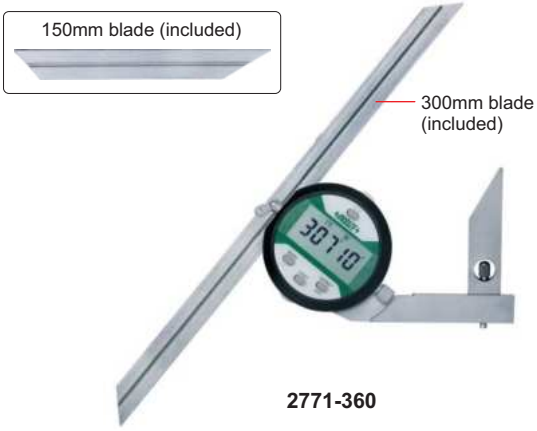




- Made of stainless steel
- Optional accessory: clamp (code **2372-CLAMP**), suitable for height gauges **1156**, **1150-300**, **1351**, **1250** and **1151**

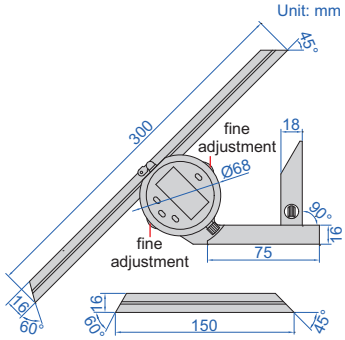
| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **2373-360** | 0-360° | 5' | ±5' |

## DIGITAL PROTRACTOR

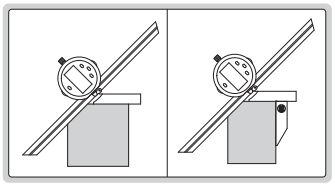
POPULAR MODEL | DATA OUTPUT | ABSOLUTE ZERO




2771-360



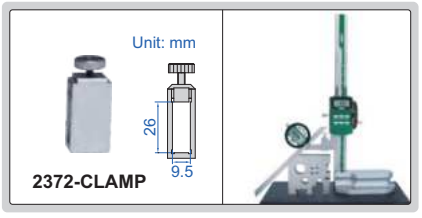

- Absolute zero, zero setting is not needed when batteries are replaced
- Button function: choose 0-90°, 0-180° or 0-360° display, change resolution, display flips over, data hold, zero, on/off supplementary angle measurement
- Battery CR2032, automatic power off, data output
- Made of stainless steel
- Optional square for zero setting
- Optional accessory: clamp (code **2372-CLAMP**), suitable for height gauges **1156**, **1150-300**, **1351**, **1250** and **1151**, wireless transmitter code **7315-2771** (receiver is needed) page 8, data output cable code **7302-50M** page 21



square (**optional**)



clamp for height gauges (**optional**)




**Square (for zero setting, optional)**

| Code |
|---|
| 2771-S90 |

13

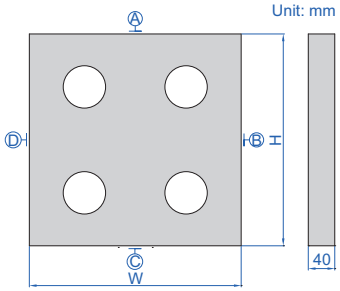
| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| 2771-360 | 0-360° | 1'/0.01° | ±5' |

## GRANITE SQUARE

CUSTOM-MADE
SUPPLY SPECIAL SIZES ACCORDING TO CUSTOMER'S REQUEST



4144-315



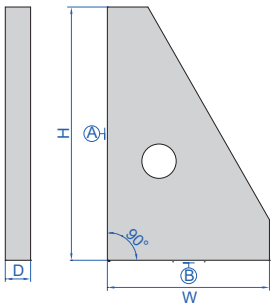

| Code | Size (HxW) | Flatness of A, B, C and D | Squareness and parallelism between A, B, C and D |
|---|---|---|---|
| 4144-315 | 315x315mm | 1.1μm | 2.6μm |



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## GRANITE SQUARES

**CUSTOM-MADE**
**SUPPLY SPECIAL SIZES ACCORDING TO CUSTOMER'S REQUEST**

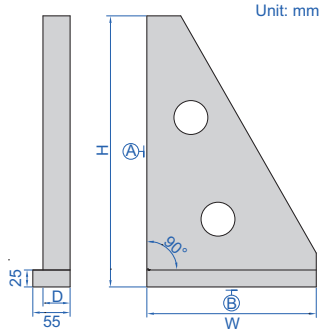



type A



4141-250

Unit: mm




type B



4141-400B

| Code | Size (HxW) | Type | Flatness of A | Flatness of B | Squareness of A to B | D |
|---|---|---|---|---|---|---|
| **4141-250** | 250x160mm | A | 1μm | 1μm | 2μm | 25mm |
| **4141-400** | 400x250mm | A | 1.5μm | 1μm | 3μm | 40mm |
| **4141-630** | 630x400mm | A | 2μm | 1.5μm | 4μm | 63mm |
| **4141-400B** | 400x250mm | B | 1.5μm | 1μm | 3μm | 40mm |

## CYLINDER SQUARES

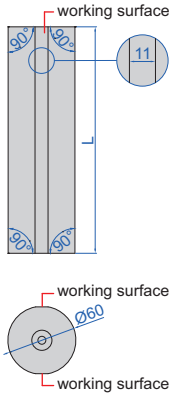
INSPECTION CERTIFICATE

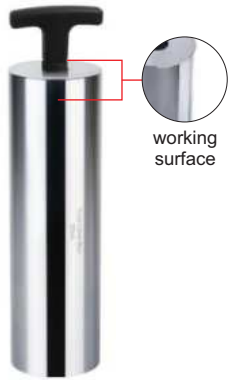
- Made of special alloy steel, hardness HRC58~60
- The handle can be removed

| Code | Length (L) | Squareness |
|---|---|---|
| **4710-200*** | 200mm | 1μm |
| **4710-300*** | 300mm | 2μm |

*Supplied with manufacturer inspection certificate

Unit: mm




**4710-200**

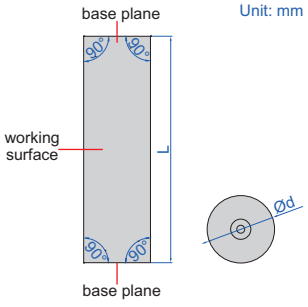
inspect 90° internal and external angles



## CYLINDER SQUARES

- DIN875
- Made of special alloy steel, hardness >HRC58
- The handle can be removed

Unit: mm

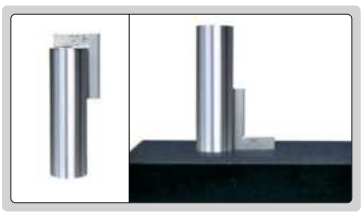



| Code | Length (L) | Diameter(Ød) | Squareness |
|---|---|---|---|
| **4712-200** | 200mm | 80mm | 4μm |
| **4712-315** | 315mm | 100mm | 5μm |
| **4712-500** | 500mm | 100mm | 7μm |

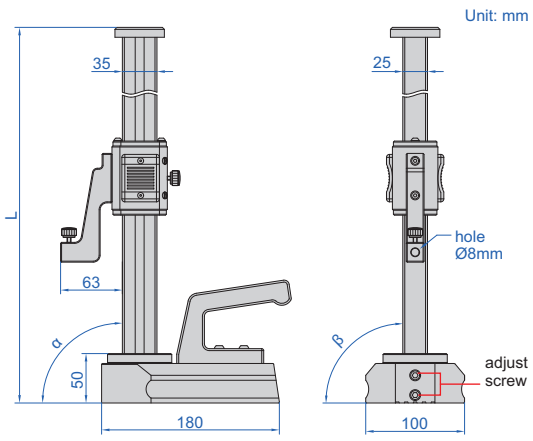


**4712-200**

inspect 90° internal and external angles



## PERPENDICULARITY TESTERS







4770-300




- Optional accessory:
  dial test indicators
  (graduation: 1μm or 2μm)

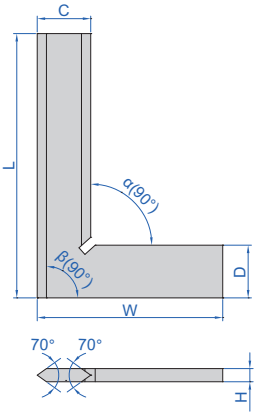
| Code | Range (H) | Perpendicularity (α) | Side perpendicularity (β) | L |
|---|---|---|---|---|
| **4770-300** | 0-300mm | 3μm | 10μm | 460mm |
| **4770-600** | 0-600mm | 5μm | 20μm | 760mm |

## 90° BEVELED EDGE SQUARES

- Satin chrome plating
- Beveled edges for inside and outside measurements
- Made of hardened stainless steel



4790-0100




**DIN875 grade 00** (mm)

| Code | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4790-050** | 50x40mm | 2.4μm | 2.5μm | 13 | 13 | 4 |
| **4790-075** | 75x50mm | 2.6μm | 2.8μm | 15 | 15 | 4 |
| **4790-0100** | 100x70mm | 2.8μm | 3.0μm | 20 | 20 | 5 |
| **4790-0150** | 150x100mm | 3.2μm | 3.5μm | 30 | 30 | 6 |
| **4790-0200** | 200x130mm | 3.7μm | 4.0μm | 34 | 34 | 7 |
| **4790-0250** | 250x165mm | 4.2μm | 4.5μm | 35 | 35 | 7 |
| **4790-0300** | 300x200mm | 4.6μm | 5.0μm | 40 | 40 | 8 |

**DIN875 grade 0** (mm)

| Code | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4790-500** | 50x40mm | 6μm | 6μm | 13 | 13 | 4 |
| **4790-750** | 75x50mm | 6μm | 7μm | 15 | 15 | 4 |
| **4790-1000** | 100x70mm | 7μm | 7μm | 20 | 20 | 5 |
| **4790-1500** | 150x100mm | 7μm | 8μm | 30 | 30 | 6 |
| **4790-2000** | 200x130mm | 8μm | 9μm | 34 | 34 | 7 |
| **4790-2500** | 250x165mm | 9μm | 10μm | 35 | 35 | 7 |
| **4790-3000** | 300x200mm | 10μm | 11μm | 40 | 40 | 8 |



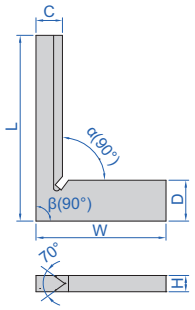
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## 90° TOOL MAKER SQUARES

- DIN875 grade 00
- Beveled edge for inside measurement
- Made of hardened stainless steel



4794-040




(mm)

| Code | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4794-025** | 25x20mm | 2.2μm | 2.3μm | 4 | 6.5 | 3.5 |
| **4794-040** | 40x28mm | 2.3μm | 2.4μm | 5.5 | 8.5 | 3.5 |

## 90° FLAT EDGE SQUARES

- Made of hardened stainless steel

**DIN875 grade 0** (mm)

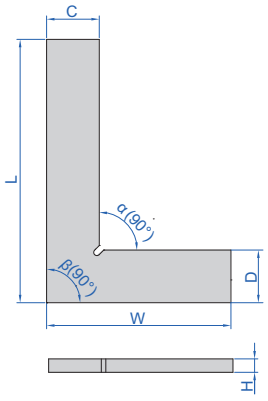
| Code | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4791-50** | 50x40mm | 6μm | 6μm | 15 | 15 | 4 |
| **4791-75** | 75x50mm | 6μm | 7μm | 15 | 15 | 4 |
| **4791-100** | 100x70mm | 7μm | 7μm | 20 | 20 | 5 |
| **4791-150** | 150x100mm | 7μm | 8μm | 30 | 30 | 6 |
| **4791-200** | 200x130mm | 8μm | 9μm | 30 | 30 | 7 |
| **4791-250** | 250x165mm | 9μm | 10μm | 35 | 35 | 7 |
| **4791-300** | 300x200mm | 10μm | 11μm | 40 | 40 | 8 |



4791-100

**DIN875 grade 1** (mm)

| Code | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4791-501** | 50x40mm | 12μm | 13μm | 15 | 15 | 4 |
| **4791-751** | 75x50mm | 13μm | 14μm | 15 | 15 | 4 |
| **4791-1001** | 100x70mm | 14μm | 15μm | 20 | 20 | 5 |
| **4791-1501** | 150x100mm | 16μm | 18μm | 30 | 30 | 6 |
| **4791-2001** | 200x130mm | 19μm | 20μm | 30 | 30 | 7 |
| **4791-2501** | 250x165mm | 21μm | 23μm | 35 | 35 | 7 |
| **4791-3001** | 300x200mm | 23μm | 25μm | 40 | 40 | 8 |




**DIN875 grade 2** (mm)

| Code | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4791-502** | 50x40mm | 24μm | 25μm | 15 | 15 | 4 |
| **4791-752** | 75x50mm | 26μm | 28μm | 15 | 15 | 4 |
| **4791-1002** | 100x70mm | 28μm | 30μm | 20 | 20 | 5 |
| **4791-1502** | 150x100mm | 33μm | 35μm | 30 | 30 | 6 |
| **4791-2002** | 200x130mm | 38μm | 40μm | 30 | 30 | 7 |
| **4791-2502** | 250x165mm | 43μm | 45μm | 35 | 35 | 7 |
| **4791-3002** | 300x200mm | 47μm | 50μm | 40 | 40 | 8 |

## MACHINIST SQUARES (ECONOMIC TYPE)

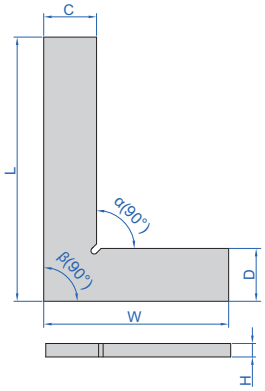
**ATTENTION: NO ANTI-RUST TREATMENT, NOT HARDEND**

- DIN875 grade 2
- Made of carbon steel, no anti-rust treatment, not hardend

(mm)

| Code | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4796-50** | 50×30mm | 24μm | 25μm | 12 | 12 | 3 |
| **4796-75** | 75×50mm | 26μm | 28μm | 16 | 16 | 3 |
| **4796-100** | 100×70mm | 28μm | 30μm | 19 | 19 | 5 |
| **4796-125** | 125×80mm | 30μm | 33μm | 22 | 22 | 5 |
| **4796-150** | 150×100mm | 33μm | 35μm | 25 | 25 | 6 |
| **4796-200** | 200×130mm | 38μm | 40μm | 25 | 25 | 6 |
| **4796-250** | 250×165mm | 43μm | 45μm | 25 | 25 | 6 |
| **4796-300** | 300×200mm | 47μm | 50μm | 30 | 30 | 6 |
| **4796-350** | 350×200mm | 51μm | 55μm | 38 | 38 | 6 |
| **4796-400** | 400×200mm | 56μm | 60μm | 38 | 38 | 9 |
| **4796-450** | 450×250mm | 58μm | 65μm | 38 | 38 | 9 |
| **4796-500** | 500×300mm | 69μm | 70μm | 38 | 38 | 9 |






**4796-150**

## 90° FLAT EDGE SQUARES WITH WIDE BASE

- Made of hardened stainless steel

**DIN875 grade 0**

(mm)

| Code | Size (LxW) | Squareness | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4793-50** | 50x40mm | 6μm | 6μm | 15 | 15 | 4 | 13 |
| **4793-75** | 75x50mm | 6μm | 7μm | 15 | 15 | 4 | 15 |
| **4793-100** | 100x70mm | 7μm | 7μm | 20 | 20 | 5 | 20 |
| **4793-150** | 150x100mm | 7μm | 8μm | 30 | 30 | 6 | 30 |
| **4793-200** | 200x130mm | 8μm | 9μm | 30 | 30 | 7 | 30 |
| **4793-250** | 250x165mm | 9μm | 10μm | 35 | 35 | 7 | 35 |
| **4793-300** | 300x200mm | 10μm | 11μm | 40 | 40 | 8 | 40 |



**4793-100**

**DIN875 grade 1**

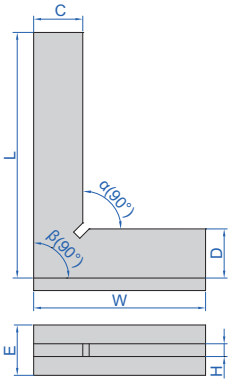
(mm)

| Code | Size (LxW) | Squareness | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4793-501** | 50x40mm | 12μm | 13μm | 15 | 15 | 4 | 13 |
| **4793-751** | 75x50mm | 13μm | 14μm | 15 | 15 | 4 | 15 |
| **4793-1001** | 100x70mm | 14μm | 15μm | 20 | 20 | 5 | 20 |
| **4793-1501** | 150x100mm | 16μm | 18μm | 30 | 30 | 6 | 30 |
| **4793-2001** | 200x130mm | 19μm | 20μm | 30 | 30 | 7 | 30 |
| **4793-2501** | 250x165mm | 21μm | 23μm | 35 | 35 | 7 | 35 |
| **4793-3001** | 300x200mm | 23μm | 25μm | 40 | 40 | 8 | 40 |

**DIN875 grade 2**

(mm)

| Code | Size (LxW) | Squareness | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4793-502** | 50x40mm | 24μm | 25μm | 15 | 15 | 4 | 13 |
| **4793-752** | 75x50mm | 26μm | 28μm | 15 | 15 | 4 | 15 |
| **4793-1002** | 100x70mm | 28μm | 30μm | 20 | 20 | 5 | 20 |
| **4793-1502** | 150x100mm | 33μm | 35μm | 30 | 30 | 6 | 30 |
| **4793-2002** | 200x130mm | 38μm | 40μm | 30 | 30 | 7 | 30 |
| **4793-2502** | 250x165mm | 43μm | 45μm | 35 | 35 | 7 | 35 |
| **4793-3002** | 300x200mm | 47μm | 50μm | 40 | 40 | 8 | 40 |








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## 90° FLAT EDGE SQUARES WITH WIDE BASE

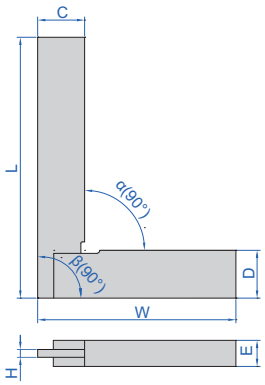
- DIN875 grade 0
- Made of hardened stainless steel

(mm)

| Code | Size (LxW) | Squareness | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4792-50** | 50x40mm | 6µm | 6µm | 12 | 12 | 3 | 10 |
| **4792-75** | 75x50mm | 6µm | 7µm | 14 | 14 | 3 | 10 |
| **4792-100** | 100x70mm | 7µm | 7µm | 18 | 18 | 3 | 10 |
| **4792-150** | 150x100mm | 8µm | 8µm | 22 | 22 | 4 | 12 |
| **4792-200** | 200x130mm | 9µm | 9µm | 25 | 25 | 4 | 12 |



**4792-100**




## MACHINIST SQUARES WITH WIDE BASE (ECONOMIC TYPE)

**ATTENTION: NO ANTI-RUST TREATMENT, NOT HARDEND**

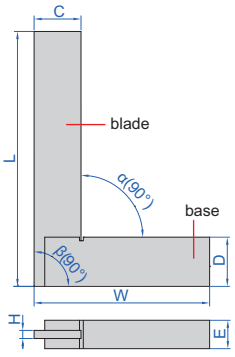
- DIN875 grade 2
- Made of carbon steel, no anti-rust treatment, not hardend

(mm)

| Code | Size (LxW) | Squareness | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4707-50** | 50x40mm | 24µm | 25µm | 16 | 12 | 3 | 9 |
| **4707-75** | 75x50mm | 26µm | 28µm | 16 | 16 | 3 | 9 |
| **4707-100** | 100x70mm | 28µm | 30µm | 19 | 19 | 3 | 12 |
| **4707-150** | 150x100mm | 33µm | 35µm | 25 | 25 | 3 | 16 |
| **4707-200** | 200x130mm | 37µm | 40µm | 30 | 32 | 4 | 16 |
| **4707-250** | 250x165mm | 42µm | 45µm | 30 | 32 | 4 | 19 |
| **4707-300** | 300x200mm | 47µm | 50µm | 32 | 32 | 4 | 19 |
| **4707-400** | 400x250mm | 56µm | 60µm | 38 | 38 | 5 | 22 |
| **4707-500** | 500x300mm | 65µm | 70µm | 45 | 50 | 6 | 25 |
| **4707-600** | 600x350mm | 75µm | 80µm | 50 | 50 | 6 | 30 |
| **4707-750** | 750x400mm | 90µm | 95µm | 55 | 55 | 6 | 50 |
| **4707-900** | 900x500mm | 103µm | 110µm | 65 | 75 | 9 | 50 |
| **4707-1000** | 1000x550mm | 113µm | 120µm | 65 | 75 | 9 | 50 |



**4707-100**




## 90° BEVELED EDGE SQUARES WITH WIDE BASE

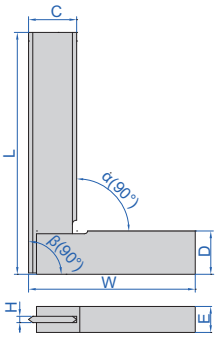
- DIN875 grade 0
- Beveled edges for inside and outside measurements
- Made of hardened stainless steel

(mm)

| Code | Size (LxW) | Squareness | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4795-50** | 50x40mm | 6µm | 6µm | 12 | 12 | 3 | 10 |
| **4795-75** | 75x50mm | 6µm | 7µm | 14 | 14 | 3 | 10 |
| **4795-100** | 100x70mm | 7µm | 7µm | 18 | 18 | 3 | 10 |
| **4795-150** | 150x100mm | 8µm | 8µm | 22 | 22 | 4 | 12 |
| **4795-200** | 200x130mm | 9µm | 9µm | 25 | 25 | 4 | 12 |



**4795-100**



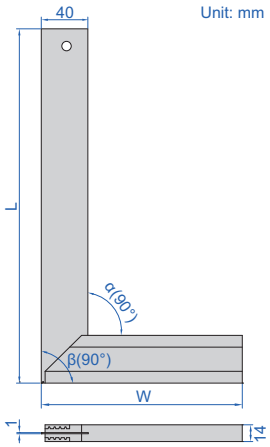
## TRY SQUARE

- Graduation: 1mm
- Stainless steel blade, aluminum base

| Code | Size (LxW) | Squareness | |
|---|---|---|---|
| | | Inside (α) | Outside (β) |
| 2275-300 | 300x170mm | 0.5mm | 0.5mm |



2275-300



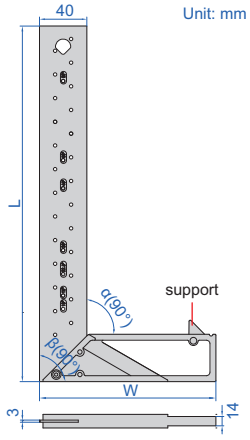

## TRY SQUARE

- Graduation: 1mm
- Aluminum blade and base
- 4 milled surfaces
- Retractable metal ledge support
- Etchings and holes for beveling and framing: 10°, 15°, 22.5°, 30°, 45°, 50° and 60°
- Etchings and holes every cm for fluid pencil marking

| Code | Size (LxW) | Squareness | |
|---|---|---|---|
| | | Inside (α) | Outside (β) |
| 2280-300 | 300x150mm | 0.5mm | 0.5mm |

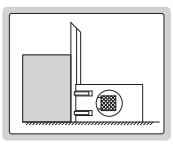


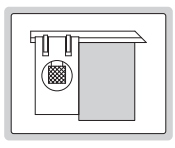
2280-300




## ADJUSTABLE SQUARE

- The straight edge can move and can be locked by the clamping screw
- Made of hardened stainless steel

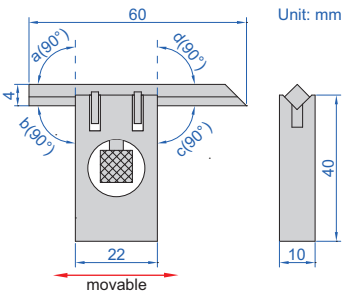




| Code | Squareness (a, b, c, d) |
|---|---|
| 4701-1 | 7μm |



4701-1








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## 45° SQUARES

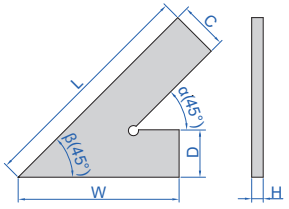
- Made of hardened stainless steel

(mm)

| Code | Size (LxW) | Accuracy | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4745-1100** | 100x70mm | 27μm | 30μm | 20 | 20 | 5 |
| **4745-1120** | 120x80mm | 29μm | 32μm | 20 | 20 | 5 |
| **4745-1150** | 150x100mm | 32μm | 35μm | 20 | 20 | 5 |
| **4745-1200** | 200x130mm | 36μm | 40μm | 25 | 25 | 5 |



**4745-1100**




## 45° SQUARES WITH WIDE BASE

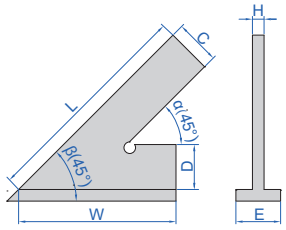
- Made of hardened stainless steel

(mm)

| Code | Size (LxW) | Accuracy | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4747-100** | 100x70mm | 27μm | 30μm | 20 | 20 | 5 | 20 |
| **4747-120** | 120x80mm | 29μm | 32μm | 20 | 20 | 5 | 20 |
| **4747-150** | 150x100mm | 32μm | 35μm | 20 | 20 | 5 | 20 |
| **4747-200** | 200x130mm | 36μm | 40μm | 25 | 25 | 5 | 25 |



**4747-100**




## 60° SQUARES

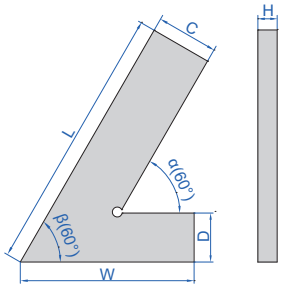
- Made of hardened stainless steel

(mm)

| Code | Size (LxW) | Accuracy | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4760-1120** | 120x80mm | 30μm | 32μm | 20 | 20 | 5 |
| **4760-1150** | 150x100mm | 32μm | 35μm | 20 | 20 | 5 |
| **4760-1200** | 200x130mm | 37μm | 40μm | 25 | 25 | 5 |



**4760-1120**




## 60° SQUARES WITH WIDE BASE

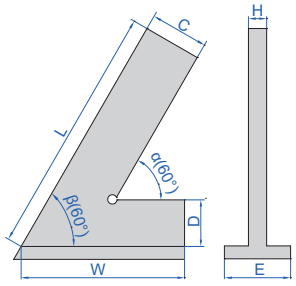
- Made of hardened stainless steel

(mm)

| Code | Size (LxW) | Accuracy | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4762-120** | 120x80mm | 30μm | 33μm | 20 | 20 | 5 | 20 |
| **4762-150** | 150x100mm | 33μm | 36μm | 20 | 20 | 5 | 20 |
| **4762-200** | 200x130mm | 37μm | 41μm | 25 | 25 | 5 | 25 |



**4762-120**

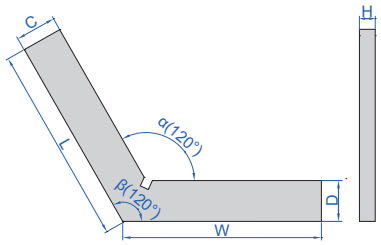


## 120° SQUARES



4706-1100

- Made of hardened stainless steel




(mm)

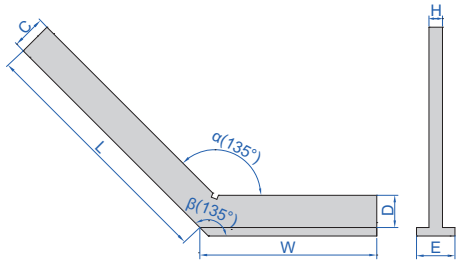
| Code | Size (LxW) | Accuracy | | C | D | H |
|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | |
| **4706-150** | 50x50mm | 24μm | 25μm | 15 | 15 | 5 |
| **4706-175** | 75x75mm | 26μm | 28μm | 20 | 20 | 5 |
| **4706-1100** | 100x100mm | 29μm | 30μm | 20 | 20 | 5 |

## 135° SQUARES WITH WIDE BASE



4754-3120

- Made of hardened stainless steel




(mm)

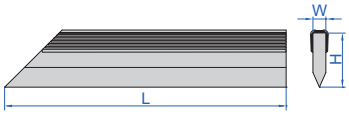
| Code | Size (LxW) | Accuracy | | C | D | H | E |
|---|---|---|---|---|---|---|---|
| | | Inside (α) | Outside (β) | | | | |
| **4754-3120** | 120x80mm | 31μm | 33μm | 20 | 20 | 5 | 20 |
| **4754-3150** | 150x100mm | 34μm | 36μm | 20 | 20 | 5 | 20 |
| **4754-3200** | 200x130mm | 39μm | 41μm | 30 | 30 | 7 | 30 |

## STRAIGHT EDGES



4700-100

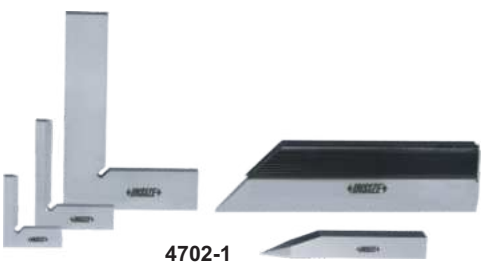
- DIN874
- Beveled edge
- Made of hardened stainless steel
- Satin chrome plating




| Code | Size (L) | Straightness | W | H |
|---|---|---|---|---|
| **4700-50** | 50mm | 2.2μm | 5mm | 25mm |
| **4700-75** | 75mm | 2.3μm | 5mm | 25mm |
| **4700-100** | 100mm | 2.4μm | 5mm | 25mm |
| **4700-125** | 125mm | 2.5μm | 6mm | 30mm |
| **4700-150** | 150mm | 2.6μm | 6mm | 30mm |
| **4700-200** | 200mm | 2.8μm | 6mm | 30mm |
| **4700-250** | 250mm | 3.0μm | 8mm | 40mm |
| **4700-300** | 300mm | 3.2μm | 8mm | 40mm |
| **4700-400** | 400mm | 3.6μm | 10mm | 50mm |
| **4700-500** | 500mm | 4.0μm | 10mm | 50mm |

## SQUARE SET

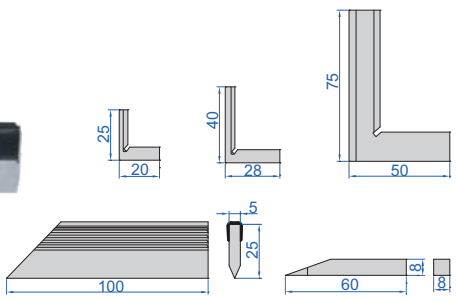
- Includes:
  - 90° tool maker square 25x20mm DIN875 grade 00 (code **4794-025**)
  - 90° tool maker square 40x28mm DIN875 grade 00 (code **4794-040**)
  - 90° beveled edge square 75x50mm DIN875 grade 00 (code **4790-075**)
  - straight edge 100mm DIN874 (code **4700-100**)
  - scriber
- Made of hardened stainless steel



4702-1

| Code |
|---|
| 4702-1 |

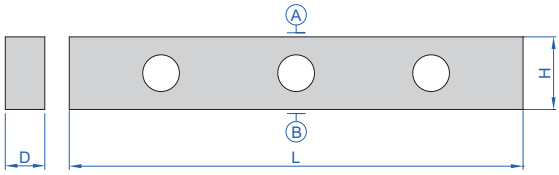
Unit: mm






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## GRANITE STRAIGHT EDGES






4147-500A

| Code | Length (L) | Flatness of A and B | Parallelism between A and B | D | H |
|---|---|---|---|---|---|
| **4147-500A** | 500mm | 2.1μm | 3.2μm | 50mm | 80mm |
| **4147-1000A** | 1000mm | 3.0μm | 4.5μm | 60mm | 120mm |

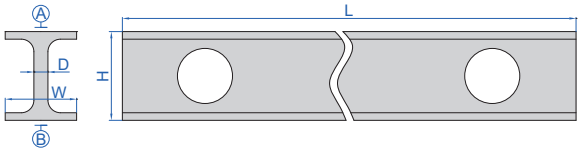
## MAGNALIUM STRAIGHT EDGES

LIGHT WEIGHT

- Made of magnalium, light weight, non-deform, no rusty



4180-1500

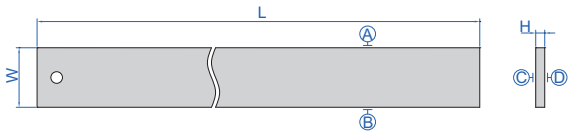



| Code | Length (L) | Flatness of A and B | Parallelism between A and B | H | W | D | Weight |
|---|---|---|---|---|---|---|---|
| **4180-500** | 500mm | 3μm | 4μm | 60mm | 30mm | 5mm | 1kg |
| **4180-1000** | 1000mm | 5μm | 8μm | 60mm | 30mm | 5mm | 1.5kg |
| **4180-1500** | 1500mm | 15μm | 22μm | 100mm | 40mm | 7mm | 4.5kg |
| **4180-2000** | 2000mm | 18μm | 27μm | 100mm | 40mm | 7mm | 6kg |
| **4180-2500** | 2500mm | 22μm | 33μm | 100mm | 40mm | 7mm | 7.5kg |
| **4180-3000** | 3000mm | 48μm | 72μm | 150mm | 80mm | 8mm | 21kg |

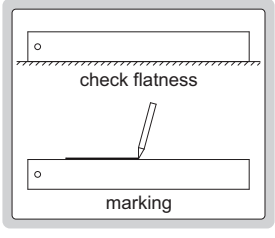
## PRECISION STRAIGHT EDGES



7117-300




- Check flatness and for marking
- Made of tool steel

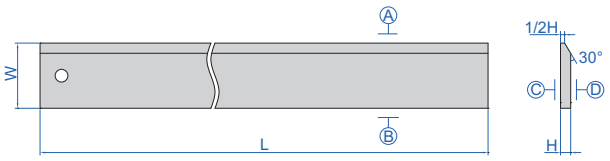



| Code | Range (L) | Flatness of A and B | Flatness of C and D | W | H |
|---|---|---|---|---|---|
| **7117-300** | 305mm | 0.005mm | 0.05mm | 41mm | 6.3mm |
| **7117-600** | 610mm | 0.006mm | 0.06mm | 51mm | 7.9mm |
| **7117-900** | 914mm | 0.007mm | 0.06mm | 64mm | 9.5mm |

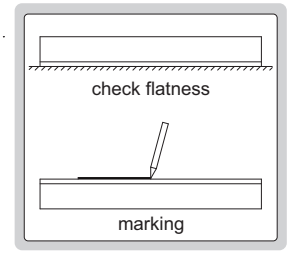
## PRECISION STRAIGHT EDGES WITH BEVELED EDGE



7118-300




- Check flatness and for marking
- Made of tool steel

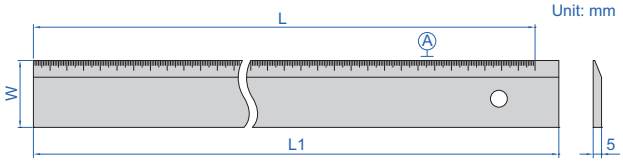



| Code | Range (L) | Flatness of A and B | Flatness of C and D | W | H |
|---|---|---|---|---|---|
| **7118-300** | 305mm | 0.005mm | 0.05mm | 41mm | 6.3mm |
| **7118-600** | 610mm | 0.006mm | 0.06mm | 51mm | 7.9mm |
| **7118-900** | 914mm | 0.007mm | 0.06mm | 64mm | 9.5mm |

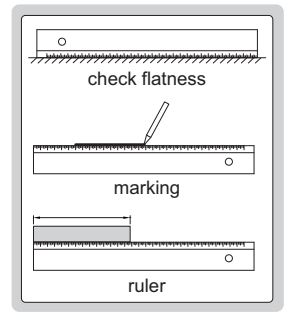
## STRAIGHT EDGES



7111-300A




- Check flatness and straightness, as well as for marking
- Graduation on the beveled edge
- Made of hardened tool steel
- Chrome plated
- Graduation: 1mm




| Code | Range (L) | Straightness of A | L1 | W |
|---|---|---|---|---|
| **7111-300A** | 300mm | 0.02mm | 310mm | 40mm |
| **7111-500A** | 500mm | 0.03mm | 510mm | 40mm |
| **7111-1000A** | 1000mm | 0.04mm | 1010mm | 50mm |

## OPTICAL FLATS

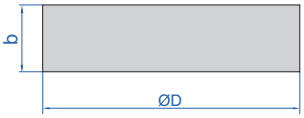
CAN BE CUSTOM-MADE

VIDEO

- Check flatness
- Single working face, the arrow indicates the working face



4191-45B




| Code | b | ØD | Flatness |
|---|---|---|---|
| **4191-45A** | 12mm | 45mm | 0.03μm |
| **4191-60A** | 15mm | 60mm | 0.03μm |

| Code | b | ØD | Flatness |
|---|---|---|---|
| **4191-45B** | 12mm | 45mm | 0.1μm |
| **4191-60B** | 15mm | 60mm | 0.1μm |



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VIDEO

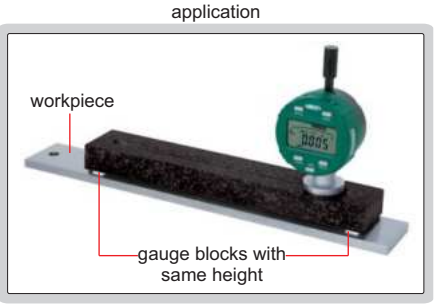
GRANITE HOLDER CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

DATA OUTPUT

## STRAIGHTNESS/FLATNESS GAUGE

- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21

application

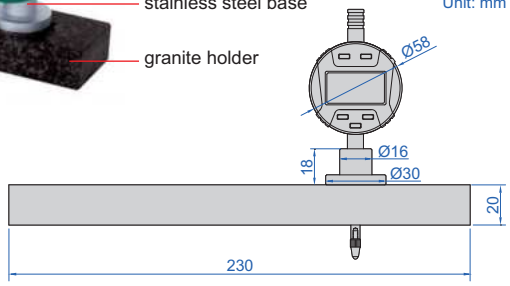






**2144-200**

Unit: mm




| Code | Range | Digital indicator resolution | Straightness measurement accuracy | Parallelism of top and botton surfaces of granite holder | Flatness of top and botton surfaces of granite holder |
|---|---|---|---|---|---|
| **2144-200** | 200mm | 0.001mm/0.00005" | 3μm | 2μm | 1.5μm |

VIDEO

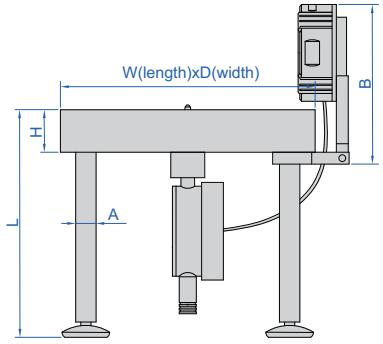
GRANITE PLATE CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

DATA OUTPUT

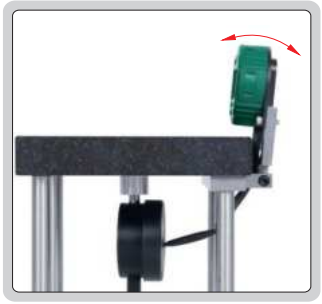
## FLATNESS MEASUREMENT STANDS




**6852-150**




display can be rotated



application




- Digital indicator resolution: 0.001mm/0.00005"
- Optional accessory: wireless transmitter code **7315-50M** (receiver is needed) page 6, bluetooth transmitter code **7214-50M** page 12, data output cable code **7302-40M** page 21, **7305-40M** page 17

**(mm)**

| Code | Flatness measurement accuracy | Flatness of granite plate | W | D | H | L | A | B | Remark |
|---|---|---|---|---|---|---|---|---|---|
| **6852-150** | 2μm | 2μm | 150 | 150 | 25 | 135 | Ø12 | 100 | non-waterproof digital indicator |
| **6852-300** | 2μm | 2μm | 300 | 300 | 50 | 210 | Ø20 | 135 | non-waterproof digital indicator |
| **6852-300WP** | 2μm | 2μm | 300 | 300 | 50 | 210 | Ø20 | 135 | IP65 waterproof digital indicator |

# 14 CONCENTRICITY AND RUNOUT TESTERS



**Concentricity Gauges**
**Page 428-432**



**Bench Centers**
**Page 433-440**



**V-blocks**
**Page 441**

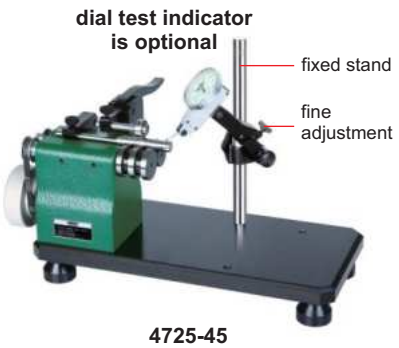


**Expansion Mandrels**
**Page 441**

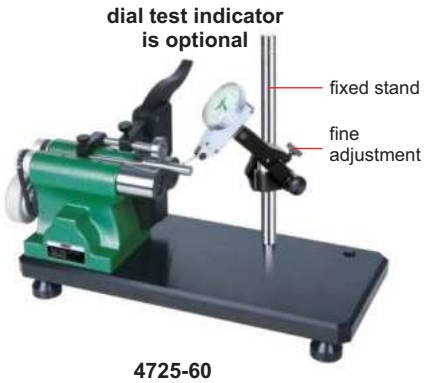
# CONCENTRICITY GAUGES

VIDEO

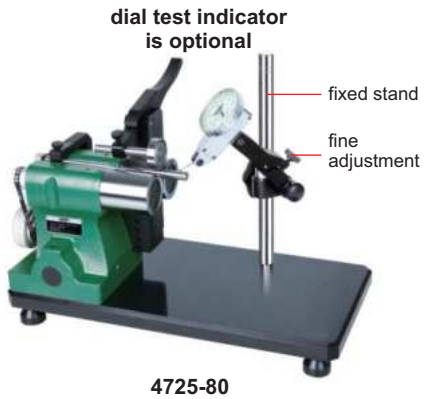
HIGH STABILITY, LONG WORKING LIFE



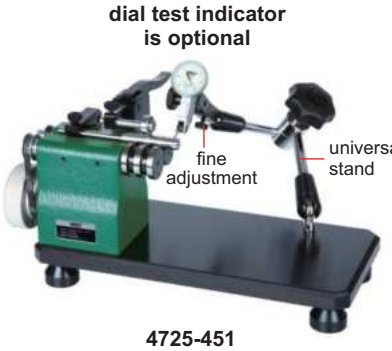

4725-45



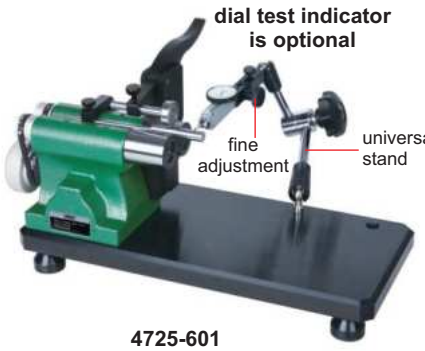

4725-60



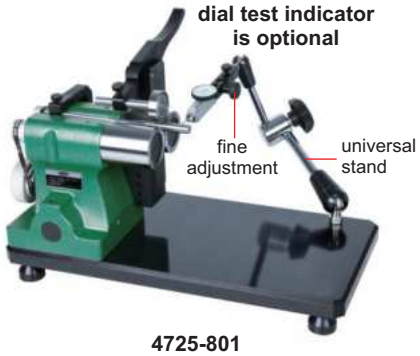

4725-80




4725-451

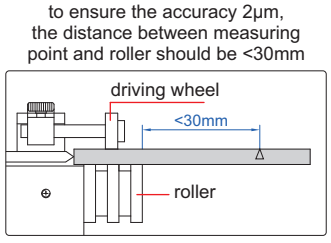


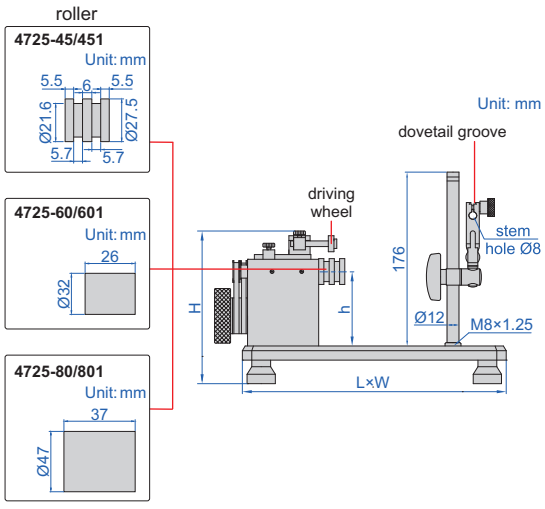

4725-601




4725-801



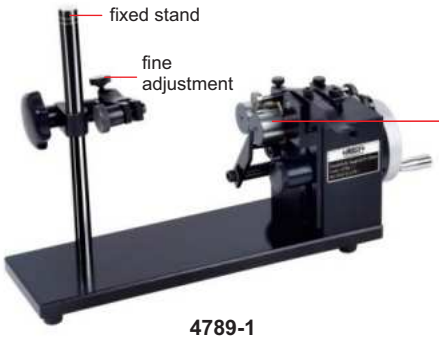



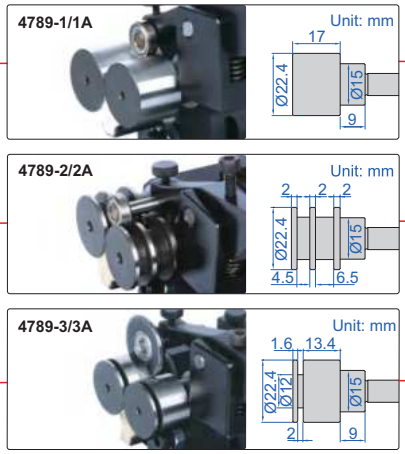

- With ball bearing, high stability, long working life
- Accuracy: 2μm
- Optional accessory: dial test indicator

| Code | Diameter range | Center height (h) | L×W×H | Weight | Remark |
|---|---|---|---|---|---|
| **4725-45** | Ø3-45mm | 80mm | 280×130×170mm | 6kg | fixed stand, high accuracy, inconvenient operation |
| **4725-60** | Ø8-60mm | 90mm | 350×160×190mm | 15.6kg | fixed stand, high accuracy, inconvenient operation |
| **4725-80** | Ø8-80mm | 130mm | 400×200×250mm | 25kg | fixed stand, high accuracy, inconvenient operation |
| **4725-451** | Ø3-45mm | 80mm | 280×130×170mm | 6kg | universal stand, low accuracy, convenient operation |
| **4725-601** | Ø8-60mm | 90mm | 350×160×190mm | 15.6kg | universal stand, low accuracy, convenient operation |
| **4725-801** | Ø8-80mm | 130mm | 400×200×250mm | 25kg | universal stand, low accuracy, convenient operation |

## CONCENTRICITY GAUGES




4789-1

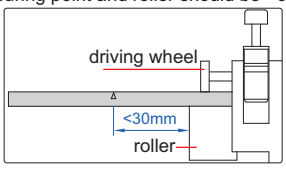






4789-2A

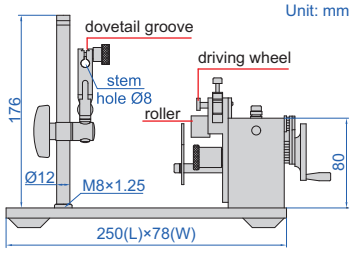
to ensure the accuracy 2μm, the distance between measuring point and roller should be <30mm




- Accuracy 2μm
- Optional accessory: dial test indicator

| Code | Applicable diameter | Remark |
|---|---|---|
| 4789-1 | Ø3.5mm-25mm | fixed stand, high accuracy, inconvenient operation |
| 4789-2 | Ø1mm-25mm | fixed stand, high accuracy, inconvenient operation |
| 4789-3 | Ø1mm-25mm | fixed stand, high accuracy, inconvenient operation |
| 4789-1A | Ø3.5mm-25mm | universal stand, low accuracy, convenient operation |
| 4789-2A | Ø1mm-25mm | universal stand, low accuracy, convenient operation |
| 4789-3A | Ø1mm-25mm | universal stand, low accuracy, convenient operation |

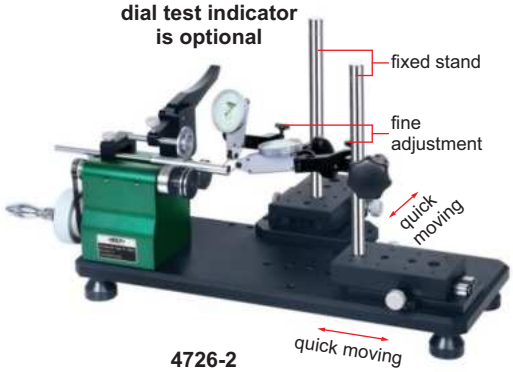
Unit: mm



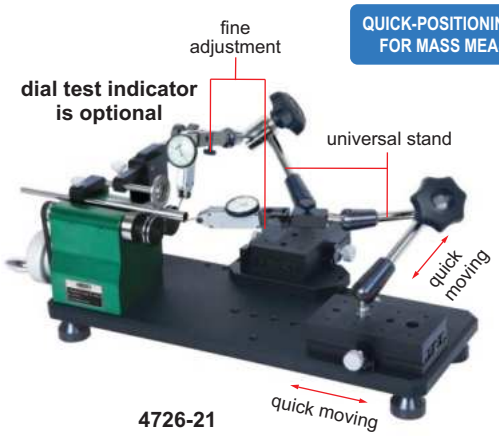

4789-1

## CONCENTRICITY GAUGES

QUICK-POSITIONING, SUITABLE FOR MASS MEASUREMENT

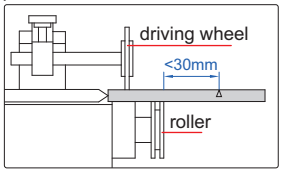


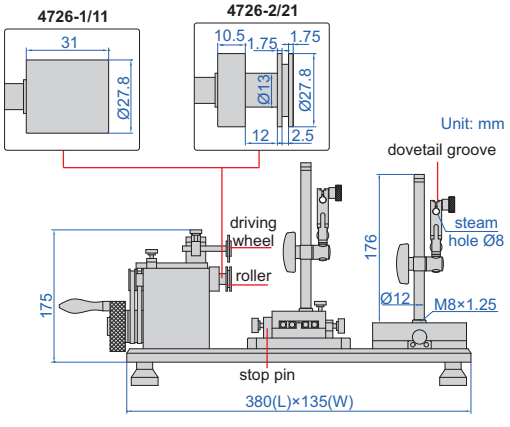

4726-2




4726-21

to ensure the accuracy 2μm, the distance between measuring point and roller should be <30mm




- With ball bearing, high stability, long working life
- Accuracy: 2μm
- Optional accessory: dial test indicator

| Code | Applicable diameter | Remark |
|---|---|---|
| 4726-1 | Ø4-40mm | fixed stand, high accuracy, inconvenient operation |
| 4726-2 | Ø2-40mm | fixed stand, high accuracy, inconvenient operation |
| 4726-11 | Ø4-40mm | universal stand, low accuracy, convenient operation |
| 4726-21 | Ø2-40mm | universal stand, low accuracy, convenient operation |



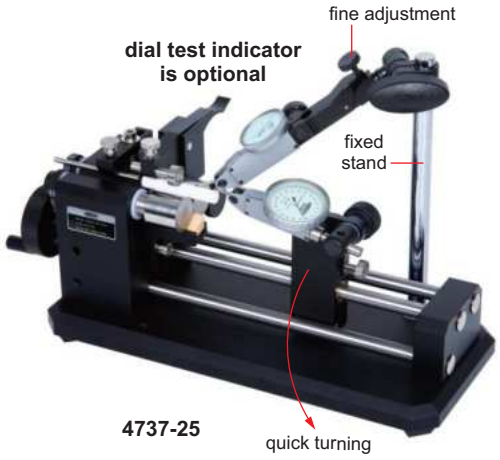


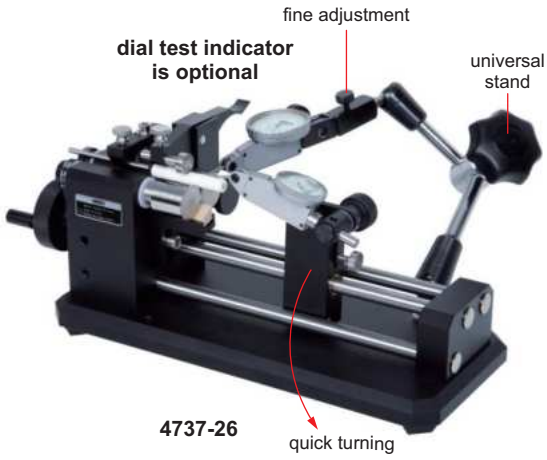
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QUICK-POSITIONING, SUITABLE FOR MASS MEASUREMENT

# QUICK POSITIONING CONCENTRICITY GAUGES

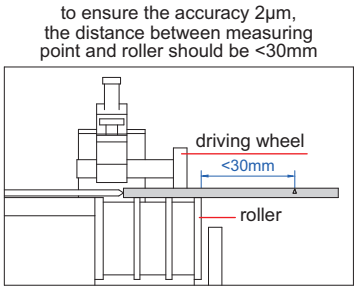
VIDEO

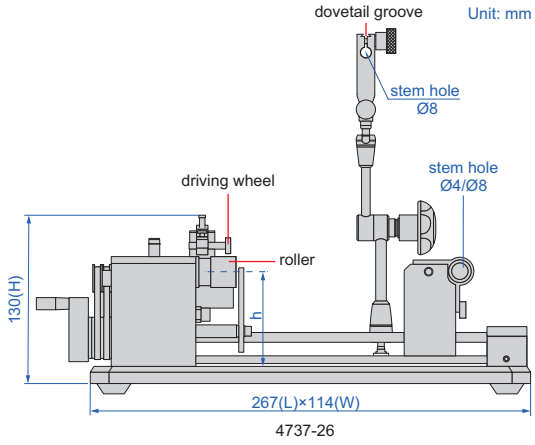



standard rod (included)





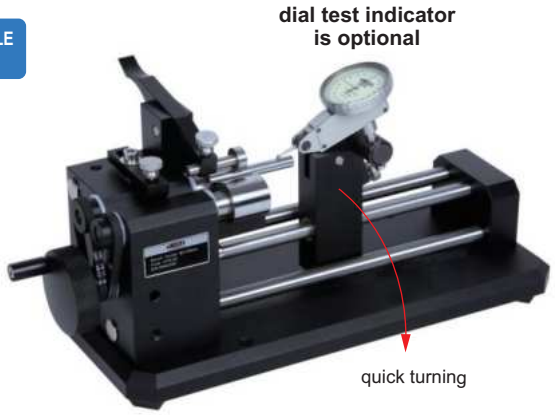

- Quick positioning, suitable for mass measurement
- Supplied with standard rod to verify accuracy
- Optional accessory: dial test indicators

| Code | Diameter range | Workpiece length | Accuracy | Center height (h) | L×W×H | Weight | Remark |
|---|---|---|---|---|---|---|---|
| **4737-25** | Ø3-25mm | 15-100mm | 2μm | 70mm | 267×114×130mm | 3kg | fixed stand, high accuracy, inconvenient operation |
| **4737-26** | Ø3-25mm | 15-100mm | 2μm | 70mm | 267×114×130mm | 3kg | universal stand, low accuracy, convenient operation |

## QUICK POSITIONING CONCENTRICITY GAUGE

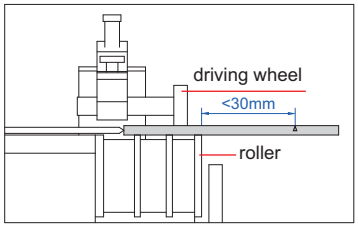
QUICK-POSITIONING, SUITABLE FOR MASS MEASUREMENT

VIDEO

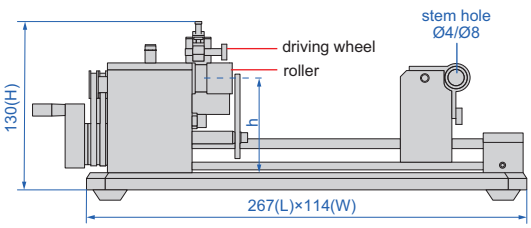



4734-25

to ensure the accuracy 2μm, the distance between measuring point and roller should be <30mm



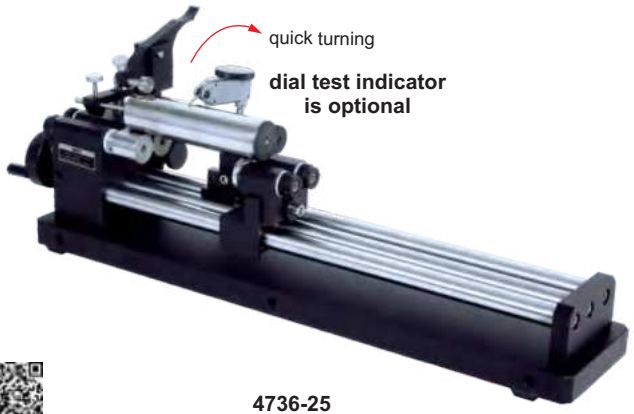

Unit: mm



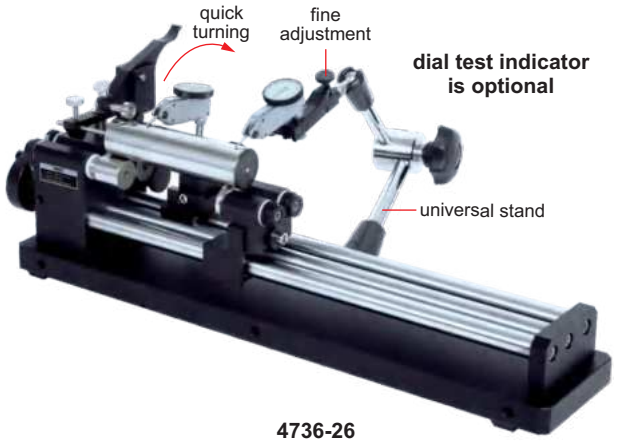

- Quick positioning, suitable for mass measurement
- Optional accessory: dial test indicators

| Code | Diameter range | Workpiece length | Accuracy | Center height (h) | L×W×H | Weight |
|---|---|---|---|---|---|---|
| **4734-25** | Ø3-25mm | 15-100mm | 2μm | 70mm | 267×114×130mm | 3kg |

## CONCENTRICITY GAUGES




4736-25




4736-26

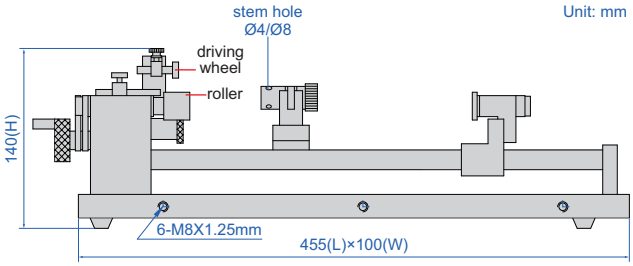
VIDEO

standard rod (included)



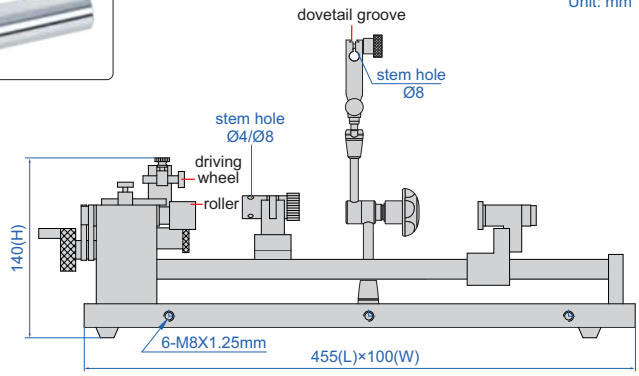
- Quick positioning, suitable for mass measurement
- Supplied with standard rod to verify accuracy
- Optional accessory: dial test indicators

Unit: mm




4736-25

Unit: mm

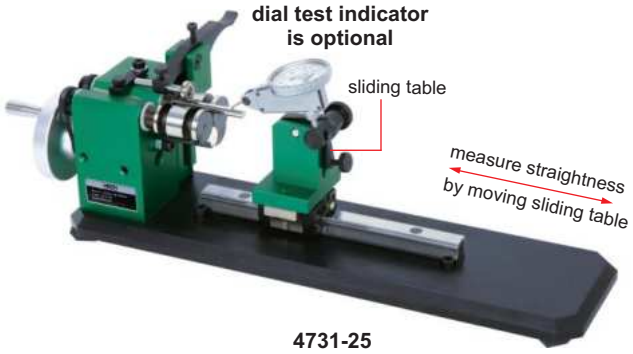



4736-26

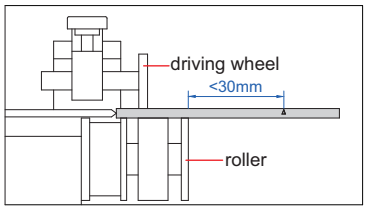
| Code | Diameter range | Workpiece length | Accuracy | L×W×H | Weight | Remark |
|---|---|---|---|---|---|---|
| **4736-25** | Ø3-25mm | 15-305mm | 2μm | 455×100×140mm | 6kg | without universal stand |
| **4736-26** | Ø3-25mm | 15-305mm | 2μm | 455×100×140mm | 6.5kg | with universal stand |

## CONCENTRICITY GAUGE WITH STRAIGHTNESS MEASUREMENT

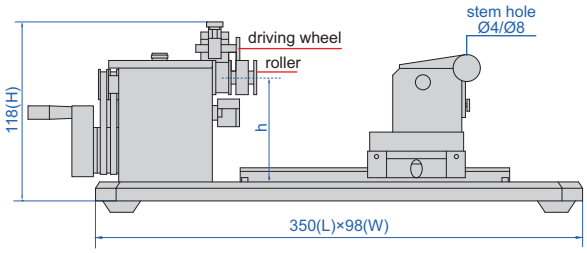
VIDEO




4731-25




Unit: mm




- Maximum moving range of sliding table: 120mm
- Optional accessory: dial test indicator

| Code | Diameter range | Workpiece length | Roller concentricity accuracy | Straightness measurement accuracy | Center height (h) | L×W×H | Weight |
|---|---|---|---|---|---|---|---|
| 4731-25 | Ø1-25mm | 15-80mm | 2μm | 0.01mm | 70mm | 350×98×118mm | 5.3kg |

## CONCENTRICITY GAUGES

VIDEO




4786-1




4786-2

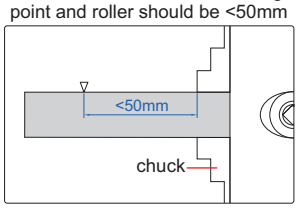
- Accuracy: 3μm
- Ø50mm setting ring and
  Ø55mm calibration cylinder are included
- Optional accessory: dial test indicator

for cylinder

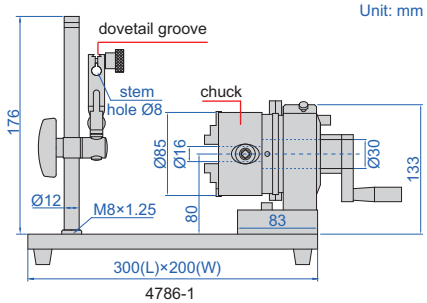


for tube






Unit: mm



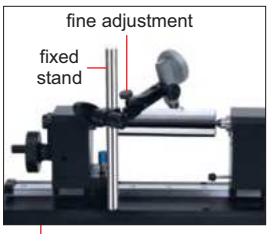

4786-1

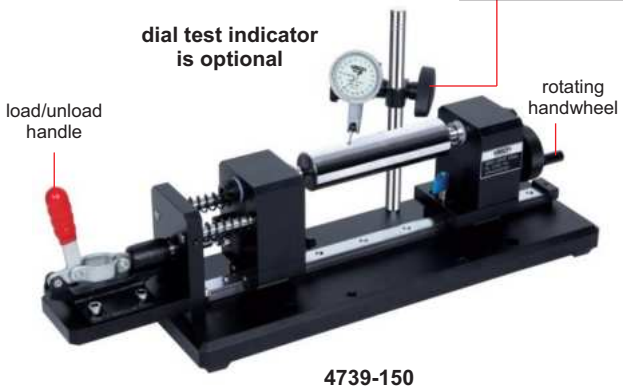
| Code | Applicable inside diameter | Applicable outside diameter | Remark |
|---|---|---|---|
| 4786-1 | Ø24-64mm | Ø2-70mm | fixed stand, high accuracy, inconvenient operation |
| 4786-2 | Ø24-64mm | Ø2-70mm | universal stand, low accuracy, convenient operation |

# BENCH CENTERS

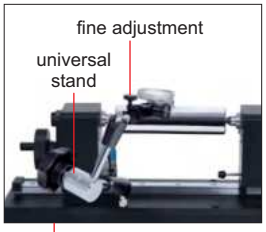
VIDEO

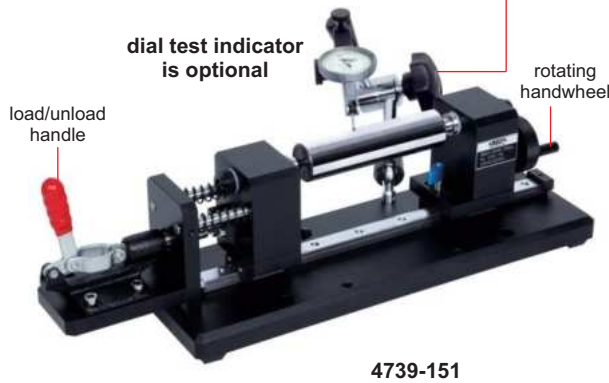
POPULAR MODEL




**4739-150**



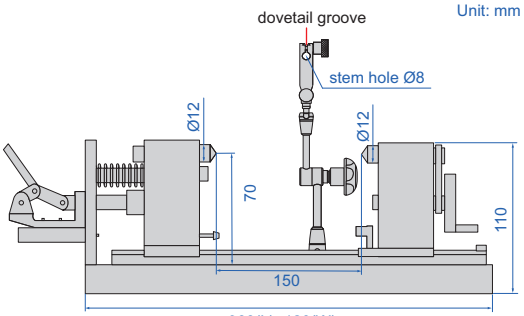

**4739-151**

standard rod (included)



- Quick positioning, suitable for mass measurement
- Suitable for cylinders with outside diameter Ø3-140mm or inside diameter Ø1-12mm
- Supplied with standard rod to verify accuracy
- Optional accessory: dial test indicators

Unit: mm

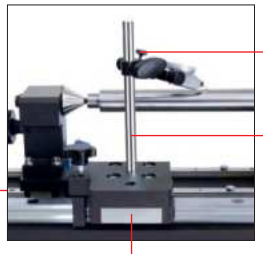


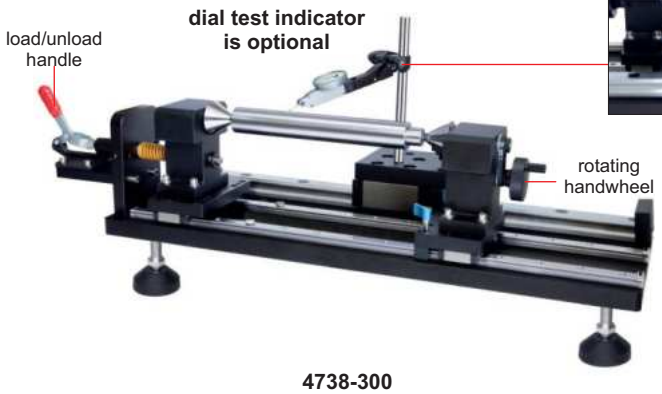

4739-151

| Code | Center height | Distance between two centers | Runout accuracy | Weight | Load | Remark |
|---|---|---|---|---|---|---|
| **4739-150** | 70mm | 150mm | 2μm | 6.5kg | 15kg | fixed stand, high accuracy, inconvenient operation |
| **4739-151** | 70mm | 150mm | 2μm | 6.5kg | 15kg | universal stand, low accuracy, convenient operation |

# BENCH CENTERS

VIDEO

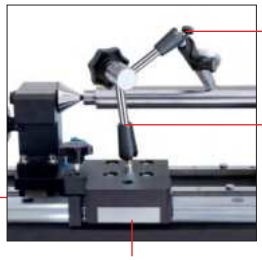



**4738-300**

standard rod (included)









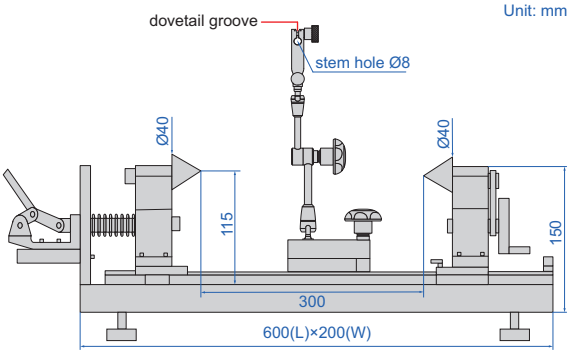
**4738-301**

dual base (**optional**)



14

Unit: mm




4738-301

- Quick positioning, suitable for mass measurement
- Suitable for cylinders with outside diameter Ø3-180mm or inside diameter Ø1-40mm
- Supplied with standard rod to verify accuracy
- Optional accessory: dial test indicators

| Code | Center height | Distance between two centers | Runout accuracy | Weight | Load | Remark |
|---|---|---|---|---|---|---|
| **4738-300** | 90mm | 300mm | 2μm | 15kg | 20kg | fixed stand, high accuracy, inconvenient operation |
| **4738-301** | 90mm | 300mm | 2μm | 15kg | 20kg | universal stand, low accuracy, convenient operation |

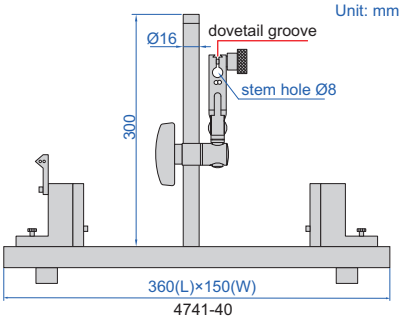
## BENCH CENTERS



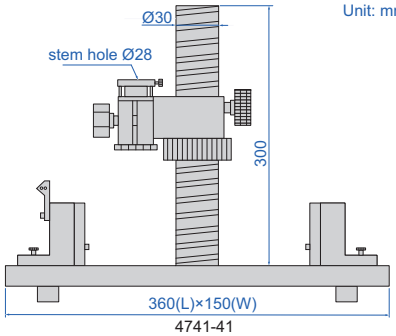

4741-40




4741-41




4741-40




4741-41

- Quick positioning, suitable for mass measurement
- **4741-40** optional accessory: dial test indicators (code **2880-02**, **2880-02R**)
- **4741-41** optional accessory: high precision digital indicators (code **2140-6**, **2140-6WL**)

| Code | Stem hole | Diameter range | Workpiece length | Accuracy |
|---|---|---|---|---|
| **4741-40** | Ø8mm | Ø3-40mm | 15-300mm | 2μm |
| **4741-41** | Ø28mm | Ø3-40mm | 15-300mm | 2μm |

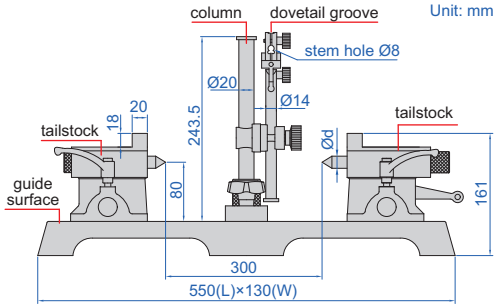
## BENCH CENTER (BASIC TYPE)



- Hardened cast-iron guide surface
- Movable column
- V-slot for cylinder Ø4~Ø22mm



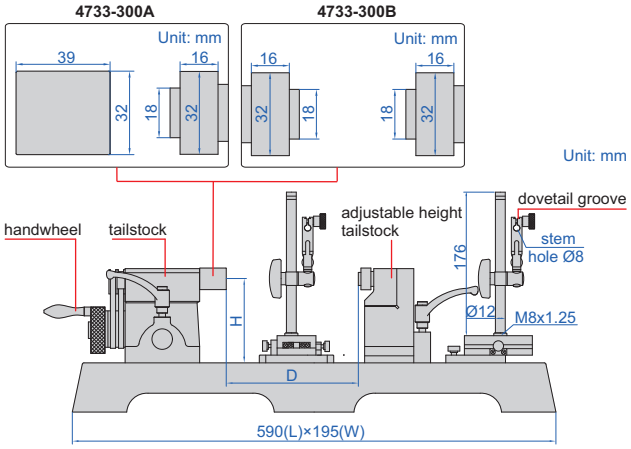

4782-300

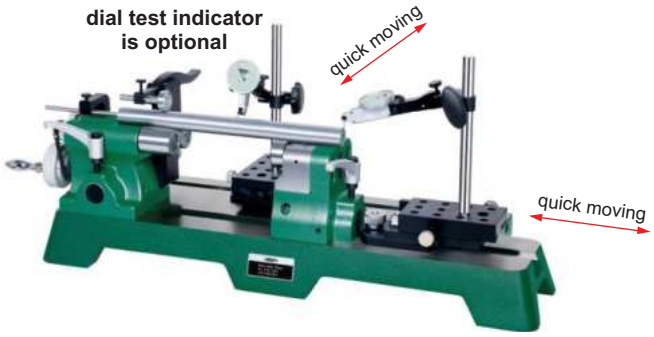



| Code | Parallelism* | Runout accuracy | Center height | Distance between two centers | Diameter of center (Ød) | Load |
|---|---|---|---|---|---|---|
| **4782-300** | 0.01mm | 2μm | 80mm | 300mm | Ø16mm | 25kg |

*Parallelism of two centers to the guide surface

# BENCH CENTERS



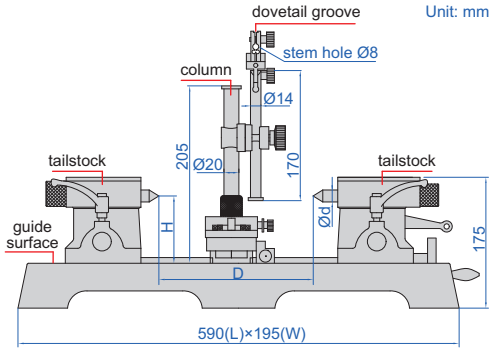




4733-300A

- Hardened cast-iron guide surface
- Quick moving is suitable for mass production inspection
- Adjustable height tailstock: 0-15mm, suitable for inspecting workpieces with different diameters
- Optional accessory: dial test indicator

| Code | Runout accuracy | Center height (H) | Distance between two centers (D) | Applicable diameter | Adjustable height | Remarks |
|---|---|---|---|---|---|---|
| **4733-300A** | 2μm | 90mm | 300mm | Ø8-60mm | 0-15mm | with handwheel |
| **4733-300B** | 2μm | 90mm | 300mm | Ø8-60mm | 0-15mm | without handwheel |

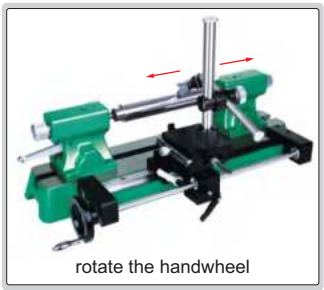
# BENCH CENTER WITH STRAIGHTNESS MEASUREMENT






4723-300

straightness measurement



rotate the handwheel

- Hardened cast-iron guide surface

| Code | Parallelism* | Runout accuracy | Accuracy of straightness measurement | Center height (H) | Distance between two centers (D) | Diameter of center (Ød) | Taper of center | Weight | Load |
|---|---|---|---|---|---|---|---|---|---|
| **4723-300** | 4μm | 2μm | 0.02mm | 90mm | 300mm | 18mm | MT2 | 38kg | 25kg |

*Parallelism of two centers to the guide surface

## BENCH CENTERS

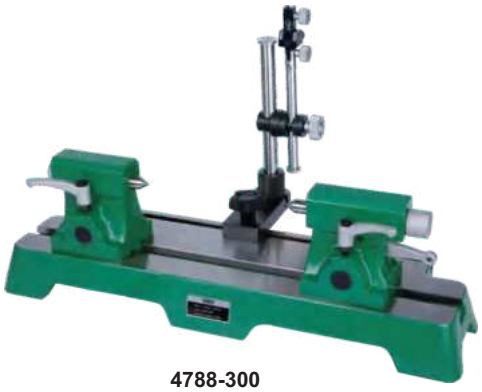
rotary centers (**optional**)



umbrella centers (**optional**)

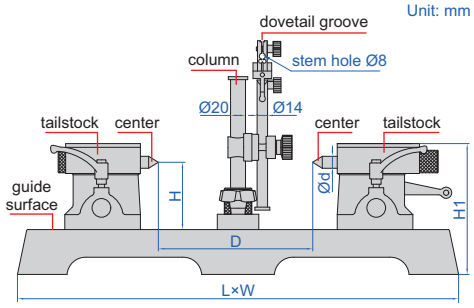


- Movable column
- Optional accessory: umbrella centers, rotary centers



**4788-300**

Unit: mm




**High accuracy** **(mm)**

| Code | Parallelism* | Runout accuracy | Center height (H) | Distance between two centers (D) | L | W | H1 | Diameter of center (Ød) | Taper of center | Weight | Load |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **4788-300** | 0.010mm | 2μm | 90 | 300 | 590 | 192 | 175 | 18.0 | MT2 | 34kg | 25kg |
| **4788-400** | 0.010mm | 2μm | 130 | 400 | 770 | 206 | 241 | 24.1 | MT3 | 66kg | 60kg |
| **4788-600** | 0.010mm | 2μm | 130 | 600 | 930 | 220 | 250 | 24.1 | MT3 | 90kg | 60kg |
| **4788-600H2** | 0.010mm | 2μm | 200 | 600 | 930 | 220 | 325 | 24.1 | MT3 | 105kg | 60kg |
| **4788-1000** | 0.010mm | 3μm | 130 | 1000 | 1330 | 220 | 262 | 24.1 | MT3 | 112kg | 60kg |
| **4788-1000H2** | 0.010mm | 3μm | 200 | 1000 | 1330 | 220 | 337 | 24.1 | MT3 | 125kg | 85kg |
| **4788-1000H3** | 0.010mm | 3μm | 300 | 1000 | 1330 | 220 | 442 | 31.6 | MT4 | 165kg | 85kg |

**Standard accuracy** **(mm)**

| Code | Parallelism* | Runout accuracy | Center height (H) | Distance between two centers (D) | L | W | H1 | Diameter of center (Ød) | Taper of center | Weight | Load |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **4788-D2** | 0.010mm | 3μm | 90 | 200 | 490 | 180 | 175 | 20.0 | MT2 | 27kg | 25kg |
| **4788-D3** | 0.010mm | 3μm | 90 | 300 | 590 | 195 | 175 | 20.0 | MT2 | 36kg | 25kg |
| **4788-D4** | 0.012mm | 3μm | 130 | 400 | 730 | 205 | 241 | 28.0 | MT3 | 68kg | 60kg |
| **4788-D6** | 0.015mm | 3μm | 130 | 600 | 930 | 220 | 250 | 28.0 | MT3 | 91kg | 60kg |
| **4788-D8** | 0.015mm | 3μm | 130 | 800 | 1130 | 220 | 250 | 28.0 | MT3 | 99kg | 60kg |
| **4788-D10** | 0.015mm | 3μm | 130 | 1000 | 1330 | 220 | 262 | 28.0 | MT3 | 116kg | 60kg |

*Parallelism of two centers to the guide surface

## DEAD CENTERS



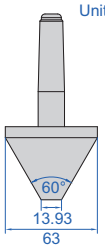
- Supplied in pair
- Suitable for **4723** and **4788** series bench centers

| Code | Taper of handle |
|---|---|
| **6391-MT2** | MT2 |
| **6391-MT3** | MT3 |



**6391-MT2**

Unit: mm




application



## ROTARY CENTERS

- Supplied in pair
- Carbide tip
- Rotational repeatability 0.005mm
- Suitable for **4723** and **4788** series bench centers

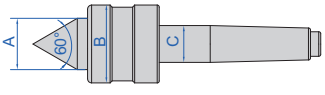
**(mm)**

| Code | Taper of handle | A | B | C |
|---|---|---|---|---|
| **6392-MT2** | MT2 | Ø25 | Ø38 | Ø18 |
| **6392-MT3** | MT3 | Ø38 | Ø45 | Ø24.1 |
| **6392-MT4** | MT4 | Ø38 | Ø45 | Ø31.6 |



**6392-MT2**

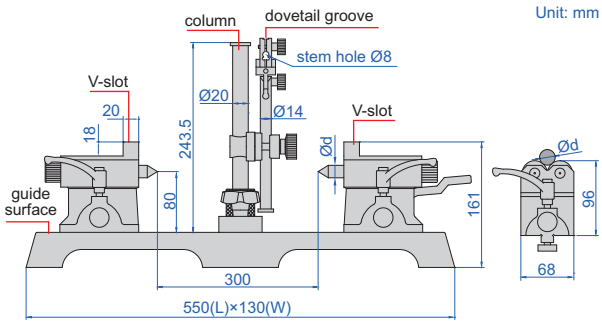
**ACTIVE CENTER DIAMETER A CAN BE CUSTOMIZED RANGE (MT2: 25~40mm, MT3: 38~55mm, MT4: 38~70mm)**





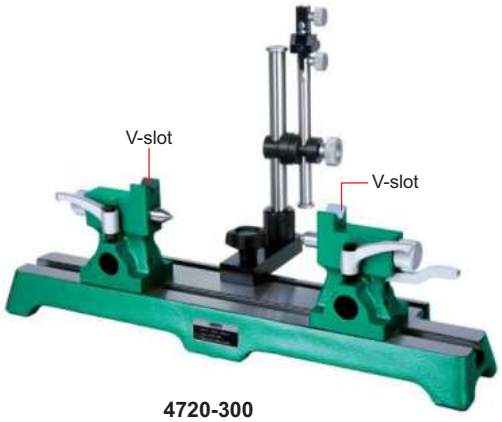

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## BENCH CENTER WITH ROLLER TAILSTOCKS









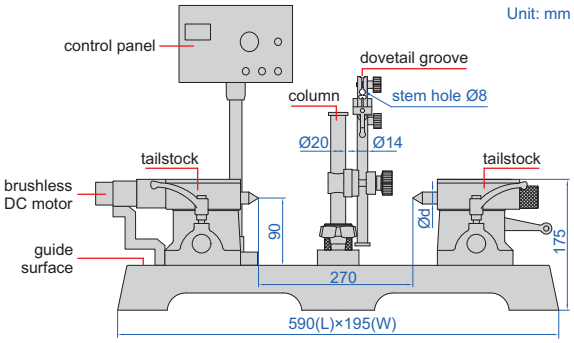

**4720-300**

- Hardened cast-iron guide surface
- Supplied with V-slot/center tailstocks and roller tailstocks
- V-slot for cylinder Ø4~22mm
- Roller for cylinder Ø5~100mm

| Code | Parallelism* | Runout accuracy | Center height | Distance between two centers | Diameter of center (Ød) | Taper of center | Load |
|---|---|---|---|---|---|---|---|
| **4720-300** | 0.01mm | 2μm | 80mm | 300mm | 16mm | MT1 | 25kg (40kg for roller tailstocks) |

*Parallelism of two centers to the guide surface

## MOTORIZED BENCH CENTER







**4735-270**

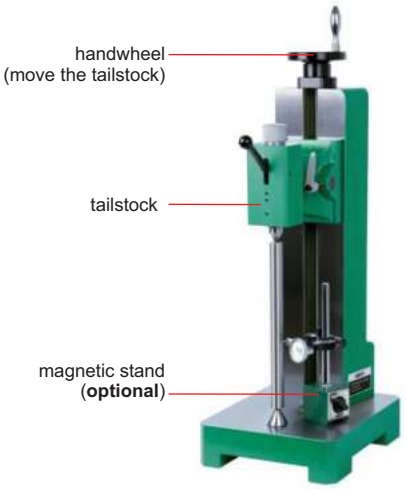
- Moveable column
- Hardened cast-iron guide surface
- Motorized measurement is suitable for mass production inspection
- Power supply: AC220V/10A/(50/60)Hz
- Optional accessory: dial test indicators

| Code | Parallelism* | Runout accuracy | Center height | Distance between two centers | Diameter of center (Ød) | Taper of center | Weight | Load |
|---|---|---|---|---|---|---|---|---|
| **4735-270** | 0.010mm | 2μm | 90mm | 270mm | 18mm | MT2 | 40kg | 25kg |

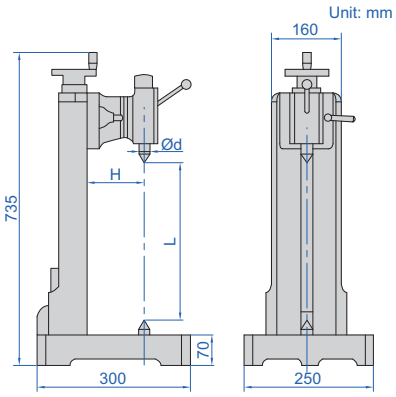
*Parallelism of two centers to the guide surface

## VERTICAL BENCH CENTER

VIDEO




4728-360




- Distance between two centers (L): 360mm
- Hardened cast-iron guide surface
- Use handwheel to move the tailstock
- Optional accessory:
  magnetic stands, dial test indicator

| Code | Parallelism* | Runout accuracy | Center height (H) | Diameter of center (Ød) | Taper of center | Weight | Load |
|---|---|---|---|---|---|---|---|
| **4728-360** | 0.01mm | 2μm | 130mm | 24.1mm | MT3 | 85kg | 80kg |

*Parallelism of two centers to the guide surface

## VERTICAL AND HORIZONTAL BENCH CENTER



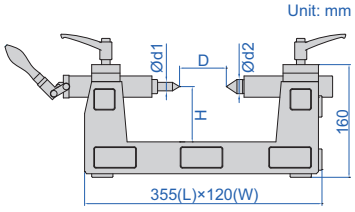
vertical use



horizontal use



side use




- For vertical, side and horizontal use

| Code | Runout accuracy | Center height (H) | Distance between two centers (D) | Diameter of center (Ød1/Ød2) | Weight | Load |
|---|---|---|---|---|---|---|
| **4722-200** | 2μm | 80mm | 200mm | 16mm/20.2mm | 22kg | 25kg |

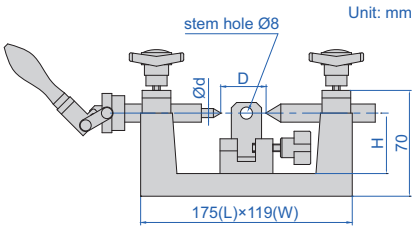


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## MINI BENCH CENTER



4721-75A

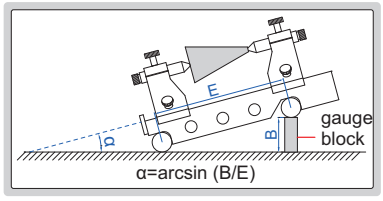


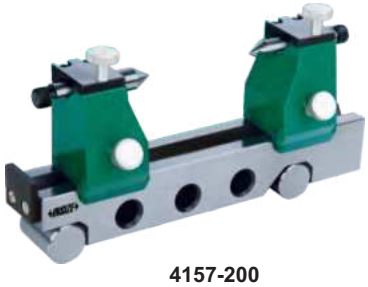

| Code | Runout accuracy | Center height (H) | Distance between two centers (D) | Diameter of center (Ød) | Taper of center | Weight | Load |
|---|---|---|---|---|---|---|---|
| **4721-75A** | 2μm | 40mm | 35-100mm | 6mm | MT1 | 4.5kg | 4kg |

VIDEO

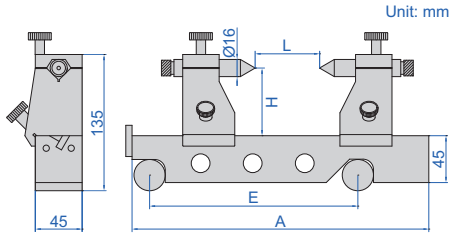
CAN BE CUSTOMIZED

## TAPER INSPECTION INSTRUMENTS



4157-200




- Check the taper angle of taper bar/taper plug gauges /Morse taper/ISO taper etc. The run out can be checked as well

| Code | Center height (H) | Center distance (L) | Sine bar accuracy (when α=30°) | E | A |
|---|---|---|---|---|---|
| **4157-200** | 65mm | 200mm | ±5 seconds | 200mm | 285mm |
| **4157-300** | 65mm | 300mm | ±8 seconds | 300mm | 385mm |

REFER TO PAGE 498 FOR DETAILS

## MAGNETIC SQUARE WITH V GROOVE



6539-100

## V-BLOCKS

REFER TO PAGE 491~498 FOR DETAILS



6896-11



6887-3



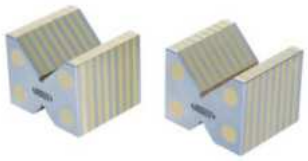
6897-1



6890-702



6888-1



6878-1



6891-1

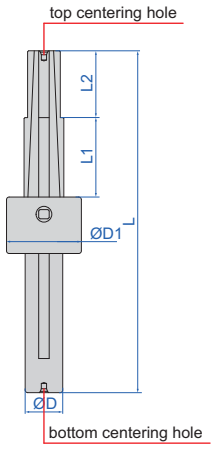
## EXPANSION MANDRELS

VIDEO

CUSTOMIZED HIGH PRECISION MANDREL WITH 3μm RADIAL RUNOUT IS AVAILABLE



6335-3A




- Checking runout of gears with the bore as a reference
- With centering holes on top and bottom ends, it can rotate between two centers for easy measurement
- Radial runout: 5μm

(mm)

| Code | Bore clamping range | L | L1 | L2 | ØD | ØD1 |
|---|---|---|---|---|---|---|
| 6335-0A | Ø9.53-12.70mm | 121.9 | 12.7 | 12.7 | 14.7 | 38.1 |
| 6335-1A | Ø12.70-19.05mm | 147.7 | 24.9 | 24.9 | 14.7 | 38.1 |
| 6335-2A | Ø19.05-25.40mm | 147.7 | 24.9 | 24.9 | 14.7 | 38.1 |
| 6335-3A | Ø25.40-38.10mm | 260.4 | 60.5 | 50.3 | 28.6 | 57.2 |
| 6335-4A | Ø38.10-50.80mm | 308.0 | 75.7 | 66.0 | 36.5 | 76.2 |
| 6335-5A | Ø50.80-63.50mm | 308.0 | 75.7 | 66.0 | 36.5 | 76.2 |
| 6335-6A | Ø63.50-76.20mm | 308.0 | 72.4 | 66.0 | 36.5 | 76.2 |
| 6335-7A | Ø50.80-76.20mm | 425.5 | 90.2 | 89.9 | 50.4 | 95.3 |
| 6335-8A | Ø76.20-101.60mm | 425.5 | 83.3 | 89.9 | 50.4 | 95.3 |
| 6335-9A | Ø101.60-127.00mm | 425.5 | 83.3 | 89.9 | 50.4 | 95.3 |
| 6335-10A | Ø127.00-152.40mm | 425.5 | 83.3 | 89.9 | 50.4 | 95.3 |
| 6335-11A | Ø152.40-177.80mm | 425.5 | 83.3 | 89.9 | 50.4 | 95.3 |

application





Feeler Gauges
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Pitch Gauges
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Gear Tooth Pitch Gauges
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Center Gauges
Page 450



Thread Gauges
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Angle Gauges
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Radius Gauges
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Drill Gauges
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Angle Gauges
Page 453



Wire Gauges
Page 454



Thickness Gauges
Page 454-455



Taper Slot Gauges
Page 455-456



Taper Gauges
Page 456-457



Taper Bore Gauges
Page 458



Welding Gauges
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Fillet Welding Gauges
Page 461-462

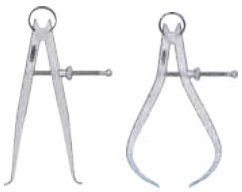
# 15 SIMPLE MEASURING TOOLS



Welding Gauges
Page 462-463



Pipe Welding Gauges
Page 464



Inside/Outside Calipers
Page 466-467



Dividers
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Measuring Tapes
Page 468-471



Long Measuring Tapes
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Measuring Wheels
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Digital Measuring Wheels
Page 472



Steel Rulers
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Digital Scales With Microscope
Page 474



Combination Squares
Page 475-476



Plastic Angle Squares
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T-bevels
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Marking Gauges
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Center Marking Gauges
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Scribing Calipers
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Height Scribers
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Scribers
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Precision Screwdriver Sets
Page 480



LED Flashlights
Page 480



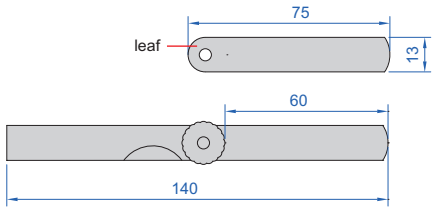
Measuring Tool Sets
Page 481-486

## FEELER GAUGE



**4601-25**

Unit: mm




- Made of hardened alloy steel
- Meet DIN2275/grade TC1
- Accuracy: ±(3+T/80)μm,
  'T' is the thickness of leaves in μm

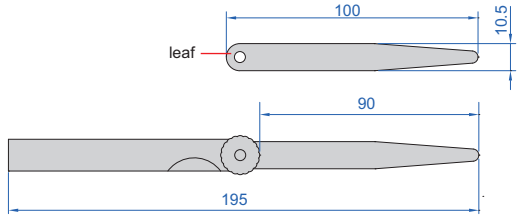
| Code | Range | Thickness of leaves included (mm) | Quantity of leaves |
|---|---|---|---|
| **4601-25** | 0.04-1.00mm | 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00 | 25 |

## FEELER GAUGES



**4602-20**

Unit: mm




- Made of hardened alloy steel
- Meet DIN2275/grade TC1
- Accuracy: ±(3+T/80)μm,
  'T' is the thickness of leaves in μm

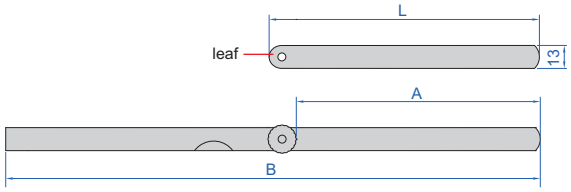
| Code | Range | Thickness of leaves included (mm) | Quantity of leaves |
|---|---|---|---|
| **4602-13A** | 0.03-0.50mm | 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.30, 0.40, 0.50 | 13 |
| **4602-13** | 0.05-1.00mm | 0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.40, 0.50, 0.60, 0.70, 0.80, 0.90, 1.00 | 13 |
| **4602-17** | 0.02-1.00mm | 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.25, 0.30, 0.40, 0.50, 0.75, 1.00 | 17 |
| **4602-20** | 0.05-1.00mm | 0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00 | 20 |
| **4602-28** | 0.05-1.00mm | 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.11, 0.12, 0.13, 0.14, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00 | 28 |
| **4602-32** | 0.03-1.00mm | 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.13, 0.15, 0.18, 0.20, 0.23, 0.25, 0.28, 0.30, 0.33, 0.35, 0.38, 0.40, 0.45, 0.50, 0.55, 0.60, 0.63, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 1.00 | 32 |
| **4602-15** | 0.05-2.00mm | 0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.40, 0.50, 0.60, 0.70, 0.80, 0.90, 1.00, 1.50, 2.00 | 15 |

## LONG FEELER GAUGES



4605-20

Unit: mm




- Made of hardened alloy steel
- Meet DIN2275/grade TC1
- Accuracy: ±(3+T/80)μm,
  'T' is the thickness of leaves in μm

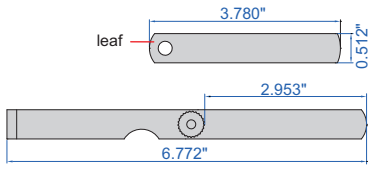
| Code | Range | Thickness of leaves included (mm) | Quantity of leaves | L | A | B |
|---|---|---|---|---|---|---|
| **4605-13** | 0.05-1.00mm | 0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.40, 0.50, 0.60, 0.70, 0.80, 0.90, 1.00 | 13 | 150mm | 135mm | 295mm |
| **4605-131** | 0.05-1.00mm | | 13 | 200mm | 185mm | 395mm |
| **4605-132** | 0.05-1.00mm | | 13 | 300mm | 285mm | 590mm |
| **4605-20** | 0.05-1.00mm | 0.05, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00 | 20 | 150mm | 135mm | 295mm |
| **4605-201** | 0.05-1.00mm | | 20 | 200mm | 185mm | 395mm |
| **4605-202** | 0.05-1.00mm | | 20 | 300mm | 285mm | 590mm |

## INCH FEELER GAUGE

- 0.010" is made of brass, others are made of hardened alloy steel
- Each blade is marked with inch/metric size



4608-31




| Code | Range | Quantity of Leaves |
|---|---|---|
| **4608-31** | 0.0015"~0.035" | 32 |

| Thickness of leaves included | Accuracy |
|---|---|
| 0.010" (brass) | ±0.00039" |
| 0.0015", 0.002" | ±0.0002" |
| 0.0025", 0.003", 0.004", 0.005", 0.006", 0.007" | ±0.00028" |
| 0.008", 0.009" | ±0.00035" |
| 0.010", 0.011" | ±0.00039" |
| 0.012", 0.013" | ±0.00047" |
| 0.014", 0.015" | ±0.00051" |

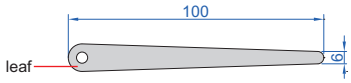
| Thickness of leaves included | Accuracy |
|---|---|
| 0.016", 0.017" | ±0.00055" |
| 0.018", 0.019" | ±0.00059" |
| 0.020", 0.021" | ±0.00067" |
| 0.022", 0.023" | ±0.00071" |
| 0.024", 0.025", 0.026" | ±0.00075" |
| 0.028" | ±0.00091" |
| 0.030" | ±0.00094" |
| 0.032", 0.035" | ±0.00102" |

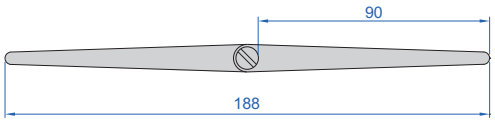
## PLASTIC FEELER GAUGES



**4623-2**

Unit: mm

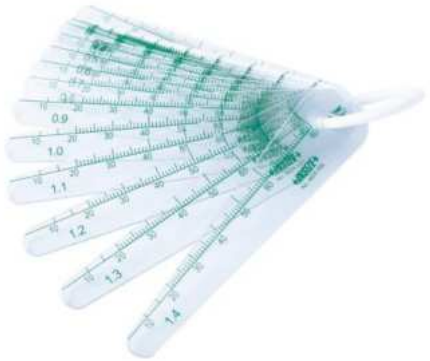



- Accuracy: ±0.04mm (thickness of leaves: 0.25mm)
  ±0.05mm (thickness of leaves: 0.5mm)
  ±0.08mm (thickness of leaves: ≥1mm)

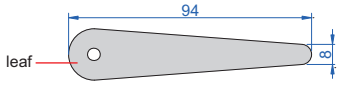
| Code | Range | Thickness of leaves included | Quantity of leaves |
|---|---|---|---|
| **4623-2** | 0.25-2.00mm | 2.00mm (0.078"), 1.00mm (0.039"), 0.50mm (0.020"), 0.50mm (0.020"), 0.50mm (0.020"), 0.25mm (0.010"), 0.25mm (0.010"), 1.00mm (0.039"), 2.00mm (0.078"), 1.00mm (0.039"), 2.00mm (0.078"), 1.00mm (0.039"), 2.00mm (0.078") | 13 |
| **4623-5** | 0.25-5.00mm | 1.00mm (0.039"), 0.25mm (0.010"), 0.50mm (0.020"), 1.50mm (0.059"), 2.00mm (0.078"), 2.50mm (0.098"), 3.00mm (0.118"), 3.50mm (0.138"), 4.00mm (0.157"), 4.50mm (0.177"), 5.00mm (0.196") | 11 |

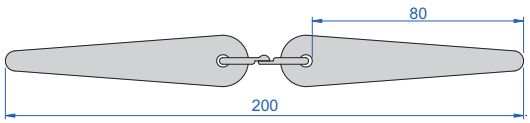
## PLASTIC FEELER GAUGE



**4624-1D5**

Unit: mm




- Accuracy: ±0.02mm (thickness of leaves: 0.05-0.1mm)
  ±0.03mm (thickness of leaves: 0.15-0.6mm)
  ±0.04mm (thickness of leaves: ≥0.7mm)

| Code | Range | Thickness of leaves included (mm) | Quantity of leaves |
|---|---|---|---|
| **4624-1D5** | 0.05-1.5mm | 0.05, 0.1, 0.15, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.4, 1.5 | 17 |





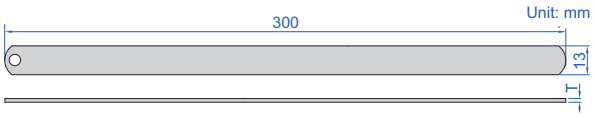
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## FEELER GAUGE STOCKS






4622-10




- Used as shims to accurately set spacing
- Made of hardened alloy steel
- Length 300mm
- Width 13mm
- 10 pcs per package

| Code | Thickness (T) | Accuracy |
|---|---|---|
| 4622-02 | 0.02mm | ±3μm |
| 4622-03 | 0.03mm | ±3μm |
| 4622-04 | 0.04mm | ±3μm |
| 4622-05 | 0.05mm | ±3μm |
| 4622-06 | 0.06mm | ±3μm |
| 4622-07 | 0.07mm | ±4μm |
| 4622-08 | 0.08mm | ±4μm |
| 4622-09 | 0.09mm | ±4μm |
| 4622-10 | 0.10mm | ±4μm |
| 4622-12 | 0.12mm | ±5μm |

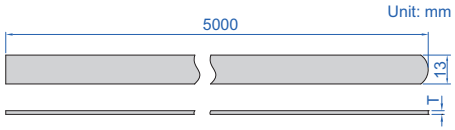
| Code | Thickness (T) | Accuracy |
|---|---|---|
| 4622-15 | 0.15mm | ±5μm |
| 4622-18 | 0.18mm | ±6μm |
| 4622-20 | 0.20mm | ±6μm |
| 4622-25 | 0.25mm | ±6μm |
| 4622-30 | 0.30mm | ±7μm |
| 4622-35 | 0.35mm | ±7μm |
| 4622-40 | 0.40mm | ±8μm |
| 4622-45 | 0.45mm | ±8μm |
| 4622-50 | 0.50mm | ±9μm |
| 4622-55 | 0.55mm | ±9μm |

| Code | Thickness (T) | Accuracy |
|---|---|---|
| 4622-60 | 0.60mm | ±9μm |
| 4622-65 | 0.65mm | ±9μm |
| 4622-70 | 0.70mm | ±12μm |
| 4622-75 | 0.75mm | ±12μm |
| 4622-80 | 0.80mm | ±13μm |
| 4622-85 | 0.85mm | ±13μm |
| 4622-90 | 0.90mm | ±14μm |
| 4622-95 | 0.95mm | ±14μm |
| 4622-100 | 1.00mm | ±16μm |

## FEELER GAUGE ROLLS



4621-30




| Code | Thickness (T) | Accuracy |
|---|---|---|
| 4621-02 | 0.02mm | ±4μm |
| 4621-03 | 0.03mm | ±4μm |
| 4621-04 | 0.04mm | ±4μm |
| 4621-05 | 0.05mm | ±4μm |
| 4621-06 | 0.06mm | ±4μm |
| 4621-07 | 0.07mm | ±5μm |
| 4621-08 | 0.08mm | ±5μm |
| 4621-09 | 0.09mm | ±5μm |
| 4621-10 | 0.10mm | ±5μm |
| 4621-12 | 0.12mm | ±5μm |
| 4621-15 | 0.15mm | ±6μm |
| 4621-18 | 0.18mm | ±7μm |
| 4621-20 | 0.20mm | ±8μm |
| 4621-25 | 0.25mm | ±9μm |

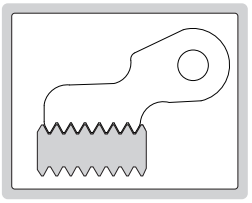
| Code | Thickness (T) | Accuracy |
|---|---|---|
| 4621-30 | 0.30mm | ±9μm |
| 4621-35 | 0.35mm | ±11μm |
| 4621-40 | 0.40mm | ±12μm |
| 4621-45 | 0.45mm | ±12μm |
| 4621-50 | 0.50mm | ±14μm |
| 4621-55 | 0.55mm | ±14μm |
| 4621-60 | 0.60mm | ±14μm |
| 4621-65 | 0.65mm | ±14μm |
| 4621-70 | 0.70mm | ±17μm |
| 4621-75 | 0.75mm | ±17μm |
| 4621-80 | 0.80mm | ±19μm |
| 4621-85 | 0.85mm | ±19μm |
| 4621-90 | 0.90mm | ±22μm |
| 4621-95 | 0.95mm | ±22μm |
| 4621-100 | 1.00mm | ±24μm |

- Used as shims to accurately set spacing
- Made of hardened alloy steel
- Length 5m
- Width 13mm

## PITCH GAUGES



4820-122



- Identify the pitch of screw thread
- Made of medium carbon steel

**Metric 60° screw**

| Code | Range | Pitch of leaves included (mm) | Quantity of leaves |
|---|---|---|---|
| 4820-122 | 0.4-7.0mm | 0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7 | 22 |
| 4820-124 | 0.25-7.0mm | 0.25, 0.3, 0.35, 0.4, 0.5, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7 | 24 |
| 4820-1241 | 0.25-6.0mm | 0.25, 0.3, 0.35, 0.4, 0.45, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6 | 24 |

**Unified 60° screw**

| Code | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|
| 4820-230 | 4-42TPI | 4, 4-1/2, 5, 5-1/2, 6, 7, 8, 9, 10, 11, 11-1/2, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42TPI | 30 |

**Whitworth 55° screw**

| Code | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|
| 4820-330 | 4-42TPI | 4, 4-1/2, 5, 5-1/2, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42TPI | 30 |
| 4820-328 | 4-62TPI | 4, 4-1/2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 36, 40, 48, 60, 62TPI | 28 |

**Metric 60° and Whitworth 55° screw**

| Code | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|
| 4820-452 | 0.25-6.0mm | 0.25, 0.3, 0.35, 0.4, 0.45, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6mm | 52 |
| | 4-62TPI | 4, 4-1/2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 36, 40, 48, 60, 62TPI | |
| 4820-450 | 0.4-7.0mm | 0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7mm | 50 |
| | 4-62TPI | 4, 4-1/2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 36, 40, 48, 60, 62TPI | |

**Metric 60° and Unified 60° screw**

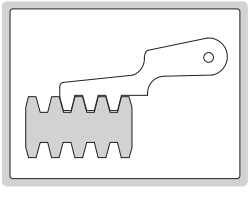
| Code | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|
| 4820-552 | 0.4-7.0mm | 0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7mm | 52 |
| | 4-42TPI | 4, 4-1/2, 5, 5-1/2, 6, 7, 8, 9, 10, 11, 11-1/2, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42TPI | |



## PITCH GAUGES



4824-12



- Check the pitch of screw thread
- Accuracy: ±0.07mm
- Made of medium carbon steel

| Code | Range | Thread type | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|---|
| 4824-12 | 2-20mm | Tr 30° | 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 16, 20mm | 12 |
| 4824-16 | 1-12TPI | ACME 29° | 1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 3-1/2, 4, 5, 6, 7, 8, 9, 10, 12TPI | 16 |

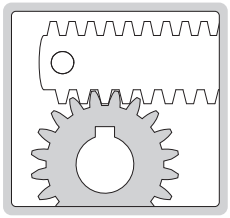


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## GEAR TOOTH PITCH GAUGES

- Check the module pitch of gear tooth
- Accuracy: ±0.05mm
- Made of hardened stainless steel

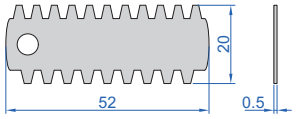




**4860-245**

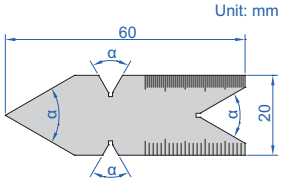
| Code | Range | Pressure angle | Quantity of leaves |
|---|---|---|---|
| **4860-145** | 0.35-4.5mm | 14.5° | 15 |
| **4860-245** | 0.35-4.5mm | 20° | 15 |
| **4860-112** | 5-12mm | 14.5° | 8 |
| **4860-212** | 5-12mm | 20° | 8 |

Unit: mm




## CENTER GAUGES

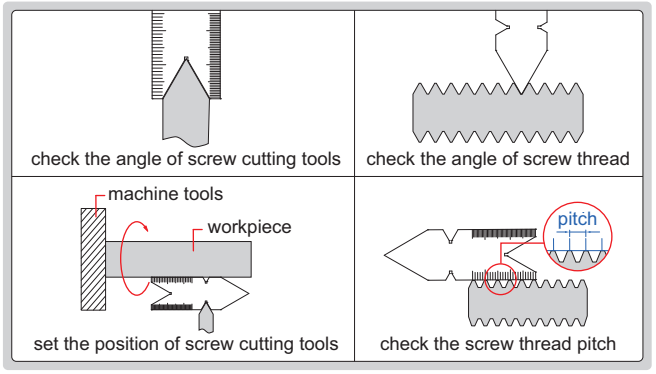
Unit: mm







**4810-602**




- To check and set screw cutting tools, and check the angle and pitch of screw thread
- Angle accuracy: ±30min.
- Made of stainless steel

| Code | Thread type | Angle (α) | Graduation |
|---|---|---|---|
| **4810-601** | METRIC 60° | 60° | 0.5mm and 1mm |
| **4810-602** | UNIFIED 60° | 60° | 14ths and 20ths on front side, 24ths and 32ths on back side |
| **4810-55** | WHITWORTH 55° | 55° | 14ths and 20ths on front side, 24ths and 32ths on back side |

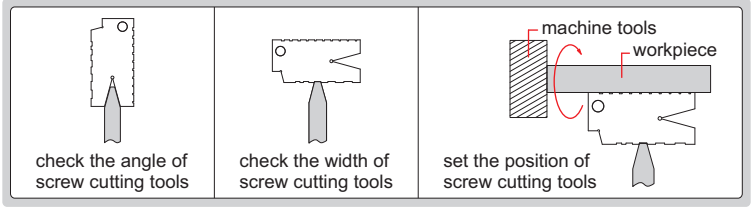
## THREAD GAUGES



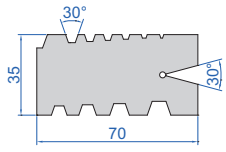


**4812-E**

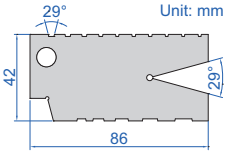
- To check and set screw cutting tools
- Made of medium carbon steel




Unit: mm




4812-12




4812-E

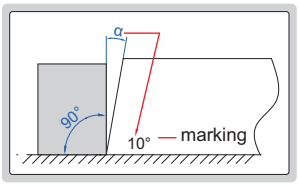
| Code | Range | Thread type | Pitch |
|---|---|---|---|
| **4812-12** | 2-12mm | Tr 30° | 2, 3, 4, 5, 6, 7, 8, 9, 10, 12mm |
| **4812-E** | 1-10TPI | ACME 29° | 1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 4, 5, 6, 7, 8, 9, 10TPI |

## ANGLE GAUGE

- To check complementary angles
- Made of stainless steel

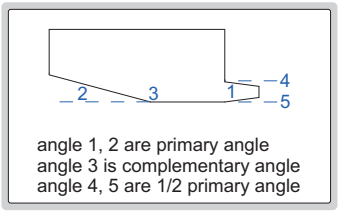


4806-20



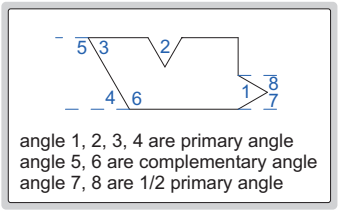

| Code | Range (α) | Angle of leaves included | Quantity of leaves | Accuracy |
|---|---|---|---|---|
| **4806-20** | 1°-45° | 1°, 2°, 3°, 4°, 5°, 6°, 7°, 8°, 9°, 10°, 12°, 14°, 16°, 18°, 20°, 25°, 30°, 35°, 40°, 45° | 20 | ±30' |

## ANGLE GAUGE SET




angle 1, 2 are primary angle
angle 3 is complementary angle
angle 4, 5 are 1/2 primary angle

**type A**




angle 1, 2, 3, 4 are primary angle
angle 5, 6 are complementary angle
angle 7, 8 are 1/2 primary angle

**type B**



**4807**

- Each blade checks primary, 1/2 primary and complementary angles
- Made of medium carbon steel

| Code | Quantity of leaves | Accuracy |
|---|---|---|
| **4807** | 18 | ±10' |

| Primary angle | ½ primary angle | Complementary angle | Type |
|---|---|---|---|
| 5° | 2°30' | 175° | A |
| 10° | 5° | 170° | A |
| 15° | 7°30' | 165° | A |
| 20° | 10° | 160° | B |
| 25° | 12°30' | 155° | B |
| 30° | 15° | 150° | B |
| 35° | 17°30' | 145° | B |
| 40° | 20° | 140° | B |
| 45° | 22°30' | 135° | B |
| 50° | 25° | 130° | B |
| 55° | 27°30' | 125° | B |
| 60° | 30° | 120° | B |
| 65° | 32°30' | 115° | B |
| 70° | 35° | 110° | B |
| 75° | 37°30' | 105° | B |
| 80° | 40° | 100° | B |
| 85° | 42°30' | 95° | B |
| 90° | 45° | 90° | B |

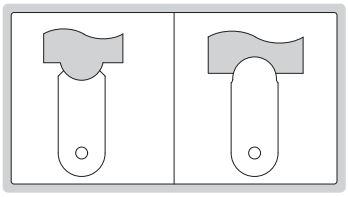


## RADIUS GAUGES

- Made of medium carbon steel



**4801-17**



| Code | Range | Radius of leaves included (mm) | Quantity of leaves (internal + external) |
|---|---|---|---|
| **4801-17** | 1-7mm | 1, 1.25, 1.5, 1.75, 2, 2.25, 2.5, 2.75, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7 | 17+17 |
| **4801-16** | 7.5-15mm | 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13, 13.5, 14, 14.5, 15 | 16+16 |
| **4801-15** | 15.5-25mm | 15.5, 16, 16.5, 17, 17.5, 18, 18.5, 19, 19.5, 20, 21, 22, 23, 24, 25 | 15+15 |



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## RADIUS GAUGES



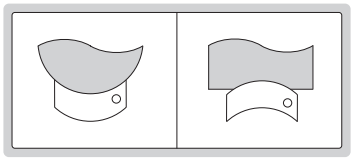
4802-31




4802-51

- Made of stainless steel

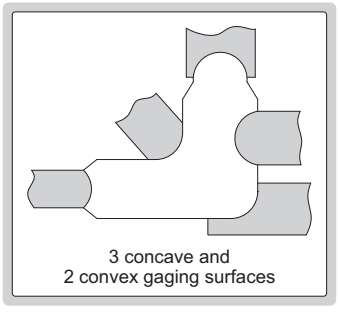
| Code | Range | Radius of leaves included (mm) | Quantity of leaves |
|---|---|---|---|
| **4802-31** | 25-40mm | 25, 25.5, 26, 26.5, 27, 27.5, 28, 28.5, 29, 29.5, 30, 30.5, 31, 31.5, 32, 32.5, 33, 33.5, 34, 34.5, 35, 35.5, 36, 36.5, 37, 37.5, 38, 38.5, 39, 39.5, 40 | 31 |
| **4802-41** | 41-50mm | 41, 42, 43, 44, 45, 46, 47, 48, 49, 50 | 10 |
| **4802-51** | 51-60mm | 51, 52, 53, 54, 55, 56, 57, 58, 59, 60 | 10 |
| **4802-61** | 61-70mm | 61, 62, 63, 64, 65, 66, 67, 68, 69, 70 | 10 |
| **4802-71** | 71-80mm | 71, 72, 73, 74, 75, 76, 77, 78, 79, 80 | 10 |
| **4802-81** | 81-90mm | 81, 82, 83, 84, 85, 86, 87, 88, 89, 90 | 10 |
| **4802-91** | 91-100mm | 91, 92, 93, 94, 95, 96, 97, 98, 99, 100 | 10 |



## RADIUS GAUGE SET

- Each piece has 3 concave and 2 convex gauging surfaces
- Supplied with handle
- Made of medium carbon steel






4804-26

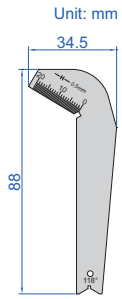
| Code | Range | Radius of leaves included (mm) | Quantity of leaves |
|---|---|---|---|
| **4804-26** | 0.5-13mm | 0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13 | 26 |

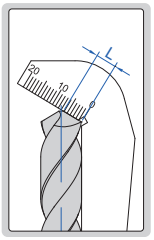
## DRILL POINT GAUGE

- For twist drills with 118° angle, to check if the center of tip is concentric with the drill body
- Made of stainless steel



Unit: mm




4843-1

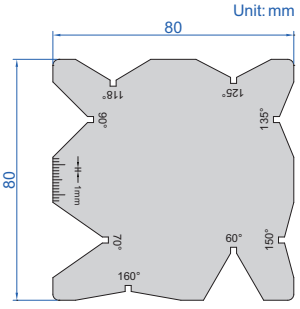
| Code | Accuracy | |
|---|---|---|
| | Angle | Length |
| 4843-1 | ±0.5° | ±0.5mm |

## DRILL ANGLE GAUGE

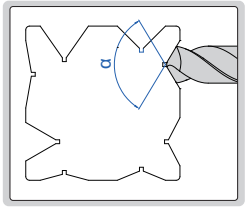
- Check drills with angle 60°, 70°, 90°, 118°, 125°, 135°, 150° or 160°
- Made of stainless steel




Unit: mm

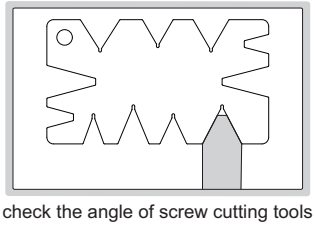



4842-1




| Code | Accuracy |
|---|---|
| 4842-1 | ±0.5° |

## ANGLE GAUGE

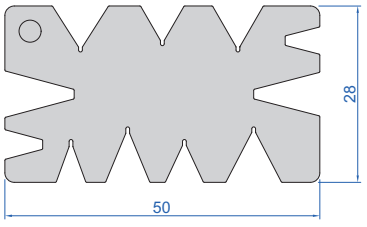


check the angle of screw cutting tools




4854-1

Unit: mm




- Made of stainless steel

| Code | Range | Accuracy |
|---|---|---|
| 4854-1 | 29°, 30°, 40°, 45°, 50°, 55°, 60° | ±10' |



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## AMERICAN STANDARD WIRE GAUGE

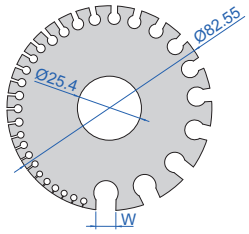
| No. | W |
|---|---|
| 0 | 8.250mm/0.3249" |
| 1 | 7.350mm/0.2893" |
| 2 | 6.540mm/0.2576" |
| 3 | 5.830mm/0.2294" |
| 4 | 5.190mm/0.2043" |
| 5 | 4.620mm/0.1819" |
| 6 | 4.110mm/0.1620" |
| 7 | 3.670mm/0.1443" |
| 8 | 3.260mm/0.1285" |
| 9 | 2.910mm/0.1144" |
| 10 | 2.590mm/0.1019" |
| 11 | 2.300mm/0.0907" |
| 12 | 2.050mm/0.0808" |
| 13 | 1.820mm/0.0720" |
| 14 | 1.630mm/0.0641" |
| 15 | 1.450mm/0.0571" |
| 16 | 1.290mm/0.0508" |
| 17 | 1.150mm/0.0453" |

| No. | W |
|---|---|
| 18 | 1.020mm/0.0403" |
| 19 | 0.912mm/0.0359" |
| 20 | 0.813mm/0.0320" |
| 21 | 0.724mm/0.0285" |
| 22 | 0.643mm/0.0253" |
| 23 | 0.574mm/0.0226" |
| 24 | 0.511mm/0.0201" |
| 25 | 0.440mm/0.0179" |
| 26 | 0.404mm/0.0159" |
| 27 | 0.361mm/0.0142" |
| 28 | 0.320mm/0.0126" |
| 29 | 0.287mm/0.0113" |
| 30 | 0.254mm/0.0100" |
| 31 | 0.226mm/0.0089" |
| 32 | 0.203mm/0.0080" |
| 33 | 0.180mm/0.0071" |
| 34 | 0.160mm/0.0063" |
| 35 | 0.142mm/0.0056" |
| 36 | 0.127mm/0.0050" |



4808

Unit: mm




| Code | Range |
|---|---|
| 4808 | 0-36 (8.250-0.127mm/0.3249-0.0050") |

- For gaging non-ferrous wire and metals such as copper, brass and aluminum
- Hardened to HRC50-57

## U.S. STANDARD SHEET METAL GAUGE

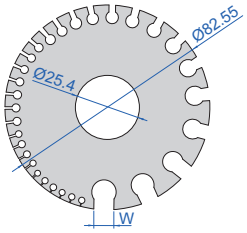
| No. | W |
|---|---|
| 0 | 7.938mm/0.3125" |
| 1 | 7.144mm/0.2813" |
| 2 | 6.747mm/0.2656" |
| 3 | 6.350mm/0.2500" |
| 4 | 5.953mm/0.2344" |
| 5 | 5.556mm/0.2188" |
| 6 | 5.159mm/0.2031" |
| 7 | 4.763mm/0.1875" |
| 8 | 4.366mm/0.1719" |
| 9 | 3.969mm/0.1563" |
| 10 | 3.572mm/0.1406" |
| 11 | 3.175mm/0.1250" |
| 12 | 2.778mm/0.1094" |
| 13 | 2.381mm/0.0938" |
| 14 | 1.984mm/0.0781" |
| 15 | 1.786mm/0.0703" |
| 16 | 1.588mm/0.0625" |
| 17 | 1.429mm/0.0563" |

| No. | W |
|---|---|
| 18 | 1.270mm/0.0500" |
| 19 | 1.111mm/0.0438" |
| 20 | 0.953mm/0.0375" |
| 21 | 0.873mm/0.0344" |
| 22 | 0.794mm/0.0313" |
| 23 | 0.714mm/0.0281" |
| 24 | 0.635mm/0.0250" |
| 25 | 0.556mm/0.0219" |
| 26 | 0.476mm/0.0188" |
| 27 | 0.437mm/0.0172" |
| 28 | 0.397mm/0.0156" |
| 29 | 0.357mm/0.0141" |
| 30 | 0.318mm/0.0125" |
| 31 | 0.278mm/0.0109" |
| 32 | 0.258mm/0.0102" |
| 33 | 0.238mm/0.0094" |
| 34 | 0.218mm/0.0086" |
| 35 | 0.198mm/0.0078" |
| 36 | 0.179mm/0.0070" |



4809

Unit: mm



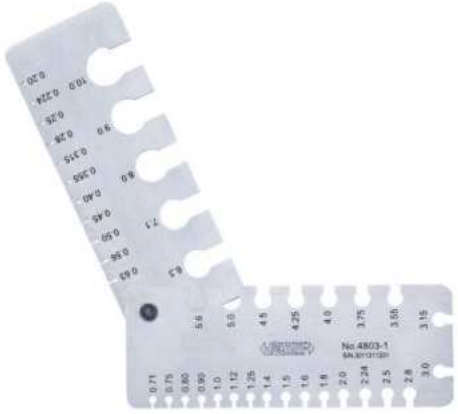

| Code | Range |
|---|---|
| 4809 | 0-36 (7.938-0.179mm/0.3125-0.0070") |

- For gaging sheet metal, plate iron and steel
- Hardened to HRC50-57

## WIRE GAUGE

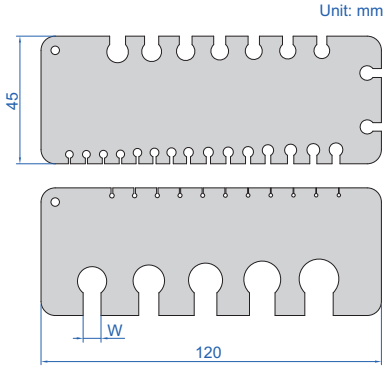
| Wire diameter (W) |
|---|
| 0.200mm |
| 0.224mm |
| 0.250mm |
| 0.280mm |
| 0.315mm |
| 0.355mm |
| 0.400mm |
| 0.450mm |
| 0.500mm |
| 0.560mm |
| 0.630mm |
| 0.710mm |
| 0.750mm |
| 0.800mm |
| 0.900mm |
| 1.000mm |
| 1.120mm |
| 1.250mm |
| 1.400mm |
| 1.500mm |

| Wire diameter (W) |
|---|
| 1.60mm |
| 1.80mm |
| 2.00mm |
| 2.24mm |
| 2.50mm |
| 2.80mm |
| 3.00mm |
| 3.15mm |
| 3.55mm |
| 3.75mm |
| 4.00mm |
| 4.25mm |
| 4.50mm |
| 5.00mm |
| 5.60mm |
| 6.30mm |
| 7.10mm |
| 8.00mm |
| 9.00mm |
| 10.00mm |



4803-1

Unit: mm




| Code | Range |
|---|---|
| 4803-1 | 0.2-10mm |

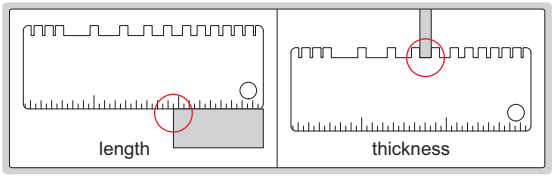
- For gaging non-ferrous wire and metals such as copper, brass and aluminum
- Hardened to HRC51-53
- Including 2 pcs wire gauges



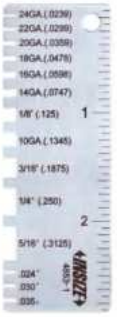


info@insz.sk | +421 944 367 573 | www.insz.sk

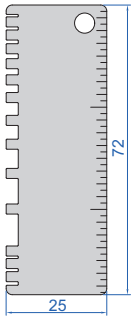
## THICKNESS GAUGE




- Made of stainless steel



Unit: mm




**4853-1**

| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **4853-1** | length | 0-2 3/4" | 1/16" | 1/32" |
| | thickness | 24GA. (0.0239"), 22GA. (0.0299"), 20GA. (0.0359") | — | ±0.002" |
| | | 18GA. (0.0478"), 16GA. (0.0598"), 14GA. (0.0747"), 1/8" (0.125"), 10GA. (0.1345"), 3/16" (0.1875"), 1/4" (0.250"), 5/16" (0.3125") | | ±0.004" |
| | | 0.024", 0.030", 0.035" | | ±0.002" |

## DIGITAL TAPER SLOT GAUGES

VIDEO

DIRECT READING, CALCULATION IS NOT REQUIRED

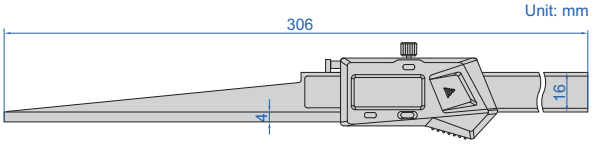
DATA OUTPUT



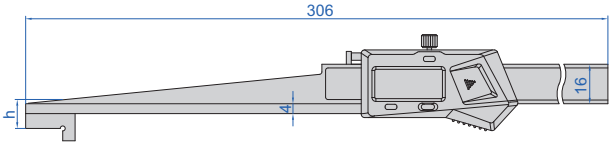
**1160-10**

- Non waterproof
- Measuring opening, slot width
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory:
  wireless transmitter code **7315-25** (receiver is needed) page 5,
  bluetooth transmitter code **7214-25** page 11,
  data output cable code **7302-21** page 20

Unit: mm



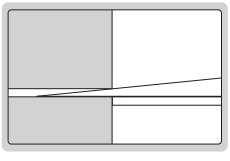

1160-10



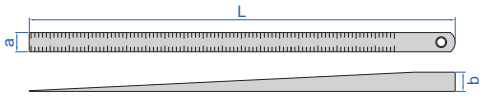

1160-20, 1160-30, 1160-40

| Code | Range | Accuracy | h |
|---|---|---|---|
| **1160-10** | 0.2-10mm/0.01-0.39" | ±0.03mm | — |
| **1160-20** | 10-20mm/0.39-0.79" | ±0.05mm | 10mm |
| **1160-30** | 20-30mm/0.79-1.18" | ±0.05mm | 20mm |
| **1160-40** | 30-40mm/1.18-1.58" | ±0.05mm | 30mm |

measure slot width



## TAPER SLOT GAUGES

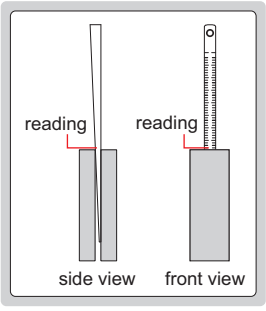





**4630-1**

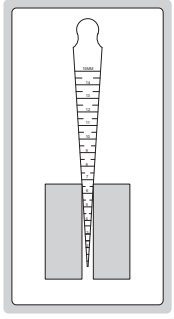
- For quick measurement of slot width
- Satin chrome plated reading surface
- Made of stainless steel

| Code | Range | Graduation | Accuracy | L | a | b |
|---|---|---|---|---|---|---|
| **4630-3** | 0.4-6mm | 0.05mm | ±0.04mm | 164mm | 12.5mm | 6.5mm |
| **4630-1** | 0.5-10mm | 0.05mm | ±0.07mm | 220mm | 10mm | 10.5mm |
| **4630-2** | 0.5-15mm | 0.1mm | ±0.08mm | 184mm | 12.5mm | 16.5mm |




## TAPER GAUGES

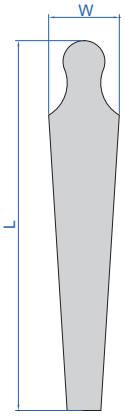
measure slot width





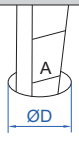
front back

**4833-2**




- Measure opening, slot width, hole diameter, etc.
- Diameter correction table on the back (only for **4833-1**, **4833-2**)
- Made of stainless steel

measure diameter of hole




when measuring diameter of holes, correction on reading is needed due to the thickness of taper gauge. for example, when reading A is 14.96mm, diameter ØD is 15mm.

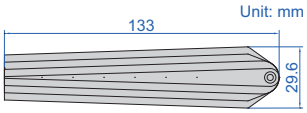
| Code | Range | Graduation | Accuracy | L | W |
|---|---|---|---|---|---|
| **4833-1** | 0.8-15mm | 0.1mm | ±0.05mm | 146mm | 17mm |
| **4833-2** | 15-30mm | 0.1mm | ±0.05mm | 159mm | 30.4mm |
| **4833-3** | 30-45mm | 0.1mm | ±0.05mm | 166mm | 45.4mm |
| **4833-4** | 45-60mm | 0.1mm | ±0.05mm | 170mm | 60.5mm |

## TAPER GAUGE SET

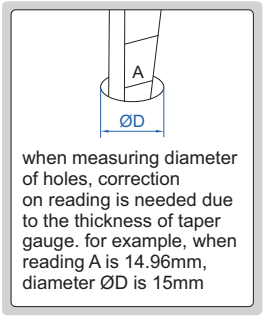


front back

**4837-1**

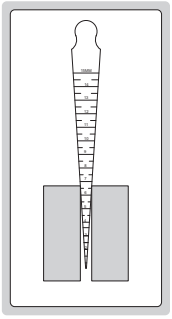



measure diameter of hole




when measuring diameter of holes, correction on reading is needed due to the thickness of taper gauge. for example, when reading A is 14.96mm, diameter ØD is 15mm

measure slot width

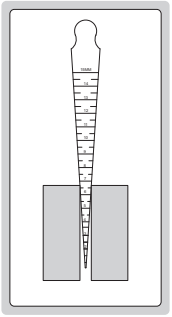


- Include 4 pcs (1~8mm, 8~15mm, 15~22mm, 22~29mm)
- Measure opening, slot width, hole diameter, etc.
- Diameter correction table on the back
- Made of stainless steel

| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **4837-1** | 1-29mm | 0.05mm | ±0.05mm |

## TAPER GAUGE AND STEEL RULER SET

use the taper gauge to measure slot width

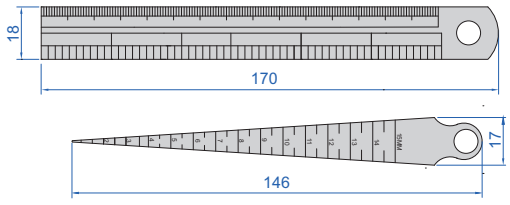




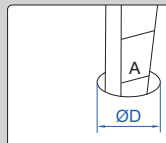
front back

**4829-1**

Unit: mm




use the taper gauge to measure diameter of hole




when measuring diameter of holes, correction on reading is needed due to the thickness of taper gauge. for example, when reading A is 14.96mm, diameter ØD is 15mm

- Diameter correction table on the taper gauge back
- Made of stainless steel

| Code | Tool | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **4829-1** | taper gauge | 0.8-15mm | 0.1mm | ±0.05mm |
| | steel ruler | 150mm/6" | 1.0mm | ±0.18mm |

## TAPER BORE GAUGES

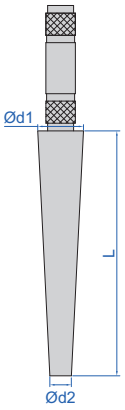
- Quick measurement of bore diameter
- Hardened steel, HRC50-58
- Satin chrome plated surface
- Aluminium oxided handle

(mm)

| Code | Range | Graduation | Accuracy | L | Ød1 | Ød2 |
|---|---|---|---|---|---|---|
| **4852-1** | 1-6.5mm | 0.1mm | ±0.05mm | 62.5 | 7 | 0.8 |
| **4852-3** | 3-16mm | 0.1mm | ±0.05mm | 143 | 17 | 2.8 |
| **4852-15** | 15-30mm | 0.1mm | ±0.05mm | 165 | 31 | 14.7 |
| **4852-30** | 30-45mm | 0.1mm | ±0.05mm | 165 | 46 | 29.6 |
| **4852-45** | 45-60mm | 0.1mm | ±0.05mm | 167 | 61 | 44.3 |



**4852-15**

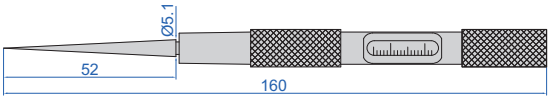



## SMALL TAPER BORE GAUGE



**4855-5**

Unit: mm




- Quick measurement of small bore diameter
- Hardened working face
- Supplied with protection cap

supplied with protection cap



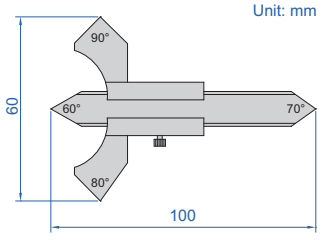
| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **4855-5** | 0.1-5mm | 0.01mm | ±0.03mm |

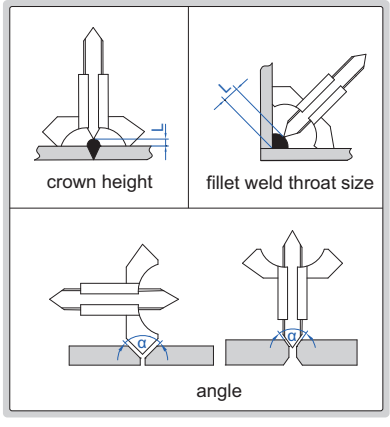
## WELDING GAUGE




**4830**

Unit: mm




- Made of stainless steel
- Satin chrome plated reading surface

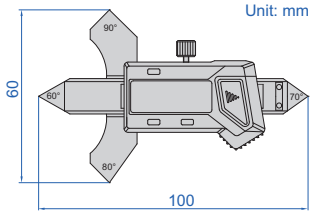
| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **4830** | crown height | 0-8mm | 0.1mm | ±0.1mm |
| | fillet weld throat size | 0-20mm | 0.1mm | ±0.3mm |
| | angle | 60°, 70°, 80°, 90° | — | ±1° |

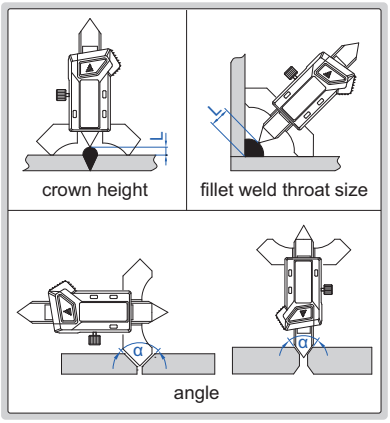
## DIGITAL WELDING GAUGE

**ATTENTION: NO DATA OUTPUT**



4831-20A



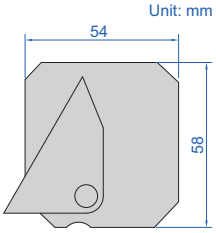

- Non waterproof
- Buttons: zero, mm/inch, on/off
- Battery LR44
- Made of stainless steel

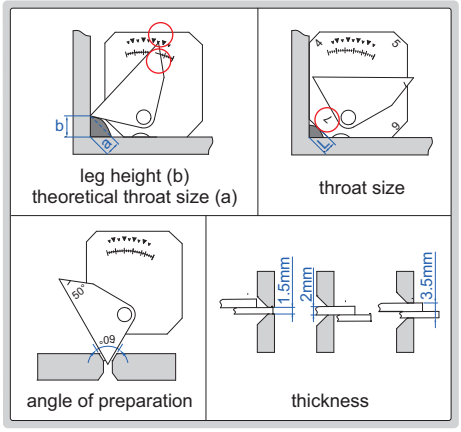
| Code | Measurement | Range | Resolution | Accuracy |
|---|---|---|---|---|
| 4831-20A | crown height | 0-7mm | 0.01mm/0.0005" | ±0.03mm |
| | fillet weld throat size | 0-20mm | 0.01mm/0.0005" | ±0.1mm |
| | angle | 60°, 70°, 80°, 90° | — | ±1° |

## WELDING GAUGE




4850-1



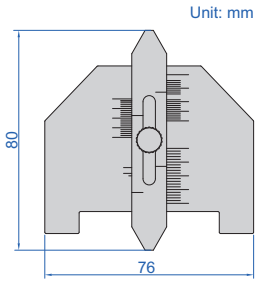

- Made of stainless steel

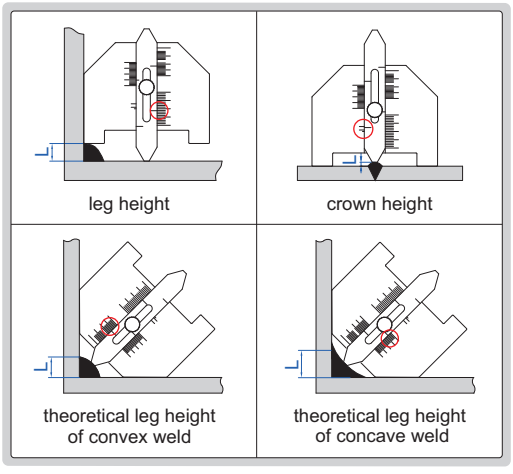
| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4850-1 | leg height (b) | 0-18mm | 1mm | ±0.5mm |
| | theoretical throat size (a) | 2-12mm | 1mm | ±0.5mm |
| | throat size | 4, 5, 6, 7mm | — | ±0.5mm |
| | angle of preparation | 50°, 60° | — | ±1° |
| | thickness | 1.5, 2, 3.5mm | — | ±0.2mm |

## WELDING GAUGE



4851-1

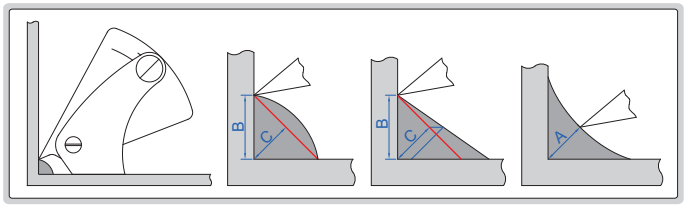


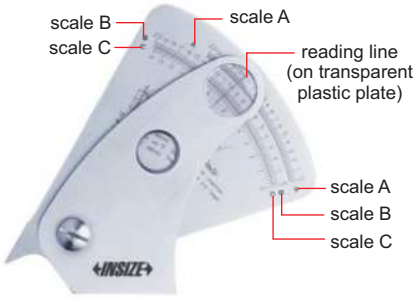



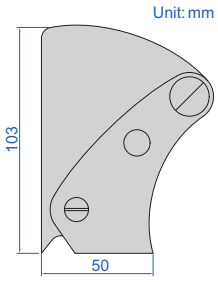

- Made of stainless steel

| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4851-1 | leg height | 0-20mm | 1mm | ±0.5mm |
| | crown height | 0-3mm | — | ±0.5mm |
| | theoretical leg height of convex weld | 0-20mm | 1mm | ±0.5mm |
| | theoretical leg height of concave weld | 0-20mm | 1mm | ±0.5mm |

## WELDING GAUGE



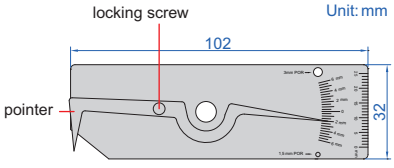




| Code | Graduation | Accuracy |
|---|---|---|
| 4840-1 | 0.2mm | ±0.3mm |

- Made of stainless steel

**4840-1**

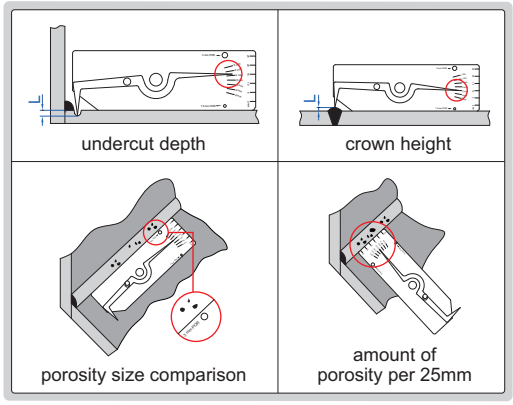
## WELDING GAUGE





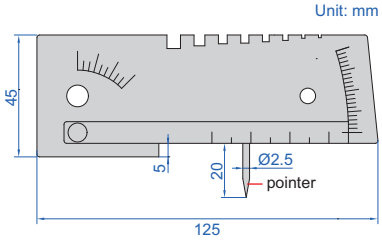

**4834-1**

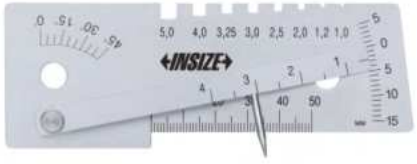
- Pointer can be locked for later reference
- Made of stainless steel




| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4834-1 | undercut depth | 0-6mm | 0.5mm | ±0.5mm |
| | crown height | 0-6mm | 0.5mm | ±0.5mm |
| | porosity size comparison | 1.5mm, 3mm | — | ±0.2mm |
| | amount of porosity per 25mm | 25mm | 1mm | — |

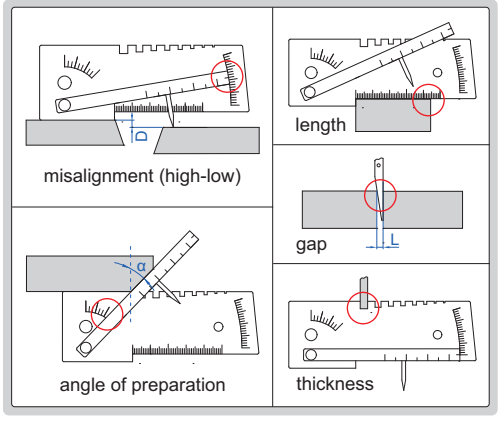
## WELDING GAUGE



**4848-1**

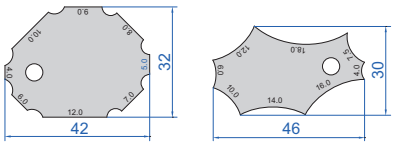
- Made of stainless steel




| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4848-1 | misalignment (high-low) | -5mm~+15mm | 1mm | ±0.5mm |
| | angle of preparation | 0°-45° | 5° | ±2.5° |
| | length | 0-50mm | 1mm | ±0.5mm |
| | gap | 1-4mm | 0.5mm | ±0.25mm |
| | thickness | 1, 1.2, 2.0, 2.5, 3.0, 3.25, 4.0, 5.0mm | — | ±0.1mm |

## FILLET WELDING GAUGE

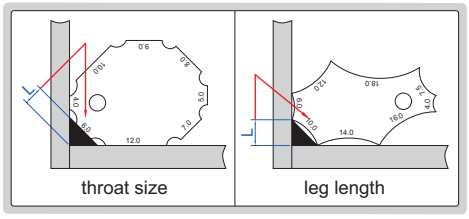
Unit: mm





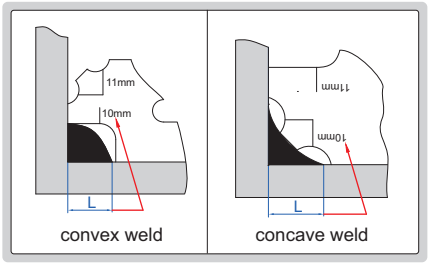

4832-1

- Made of stainless steel
- Sizes marked on both faces




| Code | Throat size | Leg length | Accuracy |
|---|---|---|---|
| 4832-1 | 4, 5, 6, 7, 8, 9, 10, 12mm | 4, 6, 7.5, 10, 12, 14, 16, 18mm | ±0.5mm |

## FILLET WELDING GAUGES






4836-1

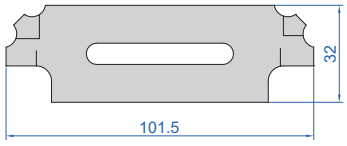


4836-2

- Measure concave and convex weld sizes
- 7 blades are included
- Made of stainless steel

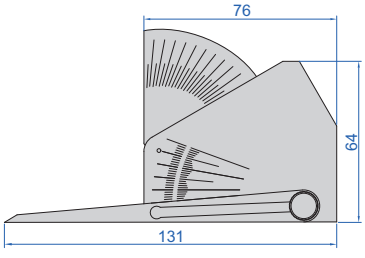
| Code | Size | Accuracy |
|---|---|---|
| 4836-1 | 3mm, 4mm, 5mm, 6mm, 8mm, 9mm, 10mm, 11mm, 12mm, 14mm, 16mm, 19mm, 22mm, 25mm | ±0.5mm |
| 4836-2 | 1/8" (3.2mm), 3/16" (4.8mm), 1/4" (6.4mm), 5/16" (7.9mm), 3/8" (9.5mm), 7/16" (11.1mm), 1/2" (12.7mm), 5/8" (15.9mm), 3/4" (19.1mm), 7/8" (22.2mm), 1" (25.4mm) | ±0.02" (0.5mm) |

Unit: mm




## FILLET WELDING GAUGE

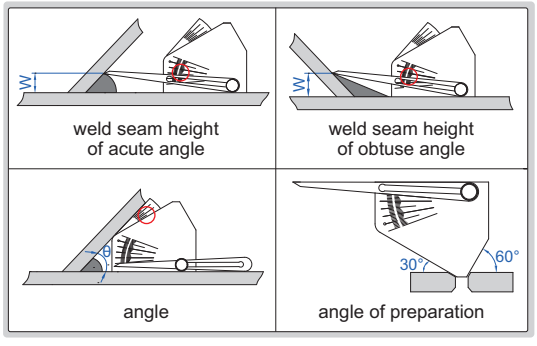
Unit: mm





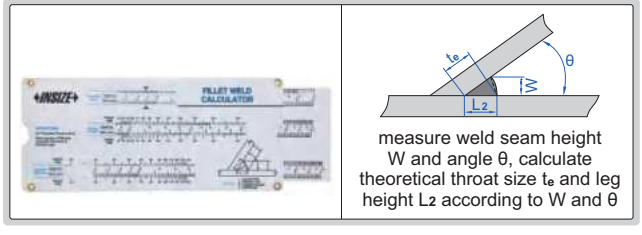


4846-1




- Calculating card is included
- Made of stainless steel

calculating card (included)



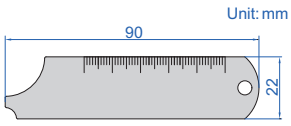

| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4846-1 | weld seam height W | 0-50mm/0-2" | 2mm/0.05" | ±1mm |
| | angle θ | 30°-90° | 2.5° | ±1° |
| | 60° angle | — | — | ±0.5° |



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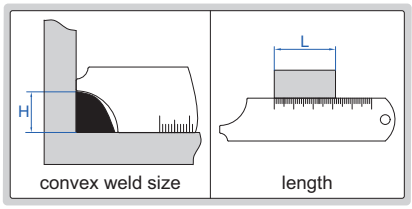
## FILLET WELDING GAUGE

- Measure convex weld sizes
- 3 blades are included
- Made of stainless steel



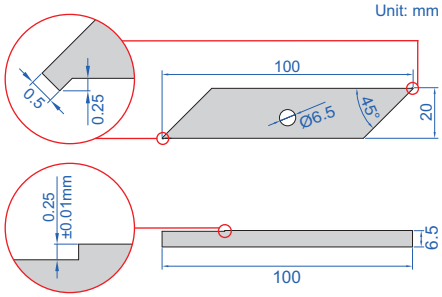



4847-1




| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4847-1 | convex weld size | 4, 6, 8, 10, 12, 14mm | — | ±0.5mm |
| | length | 0-50mm | 1mm | ±0.5mm |

## WELDING UNDERCUT GAUGE





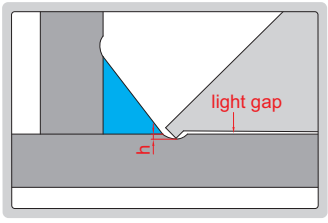


4849-1

calibration block (included)



application

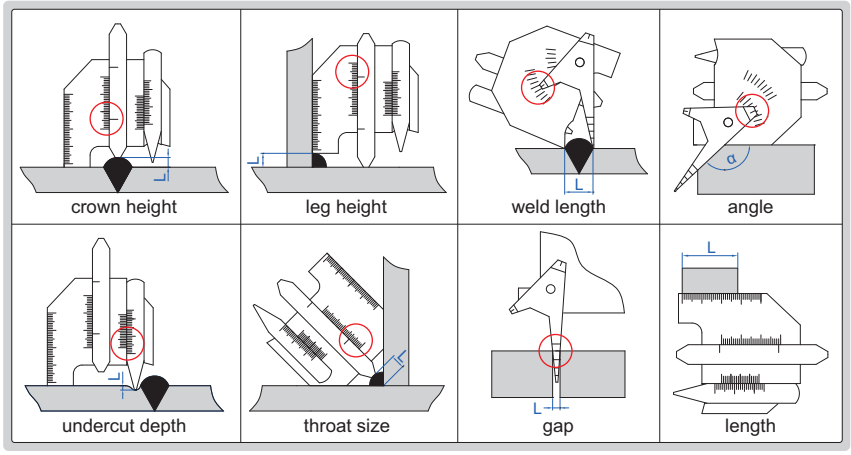



when there is a light gap, h<0.25mm;
when there is no light gap, h≥0.25mm

| Code |
|---|
| 4849-1 |

- Measure undercut
- Calibration block is included
- Made of stainless steel

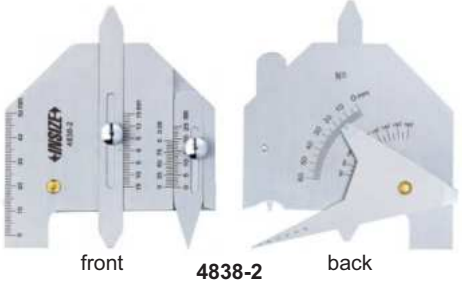
## WELDING GAUGES



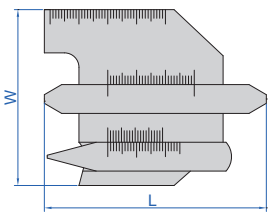




4838-1



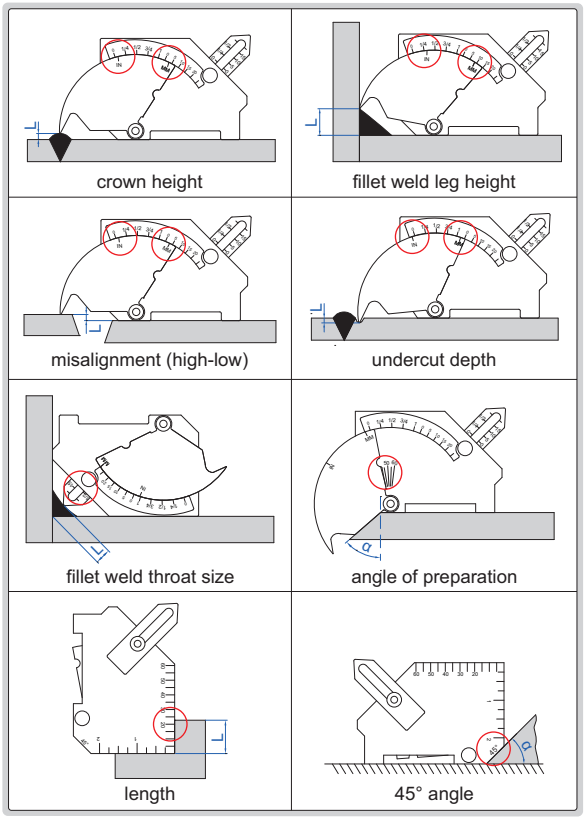

4838-2




- Made of stainless steel

| Measurement | Code 4838-1 | | | Code 4838-2 | | |
|---|---|---|---|---|---|---|
| | Range | Graduation | Accuracy | Range | Graduation | Accuracy |
| crown height | 0-10mm | 1mm | ±0.5mm | 0-15mm | 1mm | ±0.5mm |
| leg height | 0-14mm | 1mm | ±0.5mm | 0-15mm | 1mm | ±0.5mm |
| undercut depth | 0-5mm | 0.05mm | ±0.05mm | 0-5mm | 0.05mm | ±0.05mm |
| throat size | 0-13mm | 1mm | ±0.5mm | 0-13mm | 1mm | ±0.5mm |
| weld length | 0-40mm | 1mm | ±1mm | 0-60mm | 1mm | ±1mm |
| angle | 90°-150° | 5° | ±1° | 80°-160° | 5° | ±1° |
| gap | 0.5-5mm | 1mm | ±0.5mm | 1-6mm | 1mm | ±0.5mm |
| length | 0-40mm | 1mm | ±0.5mm | 0-50mm | 1mm | ±0.5mm |
| LxW | 62x77mm | | | 99x84mm | | |

## WELDING GAUGE

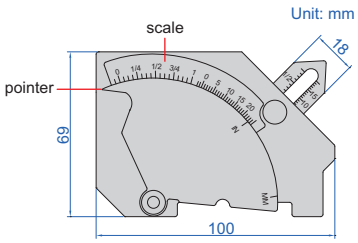





front back

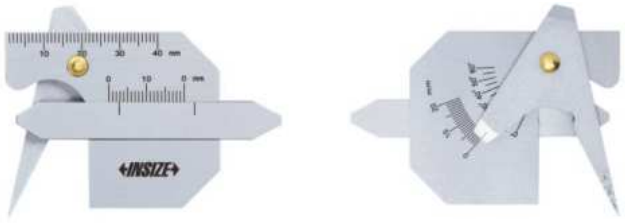
**4835-1**

- Adjustable scale to compensate pointer wear
- Made of stainless steel



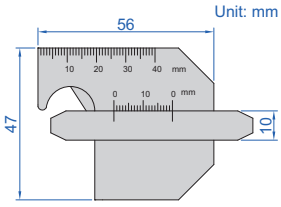

| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4835-1 | crown height | 0-25mm (0-1") | 1mm (1/16") | ±0.5mm |
| | fillet weld leg height | 0-25mm (0-1") | 1mm (1/16") | ±0.5mm |
| | misalignment (high-low) | 0-25mm (0-1") | 1mm (1/16") | ±0.5mm |
| | undercut depth | 0-2mm (0-1/8") | 1mm (1/16") | ±0.5mm |
| | fillet weld throat size | 0-20mm (0-3/4") | 1mm (1/16") | ±0.5mm |
| | angle of preparation | 0-60° | 5° | ±1° |
| | length | 0-60mm (0-2") | 1mm (1/16") | ±0.5mm |
| | 45° angle | — | — | ±1° |

## WELDING GAUGE



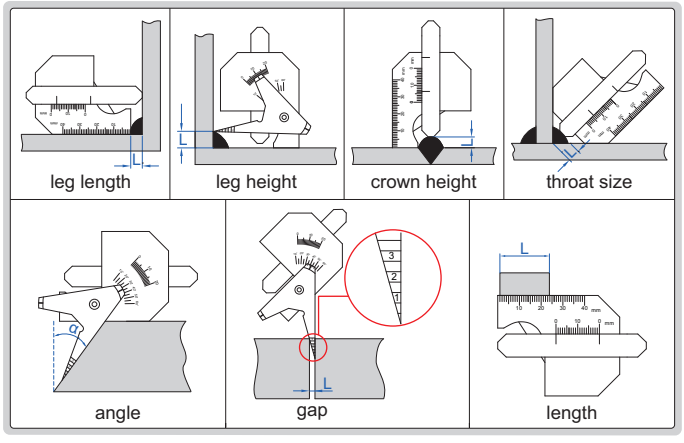
front back

**6832-1**




- Made of stainless steel
- Satin chrome plated surface

| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 6832-1 | leg length | 0-20mm | 1mm | ±0.3mm |
| | leg height | 0-20mm | 1mm | ±0.3mm |
| | crown height | 0-20mm | 1mm | ±0.3mm |
| | throat size | 0-10mm | 1mm | ±0.3mm |
| | angle | 0°-60° | 5° | ±1° |
| | gap | 1-3.5mm | 0.5mm | ±0.2mm |
| | length | 0-40mm | 1mm | ±0.3mm |

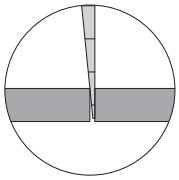





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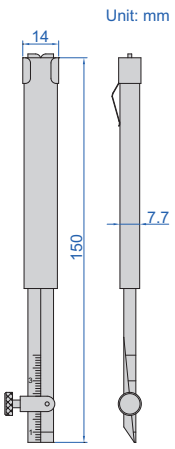
## PIPE WELDING GAUGE

- Made of stainless steel



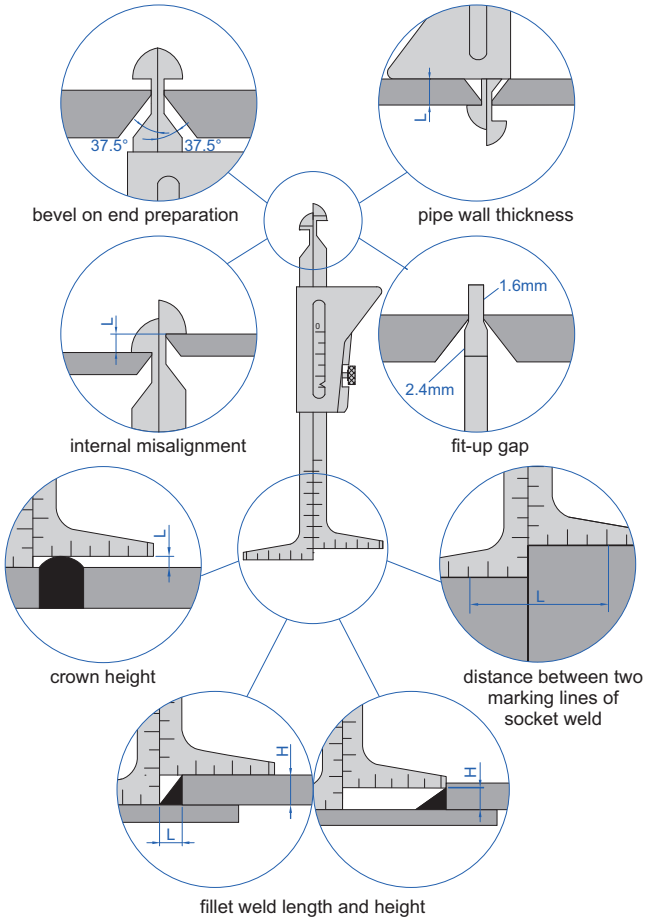


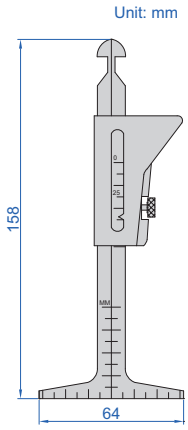

4841-1




| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4841-1 | internal misalignment | 0-30mm | 1mm | ±0.5mm |
| | fit-up gap | 0.7-4mm | 0.1mm | ±0.1mm |

## PIPE WELDING GAUGE







4839-1

| Code | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|
| 4839-1 | bevel on end preparation | 37.5° | — | ±1° |
| | pipe wall thickness | 0-45mm (0~1-3/4") | 1mm (1/16") | ±0.5mm |
| | internal misalignment | 0-35mm (0~1-3/8") | 1mm (1/32") | ±0.5mm |
| | fit-up gap | 1.6mm, 2.4mm | — | ±0.1mm |
| | crown height | 0-35mm (0~1-3/8") | 1mm (1/32") | ±0.5mm |
| | distance between two marking lines of socket weld | 0-60mm (0~2-3/8") | 1mm (1/16") | ±0.5mm |
| | fillet weld length | 0-30mm (0~1-1/4") | 1mm (1/16") | ±0.5mm |
| | fillet weld height | 0-35mm (0~1-3/8") | 1mm (1/32") | ±0.5mm |

- Made of stainless steel

## 6-PIECE WELDING GAUGE SET

- Includes:
  1) Welding gauge (code **4834-1**)
  2) Fillet welding gauge, size 3~25mm, 7 blades (code **4836-1**)
  3) Pipe welding gauge (code **4841-1**)
  4) Telescoping inspection mirror, size of mirror Ø32mm, length 178~505mm (code **7160-1**)
  5) Pocket ruler with sliding clip, range 150mm/6", graduation 1mm, 1/64" (code **7119-150**)
  6) LED flashlight (code **ISGF-0501**)



**5064**

| Code |
| --- |
| 5064 |

## 7-PIECE WELDING GAUGE SET

- Includes:
  1) Welding gauge (code **4834-1**)
  2) Welding gauge (code **4851-1**)
  3) Pipe welding gauge (code **4839-1**)
  4) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3203-25A**)
  5) Telescoping inspection mirror, size of mirror Ø32mm, length 178~505mm (code **7160-1**)
  6) Magnifier with illumination, magnification 4X (code **7513-4**)
  7) Steel ruler, range 150mm/6", graduation 0.5mm, 1mm, 1/64", 1/32", 1/16" (code **7110-150**)



**5071**

| Code |
| --- |
| 5071 |

## 7-PIECE WELDING GAUGE SET

- Includes:
  1) Welding gauge (code **4834-1**)
  2) Welding gauge (code **4851-1**)
  3) Fillet welding gauge, size 3~25mm, 7 blades (code **4836-1**)
  4) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3203-25A**)
  5) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.005" (code **1108-150**)
  6) Pocket ruler with sliding clip, range 150mm/6", graduation 1mm, 1/64" (code **7119-150**)
  7) Magnifier with illumination, magnification 4X (code **7513-4**)

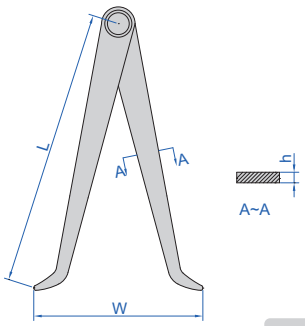


**5072**

| Code |
| --- |
| 5072 |

## INSIDE CALIPERS

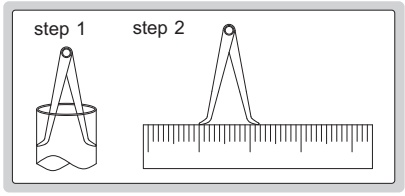





- Made of carbon steel

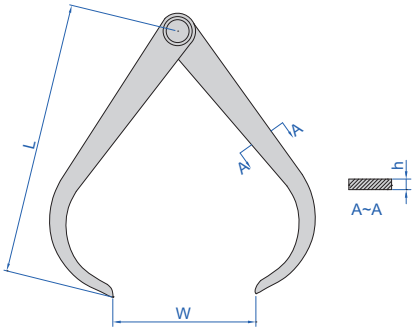
**7240-150**

| Code | Size (L) | Range (W) | h |
|---|---|---|---|
| **7240-150** | 150mm | 17-150mm | 2mm |
| **7240-200** | 200mm | 17-200mm | 3mm |
| **7240-300** | 300mm | 18-300mm | 3mm |




## OUTSIDE CALIPERS

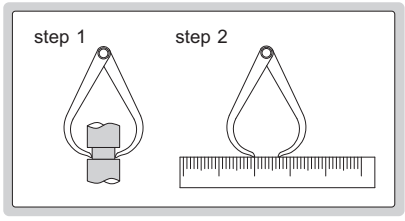





- Made of carbon steel

**7241-150**

| Code | Size (L) | Range (W) | h |
|---|---|---|---|
| **7241-150** | 150mm | 0-150mm | 2mm |
| **7241-200** | 200mm | 0-200mm | 3mm |
| **7241-300** | 300mm | 0-300mm | 3mm |

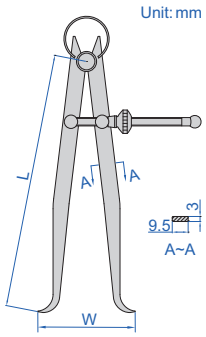



## INSIDE SPRING CALIPERS





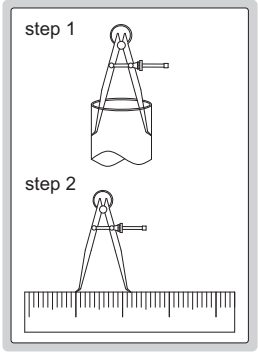



- Made of carbon steel

**7261-150**

| Code | Size (L) | Range (W) |
|---|---|---|
| **7261-150** | 150mm | 20-150mm |
| **7261-200** | 200mm | 22-200mm |
| **7261-250** | 245mm | 30-250mm |
| **7261-300** | 300mm | 30-300mm |

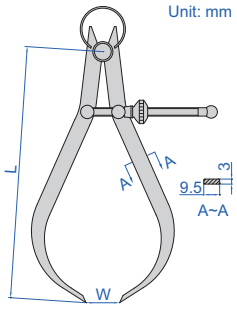


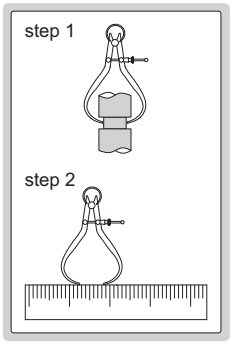
## OUTSIDE SPRING CALIPERS






7262-150



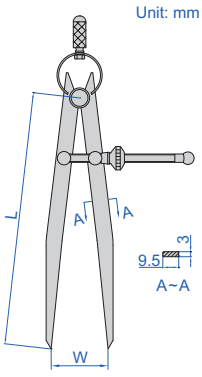

- Made of carbon steel

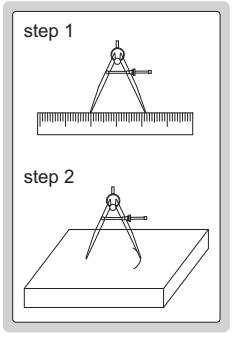
| Code | Size (L) | Range (W) |
|---|---|---|
| **7262-150** | 155mm | 0-150mm |
| **7262-200** | 210mm | 0-200mm |
| **7262-250** | 265mm | 0-250mm |
| **7262-300** | 310mm | 0-300mm |

## SPRING DIVIDERS



7260-150




- Made of carbon steel
- Hardened points

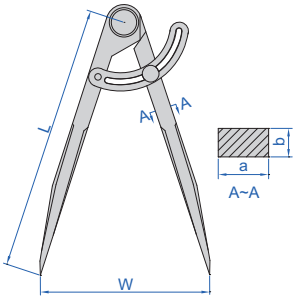
| Code | Size (L) | Range (W) |
|---|---|---|
| **7260-150** | 150mm | 0-150mm |
| **7260-200** | 200mm | 0-210mm |
| **7260-250** | 245mm | 0-260mm |
| **7260-300** | 300mm | 0-320mm |

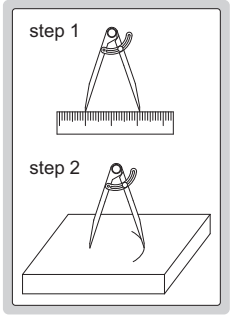
15

## DIVIDERS



7247-150




- Made of carbon steel
- Hardened points

(mm)

| Code | Size (L) | Range (W) | a | b |
|---|---|---|---|---|
| **7247-150** | 150mm | 0-140mm | 8.5 | 7 |
| **7247-200** | 200mm | 0-190mm | 10 | 7 |
| **7247-300** | 300mm | 0-290mm | 12 | 7 |



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# WIRELESS DIGITAL MEASURING TAPES + LASER DISTANCE METERS

VIDEO




9563-C40

digital measuring tape



laser distance meter

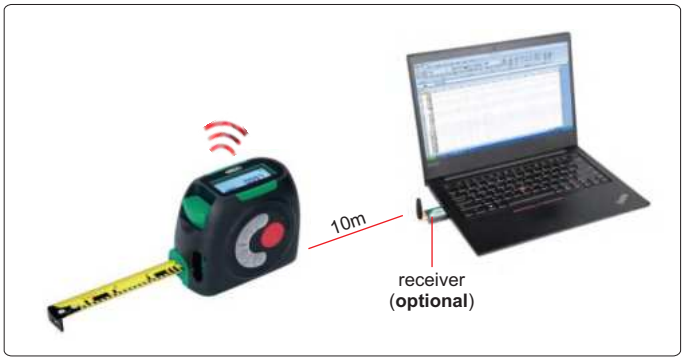


- Built-in bluetooth or wireless Zigbee transmission
- Display with backlight
- Automatic power off: laser 30s, main unit 180s
- Can work continuously for 5 hours
- Can store 50 groups of measurement data

bluetooth connect to phone (APP)




wireless Zigbee connect to computer



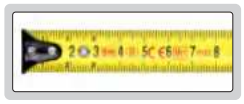

**SPECIFICATION**

| Code | | 9563-C40 | 9563-C60 | 9563-WL40 | 9563-WL60 |
|---|---|---|---|---|---|
| Output | | bluetooth (data can be transmitted to APP) | | wireless Zigbee (optional receiver needed: code **7315-2/3/6/7/8/9**) (data can be transmitted to excel, word, txt etc.) | |
| Digital measuring tape | range | 5m | | | |
| | resolution | 0.001m | | | |
| | accuracy | ±1.5mm | | | |
| | blade width | 19mm | | | |
| | horizontal stand-out | ≥1.8m | | | |
| Laser distance meter | range | 40m | 60m | 40m | 60m |
| | resolution | 0.001m | | | |
| | accuracy | ±(3+D/20)mm, D: measured distance, unit: m | | | |
| | units | m, ft, in, ft+in | | | |
| | laser type | 630~670nm, <1mW, class 2 | | | |
| | measurement function | single, continuous, area, volume, pythagoras measurement | | | |
| Operation temperature | | 0~40°C | | | |
| Storage temperature | | -10~60°C | | | |
| Power supply | | built-in rechargeable lithium battery | | | |
| Dimension (L×W×H) | | 95×74×56mm | | | |
| Weight | | 313g | | | |

## MEASURING TAPES

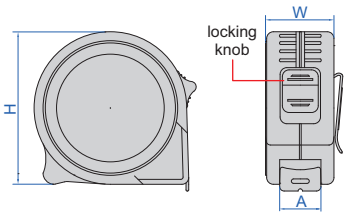
EG II

graduation





7140-5




- With TPR round case
- Non-glare nylon surface for wear resistance
- Accuracy: ±(0.3+0.2L)mm (L is the measured length rounded up to the next whole meter), meet MI-008 of DIRECTIVE 2014/32/EU

**Individual (1 pc per package)**

| Code | Range | Graduation | Width of tape A | W | H |
|---|---|---|---|---|---|
| **7140-3** | 0-3m | 1mm | 16mm | 28mm | 62mm |
| **7140-5** | 0-5m | 1mm | 19mm | 30mm | 68mm |
| **7140-8** | 0-8m | 1mm | 25mm | 38mm | 78mm |

**Set (12 pcs per package)**

| Code | Range | Graduation | Width of tape A | W | H |
|---|---|---|---|---|---|
| **7140-3A** | 0-3m | 1mm | 16mm | 28mm | 62mm |
| **7140-5A** | 0-5m | 1mm | 19mm | 30mm | 68mm |
| **7140-8A** | 0-8m | 1mm | 25mm | 38mm | 78mm |

## MEASURING TAPES (ECONOMIC TYPE)

EG II



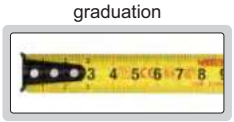
7147-5



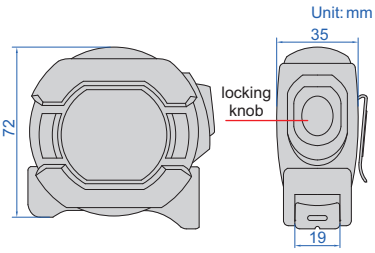
7147-5S

- With TPR round case
- Non-glare nylon surface for wear resistance
- Accuracy: ±(0.3+0.2L)mm (L is the measured length rounded up to the next whole meter), meet MI-008 of DIRECTIVE 2014/32/EU

graduation



Unit: mm




**Individual**

| Code | Range | Graduation | Width of tape |
|---|---|---|---|
| **7147-5** | 0-5m | 1mm | 19mm |

**Set**

| Code | Range | Graduation | Width of tape | Remark |
|---|---|---|---|---|
| **7147-5S** | 0-5m | 1mm | 19mm | include 12pcs **7147-5** |

15

## MEASURING TAPES

EG II



7142-5

- Non-glare nylon coating tape, wear resistance
- Accuracy: ±(0.3+0.2L)mm (L is the measured length rounded up to the next whole meter), meet MI-008 of DIRECTIVE 2014/32/EU

graduation

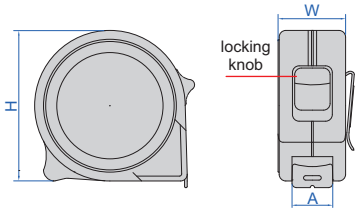


**Individual (1 pc per package)**

| Code | Range | Graduation | Width of tape A | W | H |
|---|---|---|---|---|---|
| **7142-5** | 0-5m/0-16ft | 1mm, 1/16" | 19mm | 31mm | 64mm |

**Set (12 pcs per package)**

| Code | Range | Graduation | Width of tape A | W | H |
|---|---|---|---|---|---|
| **7142-5A** | 0-5m/0-16ft | 1mm, 1/16" | 19mm | 31mm | 64mm |






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EG II

## MEASURING TAPES (ECONOMIC TYPE)



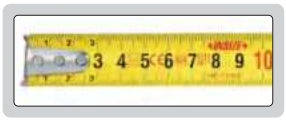
7148-5



7148-5S

- Matte coating
- Accuracy: ±(0.3+0.2L)mm (L is the measured length rounded up to the next whole meter), meet MI-008 of DIRECTIVE 2014/32/EU

graduation

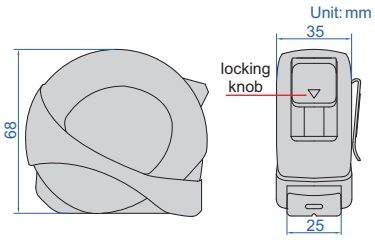


**Individual**

| Code | Range | Graduation | Width of tape |
|---|---|---|---|
| **7148-5** | 0-5m | 1mm | 25mm |

**Set**

| Code | Range | Graduation | Width of tape | Remark |
|---|---|---|---|---|
| **7148-5S** | 0-5m | 1mm | 25mm | include 12pcs **7148-5** |



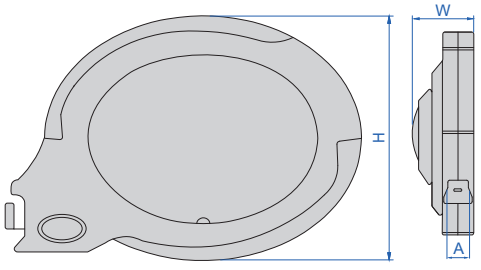

EG II

## MEASURING TAPES



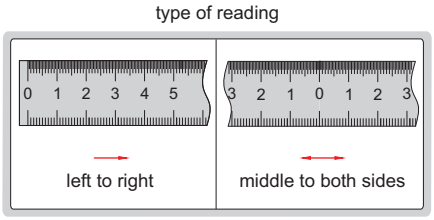
7149-30

- Steel tape, non-glare nylon surface for wear resistance
- Accuracy: ±(0.3+0.2L)mm (L is the measured length rounded up to the next whole meter), meet MI-008 of DIRECTIVE 2014/32/EU




| Code | Range | Graduation | Width of tape (A) | W | H |
|---|---|---|---|---|---|
| **7149-10** | 0-10m | 1mm | 9.5mm | 41mm | 107mm |
| **7149-15** | 0-15m | 1mm | 9.5mm | 41mm | 107mm |
| **7149-30** | 0-30m | 1mm | 9.5mm | 41mm | 107mm |

## SELF ADHESIVE MEASURING ROLLS





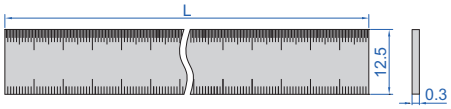

7139-50




- Self adhesive back
- Steel tape, non-glare coating, wear resistance

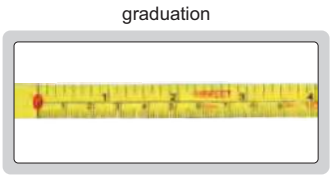
| Code | Range (L) | Graduation | Accuracy | Type of reading |
|---|---|---|---|---|
| 7139-50 | 50-0-50cm | 1mm | ±0.2mm | middle to both sides |
| 7139-100 | 0-100cm | 1mm | ±0.4mm | left to right |

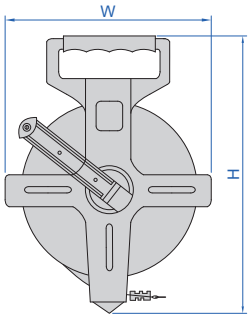
Unit: mm




## LONG MEASURING TAPE

EG II






7143-50

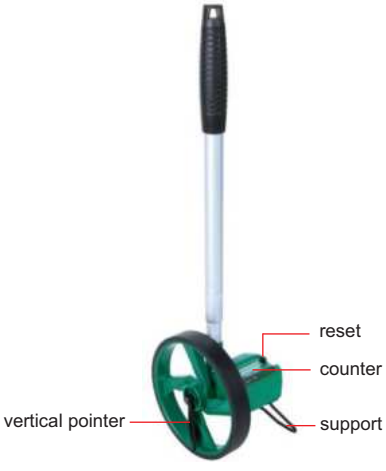
- High tensile strength fibreglass tape
- Nylon coating tape, wear resistance
- Accuracy: ±(0.3+0.2L)mm (L is the measured length rounded up to the next whole meter), meet MI-008 of DIRECTIVE 2014/32/EU

| Code | Range | Graduation | Width of tape | W | H |
|---|---|---|---|---|---|
| 7143-50 | 0-50m/0-165ft | 1mm, 1/8" | 13mm | 220mm | 320mm |

## MEASURING WHEEL (BASIC TYPE)

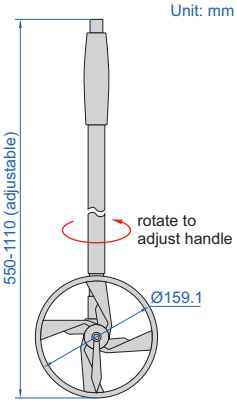


- ABS plastic frame, wear-resistant PU tire
- Three-section adjustable handle




7144-1

Unit: mm




| Code | Range | Resolution |
|---|---|---|
| 7144-1 | 0.1-9999.9m | 0.1m |



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## MEASURING WHEEL



after folding



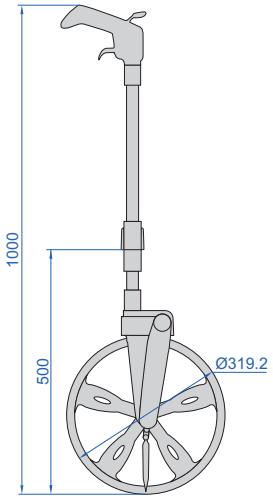
backpack (included)

- ABS plastic frame, wear-resistant PU tire
- Two-section foldable handle




7145-1

Unit: mm




| Code | Range | Resolution |
|---|---|---|
| 7145-1 | 0.1-9999.9m | 0.1m |

## DIGITAL MEASURING WHEEL

IP40 WATERPROOF

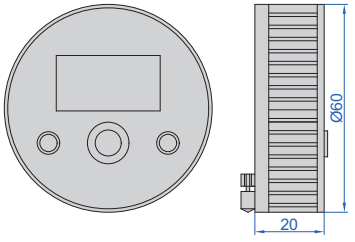
VIDEO




7146-10

- IP40 dust/waterproof
- Measuring length of curve
- Four measurement modes: length, rectangle area, diameter of circle, cube
- Resolution: 0.001m/0.01ft
- Button function: on/off, mm/inch, one or two sides set, measurement mode conversion, measurement
- Battery CR2032, automatic power off

Unit: mm



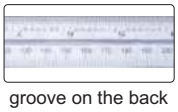

| Code | Range | Accuracy |
|---|---|---|
| 7146-10 | 0-10m/0-32.8ft | ±0.3%L (L is the measured length) |

## RIGID RULER



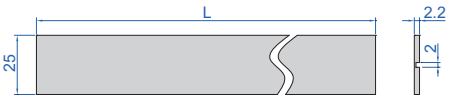
7113-300A

- Rigid ruler
- With groove on the back, suitable for combination square set (**2278** series)
- Satin chrome plated



groove on the back

Unit: mm




| Code | Range | Graduation | | Accuracy | L |
|---|---|---|---|---|---|
| | | front | back | | |
| 7113-300A | 300mm/12" | 0.5mm and 1/32" | 1mm and 1/64" | ±0.15mm | 300mm |

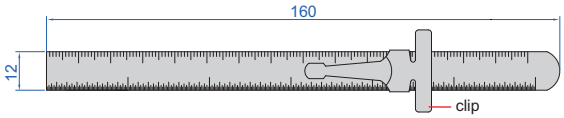
## POCKET RULER WITH SLIDING CLIP

- With sliding clip, clip can be inserted in the pocket, also can be used as depth gauge base
- Inch/metric conversion table on the back
- Made of stainless steel



7119-150

Unit: mm




| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 7119-150 | 150mm/6" | 1mm, 1/64" | ±0.3mm |

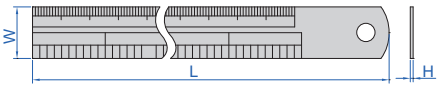
## STEEL RULERS

POPULAR MODEL

- Graduation: 0.5mm, 1mm, 1/64", 1/32", 1/16"
- Rigid rulers
- Made of stainless steel
- Non-glare surface



7110-300




**Individual (1 pc per package)** **(mm)**

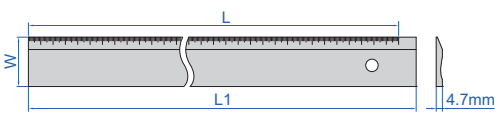
| Code | Range | Accuracy | L | W | H | Remark |
|---|---|---|---|---|---|---|
| 7110-150 | 150mm/6" | ±0.18mm | 170 | 18 | 1.0 | metric graduation on front and inch graduation on back |
| 7110-200 | 200mm/8" | ±0.18mm | 220 | 18 | 1.0 | metric graduation on front and inch graduation on back |
| 7110-300 | 300mm/12" | ±0.27mm | 330 | 25 | 1.0 | metric graduation on front and inch graduation on back |
| 7110-3001 | 300mm/12" | ±0.27mm | 325 | 30 | 1.0 | metric graduation on front and inch graduation on back |
| 7110-500 | 500mm/20" | ±0.40mm | 530 | 30 | 1.2 | metric graduation on front and inch graduation on back |
| 7110-600 | 600mm/24" | ±0.50mm | 630 | 30 | 1.2 | metric graduation on front and inch graduation on back |
| 7110-1000 | 1000mm/40" | ±0.50mm | 1040 | 32 | 1.5 | metric graduation on front and inch graduation on back |
| 7110-1200 | 1200mm/48" | ±0.80mm | 1240 | 35 | 1.8 | metric and inch graduation on front |
| 7110-1500 | 1500mm/60" | ±1.00mm | 1550 | 38 | 1.8 | metric and inch graduation on front |
| 7110-2000 | 2000mm/80" | ±1.00mm | 2065 | 40 | 2.0 | metric and inch graduation on front |

**Set** **(mm)**

| Code | Range | Accuracy | L | W | H | Remark | Quantity per package |
|---|---|---|---|---|---|---|---|
| 7110-150A | 150mm/6" | ±0.18mm | 170 | 18 | 1.0 | metric graduation on front and inch graduation on back | 10 pcs |
| 7110-200A | 200mm/8" | ±0.18mm | 220 | 18 | 1.0 | metric graduation on front and inch graduation on back | 10 pcs |
| 7110-300A | 300mm/12" | ±0.27mm | 330 | 25 | 1.0 | metric graduation on front and inch graduation on back | 5 pcs |
| 7110-3001A | 300mm/12" | ±0.27mm | 325 | 30 | 1.0 | metric graduation on front and inch graduation on back | 5 pcs |
| 7110-500A | 500mm/20" | ±0.40mm | 530 | 30 | 1.2 | metric graduation on front and inch graduation on back | 5 pcs |
| 7110-600A | 600mm/24" | ±0.50mm | 630 | 30 | 1.2 | metric graduation on front and inch graduation on back | 5 pcs |
| 7110-1000A | 1000mm/40" | ±0.50mm | 1040 | 32 | 1.5 | metric graduation on front and inch graduation on back | 5 pcs |
| 7110-1200A | 1200mm/48" | ±0.80mm | 1240 | 35 | 1.8 | metric and inch graduation on front | 5 pcs |
| 7110-1500A | 1500mm/60" | ±1.00mm | 1550 | 38 | 1.8 | metric and inch graduation on front | 5 pcs |
| 7110-2000A | 2000mm/80" | ±1.00mm | 2065 | 40 | 2.0 | metric and inch graduation on front | 5 pcs |

## ALUMINUM RULERS

- Made of aluminum, oxidized surface



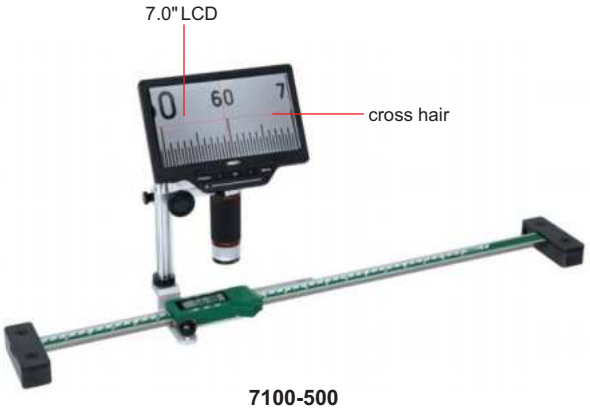



7123-300

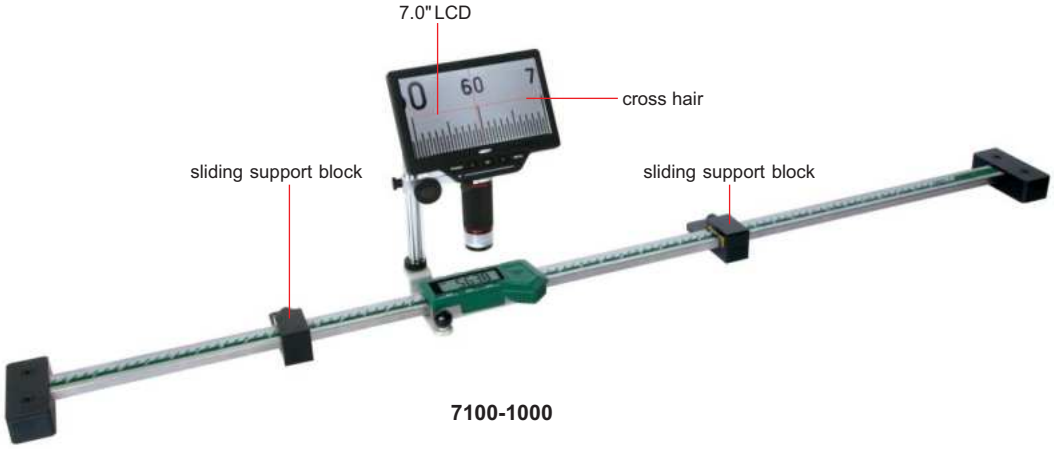
| Code | Range (L) | Graduation | Accuracy | L1 | W |
|---|---|---|---|---|---|
| 7123-300 | 300mm | 1mm | ±0.5mm | 321mm | 50mm |
| 7123-600 | 600mm | 1mm | ±0.9mm | 624mm | 50mm |
| 7123-1000 | 1000mm | 1mm | ±0.9mm | 1024mm | 50mm |

DATA OUTPUT

# DIGITAL SCALES WITH MICROSCOPE




**7100-500**




**7100-1000**

- Including microscope
- Optional accessory:
  wireless transmitter code **7315-22** (receiver is needed) page 5,
  bluetooth transmitter code **7214-22** page 11

| Code | Range | Accuracy | Total length | Remark |
|---|---|---|---|---|
| **7100-400** | 350mm | ±0.05mm | 590mm | without sliding support blocks |
| **7100-500** | 450mm | ±0.05mm | 690mm | |
| **7100-600** | 500mm | ±0.08mm | 790mm | with sliding support blocks |
| **7100-800** | 700mm | ±0.10mm | 990mm | |
| **7100-1000** | 900mm | ±0.10mm | 1240mm | |

**SPECIFICATION OF DIGITAL SCALE**

| | |
|---|---|
| **Resolution** | 0.01mm/0.0005" |
| **Buttons** | on/off, zero, mm/inch, ABS, data preset |
| **Data output** | Micro USB |
| **Power supply** | Battery CR2032 |

**SPECIFICATION OF MICROSCOPE**

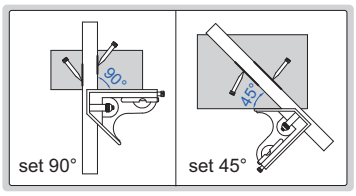
| | |
|---|---|
| **Display resolution** | 1024×600 |
| **Sensor** | 1/3" CMOS |
| **Single pixel size** | 2μm×2μm |
| **Magnification** | 1X~16X |
| **Power supply** | built-in lithium battery |

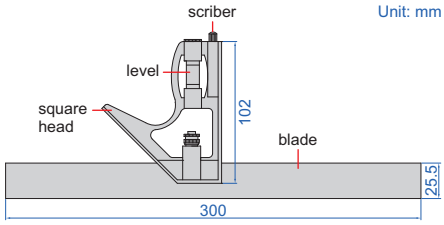
## COMBINATION SQUARE (ECONOMIC TYPE)

- Square head (made of zinc):
  set the blade at 90° or 45° to
  an edge of a workpiece
  accuracy: ±0.5°
- Blade (made of stainless steel):
  range: 300mm/12",
  graduation: 1mm and 1/32" on front
  face,1mm and 1/16" on back face



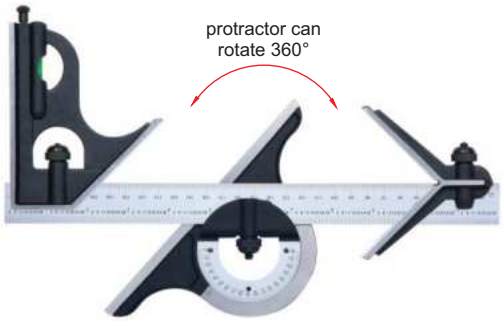
2276-300



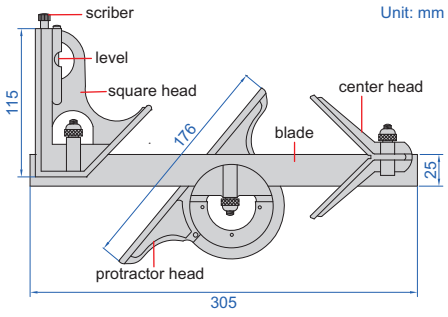




| Code |
|---|
| 2276-300 |

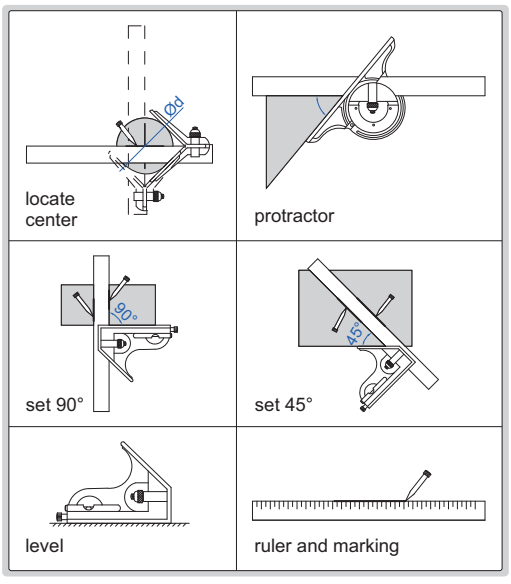
## COMBINATION SQUARE SET (OPEN TYPE PROTRACTOR)




2274-4




- Center head (made of cast iron):
  to locate center of cylinders with diameter (Ød): 30-100mm
  accuracy: ±0.15mm
- Protractor head (made of cast iron):
  set the blade at desired angle to an edge of a
  workpiece, and can be used to measure angles
  range: 0-180°
  accuracy: ±20min
- Square head (made of cast iron):
  set the blade at 90° or 45° to an edge of a workpiece
  accuracy: ±8min for 90° square,
  ±10min for 45° square
- Blade (made of stainless steel):
  range: 300mm/12",
  graduation: 0.5mm and 1/32" on front face,
  1mm and 1/64" on back face
- Optional accessory: rigid ruler (code **7113**)




| Code | Remark |
|---|---|
| 2274-4 | 4-piece set |

# COMBINATION SQUARE SETS (CLOSE TYPE PROTRACTOR)



2278-2

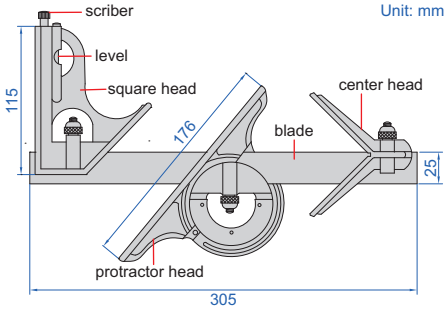


2278-3

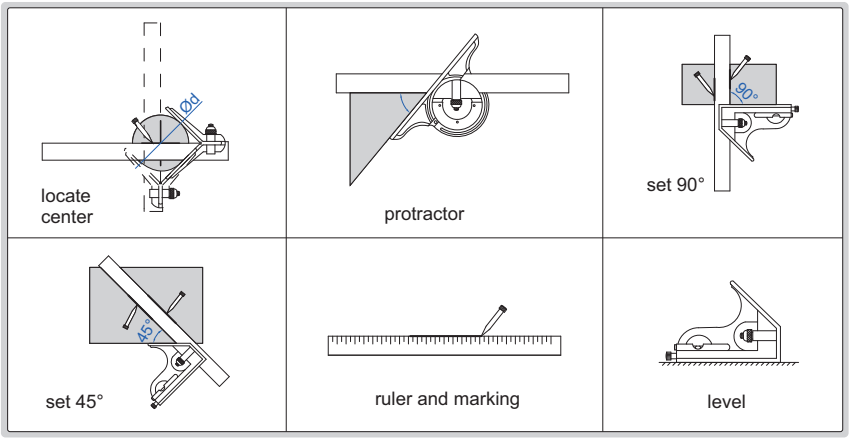


2278-180

- Center head (made of cast iron):
  to locate center of cylinders with diameter (Ød): 30-100mm
  accuracy: ±0.15mm
- Protractor head (made of cast iron):
  set the blade at desired angle to an edge of a workpiece, and can be used to measure angles
  range: 0-180°
  accuracy: ±20min.
- Square head (made of cast iron):
  set the blade at 90° or 45° to an edge of a workpiece
  accuracy: ±8min for 90° square,
  ±10min for 45° square
- Blade (made of stainless steel):
  range: 300mm/12",
  graduation: 0.5mm and 1/32" on front face,
  1mm and 1/64" on back face
- Optional accessory: rigid ruler (code **7113**)



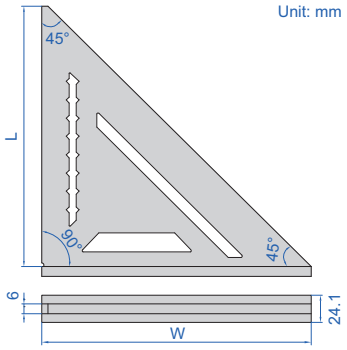

| Code | Remark |
|---|---|
| 2278-2 | 2-piece set |
| 2278-3 | 3-piece set |
| 2278-180 | 4-piece set |



## PLASTIC ANGLE SQUARE



2282-180

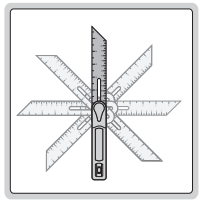



- Length range: 0-7", graduation: 1/8"
- Angel range: 0-90°, graduation: 1°

| Code | Size (L×W) | Accuracy of angle |
|---|---|---|
| **2282-180** | 180×185mm | ±0.3° |

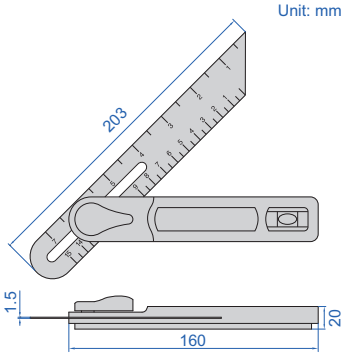
## T-BEVEL

blade can rotate 360°

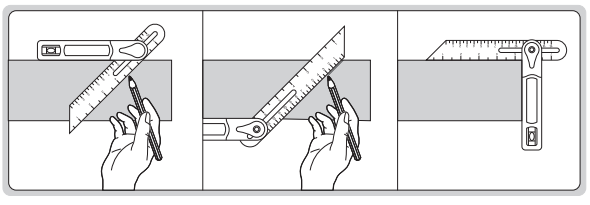




2281-360




- Easy-to-read vial
- The blade can move and can be locked by the clamping screw
- Stainless steel blade
- Tough rubber handle
- Centimeter/inch graduations

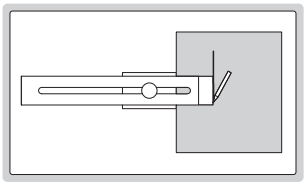


| Code | Angle mark | Accuracy of angle |
|---|---|---|
| **2281-360** | 15°, 30°, 45°, 60°, 90° | ±1° |

## MARKING GAUGES

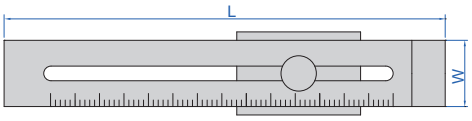


7120-200A



- Made of carbon steel
- Stainless steel chrome plated

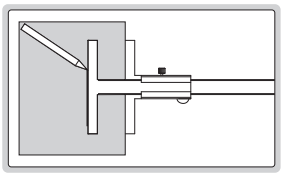
| Code | Range | Graduation | Accuracy | L | W |
|---|---|---|---|---|---|
| 7120-200A | 0-200mm | 0.1mm | ±0.1mm | 250mm | 40mm |
| 7120-250A | 0-250mm | 0.1mm | ±0.1mm | 300mm | 40mm |
| 7120-300A | 0-300mm | 0.1mm | ±0.1mm | 350mm | 40mm |




## T-SHAPE MARKING GAUGE

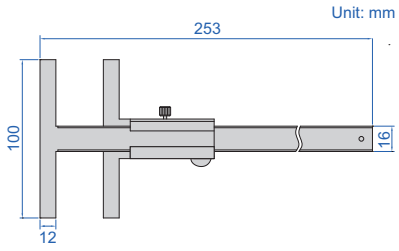


1275-150B



- Made of stainless steel
- Satin chrome plated reading surface

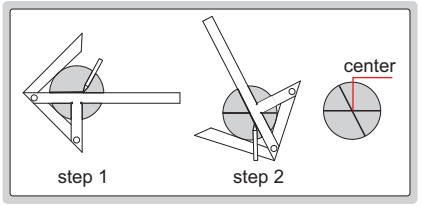
| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| 1275-150B | 0-150mm | 0.02mm | ±0.04mm |




## CENTER MARKING GAUGES

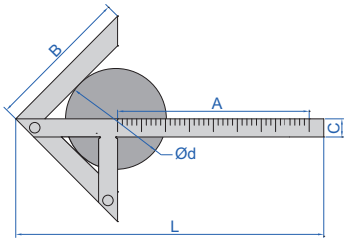


7205-100



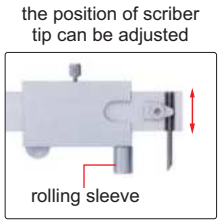

- Marking the center of round plates and shafts
- Made of stainless steel
- Satin chrome plated

| Code | Size (AxB) | Diameter of shafts (Ød) | Accuracy | C | L |
|---|---|---|---|---|---|
| 7205-100 | 100x70mm | 4-90mm | ±0.15mm | 12mm | 153mm |
| 7205-150 | 150x130mm | 4-190mm | ±0.15mm | 15mm | 245mm |
| 7205-200 | 200x150mm | 6-220mm | ±0.15mm | 15mm | 310mm |
| 7205-300 | 300×180mm | 6-270mm | ±0.15mm | 20mm | 435mm |



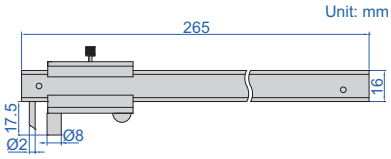
## SCRIBING CALIPER

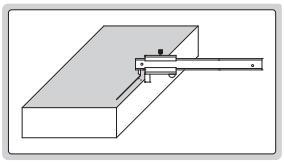
- Made of stainless steel
- Satin chrome plated reading surface
- Carbide scriber tip
- Optional accessory: carbide scriber tip (code **SP-SCRIBER-7202**)






**7202-200A**



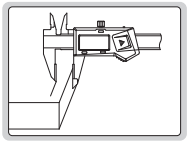
| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **7202-200A** | 0-200mm/0-8" | 0.1mm, 1/128" | ±0.1mm |

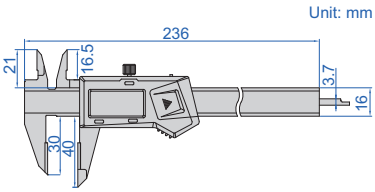
## DIGITAL SCRIBING CALIPER

- Non waterproof
- The carbide-tipped jaws facilitate scribing on workpieces
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



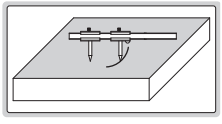

**1166-150A**






| Code | Range | Accuracy |
|---|---|---|
| **1166-150A** | 0-150mm/0-6" | ±0.03mm |

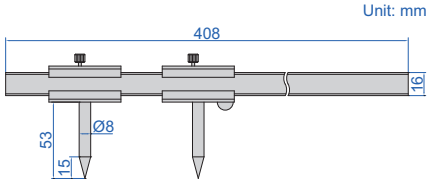
## SCRIBING CALIPER





**7203-300A**

- Made of stainless steel
- Satin chrome plated reading surface
- Hardened scriber tips




| Code | Range | Graduation | Accuracy |
|---|---|---|---|
| **7203-300A** | 51-300mm | 0.1mm | ±0.1mm |



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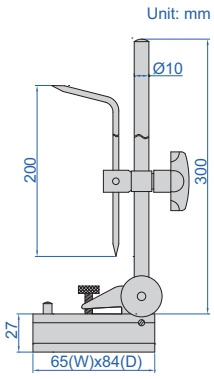
## HEIGHT SCRIBER

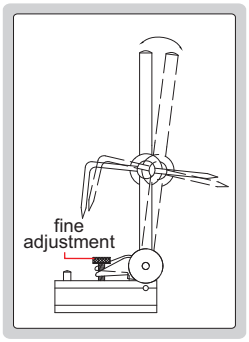
- Grooved bottom for cylinders
- Two pins to be set against the edge of surface plate

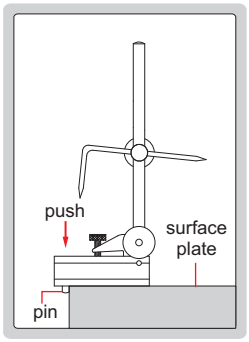
| Code |
|---|
| 6990-300A |



6990-300A



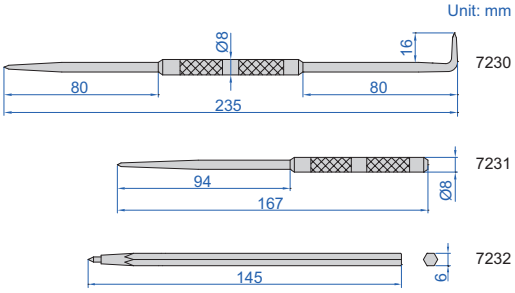




## SCRIBERS




- **7230** and **7231** are nickel plated, **7232** is zinc-plated

| Code | Tip |
|---|---|
| 7230 | hardened tips |
| 7231 | hardened tip |
| 7232 | carbide tip |




## PRECISION SCREWDRIVER SET CODE ISGF-0901

- Includes:
  4pcs "–": 1.4mm, 2.0mm, 2.4mm, 3.0mm
  2pcs "+": 0#, 1#
- Rotating cap
- Material: CRV, hardness: HRC52~56



ISGF-0901

packaging




## LED FLASHLIGHT CODE ISGF-0501

- Toshiba high performance LED
- Powered by 3x AAA batteries (batteries are not included)
- Max output: 120 lumens
- Battery life: 4 hours
- Beam distance: 70 meters
- IP54 dust/waterproof

packaging






ISGF-0501

## MEASURING TOOLS REPAIR TOOL SET

- For repairing of calipers, micrometers and indicators
- Including:
  1) Slotted screwdriver, 1.4×20mm
  2) Slotted screwdriver, 2.0×20mm
  3) Slotted screwdriver, 2.4×25mm
  4) Slotted screwdriver, 3.0×25mm
  5) Cross screwdriver, 0#×25mm
  6) Cross screwdriver, 1#×25mm
  7) Magnetizer and demagnetizer
  8) Pointed tweezer, 125mm
  9) Mini needle-nose pliers, 5"
  10) Extended flat head allen wrench, 1.5×80mm
  11) Extended flat head allen wrench, 2.5×94mm
  12) Extended flat head allen wrench, 3×92mm
  13) Needle puller, 3 pcs
  14) Copper hammer, 126g
  15) Copper rod, Ø10×60mm
  16) Dial face suction cup, Ø30mm
  17) Oil stone, 100×20×10mm
  18) Cleaning brush
  19) Micrometer wrench
  20) Three point inside micrometer rod wrench, 2 pcs
  21) Anti rust oil, 30ml
  22) Special anti rust oil for micrometers, 30ml
  23) Dust free cloth, 5 pcs

| Code |
|---|
| 7338-1 |



7338-1

## 2-PIECE MEASURING TOOL SETS

- Includes:
  1) Vernier caliper, range 0-150mm/0-6",
     graduation 0.05mm/1/128"
     (code **1205-150S**) for **5021**,
     graduation 0.02mm/0.001"
     (code **1205-1502S**) for **5021-2**
  2) Outside micrometer, range 0-25mm,
     graduation 0.01mm (code **3202-25A**)

| Code | Remark |
|---|---|
| 5021 | vernier caliper, graduation 0.05mm/1/128" (code **1205-150S**) |
| 5021-2 | vernier caliper, graduation 0.02mm/0.001" (code **1205-1502S**) |



5021



## 2-PIECE MEASURING TOOL SETS

- Includes:
  1) Digital caliper, range 0-150mm/0-6",
     resolution 0.01mm/0.0005",
     with thumb roller (code **1108-150**) for **5022**,
     without thumb roller (code **1108-150W**) for **5022-W**
  2) Digital outside micrometer,
     range 0-25mm/0-1",
     resolution 0.001mm/0.00005" (code **3109-25A**)

| Code | Remark |
|---|---|
| 5022 | digital caliper, with thumb roller, code **1108-150** |
| 5022-W | digital caliper, without thumb roller, code **1108-150W** |



5022



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## 2-PIECE MEASURING TOOL SET

- Includes:
  1) Dial test indicator, range 0.8mm, graduation 0.01mm (code **2380-08**)
  2) Magnetic stand



5023

| Code |
| --- |
| 5023 |

## 2-PIECE MEASURING TOOL SET

- Includes:
  1) Dial indicator, range 10mm, graduation 0.01mm (code **2308-10A**)
  2) Magnetic stand (code **6201-60**)



5024

| Code |
| --- |
| 5024 |

## 3-PIECE MEASURING TOOL SET



- Includes:
  1) Digital indicator, range 12.7mm/0.5", resolution 0.01mm/0.0005" (code **2112-10**)
  2) Flex arm
  3) Locking pliers, adjustable jaw opening from 0 to 25mm





5031

| Code |
| --- |
| 5031 |

## 3-PIECE MEASURING TOOL SET

- Includes:
  1) Vernier caliper, range 0-150mm
     graduation 0.02mm (code **1205-1501S**)
  2) Outside micrometer, range 0-25mm,
     graduation 0.01mm (code **3203-25A**)
  3) Steel ruler, range 150mm/6", graduation 0.5mm,
     1mm, 1/64", 1/32", 1/16" (code **7110-150**)
  4) Dust free gloves and dust free cloth

dust free gloves and
dust free cloth





**5032**

| Code |
|---|
| **5032** |

## 4-PIECE MEASURING TOOL SETS

- Includes:
  1) Vernier caliper, range 0-150mm/0-6",
     graduation 0.05mm/1/128" (code **1205-150S**) for **5041**,
     graduation 0.02mm/0.001" (code **1205-1502S**) for **5041-2**
  2) Outside micrometer, range 0-25mm,
     graduation 0.01mm (code **3202-25A**)
  3) 90° beveled edge square, 100x70mm,
     grade 0 (code **4790-1000**)
  4) Steel ruler, 150mm/6" (code **7110-150**)



**5041**

| Code | Remark |
|---|---|
| **5041** | vernier caliper, graduation 0.05mm/1/128" (code **1205-150S**) |
| **5041-2** | vernier caliper, graduation 0.02mm/0.001" (code **1205-1502S**) |

## 4-PIECE MEASURING TOOL SETS



- Includes:
  1) Digital caliper, range 0-150mm/0-6",
     resolution 0.01mm/0.0005",
     with thumb roller (code **1108-150**) for **5042**,
     without thumb roller (code **1108-150W**) for **5042-W**
  2) Outside micrometer, range 0-25mm, graduation 0.01mm,
     (code **3202-25A**)
  3) 90° beveled edge square, 100x70mm, grade 0
     (code **4790-1000**)
  4) Steel ruler, 150mm/6" (code **7110-150**)



**5042**

| Code | Remark |
|---|---|
| **5042** | digital caliper, with thumb roller, code **1108-150** |
| **5042-W** | digital caliper, without thumb roller, code **1108-150W** |



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## 5-PIECE MEASURING TOOL SETS

- Includes:
  1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005", with thumb roller (code **1108-150**) for **5051**, without thumb roller (code **1108-150W**) for **5051-W**
  2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3203-25A**)
  3) Dial indicator, range 10mm, graduation 0.01mm (code **2308-10A**)
  4) Magnetic stand (code **6201-60**)
  5) Micrometer stand (code **6300**)

| Code | Remark |
|---|---|
| **5051** | digital caliper, with thumb roller, code **1108-150** |
| **5051-W** | digital caliper, without thumb roller, code **1108-150W** |



**5051**

## 5-PIECE MEASURING TOOL SETS

- Includes:
  1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005", with thumb roller (code **1108-150**) for **5052**, without thumb roller (code **1108-150W**) for **5052-W**
  2) Digital outside micrometer, range 0-25mm/0-1", resolution 0.001mm/0.00005" (code **3109-25A**)
  3) Digital indicator, range 12.7mm/0.5", resolution 0.01mm/0.0005" (code **2112-10**)
  4) Magnetic stand (code **6201-60**)
  5) Micrometer stand (code **6300**)

| Code | Remark |
|---|---|
| **5052** | digital caliper, with thumb roller, code **1108-150** |
| **5052-W** | digital caliper, without thumb roller, code **1108-150W** |



**5052**

## 6-PIECE MEASURING TOOL SETS

- Includes:
  1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005", with thumb roller (code **1108-150**) for **5061**, without thumb roller (code **1108-150W**) for **5061-W**
  2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3202-25A**)
  3) Dial indicator, range 10mm, graduation 0.01mm (code **2308-10FA**)
  4) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
  5) Scriber (code **7230**)
  6) Steel ruler, 150mm/6" (code **7110-150**)

| Code | Remark |
|---|---|
| **5061** | digital caliper, with thumb roller, code **1108-150** |
| **5061-W** | digital caliper, without thumb roller, code **1108-150W** |



**5061**

## 6-PIECE MEASURING TOOL SETS

- Includes:
  1) Digital caliper, range 0-150mm/0-6"
     resolution 0.01mm/0.0005",
     with thumb roller (code **1108-150**) for **5062**,
     without thumb roller (code **1108-150W**) for **5062-W**
  2) Outside micrometer, range 0-25mm
     graduation 0.01mm (code **3202-25A**)
  3) 90° beveled edge square, 100x70mm
     grade 00 (code **4790-0100**)
  4) Straight edge, 100mm (code **4700-100**)
  5) Spring divider, 150mm (code **7260-150**)
  6) Steel ruler, 200mm/8" (code **7110-200**)

| Code | Remark |
|---|---|
| **5062** | digital caliper, with thumb roller, code **1108-150** |
| **5062-W** | digital caliper, without thumb roller, code **1108-150W** |



**5062**

## 6-PIECE MEASURING TOOL SETS

- Includes:
  1) Vernier caliper, range 0-150mm/0-6",
     graduation 0.05mm/1/128" (code **1205-150S**) for **5063**,
     graduation 0.02mm/0.001" (code **1205-1502S**) for **5063-2**
  2) Outside micrometer, range 0-25mm
     graduation 0.01mm (code **3202-25A**)
  3) 90° beveled edge square, 100x70mm
     grade 00 (code **4790-0100**)
  4) Straight edge, 100mm (code **4700-100**)
  5) Spring divider, 150mm (code **7260-150**)
  6) Steel ruler, 200mm/8" (code **7110-200**)

| Code | Remark |
|---|---|
| **5063** | vernier caliper, graduation 0.05mm/1/128" (code **1205-150S**) |
| **5063-2** | vernier caliper, graduation 0.02mm/0.001" (code **1205-1502S**) |



**5063**

## 8-PIECE MEASURING TOOL SETS

- Includes:
  1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005",
     with thumb roller (code **1108-150**) for **5081**,
     without thumb roller (code **1108-150W**) for **5081-W**
  2) Digital outside micrometer, range 0-25mm/0-1",
     graduation 0.001mm/0.00005" (code **3109-25A**)
  3) Dial test indicator, range 0.8mm,
     graduation 0.01mm (code **2380-08**)
  4) Magnetic stand (code **6201-60**)
  5) Parallel/square set, 75x50x25mm (code **6531-25**)
  6) Steel ruler, 150mm/6" (code **7110-150**)
  7) Depth base attachment (code **6140**)
  8) Zero setting bar for depth base attachment

| Code | Remark |
|---|---|
| **5081** | digital caliper, with thumb roller, code **1108-150** |
| **5081-W** | digital caliper, without thumb roller, code **1108-150W** |



**5081**

## 9-PIECE MEASURING TOOL SETS

- Includes:
  1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005", with thumb roller (code **1108-150**) for **5091**, without thumb roller (code **1108-150W**) for **5091-W**
  2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3202-25A**)
  3) Protractor, range 0-180°, graduation 1° (code **4799-180**)
  4) Pitch gauge, range 0.25-7mm, 24 pcs, metric 60° thread (code **4820-124**)
  5) Radius gauge, range 1-7mm (code **4801-17**)
  6) Feeler gauge, range 0.05-1.00mm, 20 pcs (code **4602-20**)
  7) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
  8) Scriber (code **7230**)
  9) Steel ruler, 150mm/6" (code **7110-150**)



**5091**

| Code | Remark |
|---|---|
| **5091** | digital caliper, with thumb roller, code **1108-150** |
| **5091-W** | digital caliper, without thumb roller, code **1108-150W** |

## 13-PIECE MEASURING TOOL SETS

- Includes:
  1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005", with thumb roller (code **1108-150**) for **5013**, without thumb roller (code **1108-150W**) for **5013-W**
  2) Outside micrometer, range 0-25mm, graduation 0.01mm (code **3202-25A**)
  3) Dial indicator, range 10mm, graduation 0.01mm (code **2308-10A**)
  4) Magnetic stand (code **6201-60**)
  5) Protractor, range 0-180°, graduation 1° (code **4799-180**)
  6) Pitch gauge, range 0.25-7mm, 24 pcs, metric 60° thread (code **4820-124**)
  7) Radius gauge, range 1-7mm (code **4801-17**)
  8) Feeler gauge, range 0.05-1.00mm, 20 pcs (code **4602-20**)
  9) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
  10) Scriber (code **7230**)
  11) Steel ruler, 150mm/6" (code **7110-150**)
  12) Depth base attachment (code **6140**)
  13) Zero setting bar for depth base attachment



**5013**

| Code | Remark |
|---|---|
| **5013** | digital caliper, with thumb roller, code **1108-150** |
| **5013-W** | digital caliper, without thumb roller, code **1108-150W** |

# 16 SET-UP TOOLS




Granite Surface Plates
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Stands For Granite Surface Plates
Page 490



Jack Sets For Granite Surface Plates
Page 490



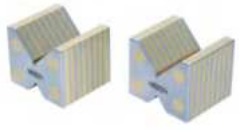
Magnetic Rectangular Blocks
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V-blocks
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Magnetic V-blocks
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Magnetic Induction V-blocks
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Squares With V Groove
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Permanent Magnetic Chucks
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Parallels
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Parallel/Square Sets
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Magnetic Induction Parallel Sets
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Angle Plate Sets
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Adjustable Angle Blocks
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Right Angle Plates
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Sine Bars
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Sine Tables
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Precision Sine Vises
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Precision Vises
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Precision Universal Vises
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Anvil Vises
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Stages
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# GRANITE SURFACE PLATES

INSPECTION CERTIFICATE

CUSTOM-MADE
SUPPLY SPECIAL SIZES ACCORDING TO CUSTOMER'S REQUEST

- Made of Indian granite, high hardness, free from deterioration or dimensional change over time, minimal changes in dimension due to temperature changes
- Meet DIN876, grade 00 is for inspection room or lab, grade 0 is for workshop
- Optional accessory:
  stand for granite surface plate (code **6902**),
  jack for granite surface plate (code **6903**)



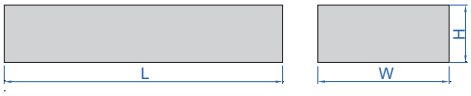

**6900-132**

**Physical characteristics of granite**

| | |
|---|---|
| **Shore hardness** | 94HS |
| **Flexural strength** | 28MPa |
| **Compressive strength** | 236MPa |
| **Elastic modulus** | $9.88\times10^{4}$MPa |
| **Poisson's ratio** | 0.33 |
| **Volume density** | 3000kg/m$^3$ |
| **Water absorption rate** | 0.05% |
| **Linear expansion coefficient** | $6\times10^{-6}$/°C |

**Grade 00**

| Code | Size (L×W×H) | Flatness | Weight | Max. load |
|---|---|---|---|---|
| **6900-132*** | 300×200×60mm | 2.7μm | 11kg | 30kg |
| **6900-142*** | 400×250×60mm | 2.9μm | 18kg | 50kg |
| **6900-144*** | 400×400×60mm | 3.1μm | 29kg | 60kg |
| **6900-153*** | 500×315×70mm | 3.2μm | 33kg | 60kg |
| **6900-164*** | 630×400×80mm | 3.5μm | 60kg | 65kg |
| **6900-166*** | 630×630×100mm | 3.8μm | 119kg | 75kg |
| **6900-185*** | 800×500×100mm | 3.9μm | 120kg | 100kg |
| **6900-1106*** | 1000×630×140mm | 4.4μm | 265kg | 200kg |
| **6900-1107*** | 1000×750×150mm | 4.5μm | 337kg | 300kg |
| **6900-1101*** | 1000×1000×150mm | 4.8μm | 450kg | 400kg |
| **6900-1128*** | 1200×800×160mm | 4.9μm | 461kg | 500kg |
| **6900-1161*** | 1600×1000×180mm | 5.8μm | 864kg | 600kg |
| **6900-1201*** | 2000×1000×220mm | 6.5μm | 1320kg | 650kg |
| **6900-1202*** | 2000×1500×250mm | 7.0μm | 2250kg | 750kg |




**Grade 0**

| Code | Size (L×W×H) | Flatness | Weight | Max. load |
|---|---|---|---|---|
| **6900-032*** | 300×200×60mm | 5.4μm | 11kg | 60kg |
| **6900-042*** | 400×250×60mm | 5.9μm | 18kg | 100kg |
| **6900-044*** | 400×400×60mm | 6.3μm | 29kg | 120kg |
| **6900-053*** | 500×315×70mm | 6.4μm | 33kg | 120kg |
| **6900-064*** | 630×400×80mm | 7.0μm | 60kg | 130kg |
| **6900-066*** | 630×630×100mm | 7.6μm | 119kg | 150kg |
| **6900-085*** | 800×500×100mm | 7.8μm | 120kg | 200kg |
| **6900-0106*** | 1000×630×140mm | 8.7μm | 265kg | 400kg |
| **6900-0107*** | 1000×750×150mm | 9.0μm | 337kg | 600kg |
| **6900-0101*** | 1000×1000×150mm | 9.7μm | 450kg | 800kg |
| **6900-0128*** | 1200×800×160mm | 9.8μm | 461kg | 1000kg |
| **6900-0161*** | 1600×1000×180mm | 11.5μm | 864kg | 1200kg |
| **6900-0201*** | 2000×1000×220mm | 12.9μm | 1320kg | 1300kg |
| **6900-0202*** | 2000×1500×250mm | 14.0μm | 2250kg | 1500kg |

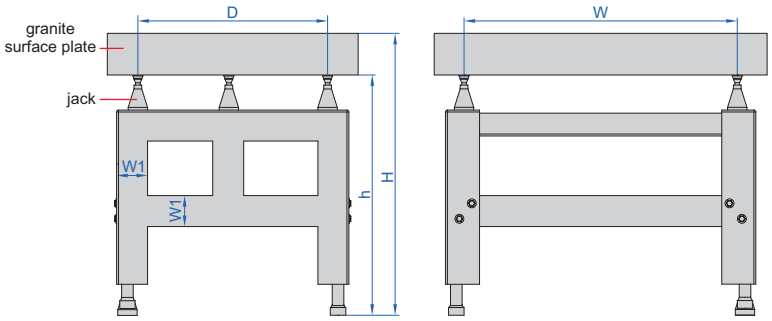
*Supplied with manufacturer inspection certificate





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# STANDS FOR GRANITE SURFACE PLATES







6902-64A

- For medium size granite surface plates
- 5 jacks are included
- Adjusting range of jacks: 25mm
- One foot on the bottom is adjustable

**Low stands** (mm)

| Code | For granite surface plate | W | D | H (with granite surface plate) | h (without granite surface plate) | W1 |
|---|---|---|---|---|---|---|
| **6902-64A** | 630×400×80mm (code **6900-064** and **6900-164**) | 352 | 224 | 775-800 | 695-720 | 80 |
| **6902-66A** | 630×630×100mm (code **6900-066** and **6900-166**) | 352 | 352 | 775-800 | 675-700 | 80 |
| **6902-85A** | 800×500×100mm (code **6900-085** and **6900-185**) | 448 | 280 | 775-800 | 675-700 | 80 |
| **6902-106A** | 1000×630×140mm (code **6900-0106** and **6900-1106**) | 560 | 352 | 755-780 | 615-640 | 80 |
| **6902-107A** | 1000×750×150mm (code **6900-0107** and **6900-1107**) | 560 | 420 | 755-780 | 605-630 | 80 |
| **6902-101A** | 1000×1000×150mm (code **6900-0101** and **6900-1101**) | 560 | 560 | 755-780 | 605-630 | 80 |
| **6902-128A** | 1200×800×160mm (code **6900-0128** and **6900-1128**) | 672 | 448 | 755-780 | 595-620 | 80 |
| **6902-161A** | 1600×1000×180mm (code **6900-0161** and **6900-1161**) | 896 | 560 | 755-780 | 575-600 | 100 |
| **6902-201A** | 2000×1000×220mm (code **6900-0201** and **6900-1201**) | 1120 | 560 | 755-780 | 535-560 | 100 |
| **6902-202A** | 2000×1500×250mm (code **6900-0202** and **6900-1202**) | 1120 | 840 | 755-780 | 505-530 | 100 |

**High stands** (mm)

| Code | For granite surface plate | W | D | H (with granite surface plate) | h (without granite surface plate) | W1 |
|---|---|---|---|---|---|---|
| **6902-64H** | 630×400×80mm (code **6900-064** and **6900-164**) | 352 | 224 | 1000-1025 | 920-945 | 80 |
| **6902-66H** | 630×630×100mm (code **6900-066** and **6900-166**) | 352 | 352 | 1000-1025 | 900-925 | 80 |
| **6902-85H** | 800×500×100mm (code **6900-085** and **6900-185**) | 448 | 280 | 1000-1025 | 900-925 | 80 |
| **6902-106H** | 1000×630×140mm (code **6900-0106** and **6900-1106**) | 560 | 352 | 1000-1025 | 860-885 | 80 |
| **6902-107H** | 1000×750×150mm (code **6900-0107** and **6900-1107**) | 560 | 420 | 1000-1025 | 850-875 | 80 |
| **6902-101H** | 1000×1000×150mm (code **6900-0101** and **6900-1101**) | 560 | 560 | 1000-1025 | 850-875 | 80 |
| **6902-128H** | 1200×800×160mm (code **6900-0128** and **6900-1128**) | 672 | 448 | 1000-1025 | 840-865 | 80 |
| **6902-161H** | 1600×1000×180mm (code **6900-0161** and **6900-1161**) | 896 | 560 | 1000-1025 | 820-845 | 100 |
| **6902-201H** | 2000×1000×220mm (code **6900-0201** and **6900-1201**) | 1120 | 560 | 1000-1025 | 780-805 | 100 |
| **6902-202H** | 2000×1500×250mm (code **6900-0202** and **6900-1202**) | 1120 | 840 | 1000-1025 | 750-775 | 100 |

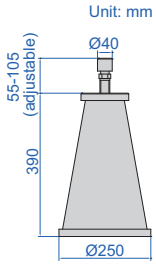
# JACK SET FOR GRANITE SURFACE PLATES



- 5 jacks per set
- Adjustable height
- For large granite surface plates:
  2000×1000×220mm
  (code **6900-0201** and **6900-1201**)
  2000×1500×250mm
  (code **6900-0202** and **6900-1202**)



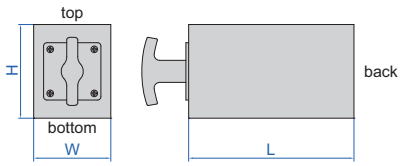
6903-B

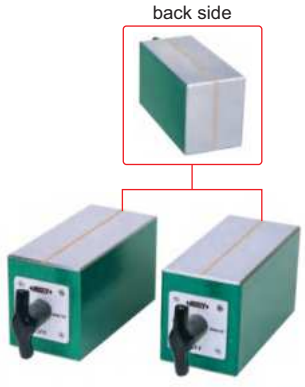



| Code |
|---|
| **6903-B** |

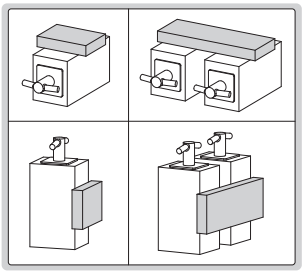
## MAGNETIC RECTANGULAR BLOCKS

HARDENED SURFACES | HIGH PRECISION | STRONG MAGNETIC FORCE




6898-150



- For grinding, light milling, drilling and inspection of round and square jobs
- Hardened, high accuracy, strong magnetic force
- Working surfaces are hardened to HRC58-62
- Magnetic force on top, bottom and back sides
- Supplied in matched pair

| Code | Size (L×W×H) | Magnetic force | Parallelism of top to bottom side | Squareness of top and bottom to back side | Height difference of a matched pair |
|---|---|---|---|---|---|
| **6898-100** | 100×70×70mm | 100kgf | 5μm | 5μm | 5μm |
| **6898-150** | 150×70×85mm | 125kgf | 5μm | 5μm | 5μm |

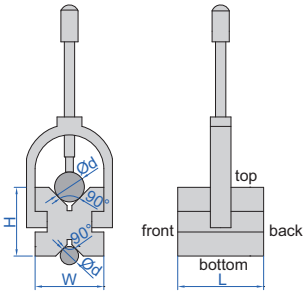
## V-BLOCK SETS

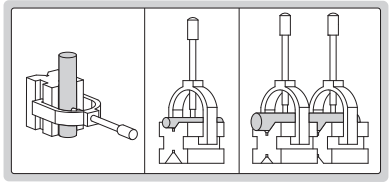


6896-10



6896-11



- Hold cylindrical workpieces for inspection and machining
- Two V-blocks per set
- Made of alloy steel
- Hardened to HRC60±2
- V groove on the top for large shafts
- V groove on the bottom for small shafts (except **6896-10**)

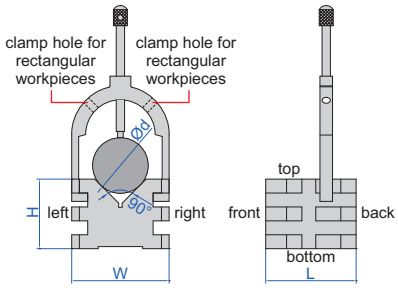
| Code | Size (L×W×H) | Range of shafts (Ød) | Parallelism of both V grooves to top and bottom sides | Squareness of both V grooves to front and back sides | Height difference of a matched pair |
|---|---|---|---|---|---|
| **6896-10** | 25x20×20mm | 3-20mm | 3μm | 3μm | 3μm |
| **6896-11** | 50×40×40mm | 5-30mm | 5μm | 5μm | 5μm |
| **6896-12** | 80×63×63mm | 7-63mm | 5μm | 5μm | 5μm |
| **6896-13** | 100×80×80mm | 7-80mm | 5μm | 5μm | 5μm |
| **6896-14** | 70×140×140mm | 9-140mm | 5μm | 5μm | 5μm |

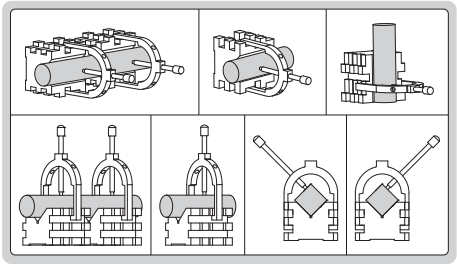
SIDE LIE-DOWN USE IS POSSIBLE

## V-BLOCK SET



6802-1



- Hold cylindrical or rectangular workpieces for inspection and machining
- Two V-blocks per set
- Made of alloy steel
- Hardened to HRC60±2
- Applicable for rectangular workpieces with thickness: ≤35mm

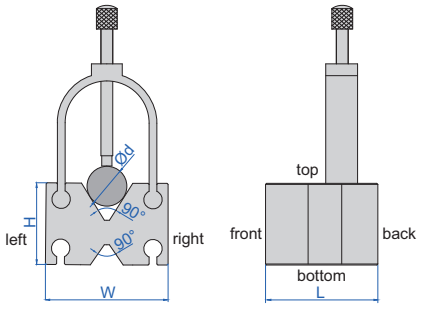
| Code | Size (L×W×H) | Range of shafts (Ød) | Parallelism of V groove to top, bottom, left, right sides | Squareness of V groove to front and back sides | Height difference of a matched pair |
|---|---|---|---|---|---|
| **6802-1** | 65×70×50mm | 5-50mm | 5μm | 5μm | 5μm |

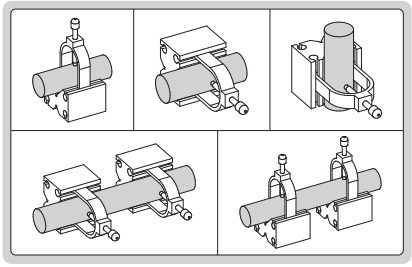
SIDE LIE-DOWN USE IS POSSIBLE

## V-BLOCK SETS



6803-1



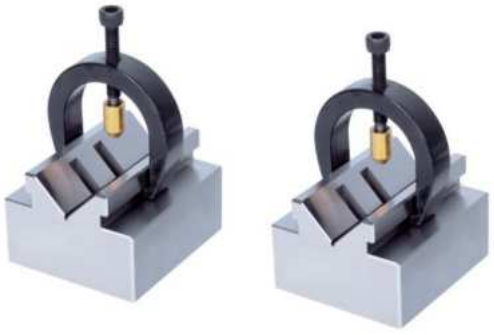



- Hold cylindrical workpieces for inspection and machining
- Two V-blocks per set
- Made of alloy steel
- Hardened to HRC60±2
- V groove on the top for large shafts
- V groove on the bottom for small shafts

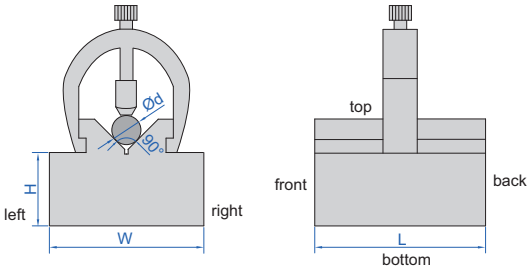
| Code | Size (L×W×H) | Range of shafts (Ød) | Parallelism of both V grooves to top, bottom, left, right sides | Squareness of both V grooves to front and back sides | Height difference of a matched pair |
|---|---|---|---|---|---|
| **6803-1** | 55×60×40mm | 4-35mm | 5μm | 5μm | 5μm |
| **6803-2** | 65×70×45mm | 4-47mm | 5μm | 5μm | 5μm |

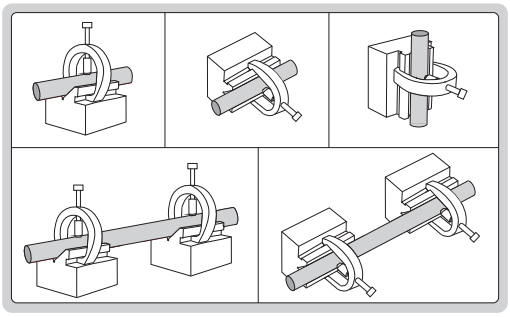
## V-BLOCK SET

SIDE LIE-DOWN USE IS POSSIBLE



6806-20

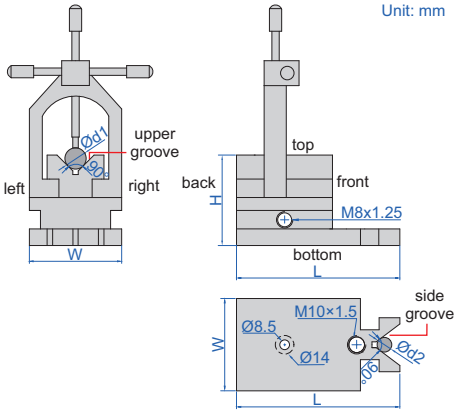


- Hold cylindrical workpieces for inspection and machining
- Two V-blocks per set
- Made of alloy steel
- Hardened to HRC60±2
- Applicable for cylinder with diameter (Ød): 2-20mm

| Code | Size (L×W×H) | Parallelism of V groove to bottom, left, right sides | Squareness of V groove to front and back sides | Height difference of a matched pair |
|---|---|---|---|---|
| **6806-20** | 70×63×31mm | 5μm | 5μm | 5μm |

## V-BLOCK






6804-M2



side groove is for shouldered studs and pins




- Hold cylindrical workpieces for inspection and machining
- Made of alloy steel
- Hardened to HRC60±2

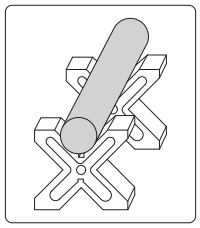
| Code | Size (L×W×H) | Range of shafts (Ød1 and Ød2) | Parallelism of upper groove to bottom, left and right sides | Squareness of upper groove to back side | Parallelism of side groove to back side |
|---|---|---|---|---|---|
| **6804-M2** | 90×48×48mm | 5-33mm | 5μm | 5μm | 5μm |



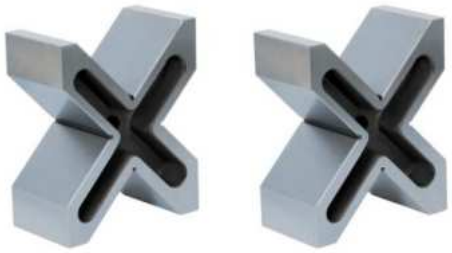


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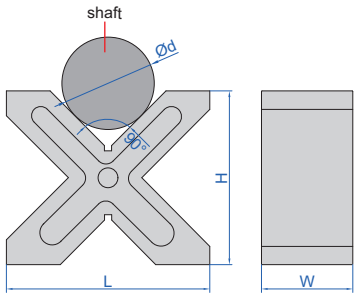
## V-BLOCK SETS



- For positioning cylindrical workpieces
- Two V-blocks per set
- Each V-block has four 90° V-grooves
- Cast iron, hardness HB170-240

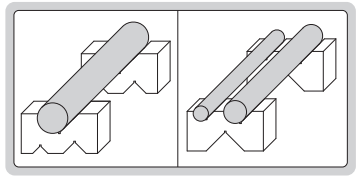


6805-2




| Code | Size (L×H×W) | Range of shafts (Ød) | Parallelism of four V grooves to all sides | Height difference of a matched pair |
|---|---|---|---|---|
| 6805-1 | 150×130×75mm | 8-120mm | 15μm | 20μm |
| 6805-2 | 200×170×90mm | 12-180mm | 15μm | 20μm |

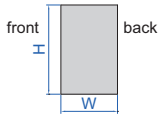
## V-BLOCK SETS

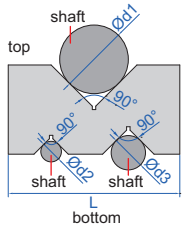


- Two V-blocks per set
- Made of hardened tool steel



6887-3

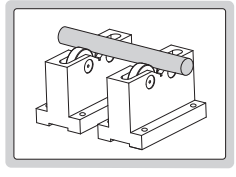



| Code | Size (L×W×H) | Range of shafts (Ød1) | Range of shafts (Ød2) | Range of shafts (Ød3) |
|---|---|---|---|---|
| 6887-1 | 50×19×24mm | 3-32mm | 3-16mm | 3-22mm |
| 6887-2 | 75×24×35mm | 3-50mm | 3-20mm | 3-32mm |
| 6887-3 | 100×33×52mm | 3-68mm | 3-26mm | 3-40mm |
| 6887-4 | 125×44×69mm | 3-87mm | 3-34mm | 3-50mm |

| Code | Parallelism of three V grooves to top and bottom sides | Height difference of a matched pair |
|---|---|---|
| 6887-1 | 5μm | 5μm |
| 6887-2 | 5μm | 5μm |
| 6887-3 | 5μm | 5μm |
| 6887-4 | 5μm | 5μm |

## ROLLER BEARING V-BLOCK SETS

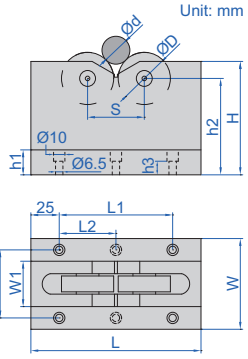


- Runout accuracy: 5μm
- Parallelism of bearings to bottom: 12μm
- Two V-blocks per set
- Workpieces don't get damaged due to bearings
- Suitable for heavy workpieces



6888-1

Unit: mm

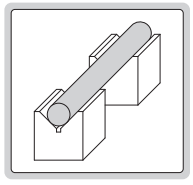



| Code | Size (L×W×H) | Code of bearings | Diameter of bearings (ØD) | Range of shafts (Ød) | Load capacity |
|---|---|---|---|---|---|
| 6888-1 | 150×60×100mm | 16004 ZZ | 42mm | 25-70mm | 500kg |
| 6888-2 | 150×80×100mm | 6303 ZZ | 47mm | 5-55mm | 1000kg |
| 6888-3 | 230×100×150mm | 6306 ZZ | 72mm | 70-200mm | 1000kg |

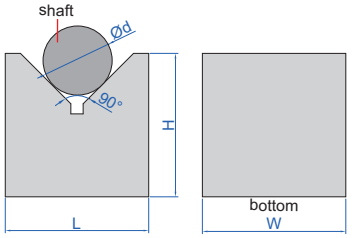
(mm)

| Code | W1 | W2 | h1 | h2 | h3 | L1 | L2 | S |
|---|---|---|---|---|---|---|---|---|
| 6888-1 | 22 | 44 | 20 | 85 | 12 | 100 | – | 60 |
| 6888-2 | 40 | 60 | 22 | 85 | 12 | 100 | – | 50 |
| 6888-3 | 60 | 80 | 30 | 124 | 20 | 180 | 90 | 120 |

## GRANITE V-BLOCK SETS







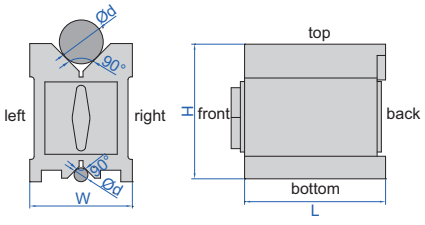

- Two V-blocks per set

**6897-1**

| Code | Size (L×W×H) | Range of shafts (Ød) | Parallelism of V groove to bottom | Height difference of a matchet pair |
|---|---|---|---|---|
| **6897-1** | 70×50×70mm | 6-70mm | 4μm | 5μm |
| **6897-2** | 100×50×70mm | 6-84mm | 4μm | 5μm |

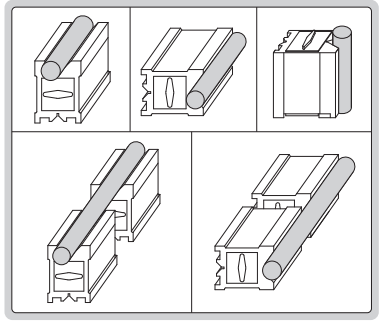
## MAGNETIC V-BLOCKS (ADVANCED TYPE)

HARDENED SURFACES | HIGH PRECISION | STRONG MAGNETIC FORCE






**6889-11**





**6889-1**

- Hardened, high accuracy, strong magnetic force, for grinding, light milling, drilling and inspection of round and square workpieces
- All working surfaces are hardened to HRC60±2
- Magnetic force on top, bottom and two V grooves
- V groove on the top for large shafts
- V groove on the bottom for small shafts
- Suitable for cast iron surface plates and granite surface plates

**Individual**

| Code | Size (L×W×H) | Range of shafts (Ød) | Magnetic force | Parallelism of V grooves to top, bottom, left, right sides | Squareness of V grooves to back side |
|---|---|---|---|---|---|
| **6889-11** | 75×56×75mm | 5-40mm | 85kgf | 5μm | 5μm |
| **6889-22** | 100×70×95mm | 5-65mm | 150kgf | 5μm | 5μm |
| **6889-33** | 150×75×100mm | 5-70mm | 190kgf | 6μm | 6μm |
| **6889-55** | 160×125×130mm | 5-140mm | 220kgf | 12μm | 12μm |
| **6889-44** | 200×125×150mm | 10-140mm | 400kgf | 12μm | 12μm |

**Matched pair**

| Code | Size (L×W×H) | Range of shafts (Ød) | Magnetic force | Parallelism of V grooves to top, bottom, left, right sides | Squareness of V grooves to back side | Height difference of a matched pair |
|---|---|---|---|---|---|---|
| **6889-1** | 75×56×75mm | 5-40mm | 85kgf | 5μm | 5μm | 5μm |
| **6889-2** | 100×70×95mm | 5-65mm | 150kgf | 5μm | 5μm | 5μm |
| **6889-3** | 150×75×100mm | 5-70mm | 190kgf | 6μm | 6μm | 6μm |
| **6889-5** | 160×125×130mm | 5-140mm | 220kgf | 12μm | 12μm | 12μm |
| **6889-4** | 200×125×150mm | 10-140mm | 400kgf | 12μm | 12μm | 12μm |

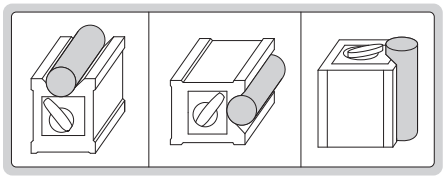




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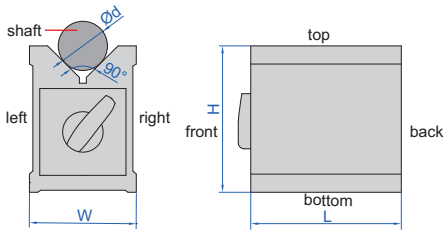
## MAGNETIC V-BLOCKS

**ATTENTION: NOT SUITABLE FOR STEEL OR IRON SURFACES, OTHERWISE THE MAGNETIC FORCE WILL BE REDUCED**





6890-702

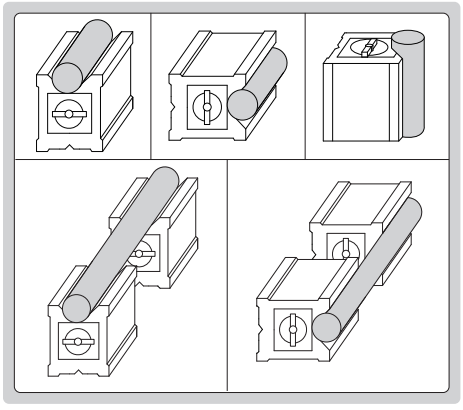



- Hold cylindrical workpieces for inspection and machining
- Supplied in single piece
- Not suitable for steel or iron surfaces, otherwise the magnetic force will be reduced

| Code | Size (L×W×H) | Range of shafts (Ød) | Magnetic force | Parallelism of V groove to top, bottom, left and right sides | Squareness of V groove to back side | Remark |
|---|---|---|---|---|---|---|
| **6890-702** | 70×60×73mm | 6-44mm | 56kgf | 10μm | 10μm | not hardened |
| **6890-702A** | 70×60×73mm | 6-44mm | 56kgf | 10μm | 10μm | hardened surfaces |

## MAGNETIC V-BLOCKS

**ATTENTION: NOT SUITABLE FOR STEEL OR IRON SURFACES, OTHERWISE THE MAGNETIC FORCE WILL BE REDUCED**

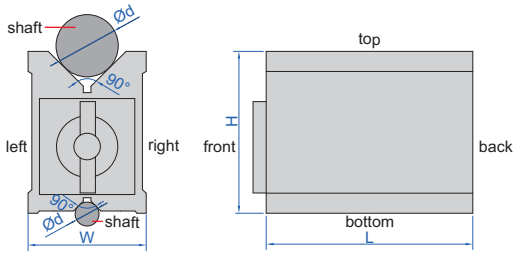




6801-1202



6801-2A




- Hold cylindrical workpieces for inspection and machining
- V groove on the top for large shafts
- V groove on the bottom for small shafts
- Not suitable for steel or iron surfaces, otherwise the magnetic force will be reduced

**Individual**

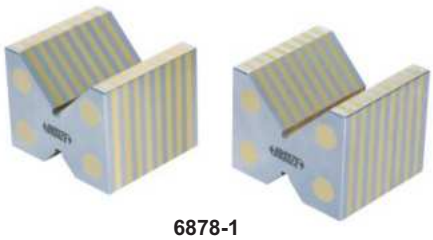
| Code | Size (L×W×H) | Range of shafts (Ød) | Magnetic force | Parallelism of V grooves to top, bottom, left, right side | Squareness of V grooves to back side | Remark |
|---|---|---|---|---|---|---|
| **6801-1201** | 80×70×95mm | 6-67mm | 64kgf | 10μm | 10μm | not hardened |
| **6801-1202** | 100×70×95mm | 6-67mm | 80kgf | 10μm | 10μm | |
| **6801-1203** | 120×70×95mm | 6-67mm | 96kgf | 10μm | 10μm | |
| **6801-1201A** | 80×70×95mm | 6-67mm | 64kgf | 10μm | 10μm | hardened surfaces |
| **6801-1202A** | 100×70×95mm | 6-67mm | 80kgf | 10μm | 10μm | |
| **6801-1203A** | 120×70×95mm | 6-67mm | 96kgf | 10μm | 10μm | |

**Matched pair**

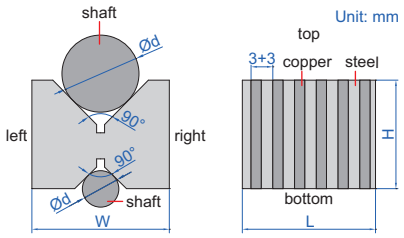
| Code | Size (L×W×H) | Range of shafts (Ød) | Magnetic force | Parallelism of V grooves to top, bottom, left, right side | Squareness of V grooves to back side | Height difference of a matched pair | Remark |
|---|---|---|---|---|---|---|---|
| **6801-1** | 80×70×95mm | 6-67mm | 64kgf | 10μm | 10μm | 10μm | not hardened |
| **6801-2** | 100×70×95mm | 6-67mm | 80kgf | 10μm | 10μm | 10μm | |
| **6801-3** | 120×70×95mm | 6-67mm | 96kgf | 10μm | 10μm | 10μm | |
| **6801-1A** | 80×70×95mm | 6-67mm | 64kgf | 10μm | 10μm | 10μm | hardened surfaces |
| **6801-2A** | 100×70×95mm | 6-67mm | 80kgf | 10μm | 10μm | 10μm | |
| **6801-3A** | 120×70×95mm | 6-67mm | 96kgf | 10μm | 10μm | 10μm | |

## MAGNETIC INDUCTION V-BLOCK SET

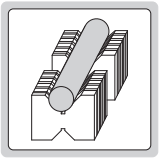
**ATTENTION: NOT HARDENED, DO NOT ROTATE WORKPIECES ON V-BLOCKS**



6878-1




- Hold cylindrical workpieces for inspection and machining
- To be used on magnetic chucks
- Two V-blocks per set
- V groove on the top for large shafts
- V groove on the bottom for small shafts
- Hardness HRB70
- Non-magnetic copper strips



| Code | Size (L×W×H) | Range of shafts (Ød) | Pole pitch | Parallelism of both V grooves to top and bottom sides | Height difference of a matched pair |
|---|---|---|---|---|---|
| **6878-1** | 52×58×46mm | 6-56mm | 3+3mm | 10μm | 10μm |

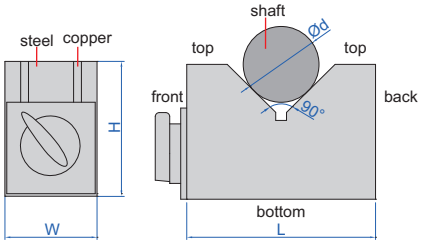
## MAGNETIC V-BLOCK SETS

**ATTENTION: NOT HARDENED, DO NOT ROTATE WORKPIECES ON V-BLOCKS**

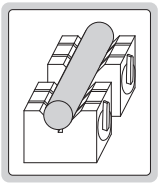
**ATTENTION: LOW MAGNETIC FORCE**



6891-1




- Hold cylindrical workpieces for inspection, not suitable for machining due to low magnetic force
- Two V-blocks per set
- Hardness HRB70



| Code | Size (L×W×H) | Range of shafts (Ød) | Magnetic force | Parallelism of V groove to bottom and back sides | Height difference of a matched pair |
|---|---|---|---|---|---|
| **6891-1** | 70×40×50mm | 6-46mm | 15kgf | 10μm | 10μm |
| **6891-3** | 150×50×100mm | 6-125mm | 21kgf | 10μm | 10μm |





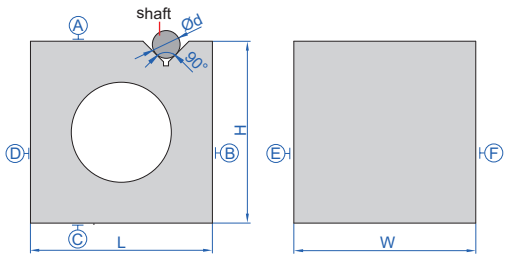
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## GRANITE SQUARE WITH V GROOVE



4142-200

- Parallelism and squareness of A, B, C, D, E and F: 6μm
- Parallelism and squareness of V groove to A, B, C, D, E and F: 6μm




| Code | Size (L×W×H) | Range of shaft (Ød) |
|---|---|---|
| **4142-200** | 200×200×200mm | 9~70mm |

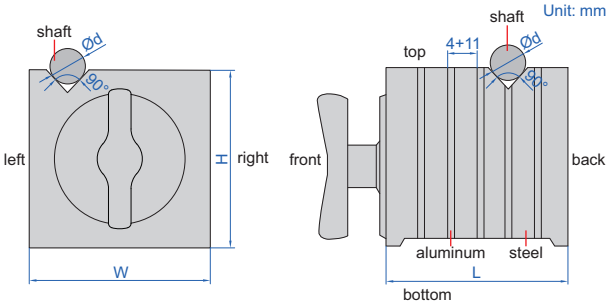
## MAGNETIC SQUARE WITH V GROOVE

**ATTENTION: NOT HARDENED, DO NOT ROTATE WORKPIECES ON V-BLOCKS**




6539-100

- Hold flat and cylindrical workpieces for inspection and machining
- Magnetic force on top, left, right and V grooves
- Parallelism and squareness of top, bottom, left, right and back: 20μm
- Parallelism and squareness of V grooves to top, bottom, left, right and back: 20μm




| Code | Size (L×W×H) | Magnetic force of V grooves | | Magnetic force of top, left and right sides | | Range of shafts (Ød) |
|---|---|---|---|---|---|---|
| | | on granite surface plate | on cast iron plate | on granite surface plate | on cast iron plate | |
| **6539-100** | 100×100×100mm | 30kgf | 25kgf | 50kgf | 30kgf | 5-30mm |





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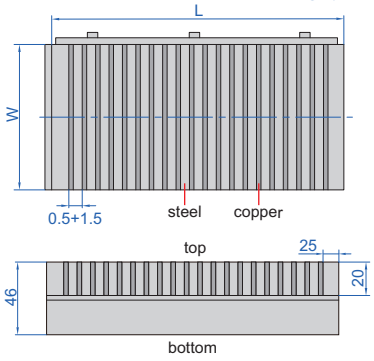
## PERMANENT MAGNETIC CHUCKS

ATTENTION:
NOT HARDENED



6537-400

Unit: mm




- The magnetic pole arrangement is dense and can hold thin and small workpieces

| Code | Table size (L×W) | Magnetic force | Pole pitch | Parallelism of top to bottom |
|---|---|---|---|---|
| **6537-175** | 175×100mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-250** | 250×125mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-150** | 150×150mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-300** | 300×150mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-350** | 350×150mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-401** | 400×150mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-451** | 450×150mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-400** | 400×200mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-450** | 450×200mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |
| **6537-500** | 500×200mm | 8kgf/cm² | 0.5+1.5mm | 0.02mm/300mm |

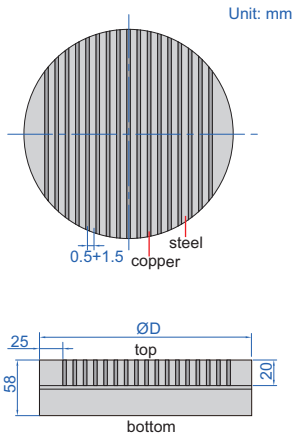
## ROUND PERMANENT MAGNETIC CHUCKS

ATTENTION:
NOT HARDENED



6542-300

Unit: mm




- The magnetic pole arrangement is dense and can hold thin and small workpieces
- Parallelism of top to bottom: 0.02mm/300mm

| Code | Table size (ØD) | Magnetic force | Pole pitch |
|---|---|---|---|
| **6542-125** | 125mm | 8kgf/cm² | 0.5+1.5mm |
| **6542-160** | 160mm | 8kgf/cm² | 0.5+1.5mm |
| **6542-200** | 200mm | 8kgf/cm² | 0.5+1.5mm |
| **6542-250** | 250mm | 8kgf/cm² | 0.5+1.5mm |
| **6542-300** | 300mm | 8kgf/cm² | 0.5+1.5mm |





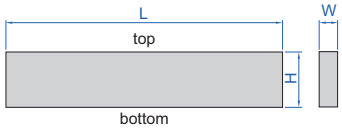
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## MAGNETIC PARALLEL SETS

- One side with magnets, can reduce clamping time
- Parallelism between top and bottom: 5μm
- Height difference of a matched pair: 5μm
- Made of alloy tool steel
- Hardened to HRC55-60



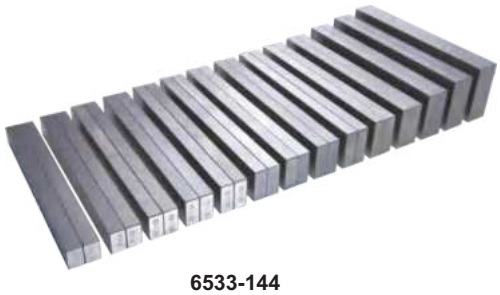
**6509-125**



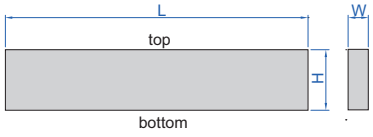

| Code | Parallels per set | Length (L) | Thickness (W) | Height (H) |
|---|---|---|---|---|
| **6509-90** | 5 pairs | 90mm | 2.5mm | 15, 22, 25, 30, 32mm |
| **6509-125** | 5 pairs | 125mm | 2.5mm | 15, 30, 35, 37,39mm |
| **6509-150** | 5 pairs | 150mm | 2.5mm | 25, 35, 40, 45, 47mm |
| **6509-160** | 5 pairs | 160mm | 2.5mm | 22, 30, 37, 42, 47mm |
| **6509-200** | 5 pairs | 200mm | 2.5mm | 25, 40, 47, 52, 57mm |

## PARALLEL SETS

- Parallelism between top and bottom: 5μm
- Height difference of a matched pair: 5μm
- Made of alloy tool steel
- Hardened to HRC55-60



**6533-144**

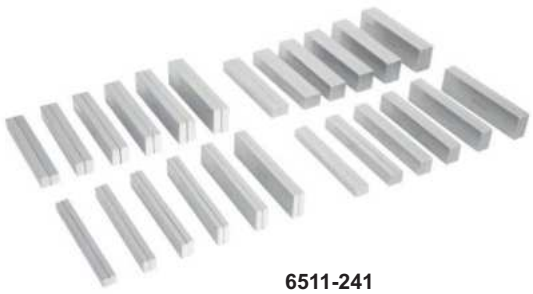



| Code | Parallels per set | Length (L) | Thickness (W) | Height (H) |
|---|---|---|---|---|
| **6533-6** | 6 pairs | 200mm | 9.5mm | 35, 40, 45, 50, 55, 58mm |
| **6533-8** | 8 pairs | 160mm | 8mm | 12*, 17, 22, 25, 28, 32, 36, 38mm |
| **6533-81** | 8 pairs | 200mm | 8mm | 17, 22, 26, 28, 32, 36, 38, 42mm |
| **6533-9** | 9 pairs | 160mm | 4mm | 10*, 14*, 18, 22, 26, 30, 34, 38, 42mm |
| **6533-10** | 10 pairs | 150mm | 3mm | 13, 16, 19, 22, 25, 28, 31, 35, 38, 41mm |
| **6533-144** | 14 pairs | 150mm | 10mm | 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 35, 40, 45, 50mm |

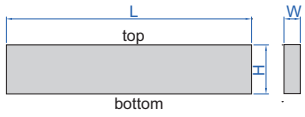
*Parallelism between top and bottom and height difference of a matched pair of 12mm in **6533-8**, 10mm, 14mm in **6533-9** is 7μm

## PARALLEL SETS

- Parallelism between top and bottom: 5μm
- Height difference of a matched pair: 5μm
- Made of alloy tool steel
- Hardened to HRC55-60



**6511-241**

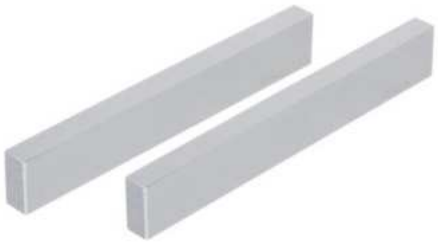


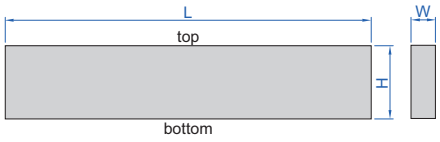

| Code | Parallels per set | Length (L) | Height (H)×Thickness (W) |
|---|---|---|---|
| **6511-20** | 20 pairs | 100mm | 5×2*, 10×2, 15×2, 20×2, 6×3*, 11×3, 16×3, 21×3, 7×4*, 12×4, 17×4, 22×4, 8×5*, 13×5, 18×5, 23×5, 9×6*, 14×6, 19×6, 24×6mm |
| **6511-24** | 24 pairs | 125mm | 11×8, 16×8, 21×8, 26×8, 31×8, 36×8, 13×10, 18×10, 23×10, 28×10, 33×10, 38×10, 15×12, 20×12, 25×12, 30×12, 35×12, 40×12, 17×14, 22×14, 27×14, 32×14, 37×14, 42×14mm |
| **6511-241** | 24 pairs | 150mm | 11×8, 16×8, 21×8, 26×8, 31×8, 36×8, 13×10, 18×10, 23×10, 28×10, 33×10, 38×10, 15×12, 20×12, 25×12, 30×12, 35×12, 40×12, 17×14, 22×14, 27×14, 32×14, 37×14, 42×14mm |

*Parallelism between top and bottom and height difference of a matched pair of 5×2mm, 6×3mm, 7×4mm, 8×5mm and 9×6mm in **6511-20** is 7μm

# PARALLELS

- Made of alloy tool steel
- Hardened to HRC55-60
- Supplied in pair






6512-2210A

| L=125mm | L=150mm | L=200mm | | | |
|---|---|---|---|---|---|
| Code | Code | Code | H×W | Parallelism between top and bottom | Height difference of a matched pair |
| 6512-118 | 6512-1181 | 6512-1182 | 11×8mm | 5μm | 5μm |
| 6512-168 | 6512-1681 | 6512-1682 | 16×8mm | 5μm | 5μm |
| 6512-218 | 6512-2181 | 6512-2182 | 21×8mm | 5μm | 5μm |
| 6512-268 | 6512-2681 | 6512-2682 | 26×8mm | 5μm | 5μm |
| 6512-318 | 6512-3181 | 6512-3182 | 31×8mm | 5μm | 5μm |
| 6512-368 | 6512-3681 | 6512-3682 | 36×8mm | 5μm | 5μm |
| 6512-1310 | 6512-13101 | 6512-13102 | 13×10mm | 5μm | 5μm |
| 6512-1810 | 6512-18101 | 6512-18102 | 18×10mm | 5μm | 5μm |
| 6512-2310 | 6512-23101 | 6512-23102 | 23×10mm | 5μm | 5μm |
| 6512-2810 | 6512-28101 | 6512-28102 | 28×10mm | 5μm | 5μm |
| 6512-3310 | 6512-33101 | 6512-33102 | 33×10mm | 5μm | 5μm |
| 6512-3810 | 6512-38101 | 6512-38102 | 38×10mm | 5μm | 5μm |
| 6512-1512 | 6512-15121 | 6512-15122 | 15×12mm | 5μm | 5μm |
| 6512-2012 | 6512-20121 | 6512-20122 | 20×12mm | 5μm | 5μm |
| 6512-2512 | 6512-25121 | 6512-25122 | 25×12mm | 5μm | 5μm |
| 6512-3012 | 6512-30121 | 6512-30122 | 30×12mm | 5μm | 5μm |
| 6512-3512 | 6512-35121 | 6512-35122 | 35×12mm | 5μm | 5μm |
| 6512-4012 | 6512-40121 | 6512-40122 | 40×12mm | 5μm | 5μm |
| 6512-1714 | 6512-17141 | 6512-17142 | 17×14mm | 5μm | 5μm |
| 6512-2214 | 6512-22141 | 6512-22142 | 22×14mm | 5μm | 5μm |
| 6512-2714 | 6512-27141 | 6512-27142 | 27×14mm | 5μm | 5μm |
| 6512-3214 | 6512-32141 | 6512-32142 | 32×14mm | 5μm | 5μm |
| 6512-3714 | 6512-37141 | 6512-37142 | 37×14mm | 5μm | 5μm |
| 6512-4214 | 6512-42141 | 6512-42142 | 42×14mm | 5μm | 5μm |

**L=100mm**

| Code | H×W | Parallelism between top and bottom | Height difference of a matched pair |
|---|---|---|---|
| 6512-52 | 5×2mm | 7μm | 7μm |
| 6512-102 | 10×2mm | 5μm | 5μm |
| 6512-152 | 15×2mm | 5μm | 5μm |
| 6512-202 | 20×2mm | 5μm | 5μm |
| 6512-63 | 6×3mm | 7μm | 7μm |
| 6512-113 | 11×3mm | 5μm | 5μm |
| 6512-163 | 16×3mm | 5μm | 5μm |
| 6512-213 | 21×3mm | 5μm | 5μm |
| 6512-74 | 7×4mm | 7μm | 7μm |
| 6512-124 | 12×4mm | 5μm | 5μm |
| 6512-174 | 17×4mm | 5μm | 5μm |
| 6512-224 | 22×4mm | 5μm | 5μm |
| 6512-85 | 8×5mm | 7μm | 7μm |
| 6512-135 | 13×5mm | 5μm | 5μm |
| 6512-185 | 18×5mm | 5μm | 5μm |
| 6512-235 | 23×5mm | 5μm | 5μm |
| 6512-96 | 9×6mm | 7μm | 7μm |
| 6512-146 | 14×6mm | 5μm | 5μm |
| 6512-196 | 19×6mm | 5μm | 5μm |
| 6512-246 | 24×6mm | 5μm | 5μm |

**L=150mm**

| Code | H×W | Parallelism between top and bottom | Height difference of a matched pair |
|---|---|---|---|
| 6512-1410A | 14×10mm | 5μm | 5μm |
| 6512-1610A | 16×10mm | 5μm | 5μm |
| 6512-1810A | 18×10mm | 5μm | 5μm |
| 6512-2010A | 20×10mm | 5μm | 5μm |
| 6512-2210A | 22×10mm | 5μm | 5μm |
| 6512-2410A | 24×10mm | 5μm | 5μm |
| 6512-2610A | 26×10mm | 5μm | 5μm |
| 6512-2810A | 28×10mm | 5μm | 5μm |
| 6512-3010A | 30×10mm | 5μm | 5μm |
| 6512-3210A | 32×10mm | 5μm | 5μm |
| 6512-3510A | 35×10mm | 5μm | 5μm |
| 6512-4010A | 40×10mm | 5μm | 5μm |
| 6512-4510A | 45×10mm | 5μm | 5μm |
| 6512-5010A | 50×10mm | 5μm | 5μm |

To be continued



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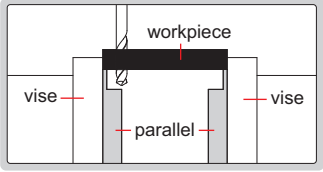
**L=160mm**

| Code | H×W | Parallelism between top and bottom | Height difference of a matched pair |
|---|---|---|---|
| **6512-104A** | 10×4mm | 5μm | 5μm |
| **6512-144A** | 14×4mm | 5μm | 5μm |
| **6512-184A** | 18×4mm | 5μm | 5μm |
| **6512-224A** | 22×4mm | 5μm | 5μm |
| **6512-264A** | 26×4mm | 5μm | 5μm |
| **6512-304A** | 30×4mm | 5μm | 5μm |
| **6512-344A** | 34×4mm | 5μm | 5μm |
| **6512-384A** | 38×4mm | 5μm | 5μm |
| **6512-424A** | 42×4mm | 5μm | 5μm |
| **6512-128A** | 12×8mm | 5μm | 5μm |
| **6512-178A** | 17×8mm | 5μm | 5μm |
| **6512-228A** | 22×8mm | 5μm | 5μm |
| **6512-258A** | 25×8mm | 5μm | 5μm |
| **6512-288A** | 28×8mm | 5μm | 5μm |
| **6512-328A** | 32×8mm | 5μm | 5μm |
| **6512-368A** | 36×8mm | 5μm | 5μm |
| **6512-388A** | 38×8mm | 5μm | 5μm |

**L=200mm**

| Code | H×W | Parallelism between top and bottom | Height difference of a matched pair |
|---|---|---|---|
| **6512-178B** | 17×8mm | 5μm | 5μm |
| **6512-228B** | 22×8mm | 5μm | 5μm |
| **6512-268B** | 26×8mm | 5μm | 5μm |
| **6512-288B** | 28×8mm | 5μm | 5μm |
| **6512-328B** | 32×8mm | 5μm | 5μm |
| **6512-368B** | 36×8mm | 5μm | 5μm |
| **6512-388B** | 38×8mm | 5μm | 5μm |
| **6512-428B** | 42×8mm | 5μm | 5μm |

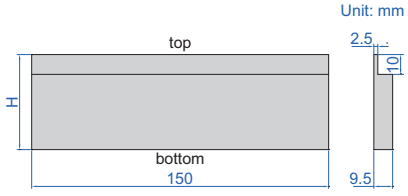
## PARALLEL SET





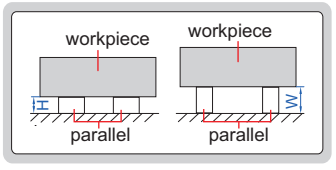

**6534-6**

- Parallelism between top and bottom: 5μm
- Height difference of a matched pair: 5μm
- Made of alloy tool steel
- Hardened to HRC55-60




| Code | Parallels per set | Height (H) |
|---|---|---|
| **6534-6** | 6 pairs | 25, 30, 35, 40, 45, 48mm |

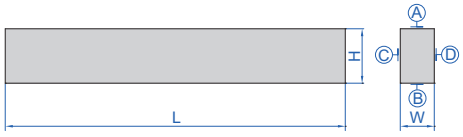
## GRANITE PARALLEL SET






**4143-250**

- Made of granite, hard and no rusty, no dimensional change over time or temperature change
- Two parallels per set




| Code | Size (L×W×H) | Parallelism between A and B | Parallelism between C and D | Height difference of a matched pair |
|---|---|---|---|---|
| **4143-250** | 250×25×40mm | 3μm | 3μm | 3μm |

## PARALLEL/SQUARE SET

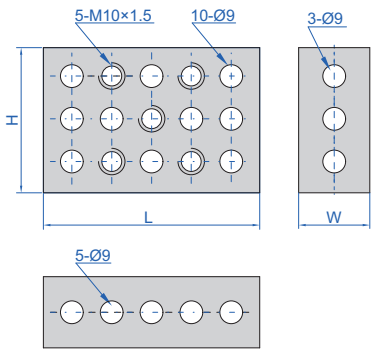
screws and wrench are included





6531-25

Unit: mm




- Pairs of matched blocks for positioning and set-up
- Screws and wrench are included
- Hardness HRC60±2

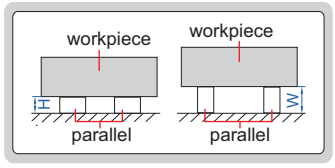
| Code | Size (L×H×W) | Size accuracy | Squareness | Parallelism | Height difference of a matched pair |
|---|---|---|---|---|---|
| **6531-25** | 75×50×25mm | 5μm | 5μm/25mm | 5μm | 5μm |

## MAGNETIC INDUCTION PARALLEL SET

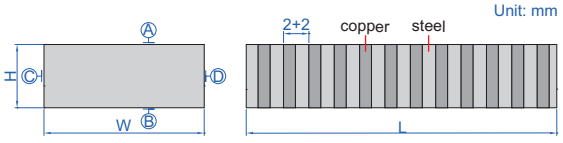
ATTENTION: NOT HARDENED



6879-1




Unit: mm




- To be used on magnetic chucks
- Two parallels per set
- Hardness HRB70
- Non-magnetic copper strips

| Code | Size (L×W×H) | Pole pitch | Parallelism between A and B | Parallelism between C and D | Height difference of a matched pair |
|---|---|---|---|---|---|
| **6879-1** | 100×50×25mm | 2+2mm | 10μm | 10μm | 10μm |

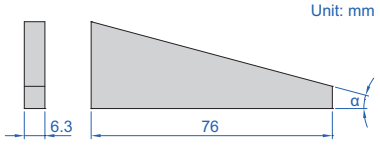
## ANGLE PLATE SETS





4006-12

Unit: mm




- For angle set-up in tooling, production and inspection
- Hardness HRC52

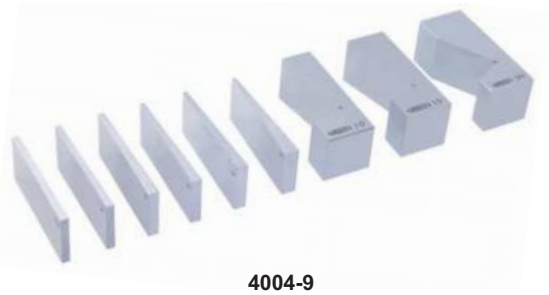
| Code | Angle plates included | Angle α | Accuracy |
|---|---|---|---|
| **4006-10** | 10 pcs | 1°, 2°, 3°, 4°, 5°, 10°, 15°, 20°, 25°, 30° | ±20 seconds |
| **4006-12** | 12 pcs | 1/4°, 1/2°, 1°, 2°, 3°, 4°, 5°, 10°, 15°, 20°, 25°, 30° | ±20 seconds |



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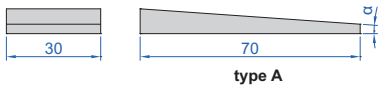
## ANGLE PLATE SET

- For angle set-up in tooling, production and inspection
- Made of tool steel
- Hardness HRC55

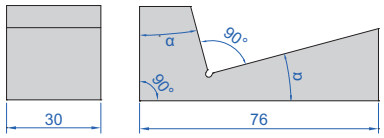


4004-9

Unit: mm




type A




type B

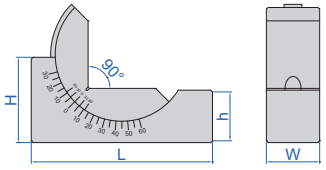
| Code | Angle plates included | Angle α | Type | Accuracy |
|---|---|---|---|---|
| 4004-9 | 9 pcs | 1/2°, 1°, 2°, 3°, 4°, 5° | type A | ±30 seconds |
| | | 10°, 15°, 30° | type B | ±50 seconds |

## ADJUSTABLE ANGLE BLOCKS

- Made of hardened tool steel
- With locking screw
- Accuracy of angle: 15 minutes

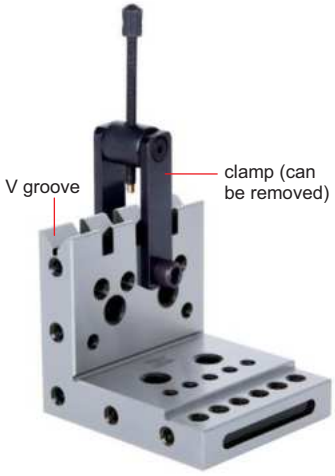


6535-30



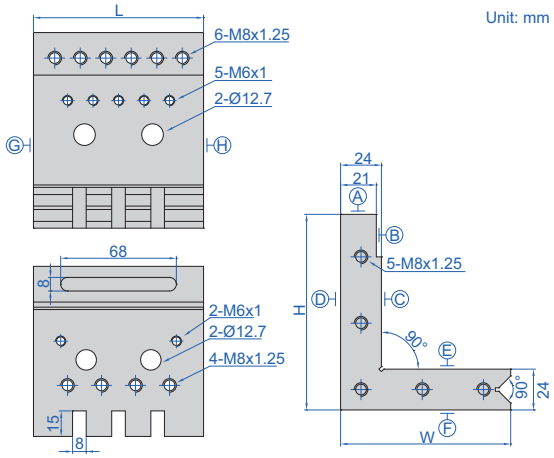

| Code | Size (L×W×H) | h | Adjustable angle | Graduation of angle |
|---|---|---|---|---|
| 6535-25 | 75×25×32mm | 25mm | 15°~0°~60° | 10 minutes |
| 6535-30 | 102×30×49mm | 30mm | 15°~0°~60° | 10 minutes |

## RIGHT ANGLE PLATE




6547-1

Unit: mm




- Made of alloy steel
- Hardened to HRC60±2
- V groove for cylinders
- Parallelism and squareness between A, B, C, D, E, F, G and H: 10μm
- Parallelism and squareness of V groove to A, B, C, D, E, F, G and H: 10μm

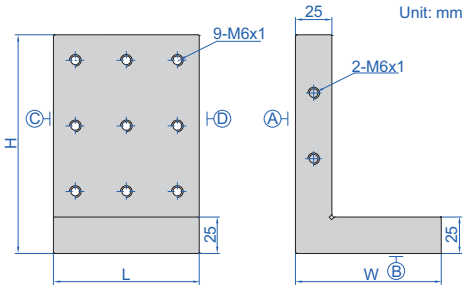
| Code | Size (L×W×H) |
|---|---|
| 6547-1 | 100×100×115mm |

## RIGHT ANGLE PLATE

- Made of tool steel
- Hardened to HRC60±2
- Squareness or parallelism between A, B, C and D: 5μm



6548-1



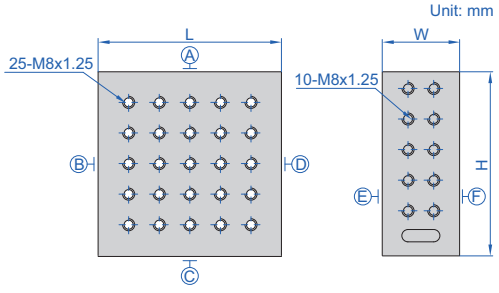

| Code | Size (L×W×H) |
|---|---|
| 6548-1 | 100×100×150mm |

## RIGHT ANGLE PLATE

- Made of tool steel
- Hardened to HRC56-58
- Parallelism between A, B, C, D, E and F: 3μm
- Squareness between A, B, C, D, E and F: 5μm



6549-1



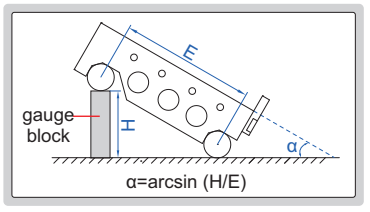

| Code | Size (L×W×H) |
|---|---|
| 6549-1 | 150×63×150mm |

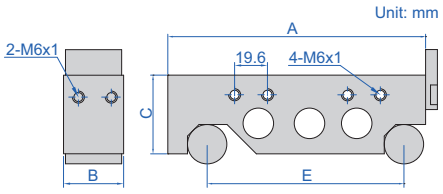
## SINE BARS

CAN BE CUSTOMIZED



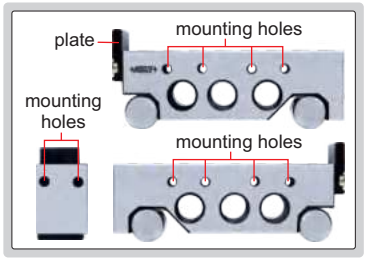
4155-100




- Made of alloy tool steel

the front and back ends and two sides have mounting holes to install plate



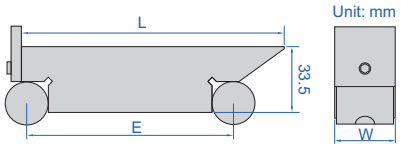

| Code | Roller distance (E) | Table size (A×B) | C | Accuracy of α at 30° |
|---|---|---|---|---|
| 4155-100 | 100mm | 130×30mm | 40mm | ±5 seconds |
| 4155-200 | 200mm | 230×30mm | 40mm | ±5 seconds |
| 4155-300 | 300mm | 345×40mm | 50mm | ±8 seconds |





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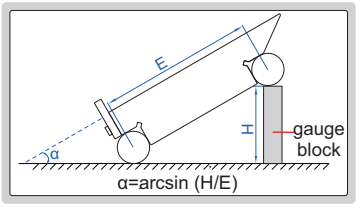
## SINE BAR






4158-100

- Made of alloy tool steel



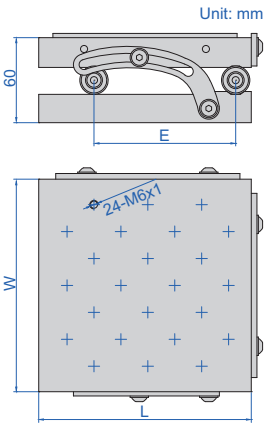

| Code | Roller distance (E) | Table size (L×W) | Accuracy of α at 30° |
|---|---|---|---|
| **4158-100** | 100mm | 130×30mm | ±5 seconds |

## SINE TABLE



6527-100

- Accuracy of angle: ±15 seconds
- Made of alloy tool steel
- Hardness HRC58-60



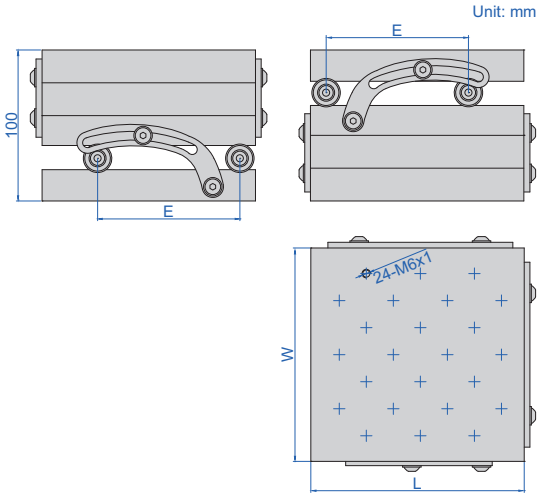

| Code | Roller distance (E) | Table size (LxW) | Adjustable angle |
|---|---|---|---|
| **6527-100** | 100mm | 150×150mm | 0-60° |

## COMPOUND SINE TABLE



6536-100

- Accuracy of angle: ±15 seconds
- Made of alloy tool steel
- Hardness HRC58-60




| Code | Roller distance (E) | Table size (L×W) | Adjustable angle |
|---|---|---|---|
| **6536-100** | 100mm | 150×150mm | 0-60° |

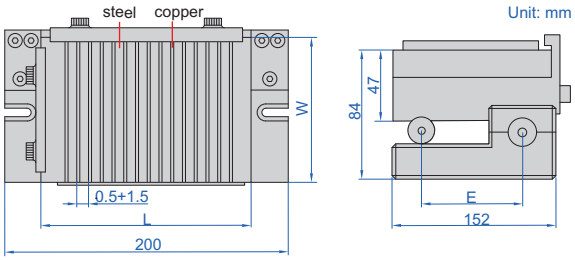
16

## MAGNETIC SINE TABLE

ATTENTION:
NOT HARDENED



6538-100




| Code | Table size (L×W) | Roller distance (E) | Adjustable angle | Accuracy of angle |
|---|---|---|---|---|
| 6538-100 | 150×150mm | 100mm | 0-60° | ±15 seconds |

## PRECISION SINE VISES

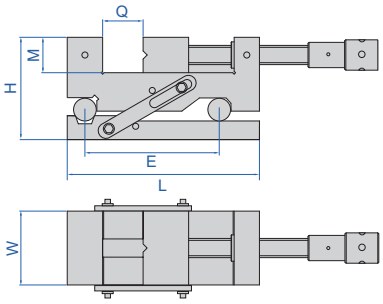
- Parallelism: 5μm/100mm
- Squareness: 5μm/100mm
- Adjustable angle: 0-55°
- Accuracy of angle: ±20 seconds
- Made of alloy steel
- Hardness HRC58-60



6513-85

(mm)

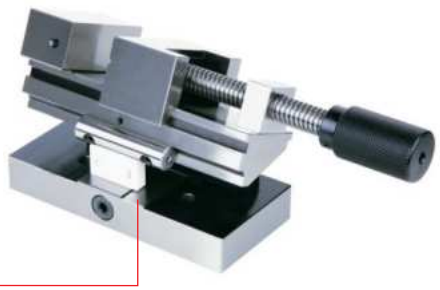
| Code | Jaw opening (Q) | Jaw width (W) | Roller distance (E) | L | H | M |
|---|---|---|---|---|---|---|
| 6513-65 | 0-65 | 50 | 100 | 150 | 85 | 25 |
| 6513-85 | 0-85 | 63 | 100 | 185 | 91.5 | 32 |
| 6513-100 | 0-100 | 73 | 150 | 205 | 105 | 35 |
| 6513-1001 | 0-100 | 80 | 150 | 215 | 108 | 40 |
| 6513-125 | 0-125 | 88 | 150 | 245 | 108 | 40 |
| 6513-1251 | 0-125 | 100 | 200 | 255 | 116 | 45 |
| 6513-160 | 0-160 | 125 | 200 | 295 | 125 | 50 |
| 6513-175 | 0-175 | 150 | 200 | 315 | 125 | 50 |




## PRECISION SINE VISE

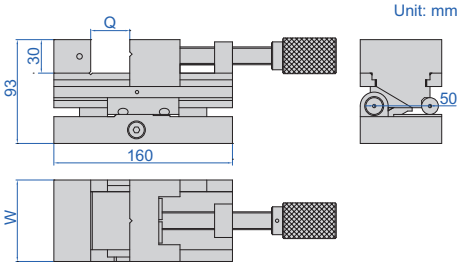
there is a 1mm step (accuracy +/-0.002mm). gauge blocks smaller than 0.5mm are not available. if small gauge blocks are needed (for example, 0.25mm), a gauge block 1.25mm can be used in order to make 1.25mm-1mm=0.25mm



6523-80

- Parallelism: 3μm/100mm
- Squareness: 5μm/100mm
- Accuracy of angle: ±15 seconds
- Made of SKS tool steel, subzero treatment
- Hardness HRC58-60



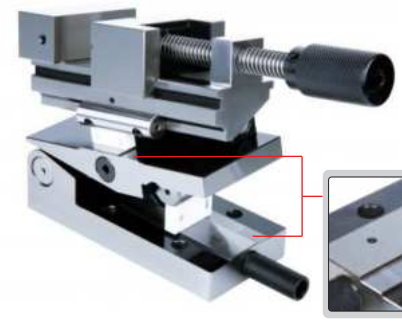

| Code | Jaw opening (Q) | Jaw width (W) | Adjustable angle |
|---|---|---|---|
| 6523-80 | 0-80mm | 73mm | 0-46° |





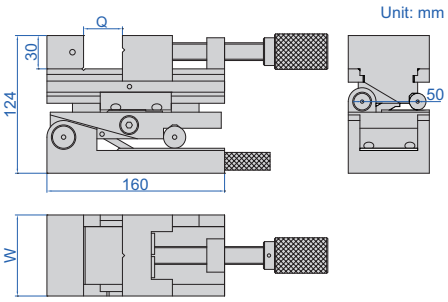
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## PRECISION COMPOUND SINE VISE



there is a 1mm step (accuracy +/-0.002mm). gauge blocks smaller than 0.5mm are not available. if small gauge blocks are needed (for example, 0.25mm), a gauge block 1.25mm can be used in order to make 1.25mm-1mm=0.25mm




**6524-80**

| Code | Jaw opening (Q) | Jaw width (W) | Adjustable angle |
|---|---|---|---|
| **6524-80** | 0-80mm | 73mm | 0-46° |

- Parallelism: 3μm/100mm
- Squareness: 5μm/100mm
- Accuracy of angle: ±15 seconds
- Made of SKS tool steel, subzero treatment
- Hardness HRC58-60

## PRECISION VISES

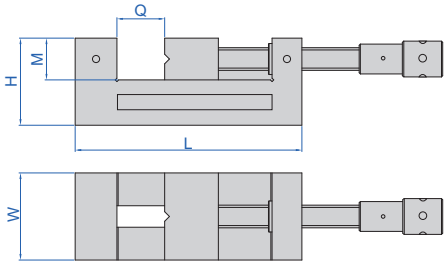
- Parallelism: 5μm/100mm
- Squareness: 5μm/100mm
- Made of alloy steel
- Hardness HRC58-60



**6520-87**

(mm)

| Code | Jaw opening (Q) | Jaw width (W) | L | H | M |
|---|---|---|---|---|---|
| **6520-36** | 0-36 | 38 | 115 | 48 | 25 |
| **6520-67** | 0-67 | 50 | 150 | 50 | 25 |
| **6520-87** | 0-87 | 63 | 185 | 63 | 32 |
| **6520-102** | 0-102 | 73 | 205 | 70 | 35 |
| **6520-1021** | 0-102 | 80 | 215 | 80 | 40 |
| **6520-127** | 0-127 | 88 | 245 | 80 | 40 |
| **6520-1271** | 0-127 | 100 | 255 | 90 | 45 |
| **6520-162** | 0-162 | 125 | 295 | 100 | 50 |
| **6520-175** | 0-175 | 150 | 315 | 100 | 50 |
| **6520-200** | 0-200 | 200 | 350 | 110 | 55 |




## PRECISION VISES (HIGH PRECISION)

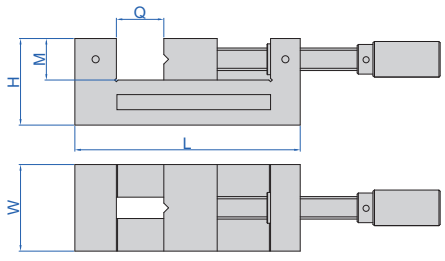
- Parallelism: 3μm/100mm
- Squareness: 4μm/100mm
- Made of alloy steel
- Hardness HRC58-62



**6525-87**

(mm)

| Code | Jaw opening (Q) | Jaw width (W) | L | H | M |
|---|---|---|---|---|---|
| **6525-36** | 0-36 | 38 | 115 | 48 | 25 |
| **6525-67** | 0-67 | 50 | 150 | 50 | 25 |
| **6525-87** | 0-87 | 63 | 185 | 63 | 32 |
| **6525-102** | 0-102 | 73 | 205 | 70 | 35 |
| **6525-1021** | 0-102 | 80 | 215 | 80 | 40 |
| **6525-127** | 0-127 | 88 | 245 | 80 | 40 |
| **6525-1271** | 0-127 | 100 | 255 | 90 | 45 |
| **6525-162** | 0-162 | 125 | 295 | 100 | 50 |
| **6525-175** | 0-175 | 150 | 315 | 100 | 50 |



## MINI QUICK MOVING PRECISION VISE (WITH STEPS)

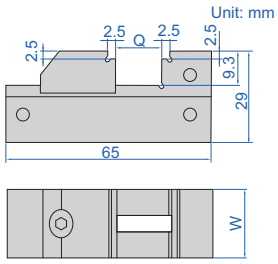
- Parallelism: 3μm
- Squareness: 3μm
- Made of alloy steel
- Hardness HRC58-62

(mm)

| Code | Jaw opening (Q) | Jaw width (W) |
|---|---|---|
| 6516-20 | 0-20 | 25 |



6516-20




## QUICK MOVING PRECISION VISES

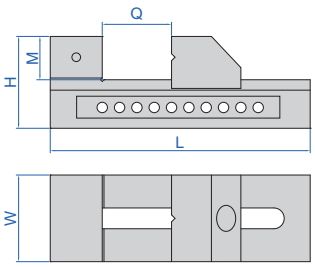
- Parallelism: 5μm/100mm
- Squareness: 5μm/100mm
- Made of alloy steel
- Hardness HRC58-60

(mm)

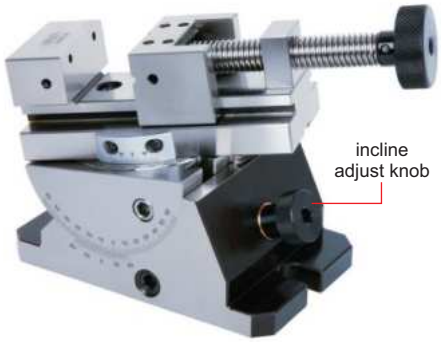
| Code | Jaw opening (Q) | Jaw width (W) | L | H | M |
|---|---|---|---|---|---|
| 6526-20 | 0-20 | 25 | 65 | 29 | 9.3 |
| 6526-40 | 0-40 | 38 | 100 | 48 | 23 |
| 6526-65 | 0-65 | 50 | 135 | 50 | 25 |
| 6526-85 | 0-85 | 63 | 170 | 63 | 32 |
| 6526-100 | 0-100 | 73 | 185 | 70 | 35 |
| 6526-1001 | 0-100 | 80 | 195 | 80 | 40 |
| 6526-125 | 0-125 | 88 | 230 | 80 | 40 |
| 6526-1251 | 0-125 | 100 | 240 | 90 | 45 |
| 6526-160 | 0-160 | 125 | 280 | 100 | 50 |
| 6526-175 | 0-175 | 150 | 300 | 100 | 50 |
| 6526-208 | 0-208 | 200 | 350 | 110 | 55 |



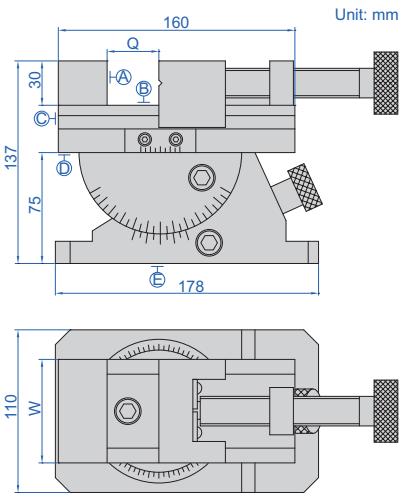
6526-85




## PRECISION UNIVERSAL VISE




6521-80




- Horizontal rotary: range 360°, graduation 0.05°
- Vertical incline: range 45°, graduation 0.05°
- With incline adjust knob
- Parallelism and squareness between A, B, C and D: 5μm/100mm, parallelism between D and E at 0°: 10μm/100mm
- Made of tool steel
- Hardness HRC56-58

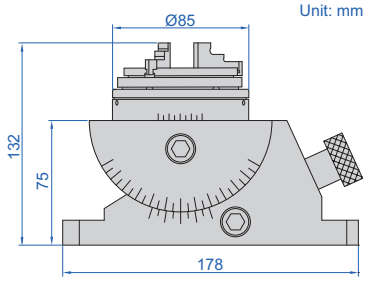
| Code | Jaw opening (Q) | Jaw width (W) |
|---|---|---|
| 6521-80 | 0-80mm | 70mm |

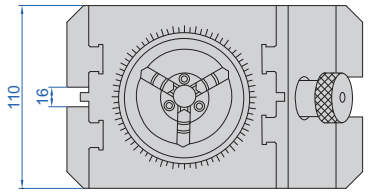
## PRECISION UNIVERSAL VISE WITH CHUCK




**6528-85**

Unit: mm

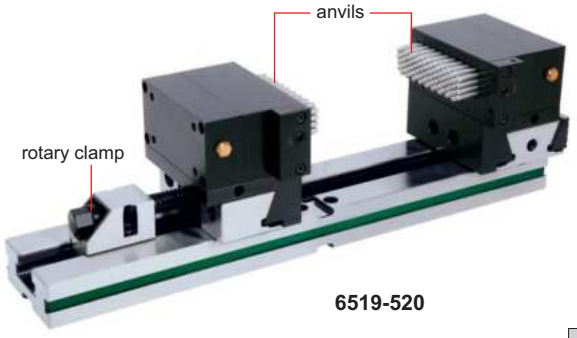


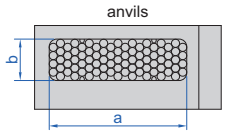

- Horizontal rotary: range 360°, graduation 0.05°
- Vertical incline: range 45°, graduation 0.05°
- With vertical incline adjust knob
- Runout of chuck is less than 0.05mm (test position is at less than 50mm from clamping jaws)
- The clamping jaws of chuck are reversible
- Made of tool steel
- Hardness HRC56-58

| Code | Range of external clamping | Range of internal clamping |
|---|---|---|
| **6528-85** | Ø0.8~Ø63mm | Ø23~Ø58mm |

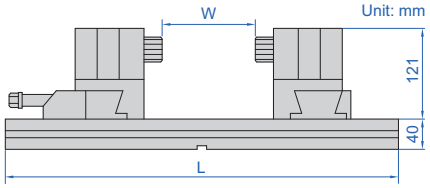
## ANVIL VISES




**6519-520**




Unit: mm




- The vise is used to fix workpieces during machining. The anvils are formed according the shape of workpieces to be fixed, so the vise can fix workpieces quickly.
- The anvils are made of stainless steel (HRC20), can be customized to carbon steel (HRC40-45)
- Diameter of anvil: 6mm, stroke of anvil: 24mm
- Movement range of rotary clamp: 0-50mm

application



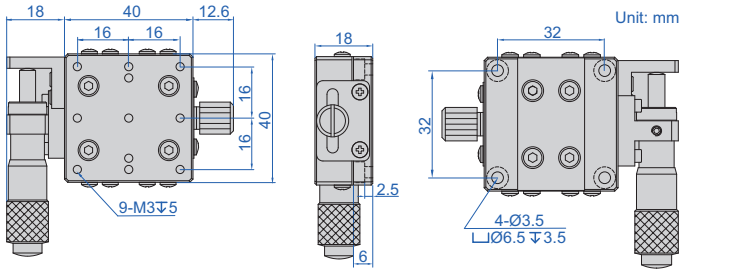
| Code | Guide length (L) | Clamp range (W) | Clamp force* | Weight | a | b |
|---|---|---|---|---|---|---|
| **6519-520** | 520mm | 0-190mm | 6500N | 22.5kg | 100mm | 30mm |
| **6519-680** | 680mm | 0-320mm | 8000N | 39.5kg | 120mm | 36mm |

*When all anvils contact the workpieces

# X-AXIS STAGES

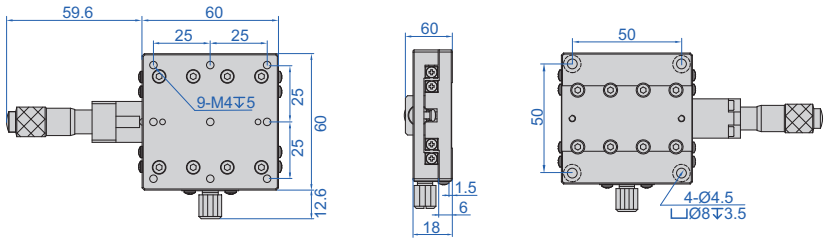


6582-401



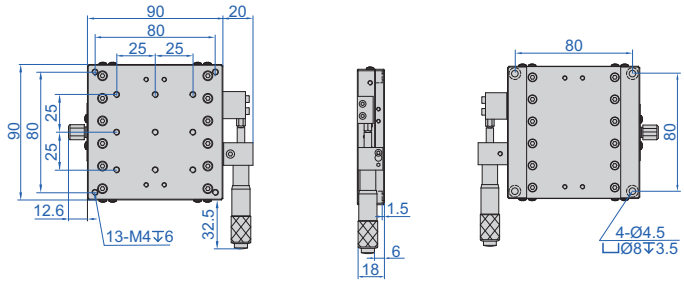



6582-602






6582-903




- Cross roller guides, achieve high precision and smooth movement
- Stages made of aluminum alloy

**SPECIFICATION (micrometer on the left)**

| Code | X-axis displacement | Parallelism of top to bottom surface | Micrometer graduation | Micrometer accuracy | Maximum load | Micrometer location | Stage size | Weight |
|---|---|---|---|---|---|---|---|---|
| 6582-401 | ±6.5mm | 0.02mm | 0.01mm | 0.01mm | 29.4N (3kgf) | left | 40x40mm | 0.14kg |
| 6582-601 | ±6.5mm | 0.03mm | 0.01mm | 0.01mm | 49N (5kgf) | left | 60x60mm | 0.24kg |
| 6582-901 | ±12.5mm | 0.03mm | 0.01mm | 0.02mm | 93.1N (9.5kgf) | left | 90x90mm | 0.47kg |
| 6582-1251 | ±12.5mm | 0.04mm | 0.01mm | 0.02mm | 180N (18.4kgf) | left | 125x125mm | 1.40kg |

**SPECIFICATION (micrometer in the middle)**

| Code | X-axis displacement | Parallelism of top to bottom surface | Micrometer graduation | Micrometer accuracy | Maximum load | Micrometer location | Stage size | Weight |
|---|---|---|---|---|---|---|---|---|
| 6582-402 | ±6.5mm | 0.02mm | 0.01mm | 0.01mm | 29.4N (3kgf) | middle | 40x40mm | 0.14kg |
| 6582-602 | ±6.5mm | 0.03mm | 0.01mm | 0.01mm | 49N (5kgf) | middle | 60x60mm | 0.24kg |
| 6582-902 | ±12.5mm | 0.03mm | 0.01mm | 0.02mm | 93.1N (9.5kgf) | middle | 90x90mm | 0.47kg |
| 6582-1252 | ±12.5mm | 0.04mm | 0.01mm | 0.02mm | 180N (18.4kgf) | middle | 125x125mm | 1.40kg |

**SPECIFICATION (micrometer on the right)**

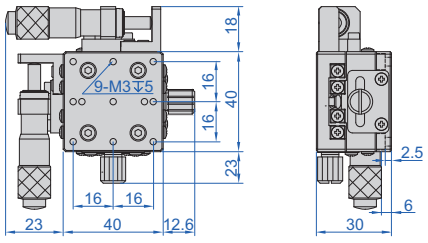
| Code | X-axis displacement | Parallelism of top to bottom surface | Micrometer graduation | Micrometer accuracy | Maximum load | Micrometer location | Stage size | Weight |
|---|---|---|---|---|---|---|---|---|
| 6582-403 | ±6.5mm | 0.02mm | 0.01mm | 0.01mm | 29.4N (3kgf) | right | 40x40mm | 0.14kg |
| 6582-603 | ±6.5mm | 0.03mm | 0.01mm | 0.01mm | 49N (5kgf) | right | 60x60mm | 0.24kg |
| 6582-903 | ±12.5mm | 0.03mm | 0.01mm | 0.02mm | 93.1N (9.5kgf) | right | 90x90mm | 0.47kg |
| 6582-1253 | ±12.5mm | 0.04mm | 0.01mm | 0.02mm | 180N (18.4kgf) | right | 125x125mm | 1.40kg |

# XY-AXIS STAGES

Unit: mm

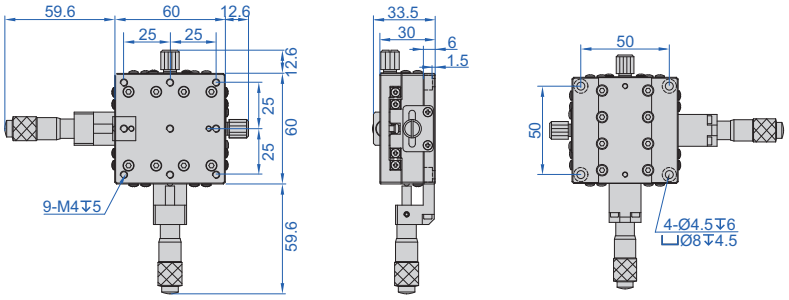


6584-401



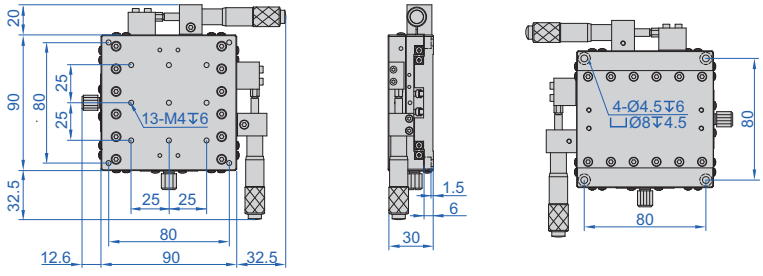



6584-602






6584-903




- Cross roller guides, achieve high precision and smooth movement
- Stages made of aluminum alloy

**SPECIFICATION (micrometer on the left)**

| Code | XY-axis displacement | Parallelism of top to bottom surface | Micrometer graduation | Micrometer accuracy | Maximum load | Micrometer location | Stage size | Weight |
|---|---|---|---|---|---|---|---|---|
| **6584-401** | ±6.5mm | 0.04mm | 0.01mm | 0.01mm | 29.4N (3kgf) | left | 40x40mm | 0.27kg |
| **6584-601** | ±6.5mm | 0.06mm | 0.01mm | 0.01mm | 49N (5kgf) | left | 60x60mm | 0.48kg |
| **6584-901** | ±12.5mm | 0.06mm | 0.01mm | 0.02mm | 93.1N (9.5kgf) | left | 90x90mm | 1kg |
| **6584-1251** | ±12.5mm | 0.08mm | 0.01mm | 0.02mm | 180N (18.4kgf) | left | 125x125mm | 2.8kg |

**SPECIFICATION (micrometer in the middle)**

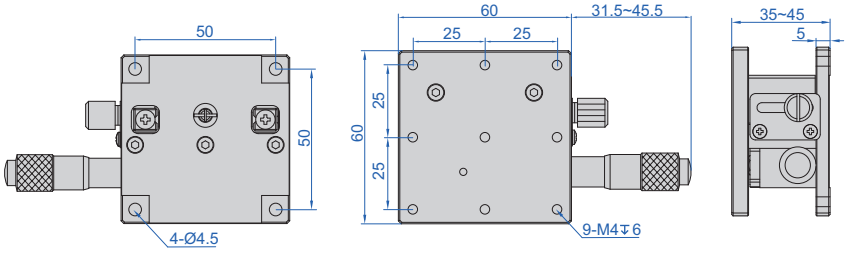
| Code | XY-axis displacement | Parallelism of top to bottom surface | Micrometer graduation | Micrometer accuracy | Maximum load | Micrometer location | Stage size | Weight |
|---|---|---|---|---|---|---|---|---|
| **6584-402** | ±6.5mm | 0.04mm | 0.01mm | 0.01mm | 29.4N (3kgf) | middle | 40x40mm | 0.27kg |
| **6584-602** | ±6.5mm | 0.06mm | 0.01mm | 0.01mm | 49N (5kgf) | middle | 60x60mm | 0.48kg |
| **6584-902** | ±12.5mm | 0.06mm | 0.01mm | 0.02mm | 93.1N (9.5kgf) | middle | 90x90mm | 1kg |
| **6584-1252** | ±12.5mm | 0.08mm | 0.01mm | 0.02mm | 180N (18.4kgf) | middle | 125x125mm | 2.8kg |

**SPECIFICATION (micrometer on the right)**

| Code | XY-axis displacement | Parallelism of top to bottom surface | Micrometer graduation | Micrometer accuracy | Maximum load | Micrometer location | Stage size | Weight |
|---|---|---|---|---|---|---|---|---|
| **6584-403** | ±6.5mm | 0.04mm | 0.01mm | 0.01mm | 29.4N (3kgf) | right | 40x40mm | 0.27kg |
| **6584-603** | ±6.5mm | 0.06mm | 0.01mm | 0.01mm | 49N (5kgf) | right | 60x60mm | 0.48kg |
| **6584-903** | ±12.5mm | 0.06mm | 0.01mm | 0.02mm | 93.1N (9.5kgf) | right | 90x90mm | 1kg |
| **6584-1253** | ±12.5mm | 0.08mm | 0.01mm | 0.02mm | 180N (18.4kgf) | right | 125x125mm | 2.8kg |

## Z-AXIS STAGE
## CODE 6586-60

Unit: mm





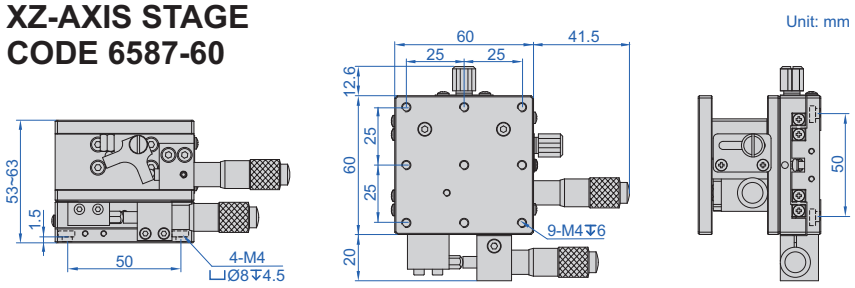

- Cross roller guides, achieve high precision and smooth movement
- Stage made of aluminum alloy

**SPECIFICATION**

| Code | Z-axis displacement | Parallelism of top to bottom surface | Micrometer graduation | Micrometer accuracy | Maximum load | Stage size | Weight |
|---|---|---|---|---|---|---|---|
| **6586-60** | 10mm | 0.05mm | 0.01mm | 0.02mm | 20.4N (3kgf) | 60x60mm | 0.27kg |

## XZ-AXIS STAGE
## CODE 6587-60

Unit: mm





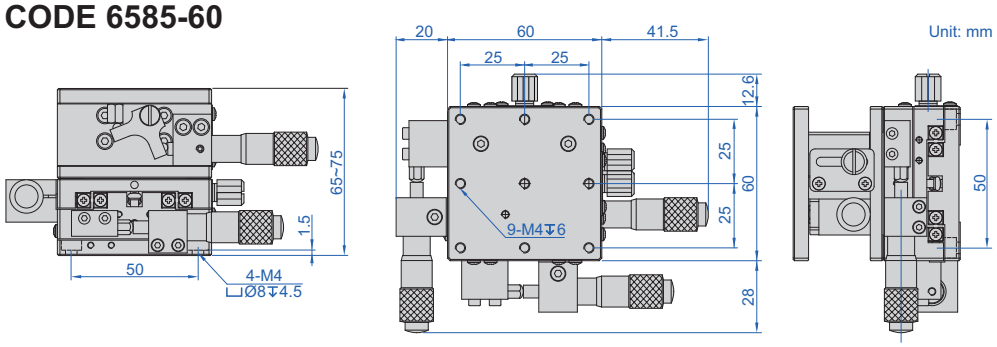

- Cross roller guides, achieve high precision and smooth movement
- Stage made of aluminum alloy

**SPECIFICATION**

| Code | X-axis displacement | Z-axis displacement | Micrometer graduation | Maximum load | Stage size | Weight |
|---|---|---|---|---|---|---|
| **6587-60** | ±6.5mm | 10mm | 0.01mm | 29.4N (3kgf) | 60x60mm | 0.51kg |

## XYZ-AXIS STAGE
## CODE 6585-60

Unit: mm






- Cross roller guides, achieve high precision and smooth movement
- Stage made of aluminum alloy

**SPECIFICATION**

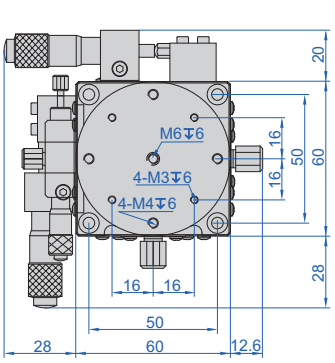
| Code | XY-axis displacement | Z-axis displacement | Micrometer graduation | Maximum load | Stage size | Weight |
|---|---|---|---|---|---|---|
| **6585-60** | ±6.5mm | 10mm | 0.01mm | 29.4N (3kgf) | 60x60mm | 0.75kg |

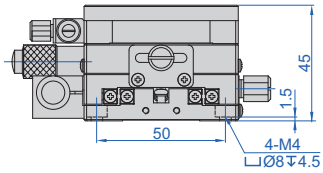


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## XY-AXIS ROTARY STAGE
## CODE 6588-60






- Cross roller guides, achieve high precision and smooth movement
- Coarse and fine adjustments
- Precise angle adjustment
- Stage made of aluminum alloy

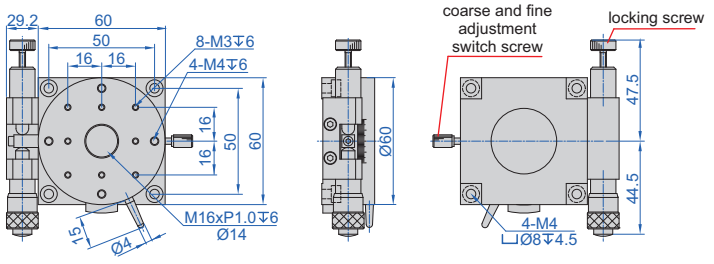
**SPECIFICATION**

| Code | XY-axis displacement | Rotation range | Micrometer graduation | Rotation accuracy | Maximum load | Stage size | Weight |
|---|---|---|---|---|---|---|---|
| **6588-60** | ±6.5mm | 360° coarse, ±5° fine | 0.01mm | 10 seconds | 29.4N (3kgf) | 60x60mm | 0.64kg |

## ROTARY STAGES

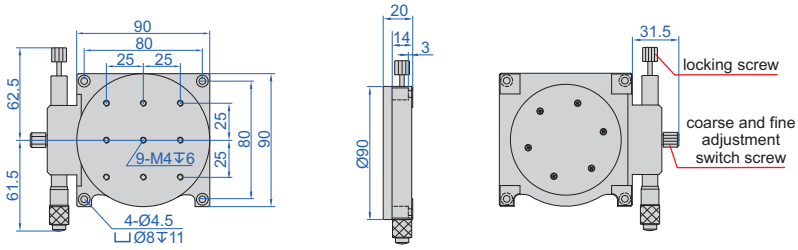


**6583-60H**






**6583-90**




- Precise angle adjustment
- Coarse and fine adjustments
- Stages made of aluminum alloy

**SPECIFICATION**

| Code | Range | Parallelism of top to bottom surface | Concentricity | Rotation accuracy | Maximum load | Stage size | Weight |
|---|---|---|---|---|---|---|---|
| **6583-60H** | 360° coarse, ±5° fine | 0.03mm | 0.03mm | 12 seconds | 29.4N (3kgf) | Ø60mm | 0.30kg |
| **6583-90** | 360° coarse, ±5° fine | 0.04mm | 0.03mm | 5 seconds | 29.4N (3kgf) | Ø90mm | 0.50kg |

# 17 ON-MACHINE MEASUREMENT



Video Measuring Instrument For Machine Tools
Page 516-517



Centering Indicators
Page 518



Edge Finders
Page 519-521



Edge Finders For EDM
Page 522



Trigger-Type 3D Probes
Page 523



Transmission Probes For CNC Machine Tools
Page 524-529



Zero Setters With Cable
Page 530-533



Zero Setters
Page 534-535



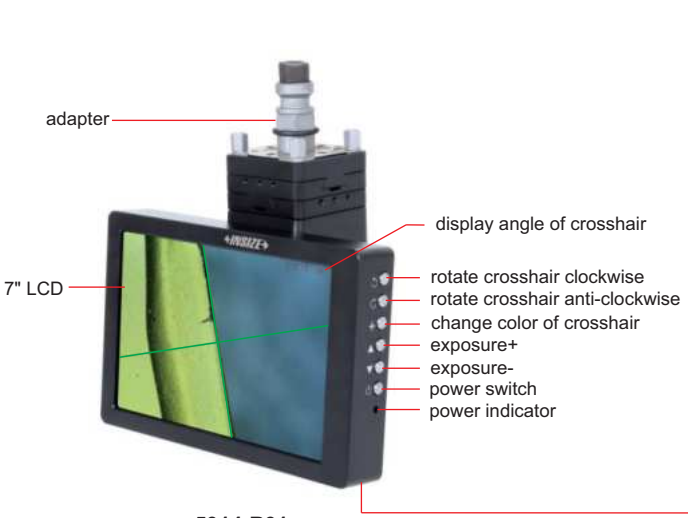
Vertical Milling Machine Perpendicularity Measuring Gauges
Page 536



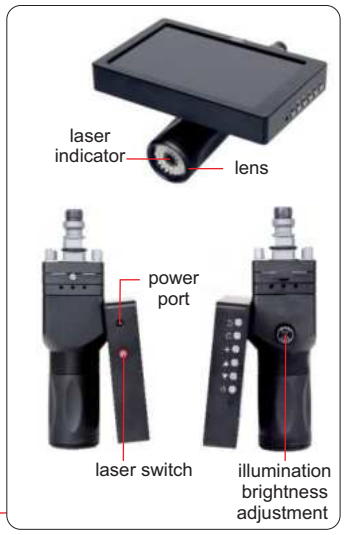
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# VIDEO MEASURING INSTRUMENT FOR MACHINE TOOLS

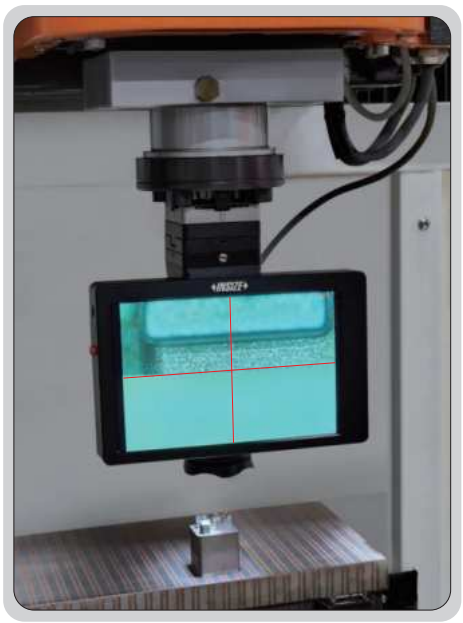
VIDEO



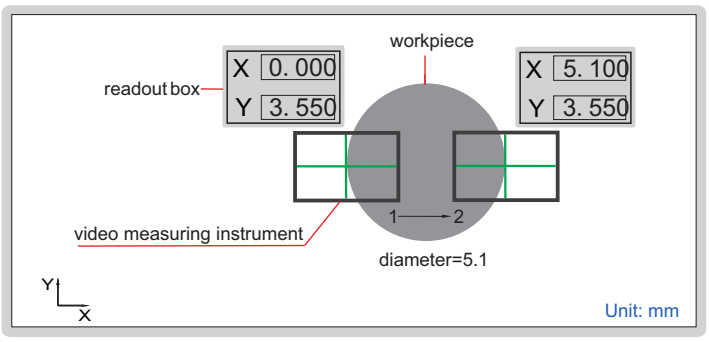

**5314-R31**



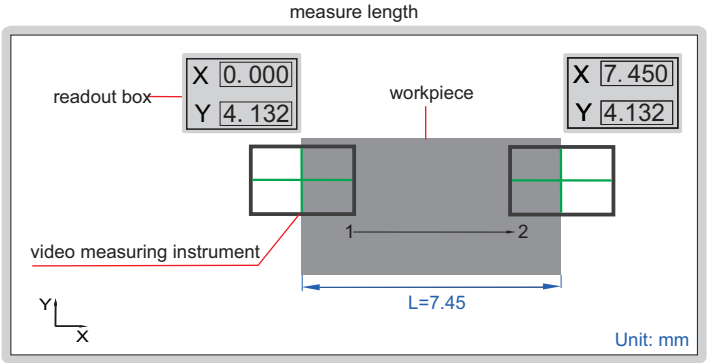

application



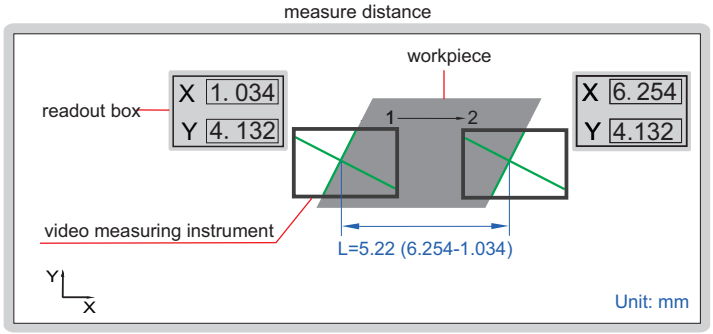
measure diameter




measure length




measure distance



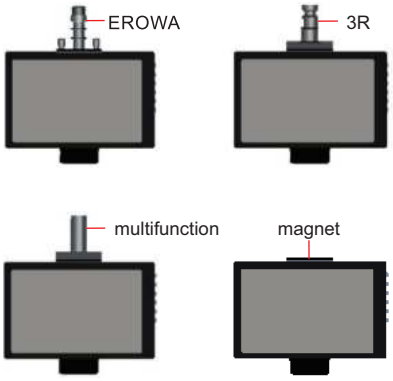

- Used in machine tools such as EDM and CNC
- Working together with linear scale and readout box of machine tools to make 2D measurement, especially suitable for small or thin parts
- Can rotate crosshair and change its color
- With laser indicator to locate position

To be continued

Continued from previous page

**SPECIFICATION**

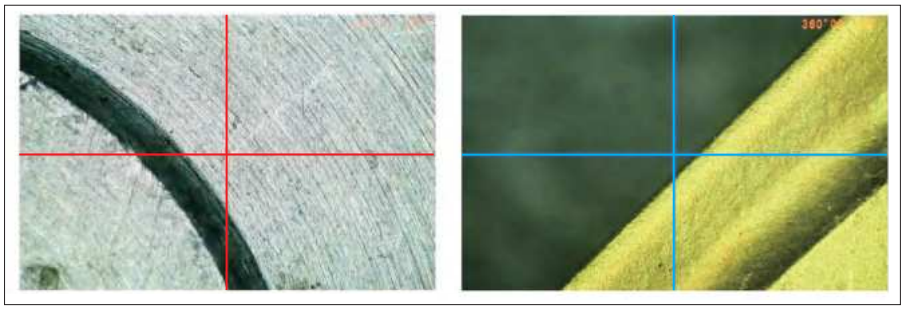
| Code | 5314-R31 | 5314-R32 | 5314-R33 | 5314-R34 |
|---|---|---|---|---|
| Adapter | EROWA | 3R | multifunction | magnet |
| Screen size/pixel | 7"/1080P | | | |
| Visual accuracy | ±0.003mm | | | |
| Magnification | 50X | | | |
| Angle resolution | 15' | | | |
| Automatic edge-find | after finding the edge, the crosshair changes to green color and prompts | | | |
| Color of crosshair | red, blue | | | |
| Rotation of crosshair | manual | | | |
| Focus distance | 50mm | | | |
| Light source | LED (adjustable brightness) | | | |
| Lithium battery | 4800mA (for 4 hours working) | | | |
| Power supply | power adapter | | | |
| Dimension (L×W×H) | 178×90×215mm | | | |
| Weight | 2kg | | | |



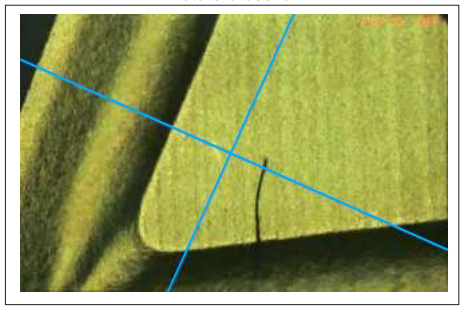

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Power adapter | 1 pc |

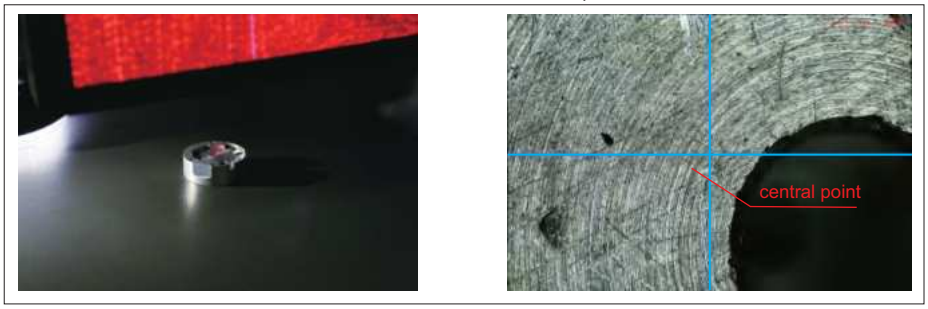
select crosshair color



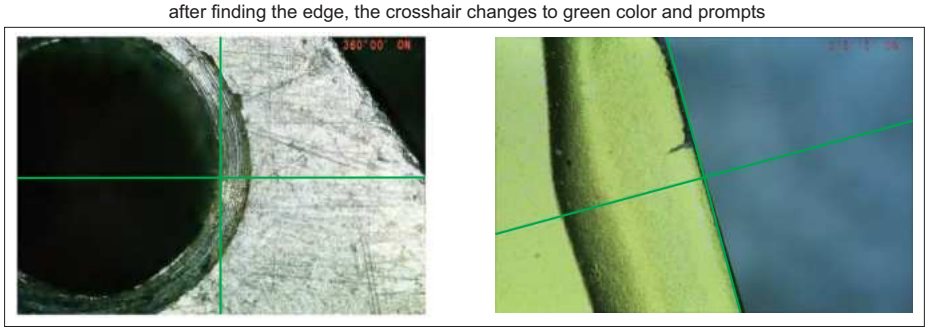
rotate crosshair



laser indicator locates the central point




after finding the edge, the crosshair changes to green color and prompts



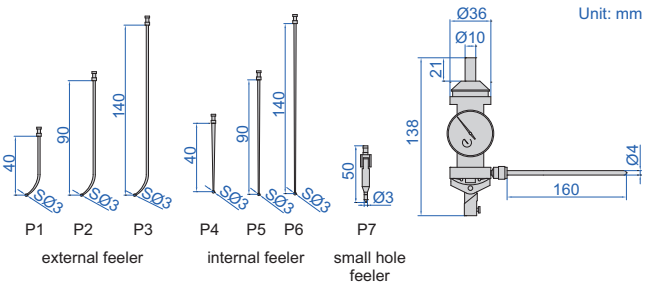
POPULAR MODEL

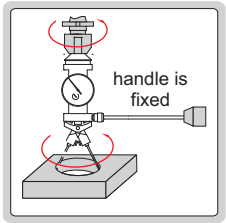
VIDEO

# CENTERING INDICATOR



2385-3

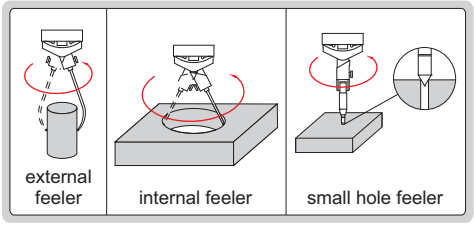



- Provides quick and accurate centering in boring and milling set-up
- Maximum speed is recommended not to exceed 800rpm

| Code |
|---|
| 2385-3 |

| Feeler | Measuring diameter | Accuracy |
|---|---|---|
| P1 | Ø0-60mm | 0.015mm |
| P2 | Ø0-160mm | 0.02mm |
| P3 | Ø0-250mm | 0.03mm |
| P4 | Ø3.2-80mm | 0.015mm |
| P5 | Ø3.2-180mm | 0.02mm |
| P6 | Ø3.2-280mm | 0.03mm |
| P7 | Ø0-2.8mm | 0.015mm |




REFER TO PAGE 280~281 FOR DETAILS

# DIAL INDICATOR HOLDERS



6296-1



6291-1



6297-1



6294-1A

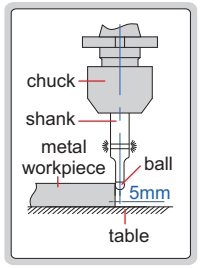


6295-1A

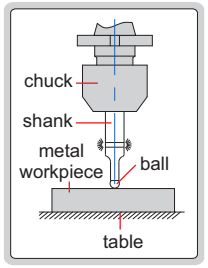
# 3D ELECTRONIC EDGE FINDERS

INSIZE PLUS
MADE IN EUROPE

X-Y edge finder




Z axial setting



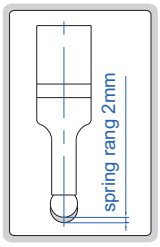




**6571-1**



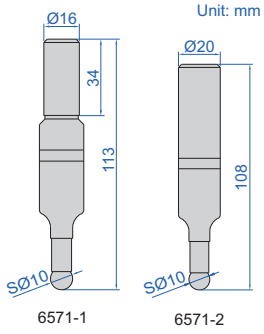

**6571-2**



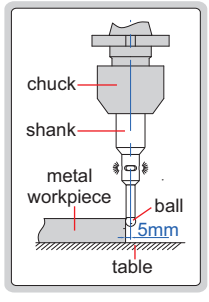

- The shank is electrically conducted to the metal workpiece through the chuck and table. The LED lights up, when the ball touches the workpiece
- Not suitable for rotary use
- Hardened contact ball

| Code | Shank | Contact ball | Accuracy | Battery |
|---|---|---|---|---|
| **6571-1** | Ø16mm | SØ10mm | 10μm | 23A, 12V×1 pc |
| **6571-2** | Ø20mm | SØ10mm | 10μm | 23A, 12V×1 pc |

Unit: mm




# LARGE SHANK ELECTRONIC EDGE FINDERS





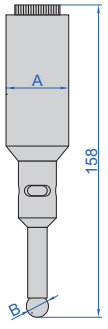


**6572-1**




**6572-2**

Unit: mm




- The shank is electrically conducted to the metal workpiece through the chuck and table. The LED lights up and the beeper sounds (only for **6572-2**), when the ball touches the workpiece
- Not suitable for rotary use
- Hardened shank and contact ball

| Code | Shank (A) | Contact ball (B) | Accuracy | Beeper | Battery |
|---|---|---|---|---|---|
| **6572-1** | Ø32mm | SØ10mm | 5μm | without | 23A, 12V×1 pc |
| **6572-2** | Ø32mm | SØ10mm | 5μm | with | 23A, 12V×1 pc |

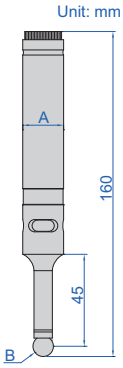


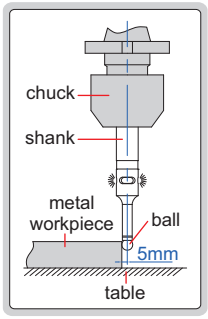
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## ELECTRONIC EDGE FINDERS




**6566-2** **6566-3**



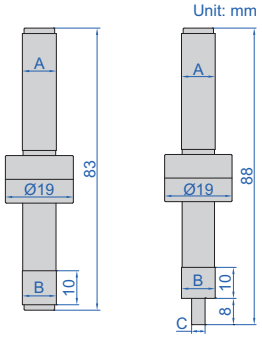

- The shank is electrically conducted to the metal workpiece through the chuck and table. The LED lights up and the beeper sounds (only for **6566-3**), when the ball touches the workpiece
- Not suitable for rotary use
- Hardened shank and contact ball

| Code | Shank (A) | Contact ball (B) | Accuracy | Beeper | Battery |
|---|---|---|---|---|---|
| **6566-2** | Ø20mm | SØ10mm | 5μm | without | 23A, 12V×1 pc |
| **6566-3** | Ø20mm | SØ10mm | 5μm | with | 23A, 12V×1 pc |

## NON-MAGNETIC EDGE FINDERS



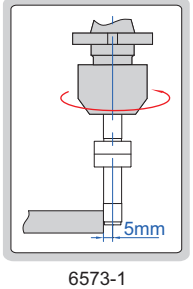
**6573-1** **6573-2**



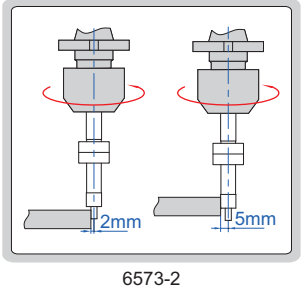

6573-1 6573-2

- TiAlN coating, non-magnetic, hardness HV2500, extremely wear resistance
- Suitable for machine speed 400~600rpm

| Code | Shank (A) | Contact point (B) | Contact point (C) | Accuracy |
|---|---|---|---|---|
| **6573-1** | Ø10mm | Ø10mm | — | 5μm |
| **6573-2** | Ø10mm | Ø10mm | Ø4mm | 5μm |

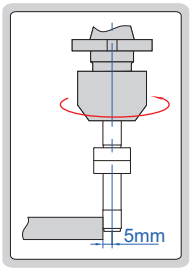



6573-1

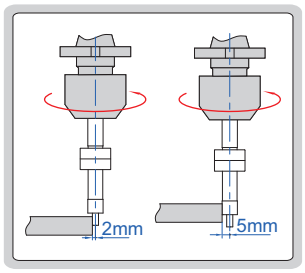



6573-2

## EDGE FINDERS




6562-3




6562-4

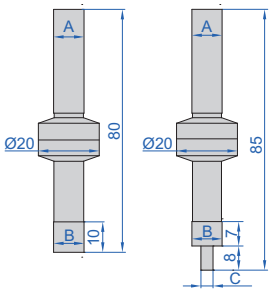


**6562-3** **6562-4**

- Hardened shank and contact point
- Suitable for machine speed 400~600rpm

| Code | Shank (A) | Contact point (B) | Contact point (C) | Accuracy |
|---|---|---|---|---|
| **6562-3** | Ø10mm | Ø10mm | — | 5μm |
| **6562-4** | Ø10mm | Ø10mm | Ø4mm | 5μm |

Unit: mm

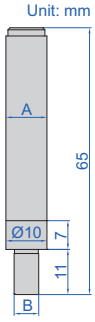



6562-3 6562-4

## EDGE FINDER

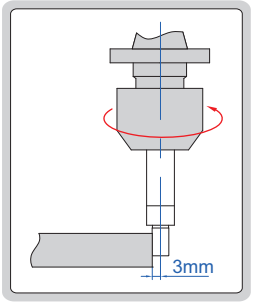
- Hardened shank and contact point
- Suitable for machine speed 400~600rpm

Unit: mm






**6567-1**

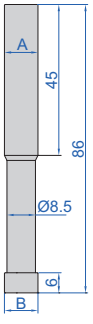



| Code | Shank (A) | Contact point (B) | Accuracy |
|---|---|---|---|
| **6567-1** | Ø10mm | Ø6mm | 8μm |

## CERAMIC EDGE FINDER

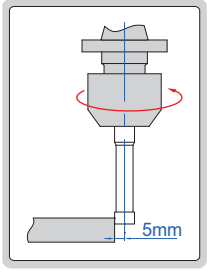
- Ceramic contact point, non magnetic
- Suitable for machine speed 400~600rpm

Unit: mm






**6568-1**



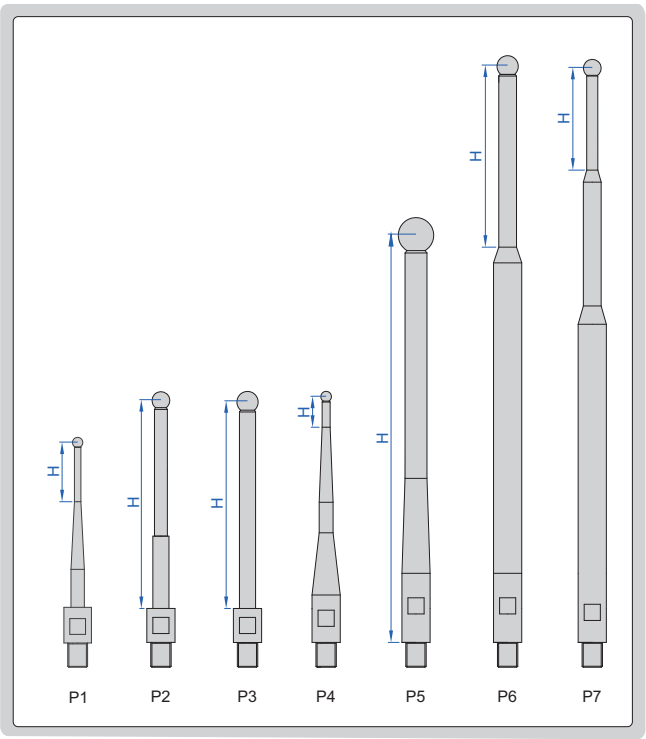

| Code | Shank (A) | Contact point (B) | Accuracy |
|---|---|---|---|
| **6568-1** | Ø10mm | Ø10mm | 8μm |

# EDGE FINDERS FOR EDM

CAN BE CUSTOM-MADE

VIDEO

spindle type







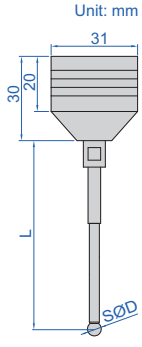
**6558-52**

- To locate workpieces
- Buzzer in EDM sounds when the ball touches the workpiece
- Tungsten steel ball, diameter accuracy: ±0.003mm
- Non magnetic stainless steel spindle
- Magnetic base

**(mm)**

| Code | Ball dia. (SØD) | Spindle length (L) | Measuring depth (H) | Spindle type |
|---|---|---|---|---|
| **6558-11** | SØ1 | 69 | 5 | P4 |
| **6558-21** | SØ2 | 49 | 6 | P1 |
| **6558-22** | SØ2 | 69 | 6 | P4 |
| **6558-23** | SØ2 | 119 | 8 | P4 |
| **6558-31** | SØ3 | 48 | 6 | P1 |
| **6558-32** | SØ3 | 68 | 7 | P4 |
| **6558-33** | SØ3 | 118 | 10 | P4 |
| **6558-41** | SØ4 | 48 | 37 | P3 |
| **6558-42** | SØ4 | 68 | 57 | P2 |
| **6558-43** | SØ4 | 118 | 16 | P4 |
| **6558-44** | SØ4 | 168 | 28 | P7 |
| **6558-51** | SØ5 | 47 | 36 | P3 |
| **6558-52** | SØ5 | 67 | 56 | P2 |
| **6558-53** | SØ5 | 117 | 106 | P2 |
| **6558-54** | SØ5 | 167 | 46 | P6 |
| **6558-61** | SØ6 | 47 | 35 | P3 |
| **6558-62** | SØ6 | 67 | 56 | P3 |
| **6558-63** | SØ6 | 87 | 76 | P3 |
| **6558-64** | SØ6 | 117 | 107 | P2 |
| **6558-65** | SØ6 | 167 | 51 | P6 |
| **6558-81** | SØ8 | 46 | 46 | P5 |
| **6558-82** | SØ8 | 66 | 54 | P3 |
| **6558-83** | SØ8 | 116 | 105 | P3 |
| **6558-84** | SØ8 | 166 | 51 | P6 |
| **6558-101** | SØ10 | 45 | 34 | P3 |
| **6558-102** | SØ10 | 65 | 53 | P3 |
| **6558-103** | SØ10 | 115 | 114 | P5 |
| **6558-104** | SØ10 | 165 | 53 | P6 |

Unit: mm



# TRIGGER-TYPE 3D PROBE (AUDIBLE AND VISUAL ALARM)
# CODE 9410

IP67 WATERPROOF

VIDEO

type-C charging cable (included)



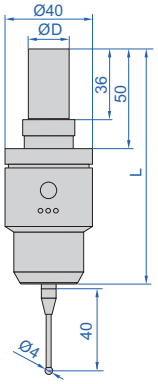
signal extension cord (included)





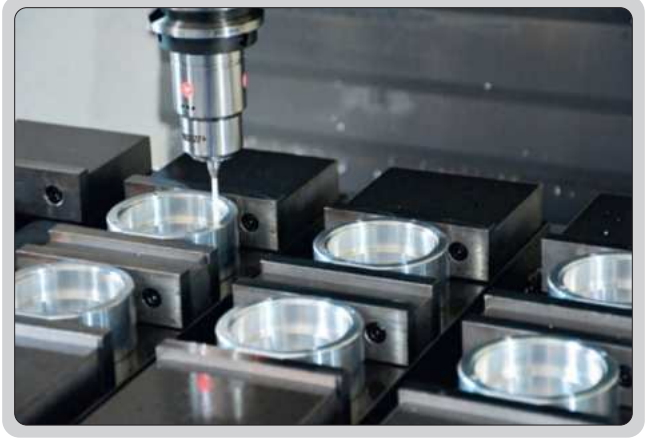
styli (code **9410-P9**, included)

Unit: mm




- Suitable for all kinds of machining centers, CNC boring machines, milling machines, drilling and tapping centers
- Suitable for workpiece detection of various solid materials
- Manually set the workpiece coordinates and machining reference points before CNC machining process
- In the process of CNC machining, manually detect and control key dimensions and position coordinates and their accuracy
- Detect the accuracy of the key size, shape and position of the workpiece after completion of CNC machining
- Standard Ø20mm shank diameter, held by CNC
- LED indicator and buzzer indicate the trigger state of the probe
- Using lithium battery charging technology, no need to replace the battery
- The battery (5% utilization rate per shift) can be used continuously for 90 days
- Type-C interface
- Optional accessory: styli and extension bar

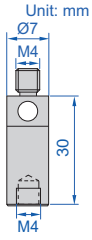
application



## SPECIFICATION

| | |
|---|---|
| **Probe length (L)** | 115.5mm |
| **Shank diameter (ØD)** | 20mm |
| **Trigger direction** | ±X, ±Y, +Z |
| **Directional trigger protection stroke** | X-Y: ±12°, Z: +5mm |
| **Arbitrary one-way repeated trigger accuracy** | ≤1μm |
| **Trigger force in X-Y direction (with standard styli)** | 0.3-0.6N |
| **Trigger force in Z direction** | 4N |
| **Dust/waterproof** | IP67 |
| **Type-C charging cable** | 1.5m |
| **Signal extension cord (provide signals to CNC)** | 1m |

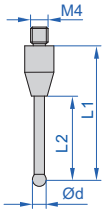
Unit: mm




## EXTENSION ROD (OPTIONAL)

| Code | Material |
|---|---|
| **9410-R1** | ceramic |

Unit: mm




## STYLI (OPTIONAL)

(mm)

| Code | L1 | L2 | Ød | Material of rod * | Material of ball |
|---|---|---|---|---|---|
| **9410-P1** | 18 | 13 | 4 | stainless steel | ruby |
| **9410-P2** | 18 | 13.5 | 5 | stainless steel | ruby |
| **9410-P3** | 18.5 | 13 | 3 | stainless steel | ruby |
| **9410-P4** | 19 | 8 | 2 | carbide | ruby |
| **9410-P5** | 19.5 | 4 | 1 | carbide | ruby |
| **9410-P6** | 50 | 40 | 2 | carbide | ruby |
| **9410-P7** | 50 | 34 | 5 | ceramic | ruby |
| **9410-P8** | 100 | 86 | 6 | ceramic | ruby |
| **9410-P9** | 40 | 30 | 4 | ceramic | ruby |
| **9410-P10** | 50 | 36 | 6 | ceramic | ruby |

* For stainless steel or carbide rods, it is recommended to use extension rods to protect spindles in case of break



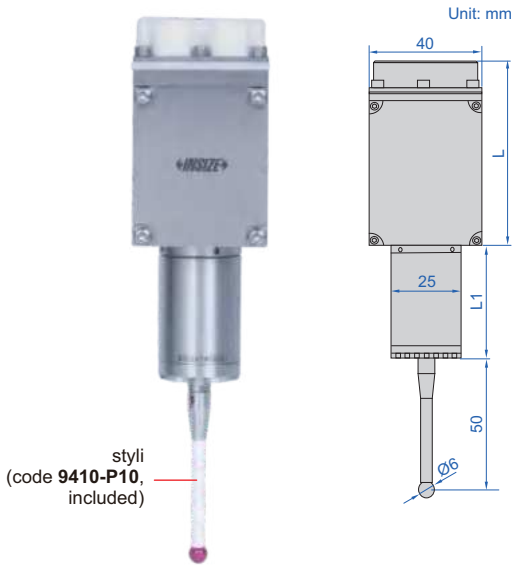


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# RADIO TRANSMISSION PROBES FOR CNC MACHINE TOOLS

IP68 WATERPROOF

VIDEO



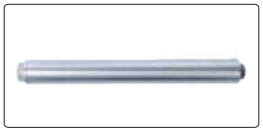

**9426-1**




**9426-A**

- On-machine measurement of all kinds of lathes, turning centers and mill-turn CNC machines tools
- Automatically set the workpiece coordinate and machining reference point before CNC machining process
- Automatically measure dimension and position coordinate during CNC machining
- Measure dimension, shape and position after CNC machining is completed
- Four kinds of SSR signals such as probe status, error, low voltage and pulse are transmitted to CNC machine tools
- M code is used to control on or off of probes
- Radio transmission, transmission/reception range: 14m
- Supplied with measurement software
- Optional accessory: styli
- Mounting plate can be customized

probe extension rod
(included)



## PROBE SPECIFICATION

| Code | 9426-1 | 9426-2 | 9426-3 | 9426-4 |
|---|---|---|---|---|
| Signal transmitter length (L) | 67mm | 67mm | 67mm | 67mm |
| Probe length (L1) | 42mm | 42mm | 42mm | 42mm |
| Probe extension rod (included) | — | 50mm | 100mm | 150mm |
| Trigger accuracy of styli in any direction | 1μm | | | |
| Protection stroke triggered by styli in all directions | X and Y axis stroke: ±12°, Z axis stroke: 5mm | | | |
| Trigger force of styli in all directions | X and Y axis: <1.6N, Z axis: <9.8N | | | |
| Dust/waterproof | IP68 | | | |
| Power supply | 2×LS14250 lithium battery | | | |

## RECEIVER SPECIFICATION

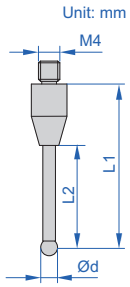
| Code | 9426-A |
|---|---|
| Protection function | low battery voltage or probe transmitting signal all the time * |
| Applicable probe | code **9426-1**, **9426-2**, **9426-3**, **9426-4** |
| Cable length ** | 8m |
| Dust/waterproof | IP68 |
| Power supply | input voltage: 24V±10%(DC), load current: 50mA |

*When battery voltage is low or probe is in wrong state, receiver sends a signal to CNC machine to stop working

**Cable length can be customized

To be continued

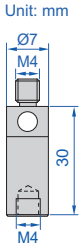
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**STYLI (OPTIONAL)** **(mm)**

| Code | L1 | L2 | Ød | Material of rod *** | Material of ball |
|---|---|---|---|---|---|
| **9410-P1** | 18 | 13 | 4 | stainless steel | ruby |
| **9410-P2** | 18 | 13.5 | 5 | stainless steel | ruby |
| **9410-P3** | 18.5 | 13 | 3 | stainless steel | ruby |
| **9410-P4** | 19 | 8 | 2 | carbide | ruby |
| **9410-P5** | 19.5 | 4 | 1 | carbide | ruby |
| **9410-P6** | 50 | 40 | 2 | carbide | ruby |
| **9410-P7** | 50 | 34 | 5 | ceramic | ruby |
| **9410-P8** | 100 | 86 | 6 | ceramic | ruby |
| **9410-P9** | 40 | 30 | 4 | ceramic | ruby |
| **9410-P10** | 50 | 36 | 6 | ceramic | ruby |

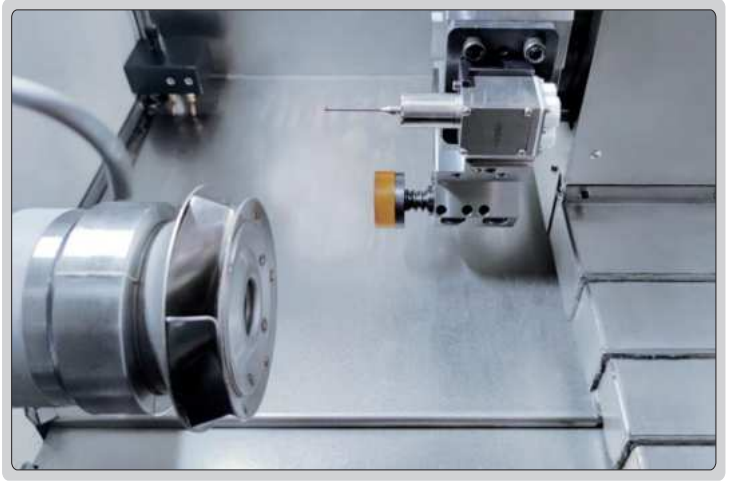
*** For stainless steel or carbide rods, it is recommended to use extension rods to protect spindles in case of break




**EXTENSION ROD (OPTIONAL)**

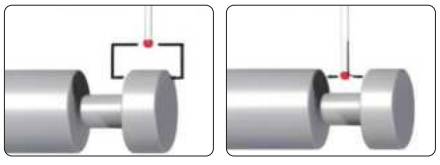
| Code | Material |
|---|---|
| **9410-R1** | ceramic |

application

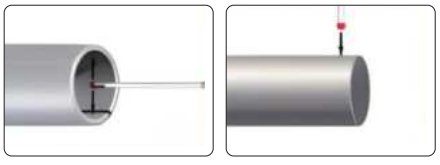


## MEASUREMENT SOFTWARE (INCLUDED)

1. Styli automatic calibration
2. Protection of stylus during probe movement (avoid collision)
3. Groove and boss measurement



4. Bore and axis measurement



5. Measurement of X and Y axis step plane
6. Measurement of X and Y plane angle
7. Measurement of internal arc in X and Y plane



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# INFRARED TRANSMISSION PROBES FOR CNC MACHINE TOOLS

VIDEO

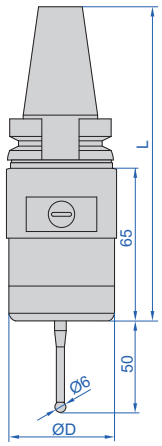
IP68 WATERPROOF



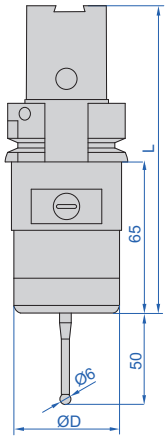
styli (code **9410-P10**, included)

**9413-1**

Unit: mm




BT30, BT40, BT50, CAT40 spindles

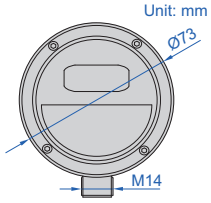



HSK63A spindle



**9413-A**

Unit: mm







- On-machine measurement of all kinds of small and medium-sized machining centers, CNC boring, milling machines and five-axis CNC machine tools
- Automatically set the workpiece coordinate and machining reference point before CNC machining process
- Automatically measure dimension and position coordinate during CNC machining
- Measure dimension, shape and position after CNC machining is completed
- Four kinds of SSR signals such as probe status, error, low voltage and pulse are transmitted to CNC machine tools
- M code is used to control on or off of probes
- Infrared transmission, strong anti-interference
- Infrared transmission/reception range: 5m
- Supplied with automatic measurement software
- Optional accessory: styli

**PROBE SPECIFICATION**

| Code | 9413-1 | 9413-2 | 9413-3 | 9413-4 | 9413-5 |
|---|---|---|---|---|---|
| Probe length (L) | 140mm | 166mm | 216mm | 168mm | 136mm |
| Probe diameter (ØD) | 48mm | 48mm | 48mm | 48mm | 48mm |
| Applicable spindle * | BT30 | BT40 | BT50 | CAT40 | HSK63A |
| Trigger accuracy of styli in any direction | 1μm | | | | |
| Protection stroke triggered by styli in all directions | X and Y axis stroke: ±12.5°, Z axis stroke: 5mm | | | | |
| Trigger force of styli in all directions | X and Y axis: 1-1.6N, Z axis: 5-10N | | | | |
| Dust/waterproof | IP68 | | | | |
| Power supply | 2×LS14250 lithium battery | | | | |

* SK and ISO spindle probes also can be customized

**RECEIVER SPECIFICATION**

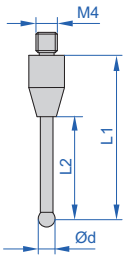
| Code | 9413-A |
|---|---|
| Protection function | low battery voltage or probe transmitting signal all the time** |
| Applicable probe | code **9413-1**, **9413-2**, **9413-3**, **9413-4**, **9413-5** |
| Cable length | 8m |
| Dust/waterproof | IP68 |
| Power supply | input voltage: 24V±10% (DC), load current: 50mA |

** When battery voltage is low or probe is in wrong state, receiver sends a signal to CNC machine to stop working

To be continued

Continued from previous page

Unit: mm

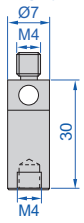



**STYLI (OPTIONAL)** **(mm)**

| Code | L1 | L2 | Ød | Material of rod *** | Material of ball |
|---|---|---|---|---|---|
| **9410-P1** | 18 | 13 | 4 | stainless steel | ruby |
| **9410-P2** | 18 | 13.5 | 5 | stainless steel | ruby |
| **9410-P3** | 18.5 | 13 | 3 | stainless steel | ruby |
| **9410-P4** | 19 | 8 | 2 | carbide | ruby |
| **9410-P5** | 19.5 | 4 | 1 | carbide | ruby |
| **9410-P6** | 50 | 40 | 2 | carbide | ruby |
| **9410-P7** | 50 | 34 | 5 | ceramic | ruby |
| **9410-P8** | 100 | 86 | 6 | ceramic | ruby |
| **9410-P9** | 40 | 30 | 4 | ceramic | ruby |
| **9410-P10** | 50 | 36 | 6 | ceramic | ruby |

*** For stainless steel or carbide rods, it is recommended to use extension rods to protect spindles in case of break

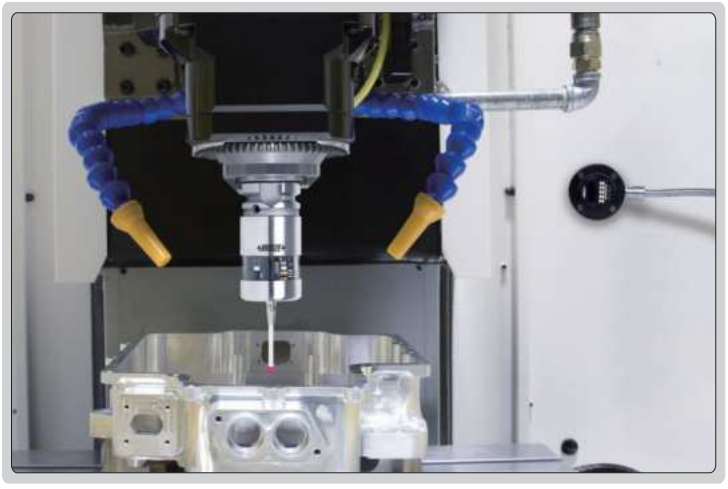
Unit: mm




**EXTENSION ROD (OPTIONAL)**

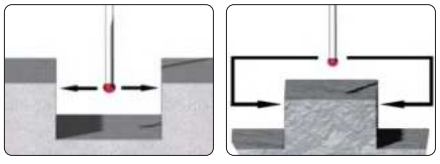
| Code | Material |
|---|---|
| **9410-R1** | ceramic |

application

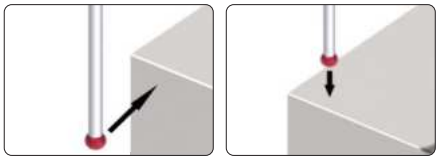


**AUTOMATIC MEASUREMENT SOFTWARE (INCLUDED)**

1. Stylus automatic calibration
2. Protection of stylus during probe movement (avoid collision)
3. Groove and boss measurement

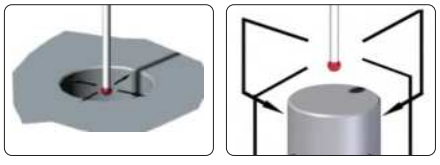


5. X or Y single-surface measurement

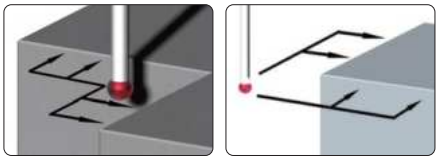


7. 4th axis measurement
8. Angle on X and Y plane measurement
9. Three points measurement of arc

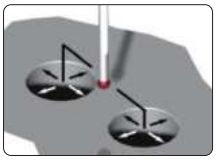
4. Bore and axis measurement



6. Internal and external corner measurement



10. Measure the distance between two holes





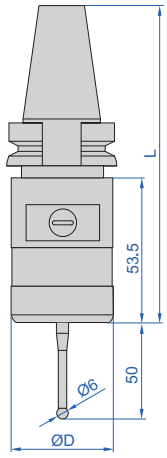
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# INFRARED TRANSMISSION PROBES FOR CNC MACHINE TOOLS (CAN BE USED IN COMBINATION WITH ZERO SETTER WITH INFRARED TRANSMISSION)

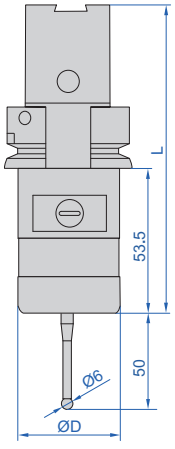



**9414-1**

Unit: mm




BT30, BT40, BT50, CAT40 spindles




HSK63A spindle

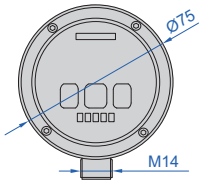
VIDEO

**IP68** WATERPROOF



**9414-A**

Unit: mm




| BT30, BT40, BT50, CAT40 | HSK63A |
|---|---|
|  |  |

- On-machine measurement of all kinds of small and medium-sized machining centers, CNC boring, milling machines and five-axis CNC machine tools
- Automatically set the workpiece coordinate and machining reference point before CNC machining process
- Automatically measure dimension and position coordinate during CNC machining
- Measure dimension, shape and position after CNC machining is completed
- Four kinds of SSR signals such as probe status, error, low voltage and pulse are transmitted to CNC machine tools
- Working status can be displayed on receiver LED indicator
- Signal transmitting range of probe can be set
- Infrared transmission, fast response, high reliability
- The battery (5% utilization rate per shift) can be used continuously for 90 days
- Supplied with measurement software package
- Can be used in combination with zero setter with infrared transmission (code **9415-1**, **9415-2**)
- Optional accessory: styli

## PROBE SPECIFICATION

| Code | 9414-1 | 9414-2 | 9414-3 | 9414-4 | 9414-5 |
|---|---|---|---|---|---|
| Probe length (L) | 130mm | 151.5mm | 208.3mm | 156mm | 126.5mm |
| Probe diameter (ØD) | 40mm | 40mm | 40mm | 40mm | 40mm |
| Applicable spindle* | BT30 | BT40 | BT50 | CAT40 | HSK63A |
| Trigger accuracy of styli in any direction | 1μm | | | | |
| Protection stroke triggered by styli in all directions | X and Y axis stroke: ±12°, Z axis stroke: 5mm | | | | |
| Trigger force of styli in all directions | X and Y axis: 0.5-1N, Z axis: 7.5N | | | | |
| Dust/waterproof | IP68 | | | | |
| Power supply | 2×LS14250 lithium battery | | | | |

*SK and ISO spindle probes also can be customized

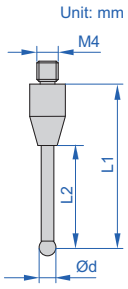
## RECEIVER SPECIFICATION

| Code | 9414-A |
|---|---|
| Protection function | low battery voltage, overstroke and signal interrupt protection** |
| Applicable | probe code **9414-1**, **9414-2**, **9414-3**, **9414-4**, **9414-5**; zero setter code **9415-1**, **9415-2** |
| Infrared transmission/reception range | 3m |
| Cable length | 8m |
| Dust/waterproof | IP68 |
| Power supply | input voltage: 24V±10% (DC), load current (max): 50mA |

**When battery voltage is low or zero setter is in wrong state, receiver sends a signal to CNC machine to stop working

To be continued

Continued from previous page

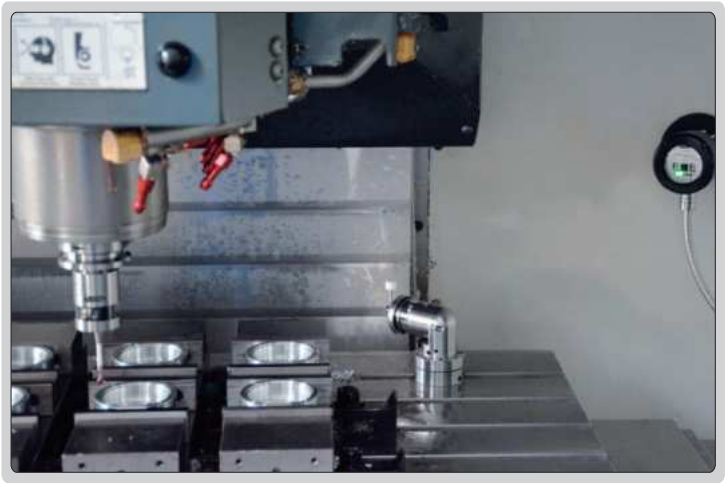


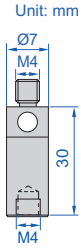

**STYLI (OPTIONAL)** **(mm)**

| Code | L1 | L2 | Ød | Material of rod *** | Material of ball |
|---|---|---|---|---|---|
| **9410-P1** | 18 | 13 | 4 | stainless steel | ruby |
| **9410-P2** | 18 | 13.5 | 5 | stainless steel | ruby |
| **9410-P3** | 18.5 | 13 | 3 | stainless steel | ruby |
| **9410-P4** | 19 | 8 | 2 | carbide | ruby |
| **9410-P5** | 19.5 | 4 | 1 | carbide | ruby |
| **9410-P6** | 50 | 40 | 2 | carbide | ruby |
| **9410-P7** | 50 | 34 | 5 | ceramic | ruby |
| **9410-P8** | 100 | 86 | 6 | ceramic | ruby |
| **9410-P9** | 40 | 30 | 4 | ceramic | ruby |
| **9410-P10** | 50 | 36 | 6 | ceramic | ruby |

*** For stainless steel or carbide rods, it is recommended to use extension rods to protect spindles in case of break

application



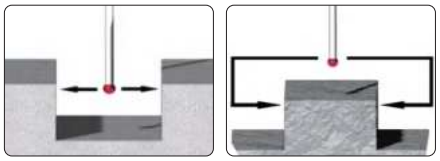



**EXTENSION ROD (OPTIONAL)**

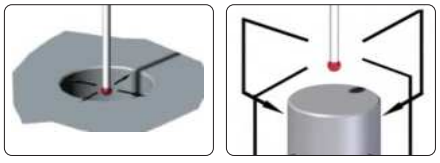
| Code | Material |
|---|---|
| **9410-R1** | ceramic |

**AUTOMATIC MEASUREMENT SOFTWARE (INCLUDED)**

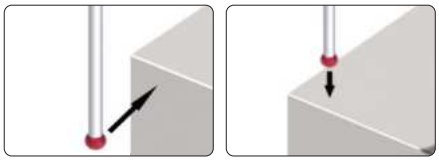
1. Stylus automatic calibration
2. Protection of stylus during probe movement (avoid collision)
3. Groove and boss measurement



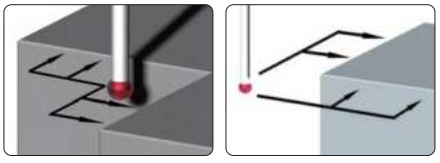
4. Bore and axis measurement



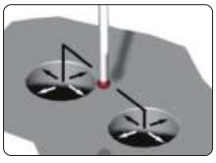
5. X or Y single-surface measurement



6. Internal and external corner measurement



7. 4th axis measurement
8. Angle on X and Y plane measurement
9. Three points measurement of arc
10. Measure the distance between two holes





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IP68 WATERPROOF

# ZERO SETTER WITH INFRARED TRANSMISSION (FIVE-SIDE)

VIDEO

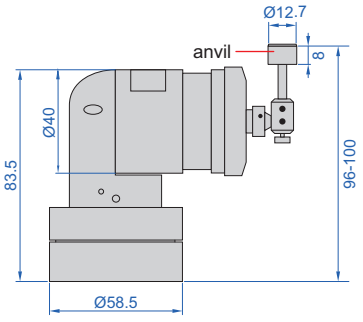


9415-1

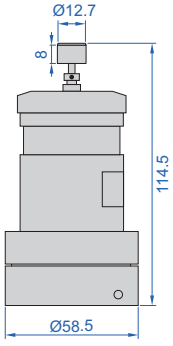


9414-A

Unit: mm

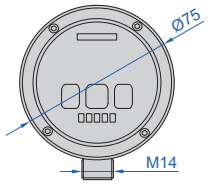



9415-1




9415-2

Unit: mm




- Suitable for all kinds of small and medium-sized machining centers, CNC boring, milling machines and five-axis CNC machine tools, etc.
- Automatically set the tool length parameters before CNC machining process
- Automatic detection of tool wear or damage during CNC machining
- Automatic detection of tool wear or damage after CNC machining is completed
- The working surface of anvil is ceramic and has chamfer, which can greatly improve the service life
- Infrared transmission, fast response, high reliability
- The battery (5% utilization rate per shift) can be used continuously for 90 days
- Supplied with automatic zero setter software package
- Can be used in combination with infrared transmission probes for CNC machine tools (code **9414-1**, **9414-2**, **9414-3**, **9414-4**, **9414-5**)
- Optional accessory: square anvil (code **9412-B1**)

**ZERO SETTER SPECIFICATION**

| Code | 9415-1 | 9415-2 |
|---|---|---|
| Height (factory setting) | 96-100mm | 114.5mm |
| Diameter of zero setter | Ø12.7mm | |
| Trigger direction | ±X, ±Y, +Z | |
| Trigger protection stroke | X-Y: ±5mm, Z: 8mm | |
| Trigger force of zero setter all directions | X and Y axis: 0.5-1N, Z axis: 1.5N | X and Y axis: 0.5-1N, Z axis: 5N |
| Repeated trigger accuracy | ≤1μm | |
| Start/stop mode | M code control * | |
| Hardness of the zero setter | HM8.5 | |
| Dust/waterproof | IP68 | |
| Power supply | 2×LS14250 lithium battery | |

*Before purchasing, please confirm whether CNC still has enough M code to be used

To be continued

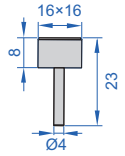
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**RECEIVER SPECIFICATION**

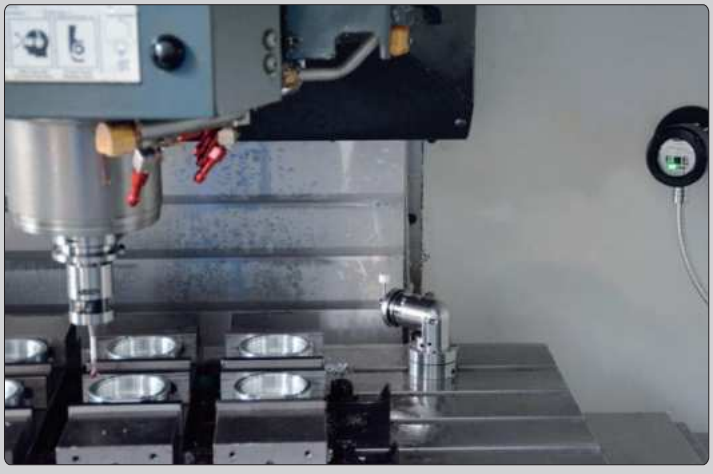
| | |
|---|---|
| **Code** | **9414-A** |
| **Protection function** | low battery voltage, overstroke and signal interrupt protection** |
| **Applicable** | probe code **9414-1**, **9414-2**, **9414-3**, **9414-4**, **9414-5**; zero setter code **9415-1**, **9415-2** |
| **Infrared transmission/reception range** | 3m |
| **Cable length** | 8m |
| **Dust/waterproof** | IP68 |
| **Power supply** | input voltage: 24V±10% (DC), load current (max): 50mA |

** When battery voltage is low or zero setter is in wrong state, receiver sends a signal to CNC machine to stop working

Unit: mm




application



**SQUARE ANVIL (OPTIONAL)**

| Code | Shape | Dimension | Material |
|---|---|---|---|
| **9412-B1** | square | 16×16mm | ceramic |



## Automatic zero setter software (included)

1. Automatic calibration of the center position of the anvil
2. Standard knife length setting
3. Semi-automatic and fully automatic tool setting for tool length
4. Semi-automatic and fully automatic tool diameter settings
5. Automatic detection of tool wear and breakage






VIDEO

IP68 WATERPROOF

# ZERO SETTER WITH CABLE (FIVE-SIDE) CODE 9412




- Suitable for various machining centers, CNC boring and milling machines, etc.
- Automatically set the tool length parameters before CNC machining process
- Automatic detection of tool wear or damage during CNC machining
- Automatic detection of tool wear or damage after CNC machining is completed
- The working surface adopts ceramic material and chamfering process, which can greatly improve the service life
- The plug, cable part and output signal of the host are protected, so that the zero setter can work in the splash environment for a long time
- Signal transmission through the cable, the reverse connection of the power line can change the state of the signal output
- The working status is displayed by the indicator light
- Supplied with automatic zero setter software package
- Optional accessory: square feeler block (code **9412-B1**)

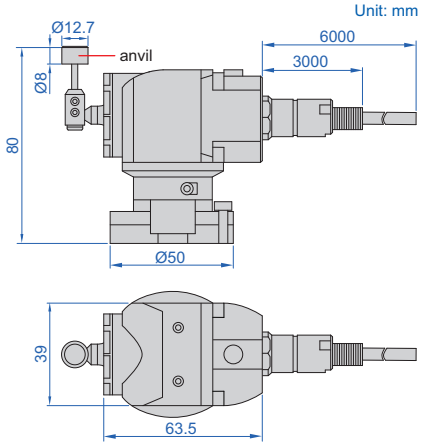
## SPECIFICATION

| | |
|---|---|
| **Height (factory setting)** | 80±0.5mm |
| **Diameter of zero setter** | Ø12.7mm |
| **Trigger direction** | ±X, ±Y, +Z |
| **Trigger protection stroke** | X-Y: ±5mm, Z: 8mm |
| **Axial reset force** | 3.4N-3.6N |
| **Repeated trigger accuracy** | ≤1μm |
| **Hardness of the zero setter** | HM8.5 |
| **Class of protection** | IP68 |
| **Cable length *** | 6m (stainless steel sheath 3m) |
| **Input voltage** | 24V±10% (DC) |
| **Load current** | max: 50mA |
| **Signal type and logic **** | SSR (NC/NO) |

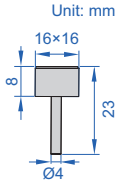
*The length of the cable can be customized

**Before purchasing, it is necessary to confirm whether the working logic of the tool setter output signal matches CNC control system

Unit: mm




Unit: mm




## SQUARE ANVIL (OPTIONAL)

| Code | Shape | Dimension | Material |
|---|---|---|---|
| **9412-B1** | square | 16×16mm | ceramic |

application




## Automatic zero setter software (included)

1. Automatic calibration of the center position of the anvil
2. Standard knife length setting
3. Semi-automatic and fully automatic tool setting for tool length





4. Semi-automatic and fully automatic tool diameter settings



5. Automatic detection of tool wear and breakage



# ZERO SETTER (WITH CABLE)
# CODE 9411

IP68 WATERPROOF

VIDEO

- Suitable for various machining centers, CNC boring and milling machines, etc.
- Automatically set the tool length parameters before CNC machining process
- Automatic detection of tool wear or damage during CNC machining
- Automatic detection of tool wear or damage after CNC machining is completed
- The working surface is made of hard alloy material, which can greatly improve the scratch resistance
- Signal transmission through the cable, the reverse connection of the power line can change the state of the signal output
- The working status is displayed by the indicator light
- Supplied with 20mm mounting base
- Supplied with automatic zero setter software package
- Optional accessory: blow-cleaning device (code **9411-C1**)

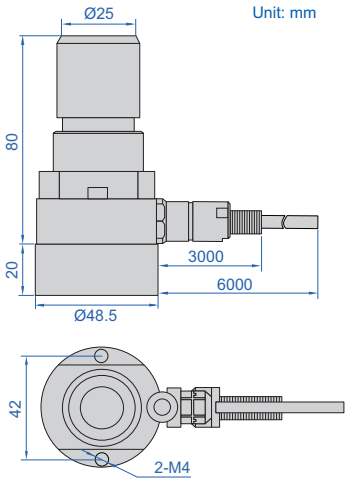



## SPECIFICATION

| | |
|---|---|
| **Height** | 80mm (the height is 100mm after adding the mounting base) |
| **Diameter of zero setter** | Ø25mm |
| **Downward travel** | 5mm |
| **Axial reset force** | 6N±0.3N |
| **Repeated trigger accuracy** | ≤1μm |
| **Hardness of the zero setter** | HRA90-93 |
| **Class of protection** | IP68 |
| **Cable length *** | 6m (stainless steel sheath 3m) |
| **Input voltage** | 24V±10% (DC) |
| **Load current** | max: 50mA |
| **Signal type and logic **** | SSR (NC/NO) |

*The length of the cable can be customized

**Before purchasing, it is necessary to confirm whether the working logic of the tool setter output signal matches CNC control system

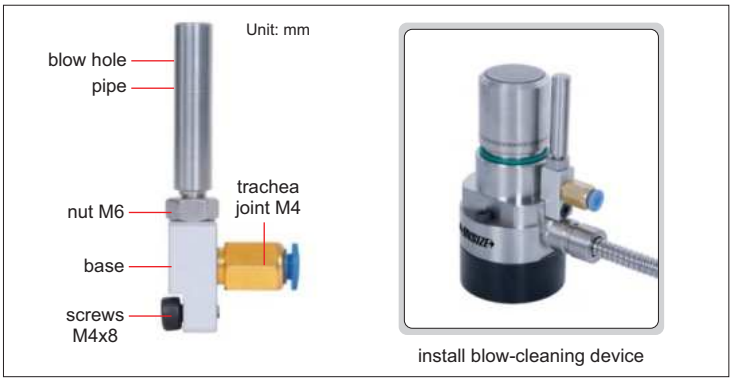



## BLOW-CLEANING DEVICE (OPTIONAL)

| Code | Material |
|---|---|
| 9411-C1 | stainless steel |

Before purchasing a blow-cleaning device, it is necessary to confirm whether CNC machine has the M-code to control the cleaning

blow-cleaning device **(optional)**




application



## Automatic zero setter software package (included)

1. Automatic calibration of the center position of the cutter block
2. Standard knife length setting
3. Semi-automatic and fully automatic tool setting for tool length
4. Automatic detection of tool wear and breakage







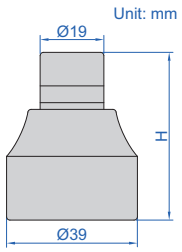


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## ELECTRONIC ZERO SETTER

LOW TEST FORCE

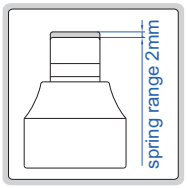
- The base is electrically conducted to the cutting tools through the table and chuck. The LED lights up when the cutting tool touches the anvil
- Magnetic base
- Two batteries LR44

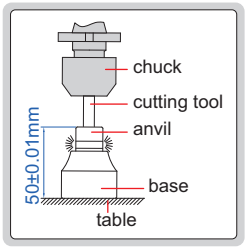






6553-50

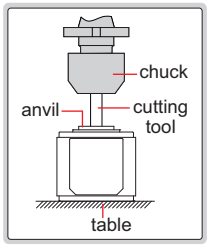



| Code | Height (H) | Accuracy | Test force |
|---|---|---|---|
| 6553-50 | 50mm | ±10μm | 7N (at 49mm) |

## DIGITAL ZERO SETTER

IP65 WATERPROOF



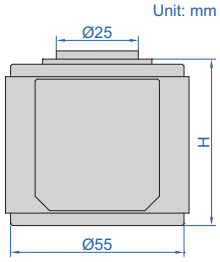



6557-50







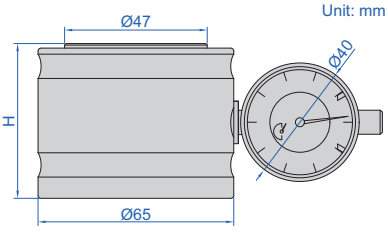


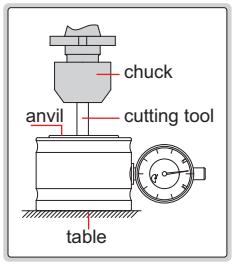

- Resolution: 0.001mm/0.00005"
- IP65 dust/waterproof
- Buttons: on/off, mm/inch, zero
- CR2032 battery
- Automatic power off
- Magnetic base
- Automatic backlight at zero

| Code | Height (H) | Anvil stroke | Accuracy* | Test force | Repeatability |
|---|---|---|---|---|---|
| 6557-50 | 50mm | 2.5mm | ±10μm/0.0004" | 10N (at 50mm) | 2μm |

* The accuracy is ensured within Ø10mm of the center

## ZERO SETTER



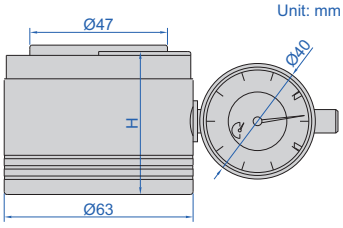



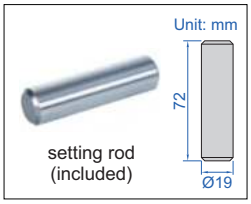



6554-50

| Code | Height (H) | Graduation | Accuracy | Test force |
|---|---|---|---|---|
| 6554-50 | 50mm | 0.01mm | ±0.02mm | 9N (at 50mm) |

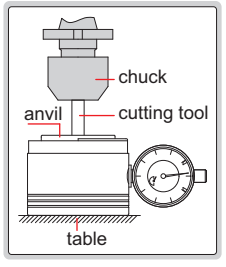
## ZERO SETTER



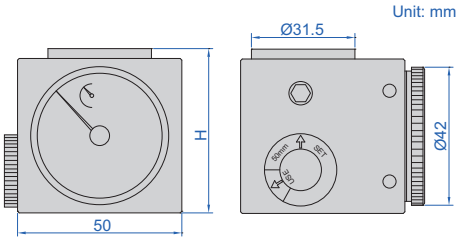



6556-50

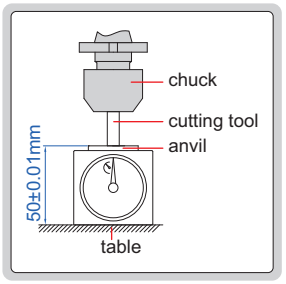



| Code | Height (H) | Graduation | Accuracy | Test force |
|---|---|---|---|---|
| 6556-50 | 50mm | 0.01mm | ±0.01mm | 10N (at 50mm) |

## ZERO SETTER





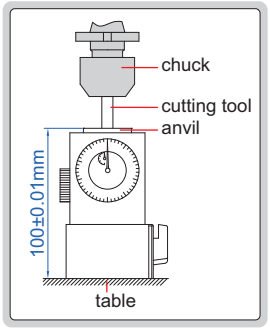

- Magnetic base

**2397-502A**

| Code | Height (H) | Graduation | Accuracy | Test force |
|---|---|---|---|---|
| **2397-502A** | 50mm | 0.01mm | ±0.01mm | 9N (at 50mm) |

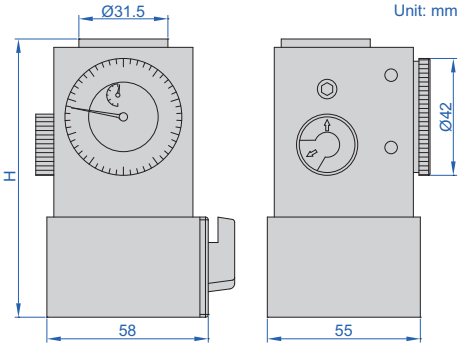
## ZERO SETTER

- Magnetic base with on-off switch






**2394-100A**



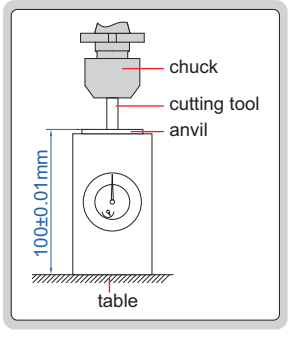

| Code | Height (H) | Graduation | Accuracy | Test force |
|---|---|---|---|---|
| **2394-100A** | 100mm | 0.01mm | ±0.01mm | 9N (at 100mm) |

## LOW TEST FORCE ZERO SETTER

INSIZE PLUS
MADE IN EUROPE

LOW TEST FORCE

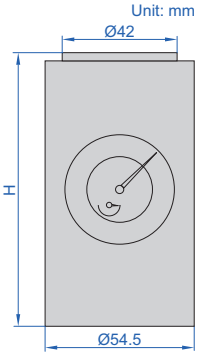
- Magnetic base
- Low test force, suitable for micro tools with minimum diameter Ø0.1mm







**6555-100B**

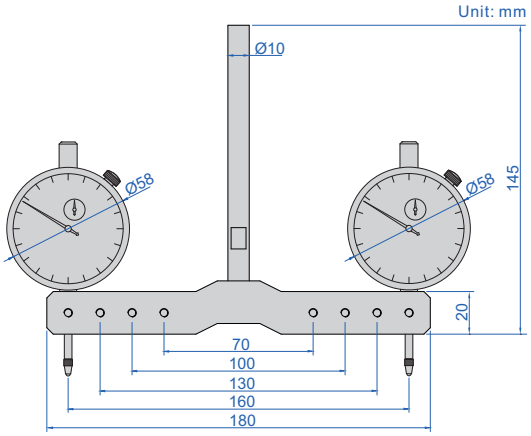



| Code | Height (H) | Graduation | Accuracy | Test force |
|---|---|---|---|---|
| **6555-100B** | 100mm | 0.01mm | ±0.01mm | 1N (at 100mm) |

## VERTICAL MILLING MACHINE PERPENDICULARITY MEASURING GAUGE



2257-10



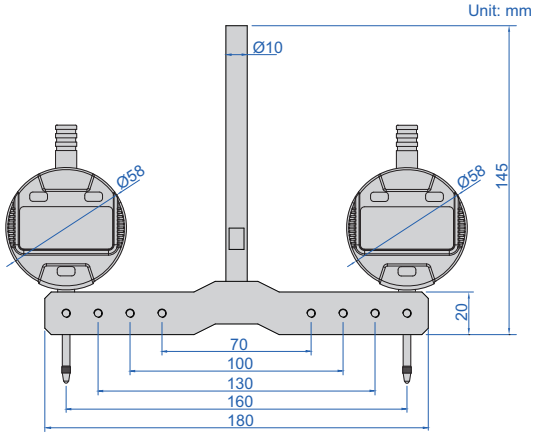

- Used to detect and adjust the perpendicularity between the spindle and worktable of a vertical milling machine

| Code | Indicator | Accuracy |
|---|---|---|
| **2257-10** | dial indicator, code **2301-10F**, range: 10mm, graduation: 0.01mm | 5μm |

## VERTICAL MILLING MACHINE PERPENDICULARITY MEASURING GAUGE



2258-101




- Used to detect and adjust the perpendicularity between the spindle and worktable of a vertical milling machine

| Code | Indicator | Accuracy |
|---|---|---|
| **2258-101** | digital indicator, code **2112-101F**, range: 12.7mm/0.5", resolution: 0.001mm/0.00005" | 3μm |

# 18 LEVELS



**Electronic Levels**
**Page 538-539**



**Digital Levels And Slope Meters**
**Page 540-545**



**Frame Levels**
**Page 545-546**



**Block Levels**
**Page 546-547**



**Levels**
**Page 548-551**



**Cross-Line Laser Levels**
**Page 552**



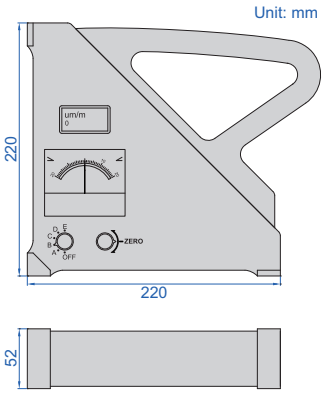
**Self-Leveling Rotary Lasers**
**Page 553**

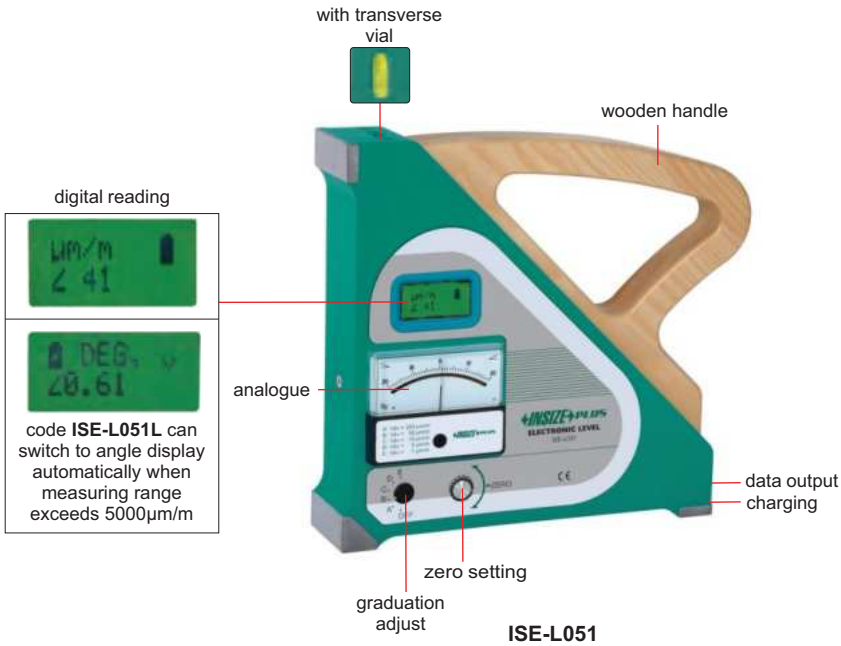
INSPECTION CERTIFICATE | DATA OUTPUT | SHOCK PROOF

# ELECTRONIC LEVELS

INSIZE PLUS
MADE IN EUROPE

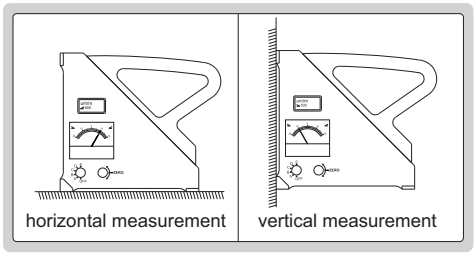
VIDEO

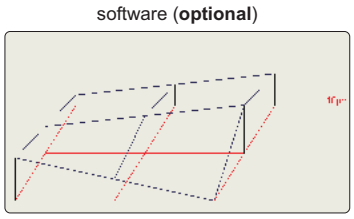



ISE-L051

- Shockproof
- Analogue and digital reading modes




## SPECIFICATION

| Code | ISE-L051 | | ISE-L051L | | |
|---|---|---|---|---|---|
| Analogue graduation (adjustable) | 250μm/m (=0.014°) | 50μm/m (=10") | 10μm/m (=2") | 5μm/m (=1") | 1μm/m (=0.2") |
| Analogue range | ±5000μm/m | ±1000μm/m | ±200μm/m | ±100μm/m | ±20μm/m |
| Digital reading resolution | horizontal: 1μm/m (=0.2") | | horizontal: 1μm/m (=0.2"), angle: 0.01° | | |
| Digital reading range | horizontal: 5000μm/m | | horizontal: 5000μm/m, angle: 0.3~85° | | |
| Accuracy | horizontal: ±1% | | horizontal: ±1%, angle: ±0.7% | | |
| Zero setting range | ±1500μm/m | | | | |
| Response time | <3s | | | | |
| Data output | RS232 | | | | |
| Power supply | rechargeable Li-ion battery, provides power for 10h continuous working | | | | |
| Dimension | 220×220×52mm | | | | |
| Weight | 4.4kg | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| AC/DC adapter | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Software and data output cable | ISE-L050-SOFTWARE |

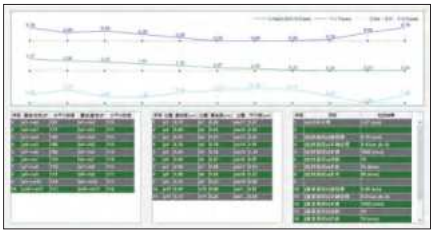
# WIRELESS ELECTRONIC LEVELS

measuring and analysis software (included)

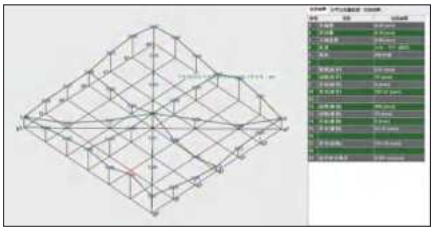
straightness measuring and analysis



parallelism measuring and analysis



flatness measuring and analysis






**4952-150**

wireless receiver (included)



control box (included)

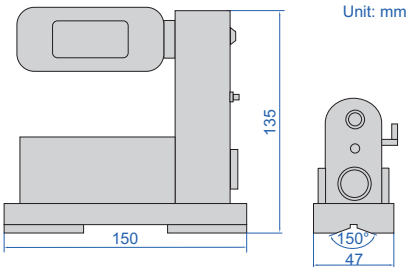


300mm bridge plate **4952-01 (optional)**



- Measures flatness, parallelism and straightness
- Built-in wireless transmission module, 433MHz signal, wireless connection to computer, transmission distance 50m
- The LCD can be rotated for easy observation in different directions
- Designed with handle for easy access
- V-groove on bottom for shafts
- Supplied with measuring and analysis software
- Optional accessory: bridge plate (code **4952-01**)

Unit: mm




## SPECIFICATION

| Code | 4952-150 | | 4952-150L | |
|---|---|---|---|---|
| Resolution (adjustable) | 0.001mm/m (0.2") | 0.01mm/m (2") | 0.005mm/m (1") | 0.01mm/m (2") |
| Range | ±0.5mm/m | ±5mm/m | ±2.5mm/m | ±5mm/m |
| Repeatability | 0.001mm/m | 0.01mm/m | 0.005mm/m | 0.01mm/m |
| Response time | <10s | <3s | <5s | <3s |
| Accuracy | ±(1+A×2%)Δ* | | | |
| Power supply | 1×21700 Li-ion battery, for 50h continuous working | | | |
| Weight | 1.8kg | | | |

*A is the measured value, Δ is the resolution

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Wireless receiver | 1 pc |
| Control box | 1 pc |
| Measuring and analysis software (with dongle) | 1 set |
| Charger | 1 pc |
| 21700 Li-ion battery | 4 pcs |

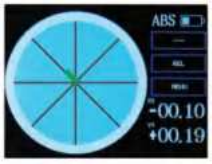
VIDEO

DATA OUTPUT

# DIGITAL LEVEL
# CODE ISE-2DT



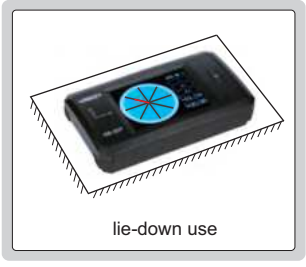

- Color LCD, touch panel
- X-Y axis measurement
- Set the tolerance and the display is shown in different colors



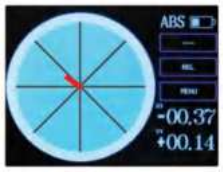
within the tolerance (green)

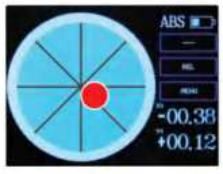


out of the tolerance (red)


lie-down use

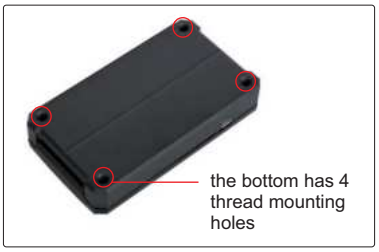
- To show the incline with line or bubble





charging and
data output


the bottom has 4
thread mounting
holes

## SPECIFICATION

| | |
|---|---|
| **Measuring range** | ±30° |
| **Resolution** | 0.1°, 0.01°, 0.1mm/m |
| **Accuracy** | ±0.03° (range 0~3°)<br>±0.05° (range >3°) |
| **Power supply** | rechargeable battery |
| **Dimension** | 115×66×25mm |
| **Weight** | 224g |

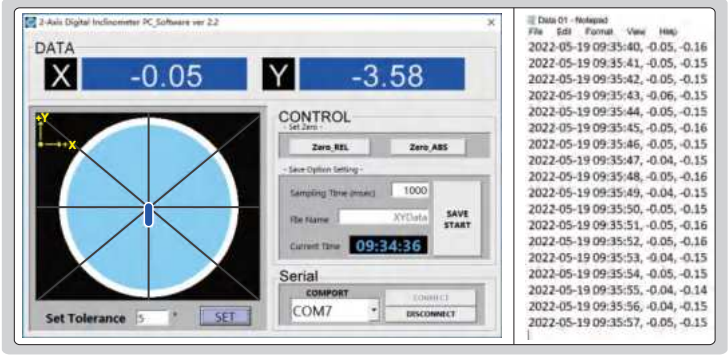
## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Software** | **ISE-2DT-SOFTWARE** |

PC software (**optional**), send data to txt



# DUAL AXIS DIGITAL LEVEL AND GYRO ANGLE METER

VIDEO

DATA OUTPUT

DISPLAY FLIPS OVER WHEN THE BOTTOM FACES UP

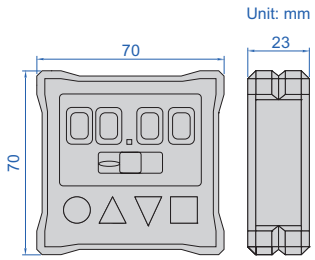
AUDIBLE ALARM WHEN OUT OF LIMIT

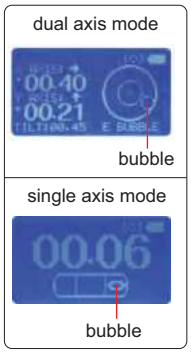
BACKLIGHT

ATTENTION: HARD PLASTIC CASE



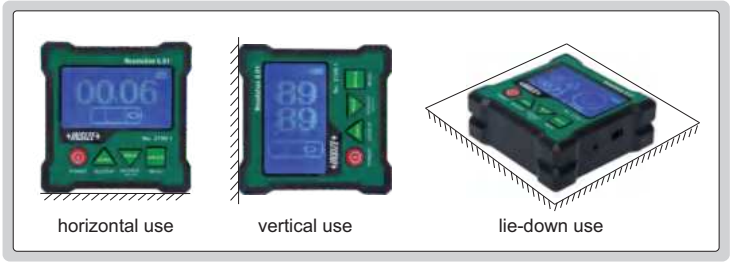
2199-1



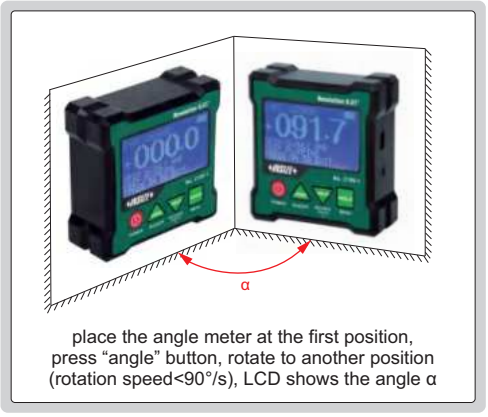




M4 threaded holes on the back for fixing




measurement of angle between two planes in any direction (gyro technique)




place the angle meter at the first position, press “angle” button, rotate to another position (rotation speed<90°/s), LCD shows the angle α

- Single axis/double axis level and slope meter, gyro technique can measure the angle between two planes in any direction
- Hard plastic case, with V-shaped grooves, four magnetic sides
- Display flips over when the bottom faces up
- Audible alarm when out of limit
- Buttons: POWER, ZERO, HOLD, display unit (°, mm/m, %), MENU
- Rechargeable Li-ion battery 3.7V, operation time is 40 hours
- Automatic power off in 30 minutes
- Data output
- Android and iPhone APP are included
- Optional accessory: wired data transmission (code **2199-A01**), bluetooth (code **2199-A02**), transmission distance is 10 meters (under the condition of no obstruction and no electromagnetic interference)

| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2199-1** | single axis level: 4×90°<br>dual axis level: ±40° | 0.01° | at 0° and 20°: ±0.08°<br>at 20° and 70°: ±0.15°<br>at 70° and 90°: ±0.08° |
| | gyro angle meter: 360° | 0.1° | ±0.5° |

To be continued



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Continued from previous page




bluetooth (**optional**)



wired data transmission
(**optional**)

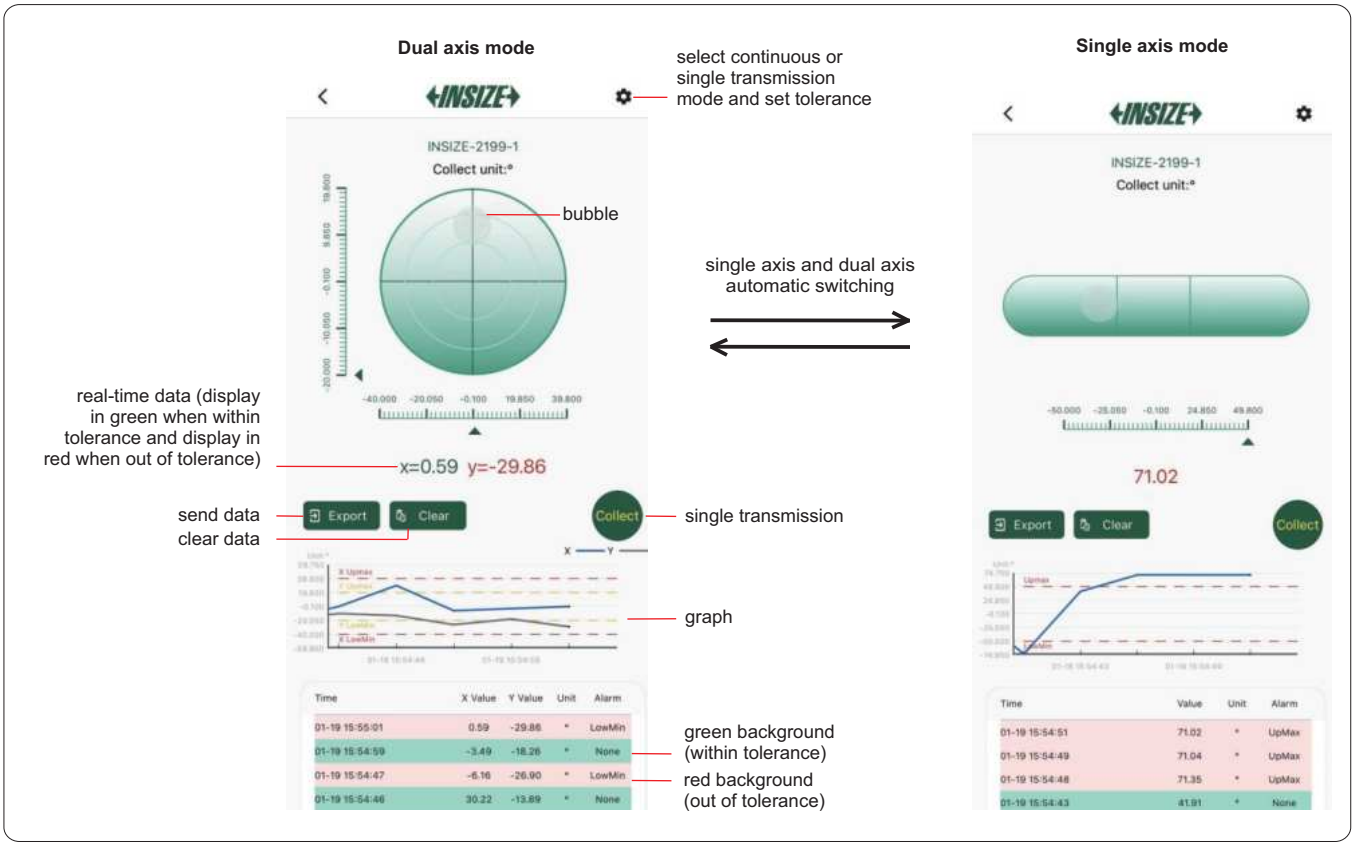


connect to computer via wired data transmission



connect to mobile phone via bluetooth

Android and iPhone APP (included), can choose real-time display (continuous transmission) or single transmission



## DIGITAL LEVEL AND SLOPE METER

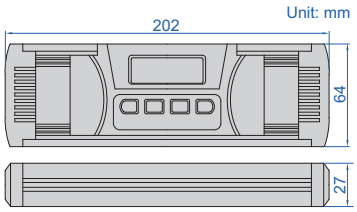
ABSOLUTE LEVEL | BACKLIGHT | BUZZER ALARM AT 0° AND 90° | WORKING TEMPERATURE -5°C~50°C

**IP67** WATERPROOF

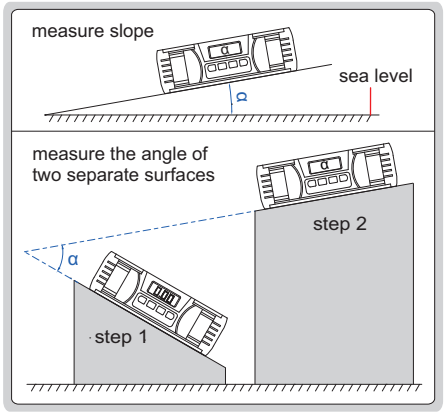
VIDEO



**2175-360**




- IP67 dust/waterproof
- Used as level and slope meter
- Aluminum frame, shock absorbing rubber end caps
- Magnetic bottom with V-groove for shafts
- The sea level is permanently set inside the chip, zero setting is not needed when batteries are replaced
- Buttons: ON/OFF, backlight/buzzer alarm, absolute and incremental measurement, unit (mm/m, %, °), HOLD (keep the reading)
- Three AAA batteries, automatic power off




| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2175-360** | 0-360° (90°×4) | 0.05°; 1mm/m | at 0°: ±0.05°; at others: ±0.1° |

## DIGITAL LEVEL AND SLOPE METER

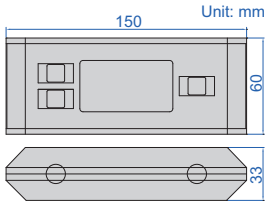
ABSOLUTE LEVEL | BACKLIGHT | BUZZER ALARM AT 0° AND 90° | WORKING TEMPERATURE -5°C~50°C

**IP54** WATERPROOF

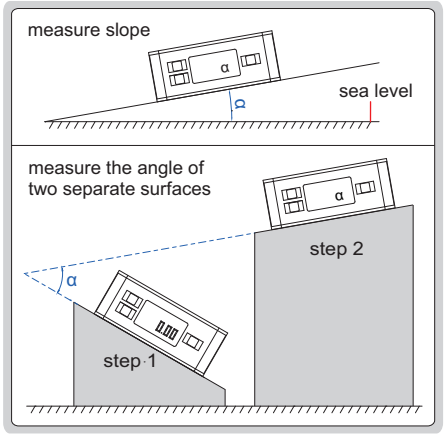
VIDEO



**2179-360**




- IP54 dust/waterproof
- Used as level and slope meter
- Aluminum frame
- Magnetic bottom with V-groove for shafts
- The sea level is permanently set inside the chip, zero setting is not needed when battery is replaced
- Buttons: ON/OFF, absolute and incremental measurement, keep the reading, buzzer alarm, unit (mm/m, %, in/ft), conversion, backlight
- Two AAA batteries, automatic power off




| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2179-360** | 0-360° (90°×4) | 0.05°; 1mm/m; 0.125in/ft | at 0° and 90°: ±0.1°; at others: ±0.2° |



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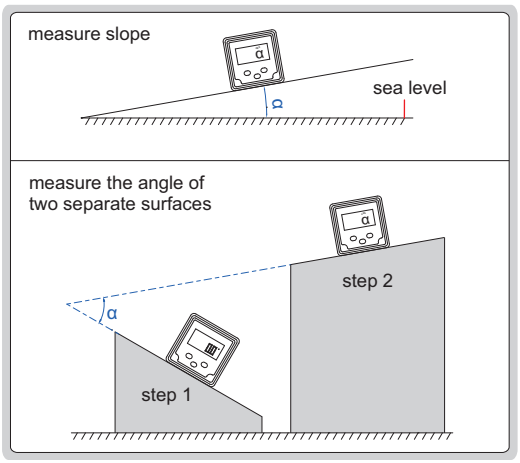
# BLUETOOTH DIGITAL LEVEL AND SLOPE METER

BACKLIGHT | MAGNETIC BOTTOM | DISPLAY FLIPS OVER WHEN THE BOTTOM FACES UP | WORKING TEMPERATURE -5°C~50°C | ABSOLUTE LEVEL

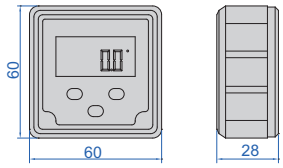
VIDEO



**2198-2**

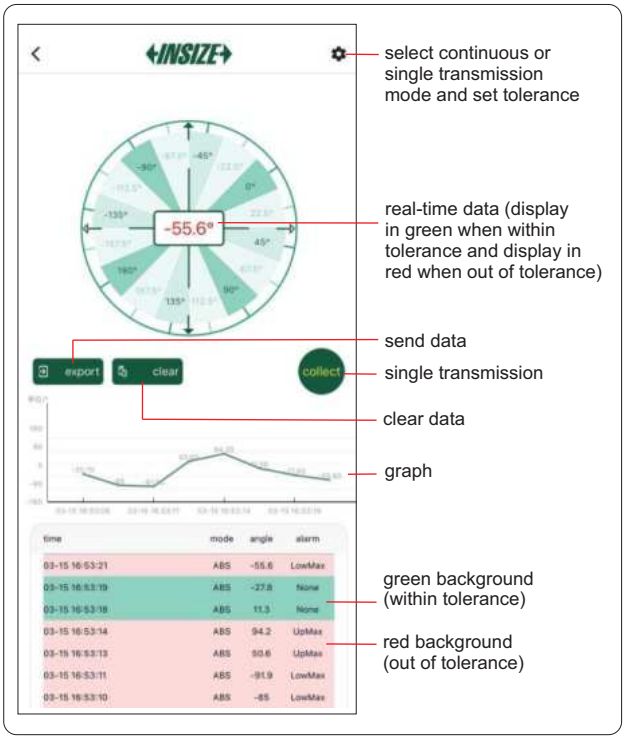



Unit: mm




- Used as level and slope meter
- Aluminum frame
- Magnetic bottom
- The display flips over when the bottom faces up
- The backlight is on automatically when in use, and automatically off in 15 seconds after use
- The sea level is permanently set inside the chip, zero setting is not needed when battery is replaced
- Buttons: ON/OFF, ZERO, HOLD, absolute and incremental measurement
- Built-in bluetooth, transmission distance is 15 meters (under the condition of no obstruction and no electromagnetic interference). Android and iPhone APP are included
- One AAA battery, automatic power off in 5 minutes

Android and iPhone APP (included), can choose real-time display (continuous transmission) or single transmission




| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2198-2** | 4x90° | 0.1° (=1.745mm/m) | at 0°and 90°: ±0.1°; at others: ±0.2° |

## DIGITAL LEVEL AND SLOPE METER

MAGNETIC BOTTOM | WORKING TEMPERATURE -5°C~50°C | BACKLIGHT | DISPLAY FLIPS OVER WHEN THE BOTTOM FACES UP | ABSOLUTE LEVEL

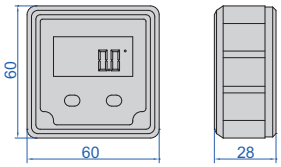
POPULAR MODEL



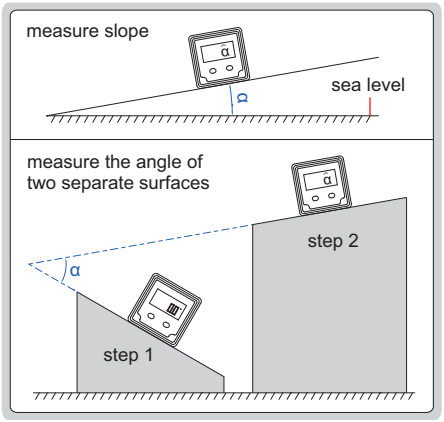
2170-1

VIDEO

Unit: mm




- Used as level and slope meter
- Aluminum frame
- Magnetic bottom
- The display flips over when the bottom faces up
- The backlight is on automatically when in use, and automatically off in 15 seconds after use
- The sea level is permanently set inside the chip, zero setting is not needed when battery is replaced
- Buttons: ON/OFF, ZERO, absolute and incremental measurement
- One AAA battery, automatic power off in 5 minutes




| Code | Range | Resolution | Accuracy |
|---|---|---|---|
| **2170-1** | 4x90° | 0.1° (=1.745mm/m) | at 0° and 90°: ±0.1°; at others: ±0.2° |

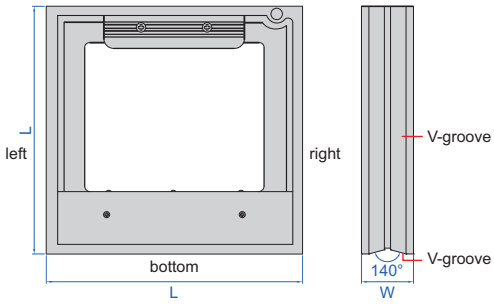
## FRAME LEVELS

VIDEO



4902-200

Unit: mm




- V-groove on bottom and left for shafts (shafts dia. 15~68mm)
- With transverse vial

| Code | | Size (L×L) | W |
|---|---|---|---|
| Sensitivity 0.02mm/m (=0.001°) | Sensitivity 0.05mm/m (=0.0029°) | | |
| **4902-150** | **4902-C150** | 150x150mm | 40mm |
| **4902-200** | **4902-C200** | 200x200mm | 40mm |
| **4902-300** | **4902-C300** | 300x300mm | 45mm |



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NO NEED TO SET ZERO BEFORE USE

# FRAME LEVELS

INSIZE PLUS
MADE IN EUROPE



4906-150

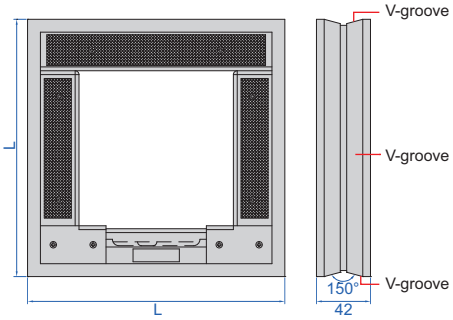
magnet on the left side





4906-150M

Unit: mm



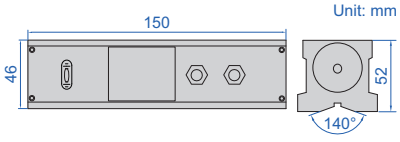

- No need to set zero before use
- Three V-grooves for shafts (shafts dia. 19.3~115.9mm)
- With longitudinal vial

| Code | | Size (L×L) | Remark |
|---|---|---|---|
| Sensitivity 0.02mm/m (=0.001°) | Sensitivity 0.1mm/m (=0.0057°) | | |
| 4906-150 | 4906-B150 | 150×150mm | – |
| 4906-200 | 4906-B200 | 200×200mm | – |
| 4906-300 | 4906-B300 | 300×300mm | – |
| 4906-150M | 4906-B150M | 150×150mm | with magnet |
| 4906-200M | 4906-B200M | 200×200mm | with magnet |
| 4906-300M | 4906-B300M | 300×300mm | with magnet |

VIDEO

# ELECTRONIC BLOCK LEVEL

Unit: mm







4950-1

- Button function: power switch, zero, data save, ABS/REF
- 8 sets of measuring data can be saved on the LCD
- V-groove on bottom for shafts (shafts dia.14~75mm)
- With transverse vial
- Li-ion battery power supply, for 30h continuous working
- Supplied with li-ion battery charger

| Code | Range | Resolution | Accuracy | Repeatability | Response time | Weight |
|---|---|---|---|---|---|---|
| 4950-1 | ±5mm/m (±0.286°) | 0.01mm/m (0.001°) | ±(1+A×2%)Δ* | 0.01mm/m | <3s | 1.1kg |

*A is the measured value, Δ is the resolution

## BLOCK LEVELS

INSIZE PLUS
MADE IN EUROPE

- No need to set zero before use
- V-groove on bottom for shafts (shafts dia. 19.3~115.9mm)
- With longitudinal vial

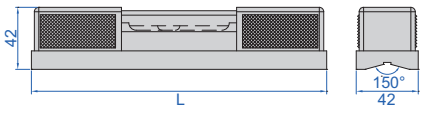


4905-200

NO NEED TO SET ZERO BEFORE USE

| Code | | Size (L) |
|---|---|---|
| Sensitivity 0.02mm/m (=0.001°) | Sensitivity 0.1mm/m (=0.0057°) | |
| 4905-160 | 4905-B160 | 160mm |
| 4905-200 | 4905-B200 | 200mm |
| 4905-300 | 4905-B300 | 300mm |
| 4905-500 | 4905-B500 | 500mm |

Unit: mm



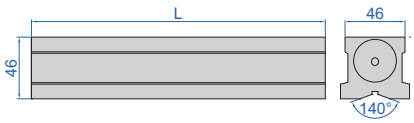

## BLOCK LEVELS

POPULAR MODEL

VIDEO

- V-groove on bottom for shafts (shafts dia. 15~68mm)
- With transverse vial

Unit: mm




| Code | | Length (L) |
|---|---|---|
| Sensitivity 0.02mm/m (=0.001°) | Sensitivity 0.05mm/m (=0.0029°) | |
| 4903-150A | 4903-C150 | 150mm |
| 4903-200A | 4903-C200 | 200mm |
| 4903-300A | 4903-C300 | 300mm |



4903-200A

## SHORT LEVEL

INSIZE PLUS
MADE IN EUROPE

- No need to set zero before use
- Suitable for small spaces like crankshaft
- Longitudinal and transverse V-grooves on bottom for shafts (shafts dia. 19.3~115.9mm)
- With transverse vial

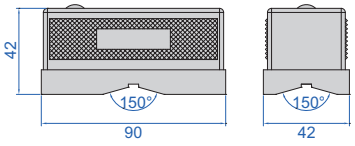


4907-90

NO NEED TO SET ZERO BEFORE USE

| Code | Length | Sensitivity |
|---|---|---|
| 4907-90 | 90mm | 0.1mm/m (=0.0057°) |

Unit: mm




## MINI LEVEL

INSIZE PLUS
MADE IN EUROPE

- No need to set zero before use
- With mounting holes (for M5 screws)

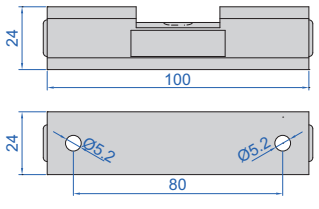


4908-100

NO NEED TO SET ZERO BEFORE USE

| Code | Length | Sensitivity |
|---|---|---|
| 4908-100 | 100mm | 0.1mm/m (=0.0057°) |

Unit: mm



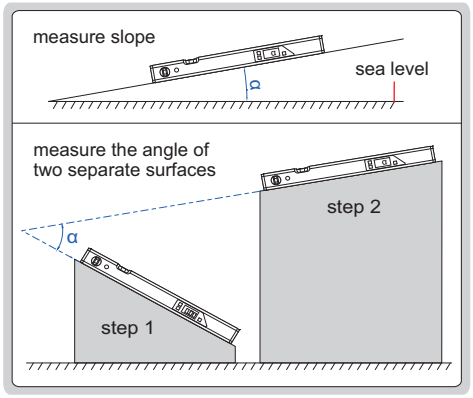



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VIDEO

ABSOLUTE LEVEL | BACKLIGHT | WORKING TEMPERATURE 0°C~50°C

# DIGITAL LEVELS AND SLOPE METERS



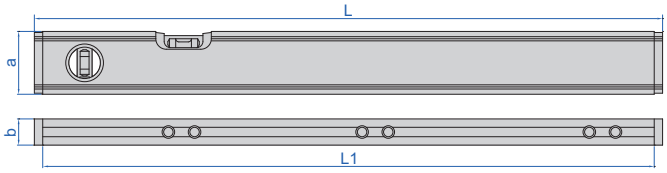




**4910-400**

**4910-600**

- With transverse and longitudinal vials
- Used as level and slope meter
- Aluminum frame, magnetic bottom
- The sea level is permanently set inside the chip, zero setting is not needed when batteries are replaced
- Buttons: ON/OFF, absolute and incremental measurement, keep the reading, buzzer alarm (not for **4910-400**), unit (mm/m, %, in/ft), conversion (not for **4910-400**), backlight
- The display flips over when the bottom faces up
- Two AAA batteries
- Automatic power off




(mm)

| Code | Range | Resolution | Accuracy | Remark* | L | L1 | a | b |
|---|---|---|---|---|---|---|---|---|
| **4910-400** | 0~360° (90°×4) | angle: 0.1° | ±0.2° | both angle and slope are displayed (slope is calculated by angle) | 416 | 400 | 50 | 21 |
| **4910-600** | 0~360° (90°×4) | at 0° and 90°: 0.05° ; at others: 0.1° | at 0° and 90°: ±0.1°; at others: ±0.2° | at 0°and 90°buzzer alarm | 600 | 585 | 60 | 25 |

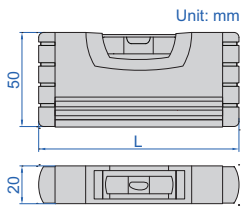
*mm/m=tan(°)x1000,for example:0.3°=tan (0.3)x1000=5mm/m

LIFETIME WARRANTY VIALS | MAGNETIC BASE

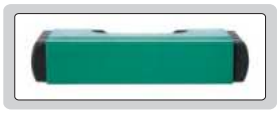
# HANDY LEVEL



**4912-100**




magnetic base surface



packaging




- Shockproof vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C

| Code | Size (L) | Accuracy |
|---|---|---|
| **4912-100** | 100mm | 0.5mm/m |

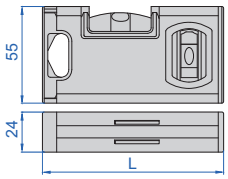
## HANDY LEVELS

MAGNETIC BASE

LIFETIME WARRANTY VIALS



Unit: mm

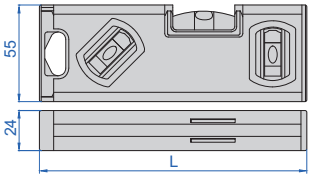



2 vials

**4922-100**



Unit: mm




3 vials

**4922-150**

| Code | Size (L) | Accuracy | Number of vials |
|---|---|---|---|
| **4922-100** | 100mm | 0.5mm/m | 2 |
| **4922-150** | 150mm | 0.5mm/m | 3 |
| **4922-200** | 200mm | 0.5mm/m | 3 |

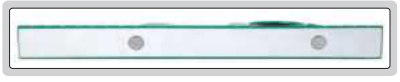
- Shockproof horizontal and vertical vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C

## CASTING ALUMINUM LEVEL

MAGNETIC BASE

LIFETIME WARRANTY VIALS

magnetic bottom surface (milled)





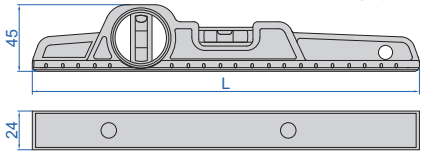
**4913-250**

packaging



- Shockproof horizontal and vertical vials
- Magnetic base
- Working temperature: -15°C~55°C
- Casting aluminum body

Unit: mm




| Code | Size (L) | Accuracy |
|---|---|---|
| **4913-250** | 250mm | 0.5mm/m |

## ALUMINUM LEVEL

MAGNETIC BASE

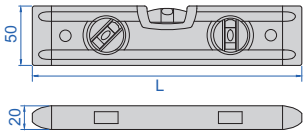
LIFETIME WARRANTY VIALS

- Shockproof horizontal and vertical vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C



**4921-230**

Unit: mm




| Code | Size (L) | Accuracy |
|---|---|---|
| **4921-230** | 230mm | 0.5mm/m |



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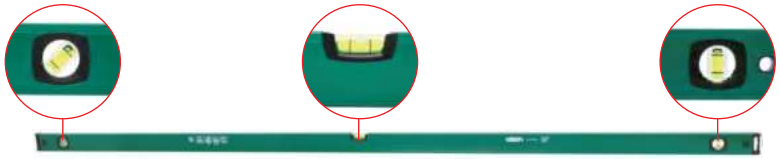
LIFETIME WARRANTY VIALS

MAGNETIC BASE

## ALUMINUM LEVELS



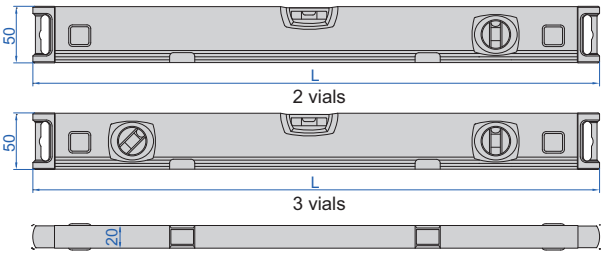
4914-600



4914-2000

- Shockproof horizontal and vertical vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C

Unit: mm




magnetic bottom surface (milled)



| Code | Size (L) | Accuracy | Number of vials |
|---|---|---|---|
| **4914-300** | 300mm | 0.5mm/m | 2 |
| **4914-600** | 600mm | 0.5mm/m | 2 |
| **4914-800** | 800mm | 0.5mm/m | 2 |
| **4914-1000** | 1000mm | 0.5mm/m | 2 |
| **4914-1200** | 1200mm | 0.5mm/m | 2 |
| **4914-2000** | 2000mm | 0.5mm/m | 3 |

LIFETIME WARRANTY VIALS

## ALUMINUM LEVELS

- Top and bottom working surfaces
- Shock-proof and UV-proof vials
- Die casting aluminum alloy frame
- Zero position of horizontal vial can be set
- One graduation of horizontal vial is 2% slope
- Working temperature: -15°C~55°C

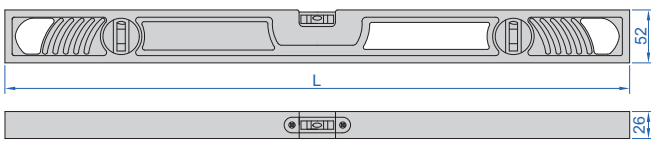



4911-600

bottom surface (non-magnetic, milled)



Unit: mm




| Code | Size (L) | Accuracy |
|---|---|---|
| **4911-600** | 600mm | 0.5mm/m |
| **4911-800** | 800mm | 0.5mm/m |

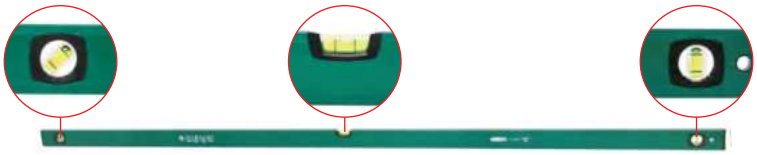
## ALUMINUM LEVELS (BASIC TYPE)

MAGNETIC BASE

LIFETIME WARRANTY VIALS



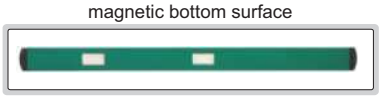
4918-300



4918-2000

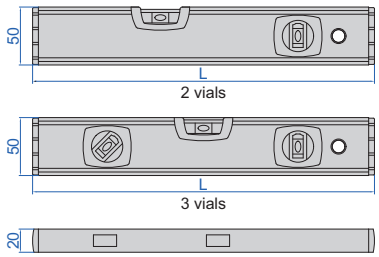
- Shock-proof and UV-proof vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C

magnetic bottom surface



| Code | Size (L) | Accuracy | Number of vials |
|---|---|---|---|
| **4918-300** | 300mm | 1mm/m | 2 |
| **4918-600** | 600mm | 1mm/m | 2 |
| **4918-800** | 800mm | 1mm/m | 2 |
| **4918-1000** | 1000mm | 1mm/m | 2 |
| **4918-1200** | 1200mm | 1mm/m | 2 |
| **4918-2000** | 2000mm | 1mm/m | 3 |

Unit: mm




## ALUMINUM LEVEL WITH RULER

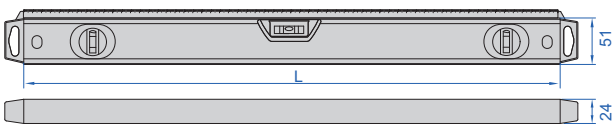
LIFETIME WARRANTY VIALS



4923-600

- Shockproof horizontal and vertical vials
- Non-magnetic milled base
- Shock absorbing rubber end caps
- Range of ruler: 0-60cm, graduation: 1mm
- Working temperature: -15°C~55°C

Unit: mm




| Code | Size (L) | Accuracy |
|---|---|---|
| **4923-600** | 600mm | 0.5mm/m |



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VIDEO

IP54
WATERPROOF

AUDIBLE AND VISUAL ALARM WHEN OUT OF ±3°

# CROSS-LINE LASER LEVEL
# CODE 4917-30

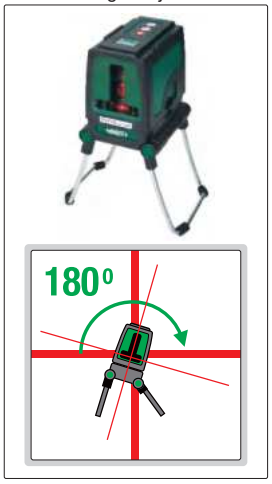


- Red horizontal and vertical cross laser lines
- Self-leveling within ±3°, self-leveling time within 4s, audible and visual alarm when out of ±3°
- Folding legs for angle and height adjustment
- Outdoor use with the detector (code: **4917-DETECTOR**)

application examples

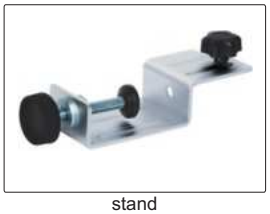


folding legs for angle and height adjustment




## SPECIFICATION

| | |
|---|---|
| **Laser line width** | 2±0.5mm (within 5m) |
| **Laser type** | 630~660nm, class II, <1mW |
| **Beam angle** | 120±0.5° |
| **Self-leveling range** | ±3° |
| **Working distance** | indoor: 30m, outdoor: 50m with detector (**optional**) |
| **Accuracy** | 0.2mm/m |
| **Operation temperature** | -10~40°C |
| **Power supply** | 3×AA batteries, for 3 hours working |
| **Dimension** | 100×82×104mm |
| **Weight** | 620g |



stand
(included with outdoor detector)

## OUTDOOR DETECTOR (OPTIONAL)

| | |
|---|---|
| **Detecting distance** | horizontal 1~50m,<br>vertical 1~30m |
| **Detecting accuracy** * | high accuracy ±1.5mm, low accuracy ±2. 5mm |
| **Power supply** | 9V battery |
| **Dimension** | 168×58×30mm |
| **Weight** | 140g (battery included) |

* Use high accuracy detection mode within 15m, use low accuracy detection mode over 15m



outdoor detector (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **1/4" to 5/8" tripod adaptor** | 1 pc |
| **Battery (AA)** | 3 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Outdoor detector** | **4917-DETECTOR** |

# SELF-LEVELING ROTARY LASER
# CODE GRL-L340

VIDEO

INDICATOR FLASHING WHEN OUT OF ±5°

IP65 WATERPROOF





detector (included)



remote controller (included)

- Applicable fields: construction, decoration, pipeline and equipment installation
- Green laser beam rotates 360° horizontally or vertically
- Self-leveling range ±5° on both X and Y planes
- Alarm when inclination is out of ±5°
- ±5° leveling range for manual mode on both X and Y planes
- 5 variable speeds 0-600rpm
- 6 scan modes
- Plumb up and plumb down dots
- Remote control for long distance
- Power supply: AC or DC



bracket for C battery (included)



beam finder glasses (included)

application examples



horizontal leveling | vertical leveling | working with detector



tripod (included)

## SPECIFICATION

| | | |
|---|---|---|
| Working range | | indoor 50m, outdoor 300m (with detector) |
| Self leveling range | | ±5° |
| Horizontal/vertical beam accuracy | | ±0.1mm/m |
| Main laser type | | 520~540nm, class 2, <1mW |
| Auxiliary laser type | | 645~655nm, class 2, <1mW |
| Rotating speed | | 0/60/120/300/600rpm |
| Scanning range | | 0/10/45/90/180/360° |
| Setting slope | | X axis: ±5°, Y axis: ±5° |
| Operation temperature | | -20~50°C |
| Maximum remote control distance | | 20m |
| Power supply | remote controller | 2×1.5V AAA batteries |
| | main unit | NI-MH batteries or 4×1.5V C batteries |
| | detector | 1×9V battery |
| Dimension | | 210×210×213mm |
| Weight | | 2.5kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit (including NI-MH batteries) | 1 pc |
| C battery and bracket | 1 set |
| Detector | 1 pc |
| Remote controller | 1 pc |
| Beam finder glasses | 1 pc |
| Laser target | 1 pc |
| Power adapter | 1 pc |
| AAA battery | 2 pcs |
| 9V battery | 1 pc |
| Tripod | 1 pc |

# LINEAR PROBES AND SCALES

19



**Linear Probes**
**Page 555**



**Optical Grating Linear Gauges And Display Units**
**Page 555-561**



**Capacitance Type Linear Gauges And Display Units**
**Page 562-566**



**Laser Displacement Sensors**
**Page 567**



**Linear Scales And Digital Readouts**
**Page 568-572**



**Magnetic Linear Scales**
**Page 573-574**



**Scales**
**Page 575-576**

## INDUCTANCE TYPE PROBE
## CODE 9420-AP02

IP65 WATERPROOF

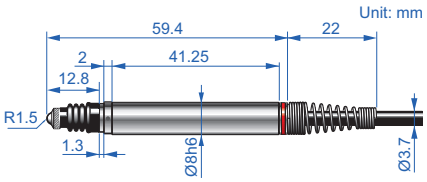
VIDEO

- Ultra-short length, built-in precision linear ball bearings
- For highly accurate and repeatable displacement measurements of displacement, deformation, dimension, vibration, thickness, expansion, etc. in quality control and metrology applications



**SPECIFICATION**

| | | |
|---|---|---|
| Range | | ±0.9mm |
| Resolution | | 0.1μm |
| Accuracy | | ±0.3+3×\|L\|³μm, (L is measuring length in mm) |
| Repeatability | | 0.15μm |
| Thermal drift | | 0.25μm/°C |
| Mechanical stroke | | 2.2mm |
| Sensor type | | LVDT |
| Measuring force | | 0.75N (measuring rod vertical down at 0±25% potential) |
| Protective cover | | fluorinated elastomer |
| Contact type | | carbide |
| Insert thread | | M2.5 |
| Sampling frequency | | ≥80ms |
| Operation environment | work | -10~60ºC; |
| | storage | -20~100ºC |
| Cable length | | 2m (customized from 2~5m) |
| Output interface | | 5-wire aviation interface |
| Weight | | 16g |




## DIGITAL LINEAR GAUGES

INSPECTION CERTIFICATE

VIDEO

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

DUSTPROOF WATERPROOF

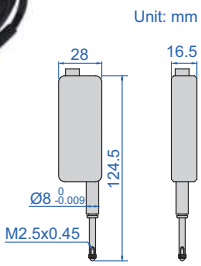
- Scale type: optical grating
- Absolute encoder, the original data remains after power off
- Digital signal output, amplifier is not required
- Measuring force: ≤1.5N
- Dust/waterproof: IP43/IP66
- Baud rate: 9600 (can be customized)
- Cable length: 3m (can be customized)
- Optional accessory: software of linear gauge (code: **7130-SOFTWARE**, 8 probes can be connected at the same time, need to purchase the corresponding hubs)



**7130-10**



**7130-10L**




**Dust/waterproof IP43, resolution 0.1μm**

| Code | Range | Repeatability | Accuracy | Outgoing cable direction | Output signal | Output interface |
|---|---|---|---|---|---|---|
| 7130-10 | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, TTL level | |
| 7130-10L | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, TTL level | |
| 7130-11 | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, 232 level | |
| 7130-11L | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, 232 level | |
| 7130-12 | 0-12.5mm | 0.5μm | 1μm | horizontal | RS485 (VCC+5~12V) | |
| 7130-12L | 0-12.5mm | 0.5μm | 1μm | vertical | RS485 (VCC+5~12V) | |
| 7130-13 | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, TTL level | |
| 7130-13L | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, TTL level | |
| 7130-14 | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, 232 level | |
| 7130-14L | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, 232 level | |

To be continued



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Continued from previous page

**Dust/waterproof IP43, resolution 0.5μm**

| Code | Range | Repeatability | Accuracy | Outgoing cable direction | Output signal | Output interface |
|---|---|---|---|---|---|---|
| **7130-20** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, TTL level | |
| **7130-20L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, TTL level | |
| **7130-21** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, 232 level | |
| **7130-21L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, 232 level | |
| **7130-22** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS485 (VCC+5~12V) | |
| **7130-22L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS485 (VCC+5~12V) | |
| **7130-23** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, TTL level | |
| **7130-23L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, TTL level | |
| **7130-24** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, 232 level | |
| **7130-24L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, 232 level | |

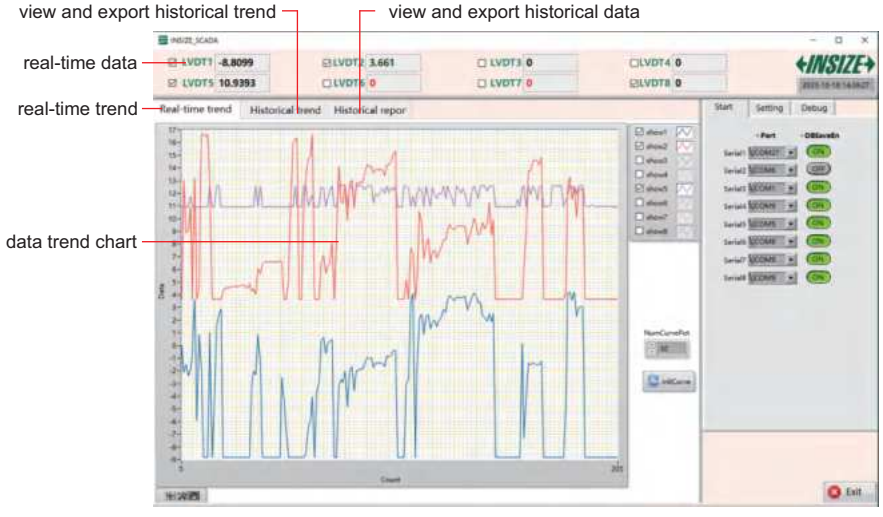
**Dust/waterproof IP66, resolution 0.1μm**

| Code | Range | Repeatability | Accuracy | Outgoing cable direction | Output signal | Output interface |
|---|---|---|---|---|---|---|
| **7130-30** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, TTL level | |
| **7130-30L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, TTL level | |
| **7130-31** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, 232 level | |
| **7130-31L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, 232 level | |
| **7130-32** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS485 (VCC+5~12V) | |
| **7130-32L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS485 (VCC+5~12V) | |
| **7130-33** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, TTL level | |
| **7130-33L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, TTL level | |
| **7130-34** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, 232 level | |
| **7130-34L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, 232 level | |

**Dust/waterproof IP66, resolution 0.5μm**

| Code | Range | Repeatability | Accuracy | Outgoing cable direction | Output signal | Output interface |
|---|---|---|---|---|---|---|
| **7130-40** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, TTL level | |
| **7130-40L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, TTL level | |
| **7130-41** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, 232 level | |
| **7130-41L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, 232 level | |
| **7130-42** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS485 (VCC+5~12V) | |
| **7130-42L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS485 (VCC+5~12V) | |
| **7130-43** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, TTL level | |
| **7130-43L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, TTL level | |
| **7130-44** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, 232 level | |
| **7130-44L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, 232 level | |

software of linear gauge (**optional**)




the software can set tolerance and make real-time judgment (red when out of tolerance, green when within tolerance), set zero, data collection interval time, color, type and line width of trend lines, can view and export data to Excel report or BMP image

# PNEUMATIC DIGITAL LINEAR GAUGES

DUSTPROOF WATERPROOF

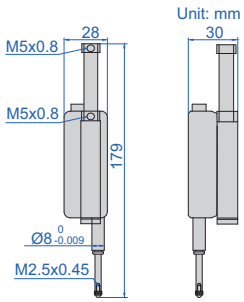
ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

INSPECTION CERTIFICATE




**7134-10L**

- Scale type: optical grating
- Absolute encoder, the original data remains after power off
- Digital signal output, amplifier is not required
- Air pressure: 0.2-0.5MPa
- Measuring force: ≤1.5N
- Dust/waterproof: IP43/IP66
- Baud rate: 9600 (can be customized)
- Cable length: 3m (can be customized)
- Optional accessory: software of linear gauge (code: **7130-SOFTWARE**, 8 probes can be connected at the same time, need to purchase the corresponding hubs)




**Dust/waterproof IP43, resolution 0.1μm**

| Code | Range | Repeatability | Accuracy | Outgoing cable direction | Output signal | Output interface |
|---|---|---|---|---|---|---|
| **7134-10** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, TTL level | |
| **7134-10L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, TTL level | |
| **7134-11** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, 232 level | |
| **7134-11L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, 232 level | |
| **7134-12** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS485 (VCC+5~12V) | |
| **7134-12L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS485 (VCC+5~12V) | |
| **7134-13** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, TTL level | |
| **7134-13L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, TTL level | |
| **7134-14** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, 232 level | |
| **7134-14L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, 232 level | |

**Dust/waterproof IP43, resolution 0.5μm**

| Code | Range | Repeatability | Accuracy | Outgoing cable direction | Output signal | Output interface |
|---|---|---|---|---|---|---|
| **7134-20** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, TTL level | |
| **7134-20L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, TTL level | |
| **7134-21** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, 232 level | |
| **7134-21L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, 232 level | |
| **7134-22** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS485 (VCC+5~12V) | |
| **7134-22L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS485 (VCC+5~12V) | |
| **7134-23** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, TTL level | |
| **7134-23L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, TTL level | |
| **7134-24** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, 232 level | |
| **7134-24L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, 232 level | |

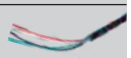
To be continued



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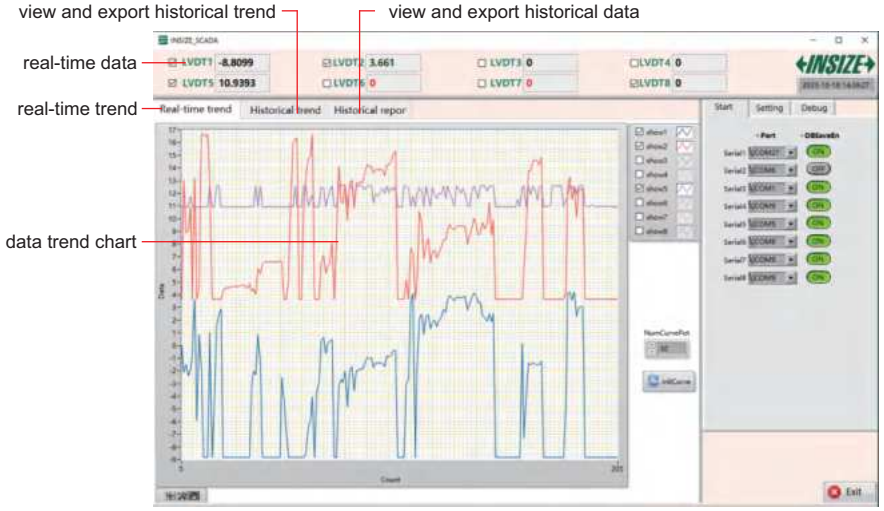
**Dust/waterproof IP66, resolution 0.1μm**

| Code | Range | Repeatability | Accuracy | Outgoing cable direction | Output signal | Output interface |
|---|---|---|---|---|---|---|
| **7134-30** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, TTL level |  |
| **7134-30L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, TTL level | |
| **7134-31** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, 232 level | |
| **7134-31L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, 232 level | |
| **7134-32** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS485 (VCC+5~12V) |  |
| **7134-32L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS485 (VCC+5~12V) | |
| **7134-33** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, TTL level |  |
| **7134-33L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, TTL level | |
| **7134-34** | 0-12.5mm | 0.5μm | 1μm | horizontal | RS232, 232 level | |
| **7134-34L** | 0-12.5mm | 0.5μm | 1μm | vertical | RS232, 232 level | |

**Dust/waterproof IP66, resolution 0.5μm**

| Code | Range | Repeatability | Accuracy | Outgoing cable direction | Output signal | Output interface |
|---|---|---|---|---|---|---|
| **7134-40** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, TTL level |  |
| **7134-40L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, TTL level | |
| **7134-41** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, 232 level | |
| **7134-41L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, 232 level | |
| **7134-42** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS485 (VCC+5~12V) |  |
| **7134-42L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS485 (VCC+5~12V) | |
| **7134-43** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, TTL level |  |
| **7134-43L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, TTL level | |
| **7134-44** | 0-12.5mm | 1.5μm | 3μm | horizontal | RS232, 232 level | |
| **7134-44L** | 0-12.5mm | 1.5μm | 3μm | vertical | RS232, 232 level | |

software of linear gauge (**optional**)




the software can set tolerance and make real-time judgment (red when out of tolerance, green when within tolerance), set zero, data collection interval time, color, type and line width of trend lines, can view and export data to Excel report or BMP image

# MULTICHANNEL INTERFACE BOXES OF LINEAR GAUGES




**7212-4A**




**7212-8A**



**7324-HUB4**



**7324-HUB7**



**7324-HUB16**

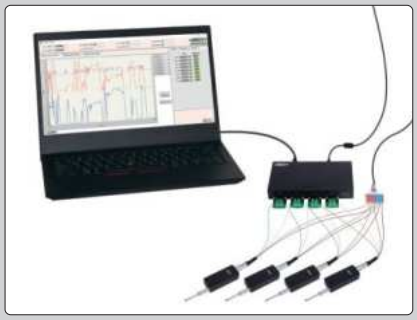
- Can be connected with **7130** or **7134** series linear gauges
- Optional accessory: software of linear gauge (code:**7130-SOFTWARE**, 8 linear gauges can be connected simultaneously)

software of linear gauge (**optional**)




the software can set tolerance and make real-time judgment (red when out of tolerance, green when within tolerance), set zero, data collection interval time, color, type and line width of trend lines, can view and export data to Excel report or BMP image

**7212-4A** application



**7324-HUB4** application



**SPECIFICATION**

| Code | 7212-4A | 7212-8A | 7324-HUB4 | 7324-HUB7 | 7324-HUB16 |
|---|---|---|---|---|---|
| Quantity of linear gauges | 4 | 8 | 4 | 7 | 16 |
| Applicable linear gauges | 7130-12, 7130-12L, 7130-22, 7130-22L, 7130-32, 7130-32L, 7130-42, 7130-42L, 7134-12, 7134-12L, 7134-22, 7134-22L, 7134-32, 7134-32L, 7134-42, 7134-42L | | 7130-10, 7130-10L, 7130-20, 7130-20L, 7130-30, 7130-30L, 7130-40, 7130-40L, 7134-10, 7134-10L, 7134-20, 7134-20L, 7134-30, 7134-30L, 7134-40, 7134-40L | | |
| Type of linear gauge | RS485 protocol | | RS232 protocol | | |
| Type of output | USB | | USB | | |





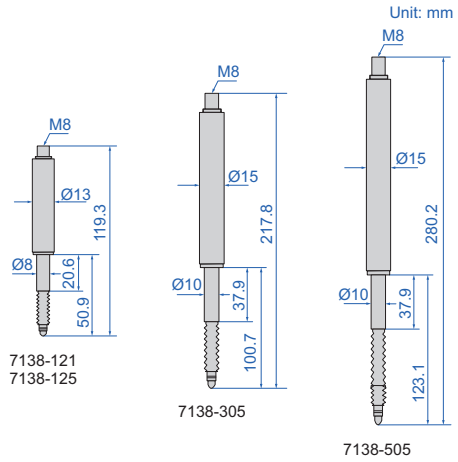
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IP67
WATERPROOF

VIDEO



7138-121




- Linear gauge type: optical grating
- Dust/waterproof: IP67
- Optional accessory: display unit (code **7131-1A**, can output keyboard signal, transmit data to excel, word, txt etc., also can output serial signal and transmit data to serial communication software)

L-connection cable
(**optional**)



straight connection cable
(**optional**)



application




**SPECIFICATION**

| Code | 7138-121 | 7138-125 | 7138-305 | 7138-505 |
|---|---|---|---|---|
| Range | 12mm | 12mm | 30mm | 50mm |
| Resolution | 0.1μm | 0.5μm | 0.5μm | 0.5μm |
| Accuracy | ±1μm | ±2μm | ±3μm | ±3.5μm |
| Power supply | DC 5V, 300mA | | | |
| Output signal * | TTL signal | | | |
| Operation environment | 0~40°C, 20~80%RH (non-condensing) | | | |
| Storage environment | -10~60°C, 20~80%RH (non-condensing) | | | |
| Dimension | Ø13×120mm | | Ø15×218mm | Ø15×281mm |
| Weight | 60g | | 130g | 170g |

* Output signal 485 or 232 is optional

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Dispaly unit | 7131-1A |
| L-connection cable | 7138-L |
| Straight connection cable | 7138-Z |

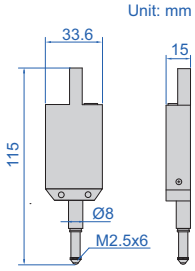
# LINEAR GAUGES AND DISPLAY UNIT

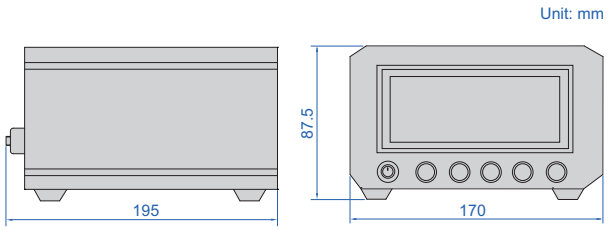


**linear gauge**
**7131-01**




**dispaly unit**
**7131-1A**




- Linear gauge type: optical grating
- Dispaly unit: display displacement data in real time, data preset, set tolerance and make judgment (out of upper tolerance, within tolerance, out of lower tolerance), set zero, change measuring direction, resolution (0.1μm/1μm), unit switch (μm/mm/inch)
- Two data transmission methods: can output keyboard signal and data can be transmitted to excel, word, txt etc, can also output serial signal and transmit data to serial communication software

spindle lift knob is included



application



## LINEAR GAUGE SPECIFICATION

| Code | 7131-01 | 7131-02 |
|---|---|---|
| Range | 12.5mm | 12.5mm |
| Resolution | 0.1μm | 1μm |
| Accuracy (19~20°C) | 1μm | 3μm |
| Repeatability | 0.2μm | 2μm |
| Linear gauge type | optical grating | |
| Working life | ten million times | |
| Dust/waterproof | IP50 | |
| Measuring force | 0.7±0.3N | |
| Cable length | 900mm | |
| Operation environment | 0~40°C, 20~80%RH | |
| Power supply | 5~24V | |
| Dimension (L×W×H) | 33.6×15×115mm | |
| Weight | 133g | |

## DISPLAY UNIT SPECIFICATION

| Code | 7131-1A |
|---|---|
| Display | 4" LCD screen |
| Unit | μm, mm, inch |
| Quantity of linear gauge to be connected | 1 pc |
| Dimension (L×W×H) | 170×195×87.5mm |
| Weight | 1.45kg |

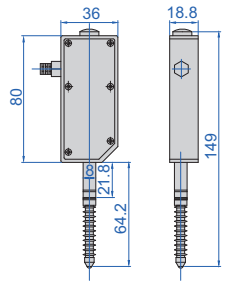
IP65
WATERPROOF

# CAPACITANCE LINEAR GAUGES



**7107-12**

Unit: mm

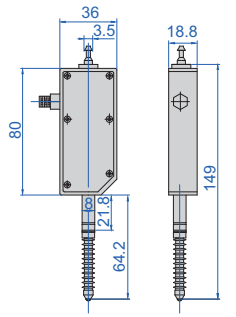



7107-11
7107-12




**7107-12V**

Unit: mm



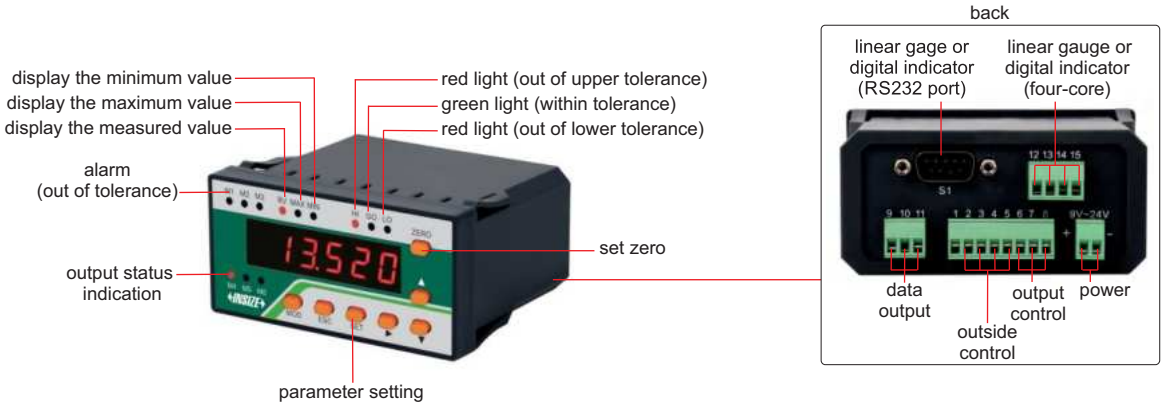

7107-11V
7107-12V

- Capacitance type linear encoder
- Shock-proof, water proof, dust proof, suitable for high speed movement, long working life
- Optional: display unit **7106-1A**, multichannel interface box **7107-1** or **7107-2**

**SPECIFICATION**

| Code | 7107-11 | 7107-12 | 7107-11V | 7107-12V |
|---|---|---|---|---|
| Measuring range | 12mm/0.47" | 12mm/0.47" | 12mm/0.47" | 12mm/0.47" |
| Resolution | 0.01mm/0.0004" | 0.001mm/0.00004" | 0.01mm/0.0004" | 0.001mm/0.00004" |
| Accuracy | 20μm | 5μm | 20μm | 5μm |
| Hysteresis | 10μm | 2μm | 10μm | 2μm |
| Driving type | spring | | pneumatic | |
| Measuring force | 1.5N | | adjusted by air pressure | |
| Measuring principle | capacitance type linear encoder | | | |
| Voltage | 5V | | | |
| Sampling frequency | 100 times/sec | | | |
| Working life | ten million times | | | |
| Dust/waterproof | IP65 | | | |
| Cable length | 2m | | | |
| Data output | RS232 | | | |

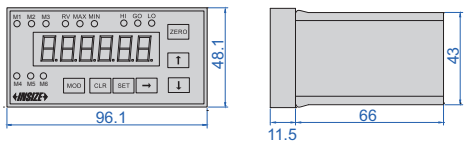
# DISPLAY UNIT FOR CAPACITANCE LINEAR GAUGES
# CODE 7106-1A




**7106-1A**

- Can be connected with **7107-11**, **7107-12**, **7107-11V** or **7107-12V** linear gauge, can also be connected with digital indicator (data cable **7309-C01M** is needed)
- Set tolerance and make judgment (out of upper tolerance, within tolerance, out of lower tolerance), output the judgment to control outside devices, control from outside (set zero, hold reading and collect data)
- Software of display unit (included): in the software, it is possible to set tolerance and show judgment (red when out of tolerance, green when within tolerance), set zero, collect data manually or automatically (time is adjustable), output data to Excel, print report

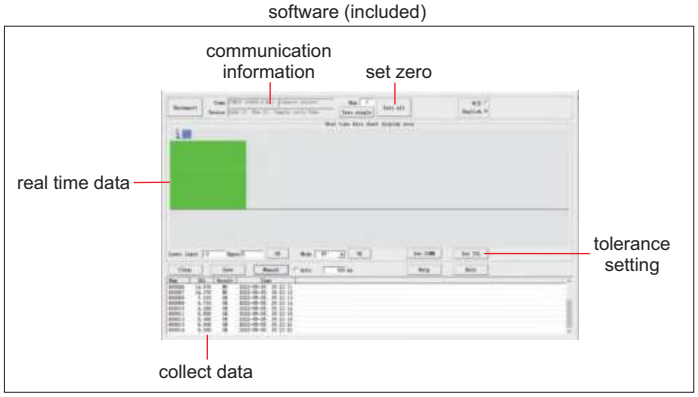
Unit: mm




connected with **7107-11**, **7107-12**, **7107-11V** or **7107-12V** linear gauge



software (included)




connected with digital indicator (data cable **7309-C01M** is needed)



suitable for **2112, 2114, 2115, 2116, 2501, 2103** and **2104** series digital indicators

## SPECIFICATION

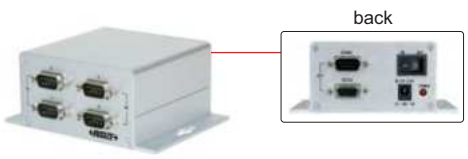
| | |
|---|---|
| **Display** | 6 digits |
| **Quantity of linear gauge or digital indicator to be connected** | 1 pc |
| **Tolerance** | set tolerance and make judgment with alarm and lights (out of upper tolerance, within tolerance, out of lower tolerance) |
| **Output control** | output the tolerance judgment (out of upper tolerance, within tolerance, out of lower tolerance) to control outside devices |
| **Outside control** | control the display units from outside (set zero, hold reading and collect data) |
| **Data output** | connect to computer software and serial communication |
| **Power supply** | DC 9~24V |



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# MULTICHANNEL INTERFACE BOXES FOR CAPACITANCE LINEAR GAUGES

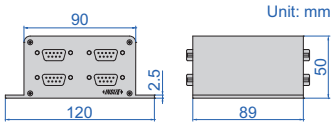
VIDEO



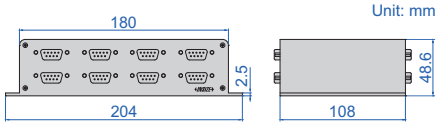

**7107-1**




**7107-2**



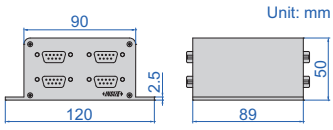

7107-1




7107-2



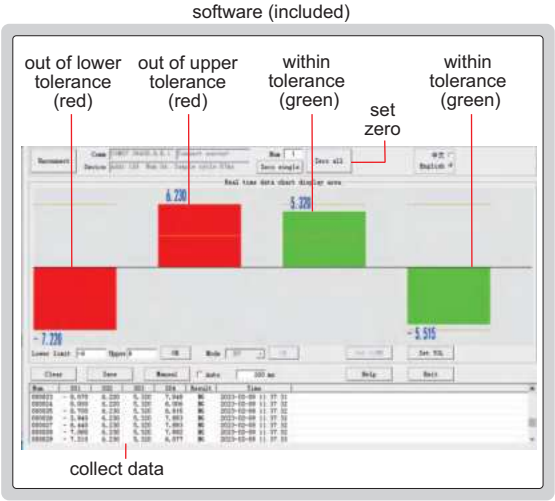
**7107-3**



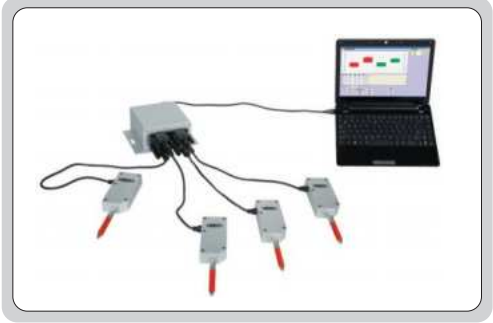

7107-3

- Can be connected with **7107-11**, **7107-12**, **7107-11V** or **7107-12V** linear gauges, can also be connected with digital indicators (data cable **7309-C01M** is needed)
- Connection box (code: **7107-3**) is needed to connect interface boxes, when two or more interface boxes are used. Maximum 4 interface boxes can be connected.
- Software of interface boxes (included): in the software, it is possible to set tolerance of each channel and show judgment (red when out of tolerance, green when within tolerance), set zero, collect data manually or automatically (time is adjustable), output data to Excel, print report.

software (included)




connected with **7107-11**, **7107-12**, **7107-11V** or **7107-12V** linear gauges



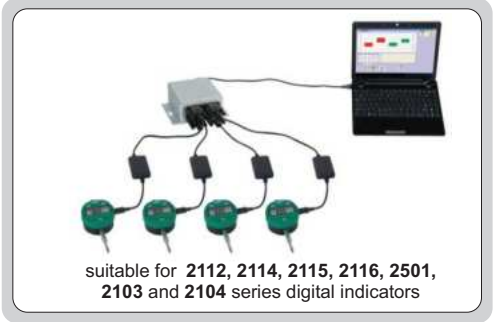
### INTERFACE BOX SPECIFICATION

| Code | 7107-1 | 7107-2 |
|---|---|---|
| Quantity of linear gauges or digital indicators to be connected | 4 pcs | 8 pcs |
| Data output | RS232 and RS485 | |
| Power supply | DC 9~24V | |

### CONNECTION BOX (OPTIONAL) SPECIFICATION

| Code | 7107-3 |
|---|---|
| Quantity of interface boxes to be connected | 4 pcs (maximum 4 interface boxes can be connected) |
| Data output | RS232 and RS485 |
| Power supply | DC 9~24V |

connected with digital indicators (data cable **7309-C01M** is needed)



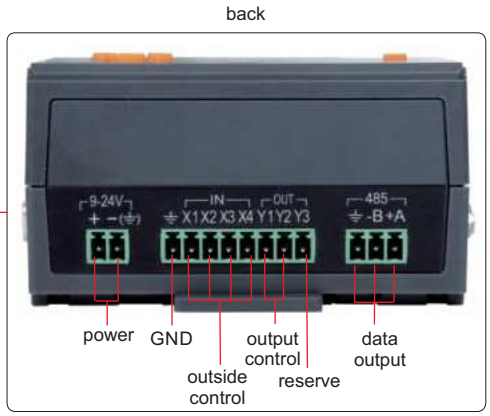
suitable for **2112, 2114, 2115, 2116, 2501, 2103** and **2104** series digital indicators

# MULTICHANNEL DISPLAY UNITS



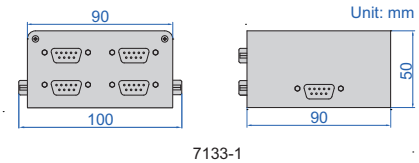

VIDEO

7133-1

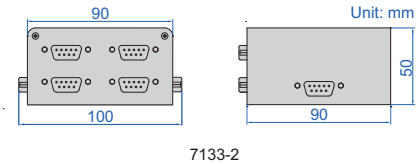





7133-2




7133-1



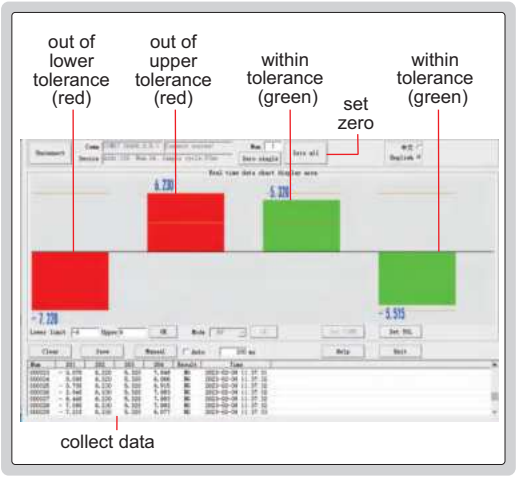

7133-2

- Can be connected with **7107-11**, **7107-12**, **7107-11V** or **7107-12V** linear gauges, can also be connected with digital indicators (data cable **7309-C01M** is needed)
- To connect more than 4 linear gauges or digital indicators, need to purchase the connection box (code: **7133-2**), and one display unit can be connected with up to 14 connection boxes
- Set tolerance and make judgment (out of tolerance, within tolerance), output the judgment to control outside devices, control from outside (set zero, hold reading and collect data)
- Software of display unit (included): in the software, it is possible to set tolerance and show judgment (red when out of tolerance, green when within tolerance), set zero, collect data manually or automatically (time is adjustable), output data to Excel, print report

## DISPLAY UNIT SPECIFICATION

| | |
|---|---|
| **Code** | **7133-1** |
| **Display** | 6 digits |
| **Quantity of linear gauges or digital indicators to be connected** | 4 pcs |
| **Tolerance** | set tolerance and make judgment with lights (out of tolerance, within tolerance) |
| **Output control** | output the tolerance judgment (out of tolerance, within tolerance) to control outside devices |
| **Outside control** | control the display units from outside (set zero, hold reading and collect data) |
| **Data output** | connect to computer software and serial communication |
| **Power supply** | DC 9~24V |

software (included)




## CONNECTION BOX (OPTIONAL) SPECIFICATION

| | |
|---|---|
| **Code** | **7133-2** |
| **Quantity of linear gauges or digital indicators to be connected** | 4 pcs |

To be continued



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Continued from previous page

use without computer
(measurement data of each channel can be switched to display on the display unit)

display unit is connected with linear gauge
(code **7107-11**, **7107-12**, **7107-11V** or **7107-12V**)



display unit is connected with digital indicators
(data cable **7309-C01M** is needed)



suitable for **2112, 2114, 2115, 2116, 2501, 2103** and **2104** series digital indicators

display unit and connection box are connected with linear gauges
(code **7107-11**, **7107-12**, **7107-11V** or **7107-12V**)



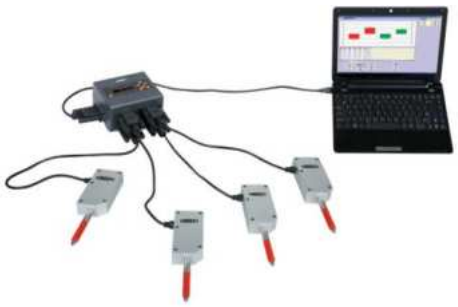
display unit and connection box are connected with digital indicators
(data cable **7309-C01M** is needed)



suitable for **2112, 2114, 2115, 2116, 2501, 2103** and **2104** series digital indicators

use with computer
(measurement data of all channel can be displayed in the software)

display unit is connected with linear gauge
(code **7107-11**, **7107-12**, **7107-11V** or **7107-12V**)

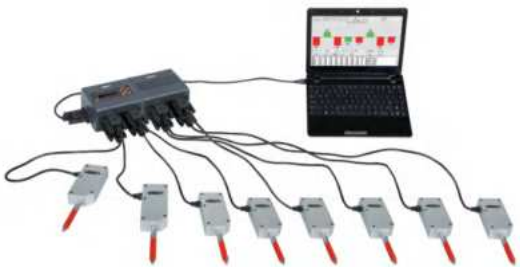


display unit is connected with digital indicators
(data cable **7309-C01M** is needed)

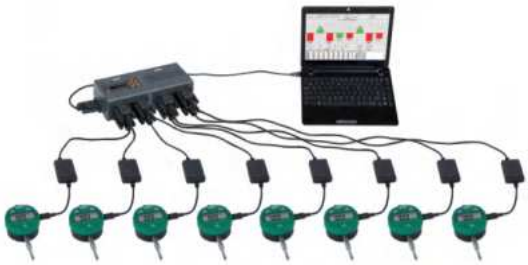


suitable for **2112, 2114, 2115, 2116, 2501, 2103** and **2104** series digital indicators

display unit and connection box are connected with linear gauges
(code **7107-11**, **7107-12**, **7107-11V** or **7107-12V**)



display unit and connection box are connected with digital indicators
(data cable **7309-C01M** is needed)



suitable for **2112, 2114, 2115, 2116, 2501, 2103** and **2104** series digital indicators

# LASER DISPLACEMENT SENSORS

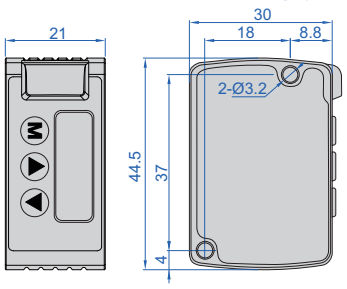
**IP67 WATERPROOF**

- High accuracy, non-contact measurement, high speed response, multiple measurement modes, environmental adaptability, programmable control, rich data output interface and easy maintenance
- Can be used in automated production lines, robotic arms, packaging equipment, printing equipment, medical equipment etc.



**LDS-N30-RS**

Unit: mm




**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Mounting bracket** | 1 pc |
| **Cable** | 1 pc |

**SPECIFICATION**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Code** | **NPN** | **LDS-N30** | **LDS-N50** | **LDS-N100** | **LDS-N200** | **LDS-N400** |
| | **NPN+Analog** | **LDS-N30-MC** | **LDS-N50-MC** | **LDS-N100-MC** | **LDS-N200-MC** | **LDS-N400-MC** |
| | **NPN+RS485** | **LDS-N30-RS** | **LDS-N50-RS** | **LDS-N100-RS** | **LDS-N200-RS** | **LDS-N400-RS** |
| **Detection method** | | diffuse reflection | | | | |
| **Basis (center) distance** | | 30mm | 50mm | 100mm | 200mm | 400mm |
| **Detection range (F.S.)** | | 25~35mm | 35~65mm | 65~135mm | 120~280mm | 200~600mm |
| **Full scale** | | 10mm | 30mm | 70mm | 160mm | 400mm |
| **Repeat accuracy** | | 10μm | 30μm | 70μm | 200μm | 200~400mm: 600μm<br>400~600mm: 1500μm |
| **Linear accuracy** | | ±0.2% F.S. | | | | 200-400mm: ±0.2% F.S.<br>200-400mm: ±0.3% F.S. |
| **Temperature drift characteristics** | | ±0.03% F.S./°C | | | | |
| **Light source** | **medium** | red diode laser, wavelength 655nm | | | | |
| | **output power** | <1mW | | | | |
| | **laser class** | IEC class 2 | | | | |
| **Light spot diameter** | | Ø50μm | Ø70μm | Ø120μm | Ø300μm | Ø500μm |
| **Output** | **switch mode** | NPN open collector, ≤50mA/DC 24V, residual voltage<1.5V | | | | |
| | **analog** | analogue voltage: 0~5V (alarm: 5.2V), analogue current: 4~20mA (alarm: 0mA), Chinese display switchable | | | | |
| | **operation** | Light.on/Dark.on selectable | | | | |
| **Response time** | | 1.5ms/5ms/10ms, switchable | | | | |
| **Power supply** | | DC12~24V | | | | |
| **No-load current** | | <30mA (at supply voltage 24V DC), <60mA (at supply voltage 12V DC) | | | | |
| **Indicator light** | | output indicator: yellow, power indicator: green | | | | |
| **Protection circuit** | | reverse polarity protection/surge protection/short circuit protection | | | | |
| **Protection level** | | IP67 | | | | |
| **Withstand voltage** | | AC1000V, 50/60Hz, 1min | | | | |
| **Vibration resistance** | | 10~55Hz (period 1min), double amplitude 1.5mm, 2H in each X/Y/Z direction | | | | |
| **Impact resistance** | | 500m/S² (approx. 50G), 3 times each in X/Y/Z direction | | | | |
| **Insulation impedance** | | 50MΩ or more (DC500V megohmmeter) | | | | |
| **Material** | **cover case** | aluminium alloy | | | | |
| | **lens** | PMMA | | | | |
| | **guidewire** | PVC (polyvinyl chloride) | | | | |
| **Connection** | | switching: lead-in type (4-pole, standard cable length 2m),<br>analogue: lead-in type (5-pole, standard cable length 2m) | | | | |
| **Ambient illumination** | | incandescent lamp ≤ 3000lux, sunlight ≤ 20000lux | | | | |
| **Ambient temperature** | | operation: -10~45°C, storage: -20~60°C(non-freezing) | | | | |
| **Ambient humidity** | | operation: 35~85%RH, storage: 35~85%RH (non-condensing) | | | | |
| **Weight** | | 85g (include cable) | | | | |

# LINEAR SCALES (TTL SIGNAL)

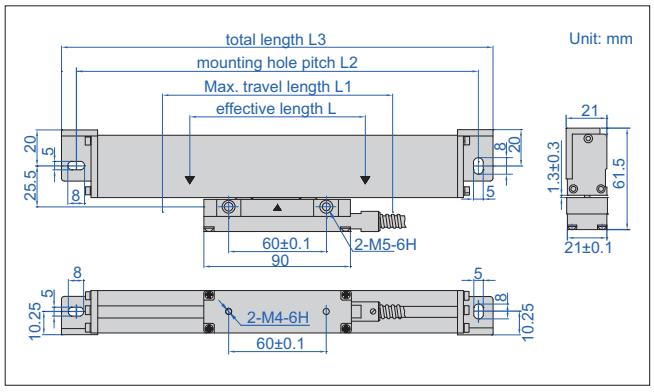
**IP54**
WATERPROOF



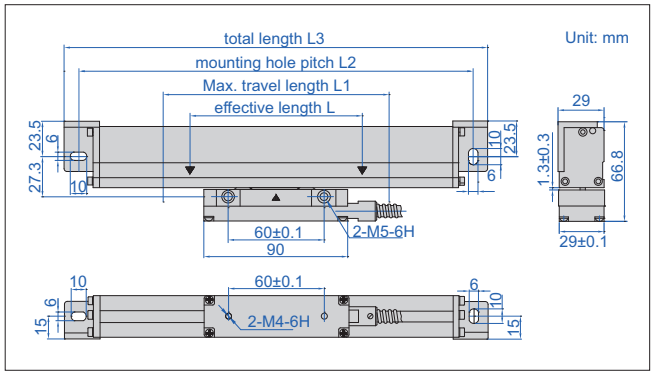
**ISL-A1-300**

- Optical TTL (Through-The-Lens) detection.
  These optical TTL linear scales use an transistor logic to transmit and record high-resolution distance measurements. They are the most accurate type of encoder and are paired with **ISL-DR2/DR3** and **ISL-LCD7** (digital readout)

**Series ISL-A1 and ISL-A5**




**Series ISL-B5**




| Effective length (L) | Code | | |
|---|---|---|---|
| | Thin type | | Thick type |
| | Series ISL-A1 | Series ISL-A5 | Series ISL-B5 |
| 50mm | ISL-A1-50 | ISL-A5-50 | ISL-B5-50 |
| 100mm | ISL-A1-100 | ISL-A5-100 | ISL-B5-100 |
| 150mm | ISL-A1-150 | ISL-A5-150 | ISL-B5-150 |
| 200mm | ISL-A1-200 | ISL-A5-200 | ISL-B5-200 |
| 250mm | ISL-A1-250 | ISL-A5-250 | ISL-B5-250 |
| 300mm | ISL-A1-300 | ISL-A5-300 | ISL-B5-300 |
| 350mm | ISL-A1-350 | ISL-A5-350 | ISL-B5-350 |
| 400mm | ISL-A1-400 | ISL-A5-400 | ISL-B5-400 |
| 450mm | ISL-A1-450 | ISL-A5-450 | ISL-B5-450 |
| 500mm | ISL-A1-500 | ISL-A5-500 | ISL-B5-500 |
| 550mm | ISL-A1-550 | ISL-A5-550 | ISL-B5-550 |
| 600mm | ISL-A1-600 | ISL-A5-600 | ISL-B5-600 |
| 650mm | ISL-A1-650 | ISL-A5-650 | ISL-B5-650 |
| 700mm | ISL-A1-700 | ISL-A5-700 | ISL-B5-700 |
| 750mm | ISL-A1-750 | ISL-A5-750 | ISL-B5-750 |
| 800mm | ISL-A1-800 | ISL-A5-800 | ISL-B5-800 |
| 850mm | ISL-A1-850 | ISL-A5-850 | ISL-B5-850 |
| 900mm | ISL-A1-900 | ISL-A5-900 | ISL-B5-900 |
| 950mm | ISL-A1-950 | ISL-A5-950 | ISL-B5-950 |
| 1000mm | ISL-A1-1000 | ISL-A5-1000 | ISL-B5-1000 |
| 1100mm | | | ISL-B5-1100 |
| 1200mm | | | ISL-B5-1200 |
| 1300mm | | | ISL-B5-1300 |
| 1400mm | | | ISL-B5-1400 |
| 1500mm | | | ISL-B5-1500 |
| 1600mm | | | ISL-B5-1600 |
| 1700mm | | | ISL-B5-1700 |
| 1800mm | | | ISL-B5-1800 |
| 1900mm | | | ISL-B5-1900 |
| 2000mm | | | ISL-B5-2000 |
| 2100mm | | | ISL-B5-2100 |
| 2200mm | | | ISL-B5-2200 |
| 2300mm | | | ISL-B5-2300 |
| 2400mm | | | ISL-B5-2400 |
| 2500mm | | | ISL-B5-2500 |
| 2600mm | | | ISL-B5-2600 |
| 2700mm | | | ISL-B5-2700 |
| 2800mm | | | ISL-B5-2800 |
| 2900mm | | | ISL-B5-2900 |
| 3000mm | | | ISL-B5-3000 |
| 3100mm | | | ISL-B5-3100 |
| 3200mm | | | ISL-B5-3200 |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **'L' shape support** | 1 pc |
| **Anti-dust cover** | 1 pc |
| **Plain base** | 1 pc (for L≥1500mm) |
| **Mounting accessories** | 1 package |



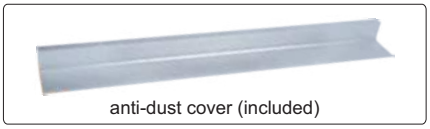
'L' shape support (included)



mounting accessories (included)

To be continued

Continued from previous page


anti-dust cover (included)


plain base (included, for L≥1500mm)

**SPECIFICATION**

| Code | Series ISL-A1 | | Series ISL-A5 | | Series ISL-B5 | |
|---|---|---|---|---|---|---|
| L1 (mm) | L+30 (L≤900) | L+50 (L>900) | L+30 (L≤900) | L+50 (L>900) | L+30 (L≤900) | L+50 (L>900) |
| L2 (mm) | L+132 (L≤900) | L+152 (L>900) | L+132 (L≤900) | L+152 (L>900) | L+136 (L≤900) | L+156 (L>900) |
| L3 (mm) | L+148 (L≤900) | L+168 (L>900) | L+148 (L≤900) | L+168 (L>900) | L+154 (L≤900) | L+174 (L>900) |
| Resolution | 1μm | | 5μm | | 5μm | |
| Max. response speed | 50m/min | | 90m/min | | 60m/min | |
| Scale grating pitch | 20μm | | | | | |
| Scale reference point pitch | 50mm | | | | | |
| Accuracy | ±(5+5L/1000)μm L is the effective length in mm | | | | | |
| Cable length | 3.5m (L: 50-950mm), 5m (L: 1000-1500mm), 10m (L: 1600-3200mm) | | | | | |
| Output signal | TTL | | | | | |
| Socket | 9PD | | | | | |
| Power supply | 5±0.5V | | | | | |

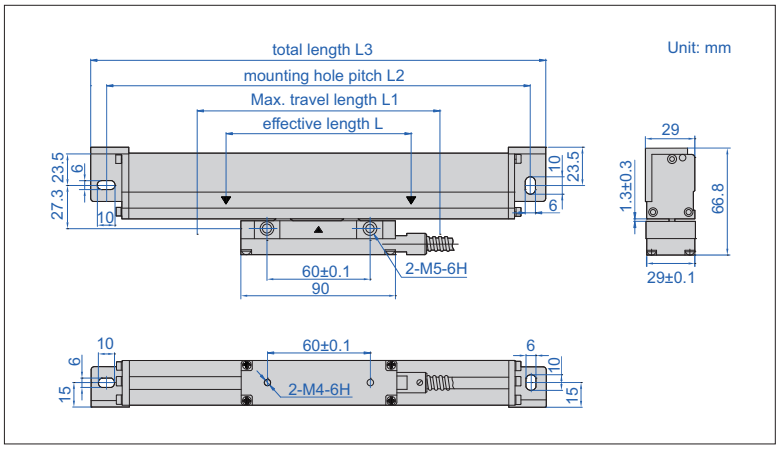
## LINEAR SCALES (RS422 SIGNAL)

IP54 WATERPROOF



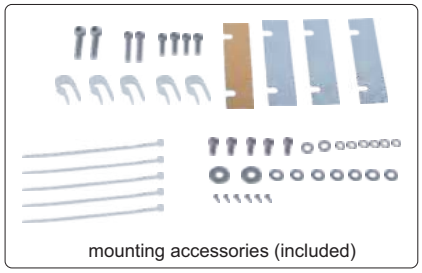
**ISL-C5-450**

- Connected to digital display box or PLC





'L' shape support (included)


mounting accessories (included)

To be continued



anti-dust cover (included)



plain base (included, for L≥1500mm)

| Effective length (L) | Code | |
|---|---|---|
| | Series ISL-C1 | Series ISL-C5 |
| 50mm | ISL-C1-50 | ISL-C5-50 |
| 100mm | ISL-C1-100 | ISL-C5-100 |
| 150mm | ISL-C1-150 | ISL-C5-150 |
| 200mm | ISL-C1-200 | ISL-C5-200 |
| 250mm | ISL-C1-250 | ISL-C5-250 |
| 300mm | ISL-C1-300 | ISL-C5-300 |
| 350mm | ISL-C1-350 | ISL-C5-350 |
| 400mm | ISL-C1-400 | ISL-C5-400 |
| 450mm | ISL-C1-450 | ISL-C5-450 |
| 500mm | ISL-C1-500 | ISL-C5-500 |
| 550mm | ISL-C1-550 | ISL-C5-550 |
| 600mm | ISL-C1-600 | ISL-C5-600 |
| 650mm | ISL-C1-650 | ISL-C5-650 |
| 700mm | ISL-C1-700 | ISL-C5-700 |
| 750mm | ISL-C1-750 | ISL-C5-750 |
| 800mm | ISL-C1-800 | ISL-C5-800 |
| 850mm | ISL-C1-850 | ISL-C5-850 |
| 900mm | ISL-C1-900 | ISL-C5-900 |
| 950mm | ISL-C1-950 | ISL-C5-950 |
| 1000mm | ISL-C1-1000 | ISL-C5-1000 |

| Effective length (L) | Code | |
|---|---|---|
| | Series ISL-C1 | Series ISL-C5 |
| 1100mm | ISL-C1-1100 | ISL-C5-1100 |
| 1200mm | ISL-C1-1200 | ISL-C5-1200 |
| 1300mm | ISL-C1-1300 | ISL-C5-1300 |
| 1400mm | ISL-C1-1400 | ISL-C5-1400 |
| 1500mm | ISL-C1-1500 | ISL-C5-1500 |
| 1600mm | ISL-C1-1600 | ISL-C5-1600 |
| 1700mm | ISL-C1-1700 | ISL-C5-1700 |
| 1800mm | ISL-C1-1800 | ISL-C5-1800 |
| 1900mm | ISL-C1-1900 | ISL-C5-1900 |
| 2000mm | ISL-C1-2000 | ISL-C5-2000 |
| 2100mm | ISL-C1-2100 | ISL-C5-2100 |
| 2200mm | ISL-C1-2200 | ISL-C5-2200 |
| 2300mm | ISL-C1-2300 | ISL-C5-2300 |
| 2400mm | ISL-C1-2400 | ISL-C5-2400 |
| 2500mm | ISL-C1-2500 | ISL-C5-2500 |
| 2600mm | ISL-C1-2600 | ISL-C5-2600 |
| 2700mm | ISL-C1-2700 | ISL-C5-2700 |
| 2800mm | ISL-C1-2800 | ISL-C5-2800 |
| 2900mm | ISL-C1-2900 | ISL-C5-2900 |
| 3000mm | ISL-C1-3000 | ISL-C5-3000 |

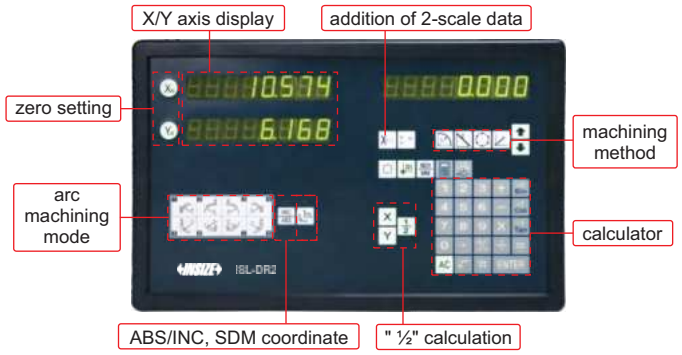
**SPECIFICATION**

| Code | Series ISL-C1 | Series ISL-C5 |
|---|---|---|
| L1 (mm) | L+30 (L≤900), L+50 (L>900) | L+30 (L≤900), L+50 (L>900) |
| L2 (mm) | L+136 (L≤900), L+156 (L>900) | L+136 (L≤900), L+156 (L>900) |
| L3 (mm) | L+154 (L≤900), L+174 (L>900) | L+154 (L≤900), L+174 (L>900) |
| Resolution | 1μm | 5μm |
| Thickness | 29mm | |
| Max. response speed | 60m/min | |
| Scale grating pitch | 20μm | |
| Scale reference point pitch | 50mm | |
| Accuracy | ±(5+5L/1000)μm, L is the effective length in mm | |
| Cable length | 3.5m (L: 50-950mm), 5m (L: 1000-1900mm), 10m (L: 2000-3000mm) | |
| Output signal | RS422 | |
| Socket | 9 PD | |
| Power supply | 5±0.25V | |

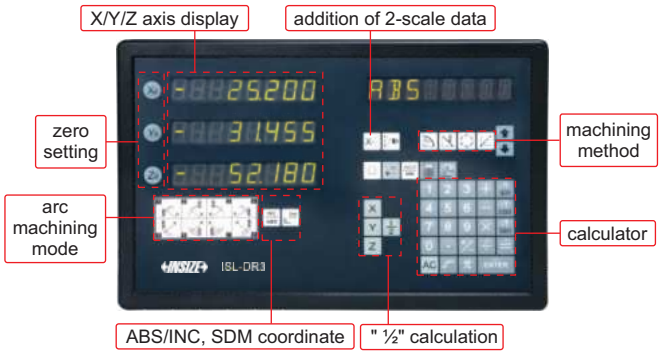
**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| 'L' shape support | 1 pc |
| Anti-dust cover | 1 pc |
| Plain base | 1 pc (for L≥1500mm) |
| Mounting accessories | 1 package |

# DIGITAL READOUTS




**ISL-DR2**




**ISL-DR3**



software flash disk (included)

- For **ISL-A1**, **ISL-A5**, **ISL-B5**, **ISL-C1**, **ISL-C5** series linear scales

**SPECIFICATION**

| Code | ISL-DR2 | ISL-DR3 |
|---|---|---|
| Application | two-axis | three-axis |
| Scale input ports | 2 | 3 |
| Resolution | 0.05μm, 0.1μm, 0.2μm, 0.5μm, 1μm, 2μm, 5μm, 10μm, 20μm, 50μm | |
| Functions | addition of 2-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion,ABS/INC conversion, expansion/contraction coefficient setting, "½" calculation, detecting RI, bolt-hole circle machining, ramp circle machining | |
| Power supply | 110/220V, 50/60Hz | |
| Dimension | 295×185×45mm | |
| Weight | 1.45kg | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Mounting bracket | 1 pc |
| Ground cable | 1 pc |
| RS232C cable | 1 pc |
| Software flash disk for RS232C | 1 pc |





mounting bracket (included)

# DIGITAL READOUT
# CODE ISL-LCD7




- 7.57 inch LCD display
- Language: English, Simplified Chinese, Traditional Chinese
- Can be connected with **ISL-A1**, **ISL-A5**, **ISL-B5**, **ISL-C1**, **ISL-C5** series linear scales




**SPECIFICATION**

| | |
|---|---|
| **Application** | three-axis: X/Y/Z |
| **Scale input ports** | 3 |
| **Resolution** | 0.05μm, 0.1μm, 0.2μm, 0.5μm, 1μm, 2μm, 5μm, 10μm, 20μm, 50μm |
| **Function** | X/Y/Z addition of 3-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion, ABS/INC conversion, expansion/sontraction coefficient setting, "½" calculation, detecting RI, bolt-hole circle machining, ramp circle machining, circular arc machining, oblique surface machining, automatic edge finding, discharge machining |
| **Dimension** | 200×88×260mm |
| **Weight** | 1.26kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Mounting bracket** | 1 pc |
| **Ground cable** | 1 pc |
| **RS232C cable** | 1 pc |
| **Software flash disk for RS232C** | 1 pc |

# MAGNETIC LINEAR SCALES (ABSOLUTE TYPE)

IP65 WATERPROOF

VIDEO



reader
LSK-A12



magnetic linear scale

application



- Absolute encoder, the original data remains after power off
- Support multiple communication protocols
- Cable length: 0.5m (can be customized up to 15m)
- Dust/waterproof: IP65

## READER SPECIFICATION

| Code | Resolution | Repeatability | Max. response speed | Power supply | Current | Output protocol * | Output interface |
|---|---|---|---|---|---|---|---|
| LSK-A10 | 0.1μm | ±0.5μm | 5m/s | 5V±5% | <200mA | BISS-C |  |
| LSK-A11 | 0.5μm | ±1μm | | | | | |
| LSK-A12 | 1μm | ±2μm | | | | | |
| LSK-A20 | 0.1μm | ±0.5μm | | | | |  |
| LSK-A21 | 0.5μm | ±1μm | | | | | |
| LSK-A22 | 1μm | ±2μm | | | | | |
| LSK-A30 | 0.1μm | ±0.5μm | | | | |  |
| LSK-A31 | 0.5μm | ±1μm | | | | | |
| LSK-A32 | 1μm | ±2μm | | | | | |

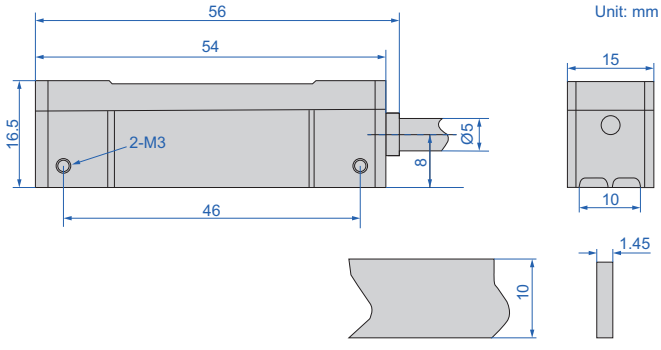
*The communication protocol can be customized to SSI, Panasonic, Tamagawa and RS485

## MAGNETIC LINEAR SCALE

| Code | Length** |
|---|---|
| LSK-E1 | 1m |
| LSK-E2 | 2m |
| LSK-E3 | 3m |
| LSK-E4 | 4m |
| LSK-E5 | 5m |
| LSK-E6 | 6m |
| LSK-E7 | 7m |
| LSK-E8 | 8m |

| Code | Length** |
|---|---|
| LSK-E9 | 9m |
| LSK-E10 | 10m |
| LSK-E11 | 11m |
| LSK-E12 | 12m |
| LSK-E13 | 13m |
| LSK-E14 | 14m |
| LSK-E15 | 15m |
| LSK-E16 | 16m |

**Customized length according to customer requirements




## MAGNETIC LINEAR SCALE SPECIFICATION

| | |
|---|---|
| Pitch | 2+2mm |
| Accuracy | ±40μm |
| Max. length | 16.3m |

## OPTIONAL ACCESSORY

| Code | Name | Description |
|---|---|---|
| LSK-B01 | assistant tool | mounting magnetic linear scales |



assistant tool (**optional**)



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# MAGNETIC LINEAR SCALES (INCREMENTAL TYPE)

VIDEO

IP65 WATERPROOF



reader
LSK-B12



magnetic linear scale

application



- Magnetic grating scale, incremental type
- Output frequency: 1000Hz (can be customized up to 8000Hz)
- Cable length: 0.5m (can be customized up to 15m)
- Dust/waterproof: IP65

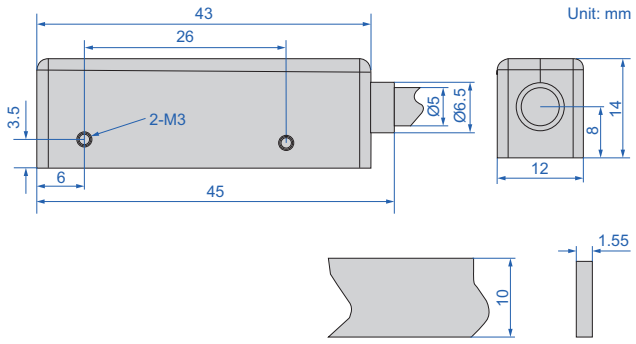
## READER SPECIFICATION

| Code | Resolution | Repeatability | Max. response speed | Power supply | Current | Output protocol | Output interface |
|---|---|---|---|---|---|---|---|
| LSK-B10 | 0.1μm | ±0.5μm | 5m/s | 5V±5% | <50mA | RS422 |  |
| LSK-B11 | 0.5μm | ±1μm | | | | | |
| LSK-B12 | 1μm | ±2μm | | | | | |
| LSK-B20 | 0.1μm | ±0.5μm | | | | |  |
| LSK-B21 | 0.5μm | ±1μm | | | | | |
| LSK-B22 | 1μm | ±2μm | | | | | |
| LSK-B30 | 0.1μm | ±0.5μm | | | | |  |
| LSK-B31 | 0.5μm | ±1μm | | | | | |
| LSK-B32 | 1μm | ±2μm | | | | | |

## MAGNETIC LINEAR SCALE

| Code | Length* | Code | Length* | Code | Length* |
|---|---|---|---|---|---|
| LSK-C1 | 1m | LSK-C10 | 10m | LSK-C19 | 10m |
| LSK-C2 | 2m | LSK-C11 | 11m | LSK-C20 | 19m |
| LSK-C3 | 3m | LSK-C12 | 12m | LSK-C25 | 25m |
| LSK-C4 | 4m | LSK-C13 | 13m | LSK-C30 | 30m |
| LSK-C5 | 5m | LSK-C14 | 14m | LSK-C35 | 35m |
| LSK-C6 | 6m | LSK-C15 | 15m | LSK-C40 | 40m |
| LSK-C7 | 7m | LSK-C16 | 16m | LSK-C45 | 45m |
| LSK-C8 | 8m | LSK-C17 | 17m | LSK-C50 | 50m |
| LSK-C9 | 9m | LSK-C18 | 18m | | |

*Customized length according to customer requirements




## MAGNETIC LINEAR SCALE SPECIFICATION

| | |
|---|---|
| Pitch | 2+2mm |
| Accuracy | ±40μm |
| Max. length | 50m |

## OPTIONAL ACCESSORY

| Code | Name | Description |
|---|---|---|
| LSK-B01 | assistant tool | mounting magnetic linear scales |



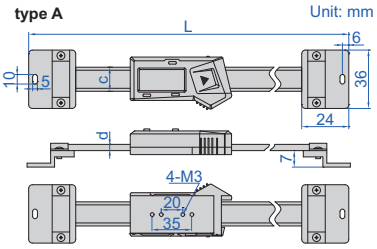
assistant tool (**optional**)

# DIGITAL HORIZONTAL SCALES

DATA OUTPUT

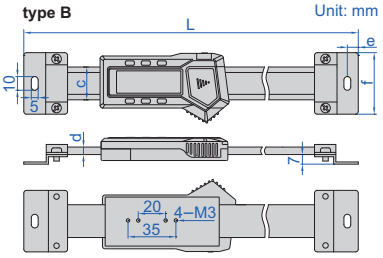


**7101-300A**

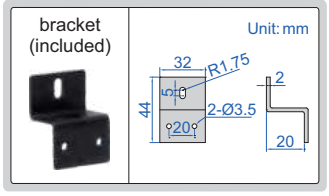




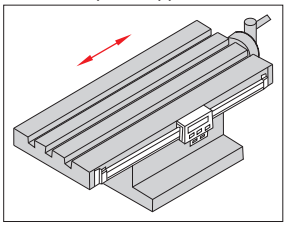

**7101-400A**




- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, zero, mm/inch,
  type B: on/off, zero, mm/inch, ABS, data preset
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back




example of application



**With data interface**
**(optional data output cable: code 7315-25 receiver is needed page 5, 7214-25 page 11, 7302-21 page 20, 7305-21 page 16)**

**(mm)**

| Code | Range | Type | Accuracy | L | c | d |
|---|---|---|---|---|---|---|
| **7101-100A** | 100mm | A | ±0.02mm | 215 | 16 | 4 |
| **7101-150A** | 150mm | A | ±0.03mm | 265 | 16 | 4 |
| **7101-200A** | 200mm | A | ±0.03mm | 315 | 16 | 4 |
| **7101-300A** | 300mm | A | ±0.04mm | 445 | 16 | 4 |

**With data interface**
**(optional data output cable: code 7315-22 receiver is needed page 5, 7214-22 page 11, 7302-22 page 20, 7305-22 page 16)**

**(mm)**

| Code | Range | Type | Accuracy | L | c | d | e | f |
|---|---|---|---|---|---|---|---|---|
| **7101-400A** | 400mm | B | ±0.05mm | 590 | 24 | 5.5 | 8 | 45 |
| **7101-500A** | 500mm | B | ±0.05mm | 690 | 24 | 5.5 | 8 | 45 |
| **7101-600A** | 600mm | B | ±0.08mm | 790 | 24 | 5.5 | 8 | 45 |
| **7101-800A** | 800mm | B | ±0.10mm | 990 | 24 | 5.5 | 8 | 45 |
| **7101-1000A** | 1000mm | B | ±0.10mm | 1240 | 31 | 10.5 | 10 | 60 |



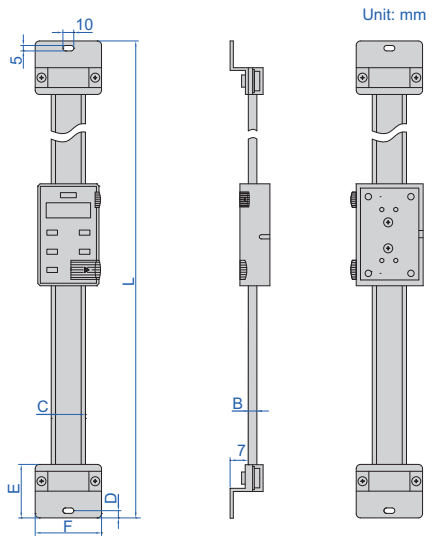
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DATA OUTPUT

# DIGITAL VERTICAL SCALES

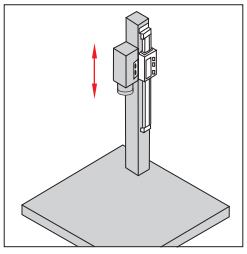


7102-300



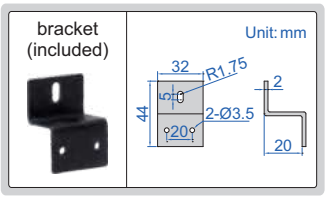

- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, ABS/INC, data hold, TOL, set
- Battery LR44, data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back
- Optional accessory:
  wireless transmitter code **7315-1150** (receiver is needed) page 7,
  data output cable (keyboard format) code **7302-SPC7** page 22,
  data output cable (serial port format) code **7305-1150** page 17

example of application



(mm)

| Code | Range | Accuracy | B | C | D | E | F | L |
|---|---|---|---|---|---|---|---|---|
| **7102-100** | 100mm/4" | ±0.02mm | 4 | 20 | 6 | 24 | 40 | 245 |
| **7102-150** | 150mm/6" | ±0.03mm | 4 | 20 | 6 | 24 | 40 | 296 |
| **7102-200** | 200mm/8" | ±0.03mm | 4 | 20 | 6 | 24 | 40 | 345 |
| **7102-300** | 300mm/12" | ±0.04mm | 4 | 20 | 6 | 24 | 40 | 445 |
| **7102-400** | 400mm/16" | ±0.05mm | 4 | 20 | 6 | 24 | 40 | 545 |
| **7102-500** | 500mm/20" | ±0.05mm | 5.5 | 24 | 8 | 32 | 45 | 685 |
| **7102-600** | 600mm/24" | ±0.08mm | 5.5 | 24 | 8 | 32 | 45 | 785 |
| **7102-800** | 800mm/32" | ±0.10mm | 5.5 | 24 | 8 | 32 | 45 | 985 |
| **7102-1000** | 1000mm/40" | ±0.10mm | 10.5 | 31 | 9.5 | 40 | 60 | 1245 |



# 20 ROUNDNESS, PROFILE AND ROUGHNESS TESTERS



**Roundness/Cylindricity Testers**
**Page 578-579**



**Roundness Measuring Machines**
**Page 580-581**



**Precision Air Floating Rotary Tables**
**Page 582**



**Surface Profile Measuring Machines**
**Page 583-591**



**Roughness Measuring Machines**
**Page 591-592**



**Roughness Testers**
**Page 593-603**



**Surface Roughness Specimens**
**Page 603-605**



**Surface Roughness Reference Specimens**
**Page 605**



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# ROUNDNESS/CYLINDRICITY TESTER
# CODE RCT-300




- Automatic centering and leveling
- Evaluation items
  -Cylindricity module: cylindricity, radial full run, coaxiality, taper, radius
  -Roundness module: roundness, concentricity, radial single jump, wall thickness difference
  -Straightness module: straightness, parallelism, squareness
  -Single section flatness module: single section flatness, axial single hop, perpendicularity, parallelism
  -Multi-section flatness module: multi-section flatness, parallelism, axial full runout, perpendicularity
  -Commutator module: monolithic bounce, immediate bounce, interval difference
- Analytical ability
  -Cylindricity function: 2-10 sections, 3 evaluation methods
  -Reference benchmarks for cylindricity evaluation: LSCY, MZCY, MICY, MCCY, OSCY
  -Reference circle for roundness evaluation: LSC, MZC, MIC, MCC
  -Measurement band: 1-15upr, 1-50upr, 1-150upr, 1-250upr, 1-500upr, 15-100upr, 15-500upr, 2-15upr, 1-1500upr, custom
  -Notched measurement

**SPECIFICATION**

| | | |
|---|---|---|
| **Probe** | **measuring range** | ±500μm |
| | **resolution** | 1:262144 |
| | **linear accuracy** | 0.1% |
| **Ruby stylus** | **size** | Ø2×10mm |
| | **direction** | two directions |
| | **adjustable angle** | ±45° |
| **X axis** | **travel** | 165mm |
| | **excess range** | 25mm |
| | **drive mode** | motor |
| | **moving speed** | 0.1~50mm/s |
| **Z axis** | **measuring range** | 480mm |
| | **straightness** | 0.3μm/100mm |
| | **movement speed** | 0.1~10mm/s |
| | **movement mode** | motor |
| **Detector** | **acquisition device** | circular grating |
| | **circumferential sampling points** | 14400 |
| **Granite stage** | | 900×500mm |
| **Rotary stage** | **rotation accuracy** | (0.025+6H/10000)μm, H is the measuring height in mm |
| | **rotation speed** | 6rpm, 8rpm, 10rpm |
| | **max. measuring diameter** | 300mm |
| | **max. workpiece diameter (rotation diameter)** | 450mm |
| **Automatic adjustment stage** | **workbench diameter** | 280mm |
| | **adjustment range of center** | ±3mm |
| | **adjustment range of level** | ±1° |
| | **weight capacity** | 30kg |
| **Precision chuck** | **external grip diameter** | Ø1~Ø81mm |
| | **internal grip diameter** | Ø31~Ø70mm |
| **Air filter** | **pressure range** | 0~0.8MPa |
| | **oil mist removal accuracy** | 0.01μm |
| | **export oil mist concentration** | 0.5mg/m³ |
| **Dimension (L×W×H)** | | 1680×862×1685mm |
| **Power supply** | | 220±10%V, 50Hz |
| **Power** | | 500W |
| **Weight** | | 350kg |

To be continued

Continued from previous page


air filter (included)

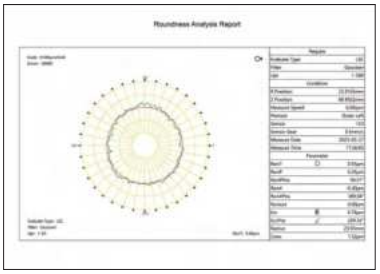

standard block (included)

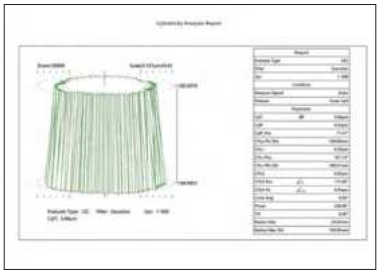

column adjusting rod (included)


precision chuck (included)

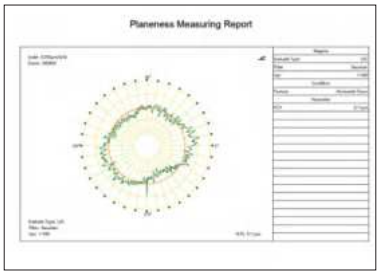
## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Probe (with ruby stylus) | 1 pc each |
| Standard block | 1 pc |
| Column adjusting rod | 1 set |
| Precision chuck | 1 pc |
| Automatic adjustment stage | 1 pc |
| Roundness cylindricity acquisition and analysis system | 1 set |
| Air filter | 1 set |
| Computer | 1 pc |
| Printer | 1 pc |
| Installation tools | 1 set |


roundness analysis


cylindricity analysis

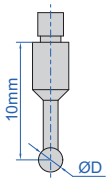

straightness analysis


planeness analysis

## OPTIONAL ACCESSORY

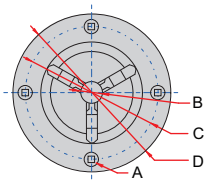
| | |
|---|---|
| Probes | see below details |
| Precision chucks | see below details |
| Dryer | ISC-DRY |

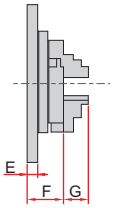
## SPECIFICATION OF PROBES




| Code | Diameter (ØD) | Remark |
|---|---|---|
| RCT-RA260-T1 | 2mm | included |
| RCT-RA260-T2 | 0.5mm | optional |
| RCT-RA260-T3 | 1mm | optional |
| RCT-RA260-T4 | 4mm | optional |
| RCT-RA260-T5 | 8mm | optional |

## SPECIFICATION OF PRECISION CHUCKS




(mm)

| Code | A | B | C | D | E | F | G | Clamping range | | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | external grip dia. | internal grip dia. | |
| RCT-RA260-C1 | M5×0.8 | 16 | 100 | 118 | 8 | 28 | 13 | Ø0.8~63 | Ø23~58 | optional |
| RCT-RA260-C2 | M6×1.0 | 20 | 116 | 143 | 10.5 | 37 | 15 | Ø1~81 | Ø31~70 | included |
| RCT-RA260-C3 | M6×1.0 | 26 | 140 | 168 | 10 | 39 | 19 | Ø1~100 | Ø36~90 | optional |



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# ROUNDNESS MEASURING MACHINE
# CODE RCT-RA260




VIDEO

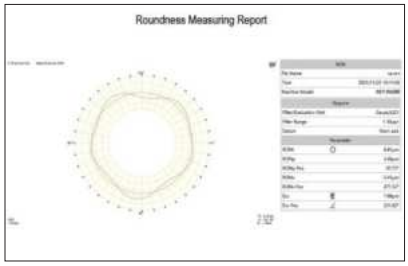
- Air-floating spindle
- Can measure roundness, coaxiality, concentricity, flatness, radial runout, axial runout, parallelism and perpendicularity
- Spectrum analysis, automatic gap/burr removal, waveform analysis
- 4 roundness evaluation methods: smallest area method, least square method, smallest circumscribed circle method, largest inscribed circle method
- Measuring filer: 1-15upr, 1-50upr, 1-150upr, 1-250upr, 1-500upr, 15-100upr, 15-500upr, 2-15upr
- Filter form: gauss (ISO standard)
- Software is included, for measurement, analysis, data output, etc.

**SPECIFICATION**

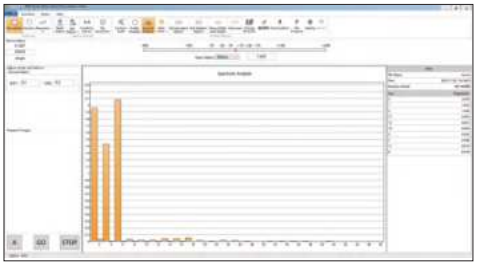
| | | |
|---|---|---|
| **Probe** | **measuring range** | ±300μm |
| | **resolution** | 0.001μm |
| | **linear accuracy** | 0.25% |
| **Ruby stylus** | **size** | Ø2×10mm |
| | **direction** | two directions |
| | **adjustable angle** | ±45° |
| **X axis** | **travel** | 165mm |
| | **excess range** | 25mm |
| | **drive mode** | by hand |
| **Z axis** | **drive mode** | motor |
| | **travel** | 320mm |
| | **movement speed** | 0.5~10mm/s |
| **Rotary stage** | **rotation accuracy** | (0.025+6H/10000)μm for H≤20mm, H is the measuring height in mm |
| | **rotation speed** | 6rpm |
| | **max. measuring diameter** | 260mm |
| | **max. workpiece diameter (rotation diameter)** | 400mm |
| **Rotary axis** | **radial rotation accuracy** | ±0.0125μm |
| | **axial runout accuracy** | ±0.05μm |
| **Adjustable 3D stage** | **diameter** | 180mm |
| | **adjustment range of center** | ±3mm |
| | **adjustment range of level** | ±2° |
| | **weight capacity** | 20kg |
| **Granite stage** | | 700×500mm |
| **Precision chuck** | **external grip diameter** | Ø1~Ø81mm |
| | **internal grip diameter** | Ø31~Ø70mm |
| **Air filter** | **pressure range** | 0~0.8MPa |
| | **oil mist removal accuracy** | 0.01μm |
| | **export oil mist concentration** | 0.5mg/m³ |
| **Dimension (L×W×H)** | | 1300×795×1715mm |
| **Power supply** | | 220±10%V, 50Hz |
| **Power** | | 500W |
| **Weight** | | 320kg |

To be continued

Continued from previous page



measurement


spectrum analysis

## STANDARD DELIVERY

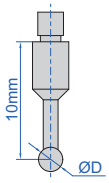
| | |
|---|---|
| **Main unit** | 1 pc |
| **Probe (with ruby stylus)** | 1 pc each |
| **Standard block** | 1 pc |
| **Precision chuck** | 1 pc |
| **Adjustable 3D stage** | 1 pc |
| **Rotary stage** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 set |
| **Printer** | 1 pc |
| **Air filter** | 1 set |
| **Installation tools** | 1 set |


standard block (included)

## OPTIONAL ACCESSORY

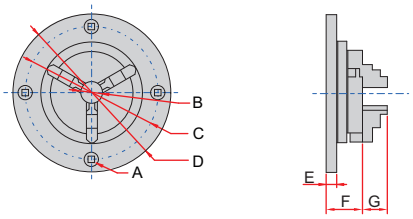
| | |
|---|---|
| **Probes** | refer to details |
| **Precision chucks** | refer to details |
| **Dryer** | **ISC-DRY** |

## SPECIFICATION OF PROBES




| Code | Diameter (ØD) | Remark |
|---|---|---|
| **RCT-RA260-T1** | 2mm | included |
| **RCT-RA260-T2** | 0.5mm | **optional** |
| **RCT-RA260-T3** | 1mm | **optional** |
| **RCT-RA260-T4** | 4mm | **optional** |
| **RCT-RA260-T5** | 8mm | **optional** |

## SPECIFICATION OF PRECISION CHUCKS




(mm)

| Code | A | B | C | D | E | F | G | Clamping range | | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | external grip dia. | internal grip dia. | |
| **RCT-RA260-C1** | M5×0.8 | 16 | 100 | 118 | 8 | 28 | 13 | Ø0.8~63 | Ø23~58 | **optional** |
| **RCT-RA260-C2** | M6×1.0 | 20 | 116 | 143 | 10.5 | 37 | 15 | Ø1~81 | Ø31~70 | included |
| **RCT-RA260-C3** | M6×1.0 | 26 | 140 | 168 | 10 | 39 | 19 | Ø1~100 | Ø36~90 | **optional** |



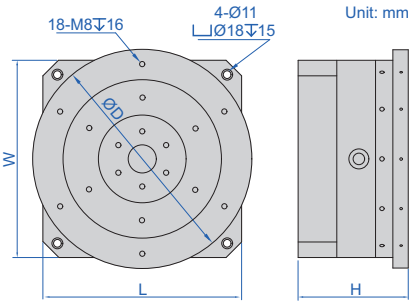
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# PRECISION AIR FLOATING ROTARY TABLES

VIDEO



6875-320




air filter (included)



- Manual rotation
- Optional accessory:
  high precision digital indicators (code **2133** series),
  hydraulic universal magnetic stands (code **6274** series)

| Code | Stage size ØD | Max. RPM | Air supply pressure | Max. load | Radial stiffness | Axial stiffness | Radial runout | Axial runout | L×W×H |
|---|---|---|---|---|---|---|---|---|---|
| **6875-320** | 320mm | 500rpm | 5-6bar | 100kg | 250N/μm | 500N/μm | <0.3μm | <0.3μm | 272×272×161mm |
| **6875-400** | 400mm | 500rpm | 5-6bar | 100kg | 250N/μm | 500N/μm | <0.3μm | <0.3μm | 272×272×161mm |
| **6875-500** | 500mm | 500rpm | 5-6bar | 100kg | 250N/μm | 500N/μm | <0.3μm | <0.3μm | 272×272×191mm |

**Standard glass hemisphere (optional)**

| Code | Roundness |
|---|---|
| **6875-BALL*** | 0.05μm |

*To check the accuracy of rotary table



**6875-BALL**

application



**Clamp for glass hemisphere (optional)**

| Code |
|---|
| **6875-CLAMP** |



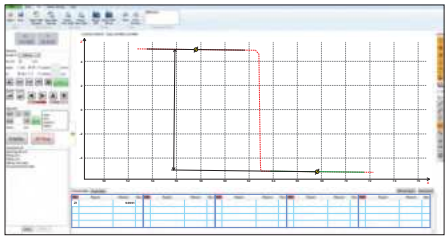
**6875-CLAMP**

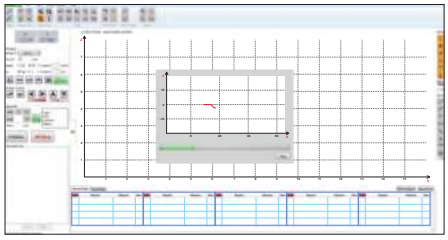
# SURFACE PROFILE MEASURING MACHINE
# CODE SPM-1000

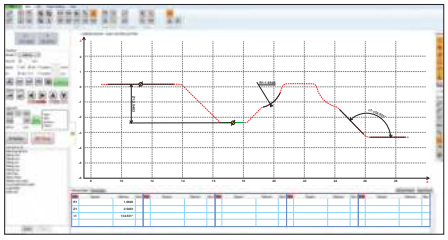
VIDEO

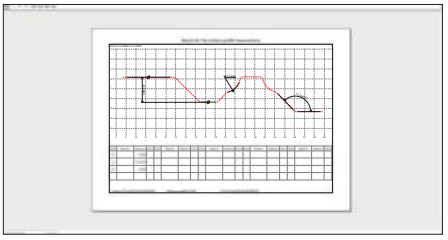
- Software is included, for surface profile measurement and data output
- Probe compensation
- Output as format txt, csv, etc.
- Large range design, the leverage ratio is 1:2.2, maintain the original accuracy of the sensor
- The overall structure of the Z-axis sensor does not have any elastic components, ensuring the measuring force is constant regardless the position of probe





calibration

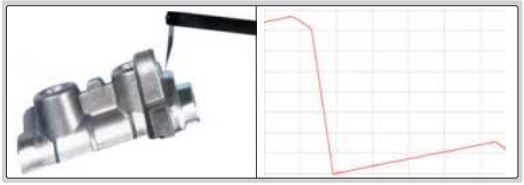

contour scanning


dimension measurement


data output

**SPECIFICATION**

| | |
|---|---|
| **X axis measuring range** | 140mm |
| **X axis resolution** | 0.2μm |
| **X axis straightness** | 0.8μm/100mm |
| **X axis moving speed** | 0.1~10mm/s |
| **Z axis measuring range** | ±20mm |
| **Z axis resolution** | 0.05μm |
| **Z axis moving speed** | 0.5~10mm/s |
| **Linear accuracy** | ±(1.5+\|0.2H\|)μm, H is measuring height in mm |
| **Angular measuring accuracy** | ±2′ |
| **Arc measuring accuracy** | ±(2+R/8)μm, R is 2~10mm standard ball |
| **Radius of probe tip** | 25μm |
| **Moving direction** | backward |
| **Measuring force** | 6.86~9.8mN |
| **Measuring unit** | mm/inch |
| **Traceable angle** | 72° (upward), 87° (downward) |
| **Drive mode** | motor |
| **Travel of Z axis** | 430mm |
| **Dimension (L×W×H)** | 1200×700×1780mm |
| **Power supply** | 220±5%V, 50Hz |
| **Weight** | 320kg |




standard balls (included)


standard blocks (included)


standard shaft (included)

To be continued

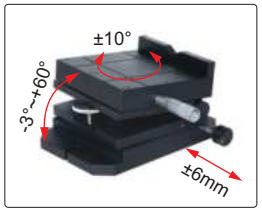


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Continued from previous page

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Standard probe and arm** | 1 pc of each |
| **Standard block** | 2 pcs |
| **Standard ball** | 2 pcs |
| **Standard shaft** | 1 pc |
| **Stage** | 1 pc |
| **Vise** | 1 pc |
| **Measuring arm** | 1 pc |
| **Computer** | 1 pc |
| **Measurement software** | 1 pc |
| **Printer** | 1 pc |
| **Installation tools** | 1 set |



stage (included)


vise (included)

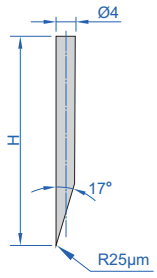
## OPTIONAL ACCESSORY

| | |
|---|---|
| **Probe** | refer to details |

## SPECIFICATION OF PROFILE PROBES

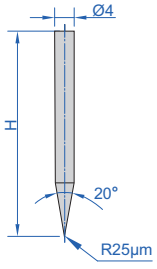
Unit: mm

**chisel stylus**



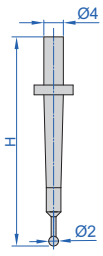

code **SPM-1000-T01** (H=32mm, included)
code **SPM-1000-T02** (H=48mm, **optional**)
code **SPM-1000-T03** (H=68mm, **optional**)

**cone stylus**



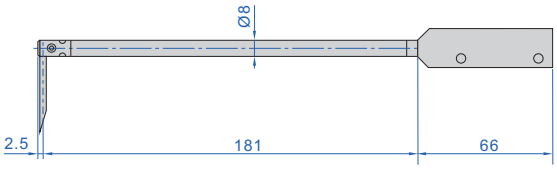

code **SPM-1000-Z01** (H=32mm, **optional**)
code **SPM-1000-Z02** (H=48mm, **optional**)
code **SPM-1000-Z03** (H=68mm, **optional**)

**ball stylus**

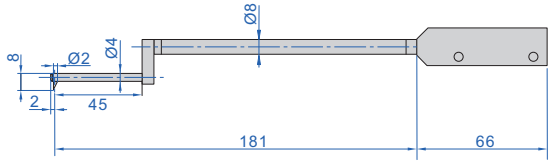



code **SPM-1000-R01** (H=32mm, **optional**)
code **SPM-1000-R02** (H=48mm, **optional**)
code **SPM-1000-R03** (H=68mm, **optional**)

**standard arm, code SPM-1000-SP** (included), **stylus is not included**

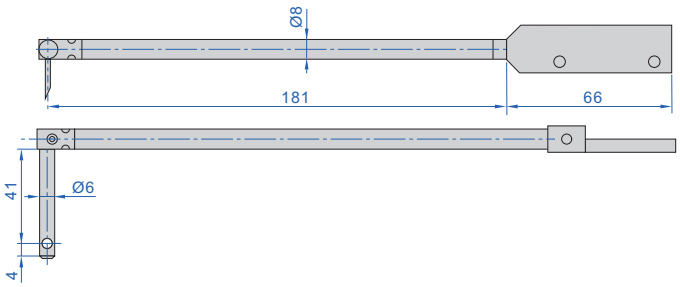



**probe for small holes, code SPM-1000-SBP (optional), stylus is included**




measure the contour of holes with diameter>Ø8mm

**transverse probe, code SPM-1000-LP (optional), stylus is included**

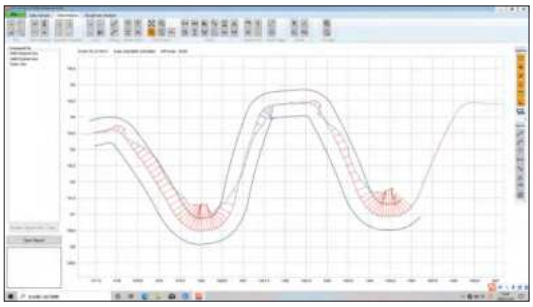



measure the contour of holes in radial direction

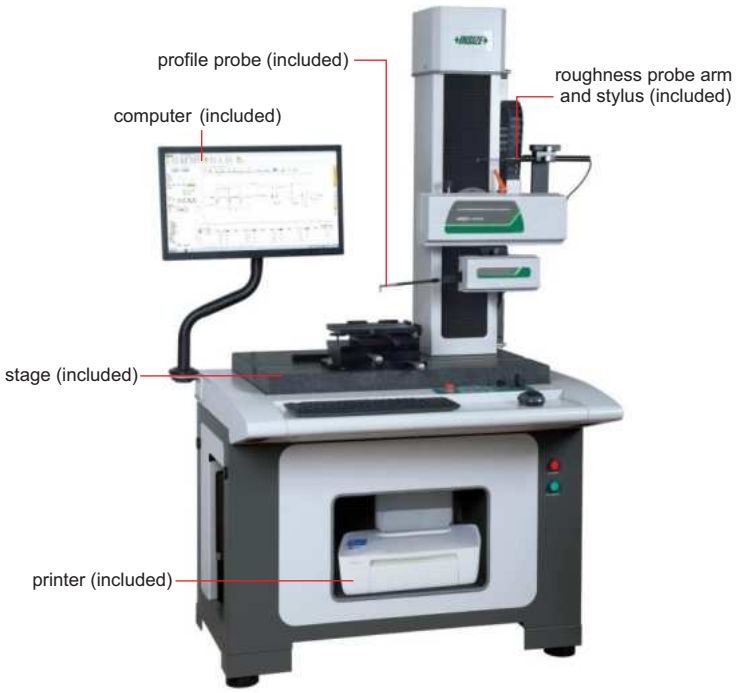
# ROUGHNESS AND PROFILE MEASURING MACHINE (TWO PROBES TYPE) CODE SPM-2000

**ATTENTION: PROFILE AND ROUGHNESS PROBES ARE USED SEPARATELY**

VIDEO



CAD profile comparison



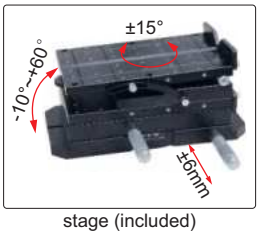

- Software is included, for measurement and data output
- Profile sensor with low noise
- Wide range roughness sensor without skid
- Meet ISO1997, ISO1984, BS1988, DIN1990, ASME1995, JIS1982, JIS1994 standards
- 65 roughness parameters

## PROFILE MEASUREMENT SPECIFICATION

| | |
|---|---|
| X axis measuring range | 140mm |
| X axis resolution | 0.2μm |
| X axis traverse speed | 0.05~15mm/s |
| Z axis measuring range | 50mm |
| Z axis resolution | 0.05μm |
| Z axis traverse speed | 0.2~15mm/s |
| Straightness | 0.5μm/100mm |
| Linear accuracy | ±(0.8+\|0.15H\|)μm, H is measuring height in mm |
| Angular measuring accuracy | ±1′ |
| Arc measuring accuracy | ±(1.5+R/12)μm, R is 2~10mm standard ball |
| Measuring unit | μm/μin |
| Measuring speed | 0.05~1mm/s |
| Traceable angle | 72° (upward), 88° (downward) |
| Travel of Z axis | 430mm |
| Power supply | 220±5%V, 50Hz |
| Dimension (L×W×H) | 1400×850×1780mm |
| Weight | 350kg |

## ROUGHNESS MEASUREMENT SPECIFICATION

| | |
|---|---|
| Roughness parameters | Ra, Rp, Rv, Rz, Rz (JIS), R3z, Rz (DIN), Rzj, Rmax, Rc, Rt, Rq, Rsk, Rku, Rsm, Rs , PΔq, Rk, Rpk, Rvk, Mr1, Mr2, Rmr |
| Waviness parameters | Wa, Wt, Wp, Wv, Wz, Wq, Wsm, Wsk, Wku, Wmr |
| Primary profile parameters | Pa, Pt, Pp, Pv, Pz, Pq, Psm, Psk, Pku, Pmr |
| Measuring range | ±420μm |
| Resolution | 0.001μm |
| Linear accuracy | ≤±(5nm+2.8%) |
| Probe radius/angle | 5μm/90° |
| Cut off | 0.025/0.08/0.25/0.8/2.5/8mm |
| Number of cut-offs | 2~7 |
| Measuring unit | μm |
| Measuring speed | 0.05~0.25mm/s |



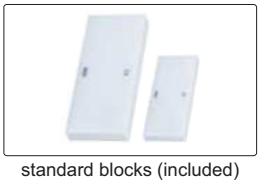

stage (included)



vise (included)



standard shaft (included)



standard blocks (included)



standard balls (included)

To be continued



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Continued from previous page

## STANDARD DELIVERY

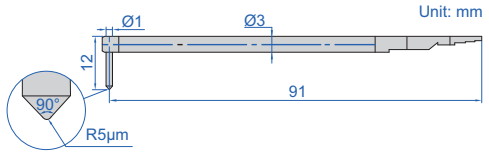
| | |
|---|---|
| **Main unit** | 1 pc |
| **Calibration block** | 1 set |
| **Roughness probe arm** | 1 pc |
| **Roughness stylus** | 1 pc |
| **Profile probe arm** | 1 pc |
| **Profile chisel stylus** | 1 pc |
| **Stage** | 1 set |
| **Vise** | 1 set |
| **Computer** | 1 pc |
| **Software** | 1 set |
| **Printer** | 1 pc |
| **Installation tools** | 1 set |

## OPTIONAL ACCESSORY

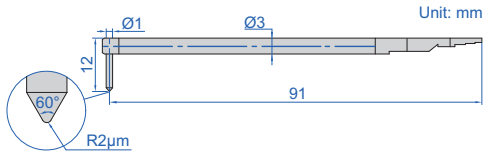
| | |
|---|---|
| **Probe** | refer to details |

## SPECIFICATION OF ROUGHNESS PROBE

**standard probe, code SPM-2000-P** (included), **stylus is included**



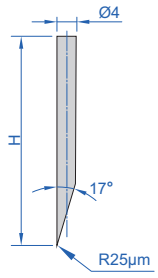

**small roughness probe, code SPM-2000-P1 (optional), stylus is included**




## SPECIFICATION OF PROFILE PROBES

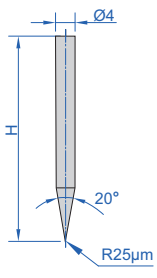
Unit: mm

**chisel stylus**



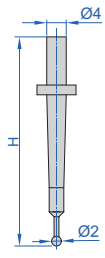

code **SPM-1000-T01** (H=32mm, included)
code **SPM-1000-T02** (H=48mm, **optional**)
code **SPM-1000-T03** (H=68mm, **optional**)

**cone stylus**



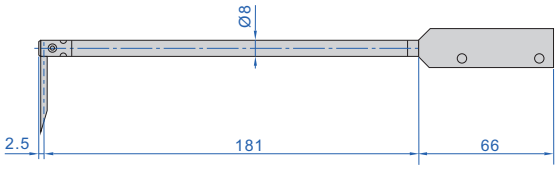

code **SPM-1000-Z01** (H=32mm, **optional**)
code **SPM-1000-Z02** (H=48mm, **optional**)
code **SPM-1000-Z03** (H=68mm, **optional**)

**ball stylus**

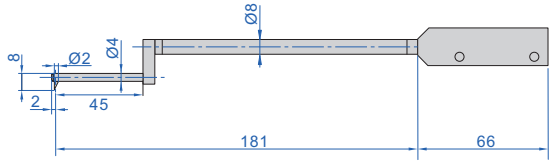



code **SPM-1000-R01** (H=32mm, **optional**)
code **SPM-1000-R02** (H=48mm, **optional**)
code **SPM-1000-R03** (H=68mm, **optional**)

**standard arm, code SPM-1000-SP** (included), **stylus is not included**

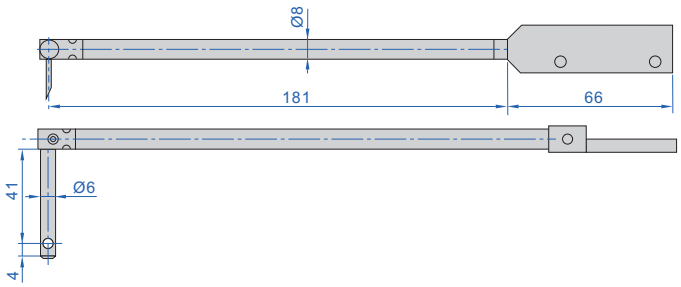



**probe for small holes, code SPM-1000-SBP (optional), stylus is included**




measure the contour of holes with diameter>Ø8mm

**transverse probe, code SPM-1000-LP (optional), stylus is included**



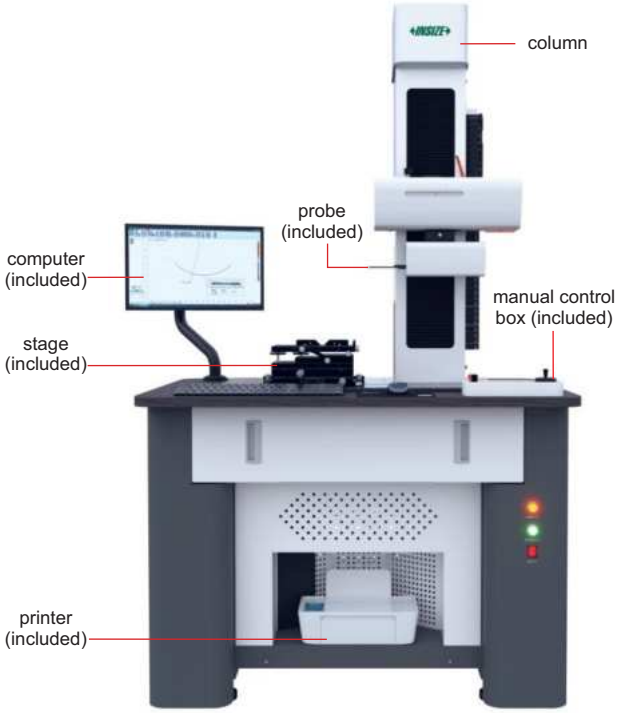

measure the contour of holes in radial direction

# ROUGHNESS AND PROFILE MEASURING MACHINE (ONE PROBE TYPE) CODE SPM-5000

VIDEO

**PROFILE AND ROUGHNESS MEASUREMENT AT THE SAME TIME**

- Roughness, waviness, and profile analysis can be achieved with just one measurement
- Can measure all roughness and waviness parameters
- Can be used for automatic measurement system
- Air flotation and shockproof system to reduce measurement deviation
- Free to edit measurement reports

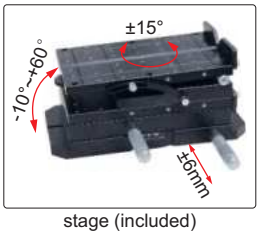



### PROFILE MEASUREMENT SPECIFICATION

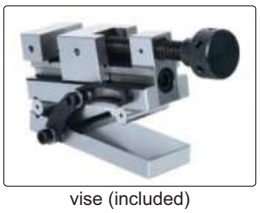
| | |
|---|---|
| X axis measuring range | 100mm |
| X axis resolution | 0.2μm |
| X axis traverse speed | 0.05~50mm/s |
| X axis linear accuracy | ±(0.8+\|0.015L\|)μm, L is measuring length in mm |
| Z axis measuring range | ±10mm |
| Z axis resolution | 0.01μm |
| Z axis traverse speed | 0.2~50mm/s |
| Z axis linear accuracy | ±(0.5+\|0.08H\|)μm, H is measuring height in mm |
| Angular measuring accuracy | ±1′ |
| Arc measuring accuracy | ±(1+R/12)μm, R is 2~10mm standard ball |
| Straightness | 0.3μm/100mm |
| Measuring unit | mm/inch |
| Travel of Z axis | 320mm |
| Power supply | 220±5%V, 50Hz |
| Dimension (L×W×H) | 1700×820×1900mm |
| Weight | 500kg |

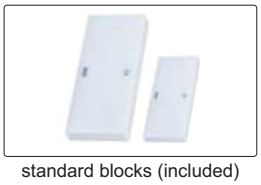

standard balls (included)


standard shaft (included)



stage (included)


vise (included)


standard blocks (included)

### ROUGHNESS MEASUREMENT SPECIFICATION

| | |
|---|---|
| Roughness parameters | Ra, Ramax, Ramin, Rasd, Rp, Rpmax, Rpmin, Rpsd, Rv, Rvmax, Rvmin, Rvsd, Rz, Rzmax, Rzmin, Rzsd, R3z, Rc, Rcmax, Rcmin, Rcsd, Rt, Rq, Rqmax, Rqmin, Rdsd, Rsk, Rskmax, Rskmin, Rsksd, Rku, Rkumax, Rkumin, Rkusd, Rsm, Rsmmax, Rsmmin, Rsmsd, Rs, RΔa, RΔamax, RΔamin, RΔasd, RΔq, RΔqmax, RΔqmin, RΔqsd, Rk, Rpk, Rvk, Mr1, Mr2, Rλa, Rλamax, Rλamin, Rλasd, Rλq, Rλqmax, Rλqmin, Rλqsd, Rδc, Rpc, Rmr |
| Waviness parameters | Wa, Wamax, Wamin, Wasd, Wsa, Wca, Wa08, Wc, Wcmax, Wcmin, Wcsd, Wt, Wz, Wzmax, Wzmin, Wzsd, Wp, Wpmax, Wv, Wvmax, Wvmin, Wvsd, Wq, Wqmax, Wqmin, Wqsd, Wsm, Wsmmax, Wsmmin, Wsmsd, Wsk, Wskmax, Wskmin, Wsksd, Wku, Wkumax, Wkumin, Wkusd, WΔq, WΔqmax, WΔqmin, WΔqsd, Wδc, Wmr, Wpsd, Wpmin |
| Original profile parameters | Pa, Pt, Pp, Pc, Pv, Pz, Pq, Psm, Psk, Pku, RzJ, Rpq, Rvq, Rmq, Pmr, PΔq, Avh, Hmax, Hmin, Area, Pδc, Tilta |
| Motif parameters | Ncrx, R, Rx, AR, Nr, Cpm, Sr, Sar, W, Wx, Aw, Wte, Nw, Sw, Saw |
| Measuring range | ±10mm |
| Resolution | 0.01μm |
| Linear accuracy | ≤±(4nm+2.5%) |
| Probe radius/angle | 5μm/90° |
| Cut off | 0.025/0.08/0.25/0.8/2.5/8mm |
| Number of cut-offs | 2~7 |
| Measuring unit | μm |
| Measuring speed | 0.1~2mm/s |

To be continued



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**STANDARD DELIVERY**

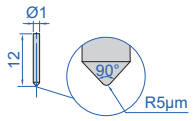
| | |
|---|---|
| **Main unit (including workbench, controller, driver, sensor)** | 1 pc |
| **Calibration block** | 1 set |
| **Probe arm** | 1 pc |
| **Stylus** | 1 pc |
| **Air flotation and shockproof system** | 1 set |
| **Stage** | 1 set |
| **Vise** | 1 set |
| **Computer** | 1 pc |
| **Software** | 1 set |
| **Printer** | 1 pc |
| **Installation tools** | 1 set |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Probe** | refer to details |

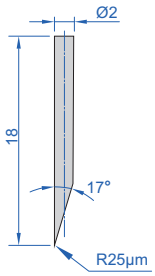
**SPECIFICATION OF STANDARD PROBE** Unit: mm

**standard stylus , code SPM-5000-R1** (included)



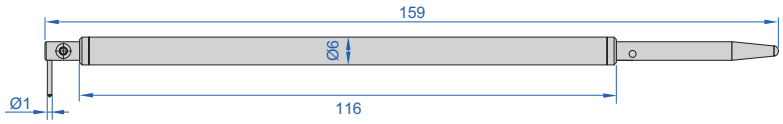

**SPECIFICATION OF PROFILE PROBES** Unit: mm

**chisel stylus**

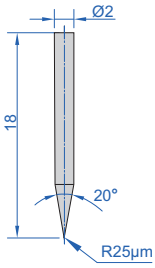



code **SPM-5000-T01** (**optional**)

**standard arm, code SPM-5000-P1** (included), **stylus is not included**

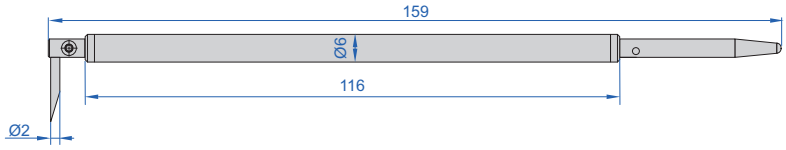



**cone stylus**

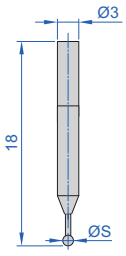



code **SPM-5000-Z01** (**optional**)

**profile arm, code SPM-5000-P2** (**optional**), **stylus is not included**

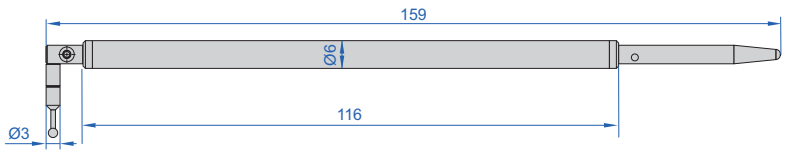



**ball stylus**




code **SPM-5000-S01** (ØS=1mm, **optional**)
code **SPM-5000-S02** (ØS=2mm, **optional**)

**profile arm, code SPM-5000-P3** (**optional**), **stylus is not included**



# BIDIRECTIONAL ROUGHNESS AND PROFILE MEASURING MACHINE CODE SPM-6000

VIDEO

- Intelligent tracking control system, real-time scanning measurement
- Bidirectional probe measurement
- Constant measuring force
- Can be used to measure absolute diameters
- Real time variable speed measurement, high-speed measurement can also ensure accuracy
- The trajectory of the probe is vertical, with more realistic Z-axis coordinate point and large range
- The profile data point cloud spacing is consisten, enabling high accuracy measurement



### PROFILE MEASUREMENT SPECIFICATION

| | |
|---|---|
| X axis measuring range | 325mm |
| X axis resolution | 0.01μm |
| X axis traverse speed | 5~10mm/s |
| X axis straightness | 0.45μm/100mm |
| X axis linear accuracy | ±(0.8+L/100)μm,<br>L is measuring length in mm |
| X axis measuring speed | 0.2~0.7mm/s |
| Z axis measuring range | 325mm |
| Z axis resolution | 0.01μm |
| Z axis traverse speed | 5~10mm/s |
| Z axis straightness | 0.45μm/100mm |
| Z axis linear accuracy | ±(0.8+L/100)μm,<br>H is measuring height in mm |
| Z axis measuring speed | 0.2~0.7mm/s |
| Angular measuring accuracy | ±2' |
| Arc measuring accuracy | ±(0.8+R/15)μm |
| Measuring unit | mm/inch |
| Traceable angle | 72° (upward), 89° (downward) |
| Power supply | 220±5%V, 50Hz |
| Dimension (L×W×H) | 1700×820×1900mm |
| Weight | 500kg |

### ROUGHNESS MEASUREMENT SPECIFICATION

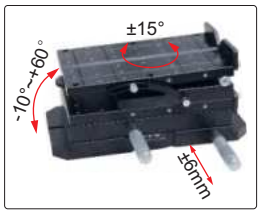
| | |
|---|---|
| Roughness parameters | Ra, Ramax, Ramin, Rasd, Rp, Rpmax, Rpmin, Rpsd, Rv, Rvmax, Rvmin, Rvsd, Rz, Rzmax, Rzmin, Rzsd, R3z, Rc, Rcmax, Rcmin, Rcsd, Rt, Rq, Rqmax, Rqmin, Rdsd, Rsk, Rskmax, Rskmin, Rsksd, Rku, Rkumax, Rkumin, Rkusd, Rsm, Rsmmax,Rsmmin, Rsmsd, Rs, RΔa, RΔamax, RΔamin, RΔasd, RΔq, RΔqmax, RΔqmin, RΔqsd, Rk, Rpk, Rvk, Mr1, Mr2, Rλa,Rλamax, Rλamin, Rλasd, Rλq, Rλqmax, Rλqmin, Rλqsd, Rδc, Rpc, Rmr |
| Waviness parameters | Wa, Wamax, Wamin, Wasd, Wsa, Wca, Wa08, Wc, Wcmax, Wcmin, Wcsd, Wt, Wz, Wzmax, Wzmin, Wzsd, Wp, Wpmax, Wv, Wvmax, Wvmin, Wvsd, Wq, Wqmax, Wqmin, Wqsd, Wsm, Wsmmax, Wsmmin, Wsmsd, Wsk, Wskmax, Wskmin, Wsksd, Wku, Wkumax, Wkumin, Wkusd, WΔq, WΔqmax, WΔqmin, WΔqsd, Wδc, Wmr, Wpsd, Wpmin |
| Original profile parameters | Pa, Pt, Pp, Pc, Pv, Pz, Pq, Psm, Psk, Pku, RzJ, Rpq, Rvq, Rmq, Pmr, PΔq, Avh, Hmax, Hmin, Area, Pδc, Tilta |
| Motif parameters | Ncrx, R, Rx, AR, Nr, Cpm, Sr, Sar, W, Wx, Aw, Wte, Nw, Sw, Saw |
| Resolution | 0.01μm |
| Linear accuracy | ≤±(20nm+5%) |
| Probe radius/angle | 5μm/90° |
| Cut off | 0.025/0.08/0.25/0.8/2.5/8mm |
| Number of cut-offs | 2~7 |
| Measuring unit | μm |
| Measuring speed | 0.1~2mm/s |

To be continued

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit (including workbench, controller, driver, sensor)** | 1 set |
| **Calibration block** | 1 set |
| **Profile arm** | 1 pc |
| **Bidirectional profile stylus** | 1 pc |
| **Roughness arm** | 1 pc |
| **Unidirectional roughness stylus** | 1 pc |
| **Stage** | 1 pc |
| **Vise** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 set |
| **Printer** | 1 pc |
| **Installation tools** | 1 set |


calibration blocks (included)

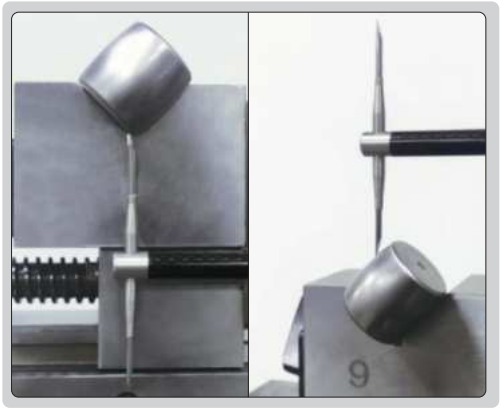


stage (included)

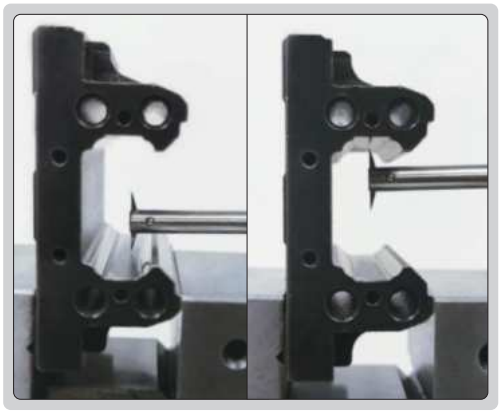

vise (included)

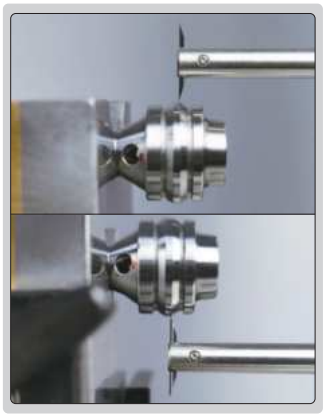

standard shaft (included)

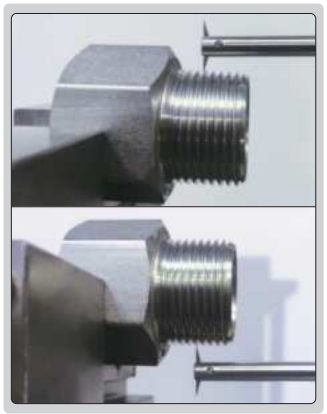
**APPLICATION EXAMPLES**


roller bearing


hub bearing


slider


valve spool


thread

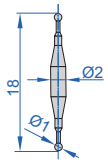
To be continued

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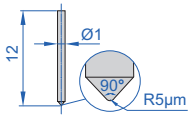
## SPECIFICATION OF PROBES

Unit: mm

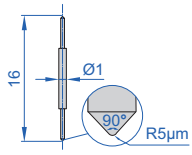
**bidirectional spherical stylus**
code **SPM-6000-R01 (optional)**



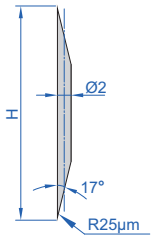

**unidirectional roughness stylus**
code **SPM-6000-S01** (included)



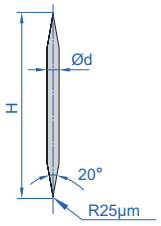

**bidirectional roughness stylus**
code **SPM-6000-S02 (optional)**



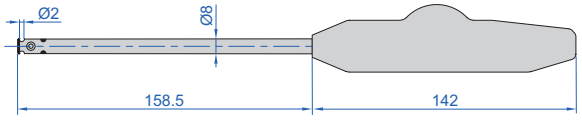

**bidirectional chisel stylus**
code **SPM-6000-T01** (H=16mm, included)
code **SPM-6000-T02** (H=24mm, **optional**)
code **SPM-6000-T03** (H=30mm, **optional**)



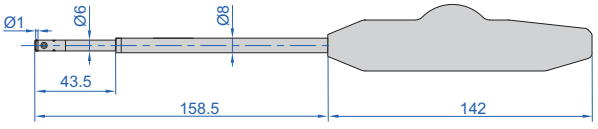

**bidirectional cone stylus**
code **SPM-6000-Z01** (H=12mm, Ød=2mm, **optional**)
code **SPM-6000-Z02** (H=24mm, Ød=2mm, **optional**)
code **SPM-6000-Z03** (H=10mm, Ød=1mm, **optional**)




**profile arm,**
code **SPM-6000-ARM1**
(included)




**roughness arm,**
code **SPM-6000-ARM2**
(included)




# ROUGHNESS MEASURING MACHINE CODE SPM-4000

VIDEO

- Skidless probe
- Hundreds of parameters can be evaluated, such as roughness profile, waviness profile, primary profile, etc.
- Software is included, for measurement and data output

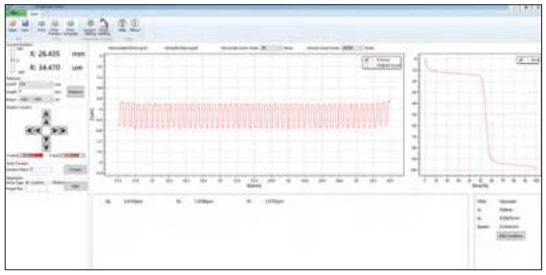



## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Roughness probe (with stylus) | 1 pc |
| Calibration block | 1 pc |
| Stage | 1 pc |
| Vise | 1 pc |
| Computer | 1 pc |
| Software | 1 set |
| Printer | 1 pc |
| Installation tools | 1 set |

To be continued

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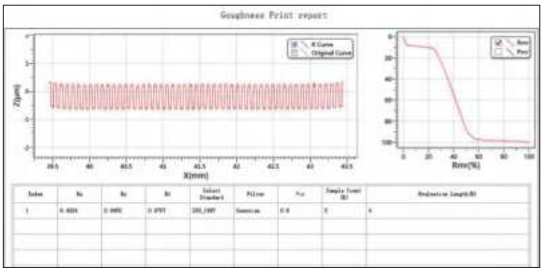
calibration



measurement



parameter measurement



data output

## SPECIFICATION

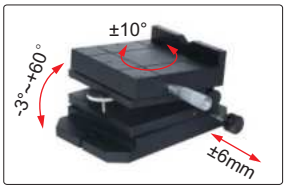
| | |
|---|---|
| **Roughness parameters** | Ra, Rp, Rv, Rz, Rz (JIS), R3z, Rz (DIN), Rzj, Rmax, Rc, Rt, Rq, Rsk, Rku, Rsm, Rs, RΔq, Rk, Rpk, Rvk, Mr1, Mr2, Rmr |
| **Waviness parameters** | Wa, Wt, Wp, Wv, Wz, Wq, Wsm, Wsk, Wku, Wmr |
| **Primary profile parameters** | Pa, Pt, Pp, Pv, Pz, Pq, Psm, Psk, Pku, Pmr |
| **X axis measuring range** | 100mm |
| **X axis resolution** | 0.2μm |
| **X axis straightness** | 0.5μm/100mm |
| **X axis moving speed** | 0.1~10mm/s |
| **Z axis measuring range** | ±420μm |
| **Z axis resolution** | 0.001μm |
| **Z axis linear accuracy** | ≤±(7nm+3.5%) |
| **Z axis moving speed** | 0.5~10mm/s |
| **Z axis repeatability** | 1δ≤2nm |
| **Radius/angle of stylus** | 5μm/90° |
| **Cut off length** | 0.025/0.08/0.25/0.8/2.5/8mm |
| **Number of cut-offs** | 2~7 |
| **Measuring unit** | μm |
| **Drive mode** | motor |
| **Travel of Z axis** | 320mm |
| **Dimension (L×W×H)** | 1200×700×1780mm |
| **Power supply** | 220±5%V, 50Hz |
| **Weight** | 320kg |



calibration block (included)



vise (included)




stage (included)

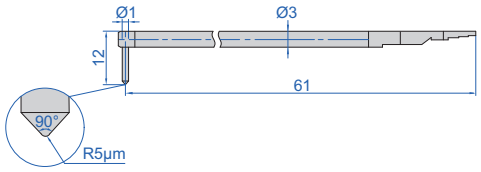
## OPTIONAL ACCESSORY

| | |
|---|---|
| **Small roughness probe** | refer to details |

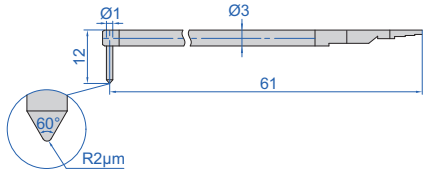
## SPECIFICATION OF ROUGHNESS PROBE

Unit: mm

**standard probe, code SPM-4000-P** (included)




**small roughness probe, code SPM-4000-P1 (optional)**



# ROUGHNESS TESTER (COMPACT TYPE)
# CODE ISR-C200

BLUETOOTH | DATA OUTPUT | PROBE CAN BE CHANGED

INSIZE PLUS
MADE IN EUROPE

VIDEO




- The product is light, reliable and durable
- 13 roughness parameters
- Can be operated by mobile phones (only Android system) or computers
- Measurement results can be exported in Excel and PDF format
- Memory of 18000 measurements with only parameters or 30 measurements with graph
- Automatic power off



probe can be set at 90°,
for transverse measurement



probe cover (included)



adjustable stand (included)




measuring software (included), connect to mobile phones via bluetooth (only Android system) to control roughness tester, or connect to computers via USB cable or bluetooth to control roughness tester, display roughness values and curve, results can be exported in Excel and PDF format

To be continued



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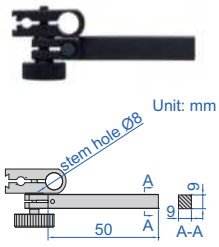
magnetic stand adapter (included)






can be installed on magnetic stands

dial test indicator holder (**optional**)






can be installed on height gauges

## SPECIFICATION

| | | |
|---|---|---|
| **Parameters** | | Ra, Rq, Rt, Rz, Rc, Rmax, RSm, Rpc, Pt, R, AR, Rx, Ppc |
| **Range** | **X axis** | 17.5mm |
| | **Z axis** | 250μm |
| **Accuracy** | | ±(5%+0.025)μm |
| **Resolution (Ra)** | | 0.001μm |
| **Probe** | **type** | inductive |
| | **stylus radius/angle** | 2μm/90° |
| | **stylus material** | diamond |
| **Measuring unit** | | μm/μin |
| **Cut off** | | 0.25/0.8/2.5mm |
| **Number of cut-off** | | 1~5 |
| **Moving speed** | | 0.5mm/s, 1mm/s |
| **Memory** | | 18000 measurements with only parameters, 30 measurements with graph |
| **Power supply** | | built-in rechargeable battery |
| **Dimension (L×W×H)** | | 160×34×33.5mm |
| **Weight** | | 200g |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Standard probe** | 1 pc |
| **Calibration block** | 1 pc |
| **Adjustable stand** | 1 pc |
| **Probe cover** | 1 pc |
| **Magnetic stand adapter** | 1 pc |
| **Software and USB cable** | 1 pc |
| **AC/DC adapter** | 1 pc |

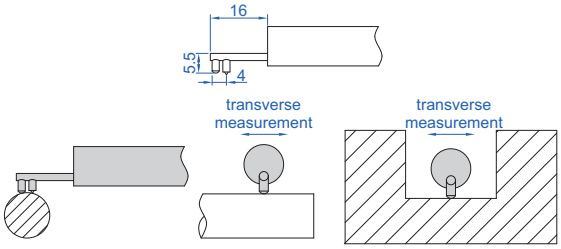
## OPTIONAL ACCESSORY

| | |
|---|---|
| **Dial test indicator holder** | **6293-6** |
| **Groove probe** | **ISR-C200-SB21** |
| **Small hole probe** | **ISR-C200-SB31** |
| **Deep groove probe** | **ISR-C200-SB121** |
| **Extension rod** | **ISR-C200-ER50** |
| **Extension rod** | **ISR-C200-ER100** |

## SPECIFICATION OF PROBES

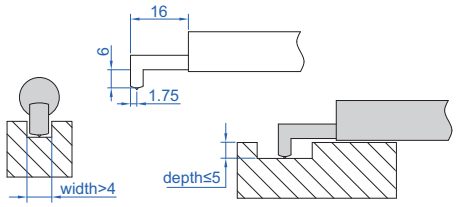
Unit: mm

**standard probe** (included)



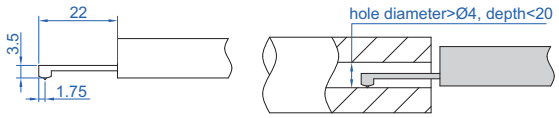

measurement for plane surfaces, also transverse measurement for plane surfaces, cylinders and grooves

**groove probe (optional), code ISR-C200-SB21**



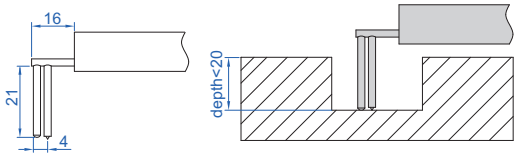

measure plane surfaces and grooves

**small hole probe (optional), code ISR-C200-SB31**



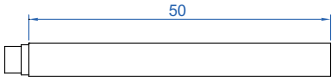

measure holes with diameter>Ø4mm and depth<20mm

**deep groove probe (optional), code ISR-C200-SB121**



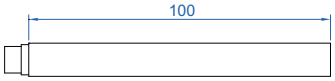

measure grooves with depth<20mm

**extension rod (optional), code ISR-C200-ER50**




for long holes

**extension rod (optional), code ISR-C200-ER100**




for long holes

# ROUGHNESS TESTER
# CODE ISR-C002

BLUETOOTH | DATA OUTPUT | CAN BE OPERATED BY MOBILE PHONES OR COMPUTERS

VIDEO

- Roughness tester can be operated by mobile phones (only Android system) or computers
- Data can be sent to Excel by connecting to computers via bluetooth or SPC cable
- Support bluetooth printer
- 21 roughness parameters
- Display roughness value, profile and curve
- Memory of maximum 100 results
- Automatic power off





software flash disk (included)

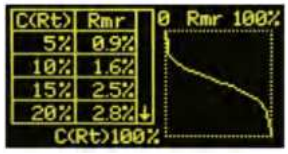
screen display




measurement result




roughness profile




Rmr analysis

probe cover (included)



put the small workpieces directly under the probe for measurement



adjustable stand (included)



operate roughness tester by mobile phones



connect to mobile phones via bluetooth (only Android system), display roughness values, profile and curve

operate roughness tester by computers



connect to computers via USB cable (software is included), display roughness values, profile and curve

data can be sent to Excel by connecting to computer via bluetooth or SPC cable

**via bluetooth**

receiver (**optional**)



**via SPC cable**

SPC cable (**optional**)



receiver (**optional**)





bluetooth printer (**optional**)



To be continued



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light duty test stand (**optional**)



the maximum workpiece height is 220mm

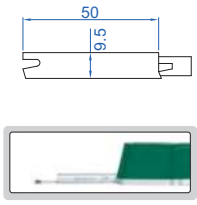
heavy duty test stand (**optional**)



the maximum workpiece height is 310mm

Unit: mm

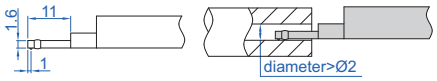
**extension rod (optional), code ISR-C002-ER**



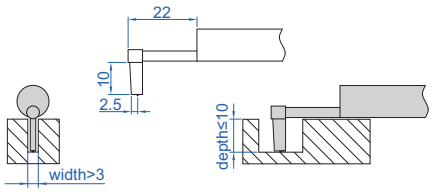

**transverse rod (optional), code ISR-C002-TR**



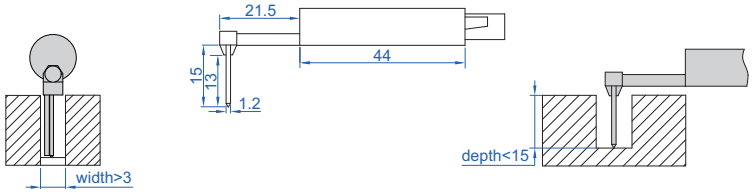
**tiny hole probe (optional), code ISR-C002-SBP**




**deep groove probe (optional), code ISR-C002-DGP**




**deep groove probe (optional), code ISR-C002-DGP1**




## SPECIFICATION

| | | |
|---|---|---|
| **Parameters** | | Ra, Rz, Rq, Rv, Rp, RS, R3z, R3y, Rt, Rz (JIS), Rk, Rku, Rsm, Rpc, Rpk, Rvk, Rsk, Mr1, Mr2, Ry (JIS), Rmax |
| **Range** | | 320μm (-160μm~160μm) |
| **Accuracy** | | ±10% |
| **Resolution (Ra)** | | 0.001μm |
| **Probe** | **type** | inductive |
| | **stylus radius/angle** | 5μm/90° |
| | **stylus material** | diamond |
| **Measuring force** | | 4mN |
| **Measuring unit** | | μm/μin |
| **Cut off** | | 0.25/0.8/2.5mm |
| **Number of cut-off** | | 1 to 5 |
| **Moving speed** | | 0.5mm/s, 1mm/s |
| **Memory** | | 100 measurement results |
| **Output** | | bluetooth and USB |
| **Power supply** | | built-in rechargeable battery |
| **Dimension (L×W×H)** | | 141×55×40mm |
| **Weight** | | 400g |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Standard probe** | 1 pc |
| **Calibration block and support** | 1 pc of each |
| **Adjustable stand** | 1 pc |
| **Probe cover** | 1 pc |
| **Software and USB cable** | 1 pc |
| **AC/DC adapter** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Extension rod** | **ISR-C002-ER** |
| **Transverse rod** | **ISR-C002-TR** |
| **Tiny hole probe** | **ISR-C002-SBP** |
| **Deep groove probe** | **ISR-C002-DGP** |
| **Deep groove probe** | **ISR-C002-DGP1*** |
| **Light duty test stand** | **ISR-C002-STAND1** |
| **Heavy duty test stand** | **ISR-C002-STAND** |
| **Bluetooth printer** | **ISR-C002-PRINTER** |
| **Receiver** | **ISR-C300-RECEIVER** |
| **SPC cable** | **ISR-C300-SPC** |

*Need to be delivered with roughness tester **ISR-C002**

# ROUGHNESS TESTER (SEPARABLE TYPE)

BLUETOOTH | TOUCH SCREEN | CAN BE OPERATED BY COMPUTERS OR MOBILE PHONES

VIDEO

POPULAR MODEL

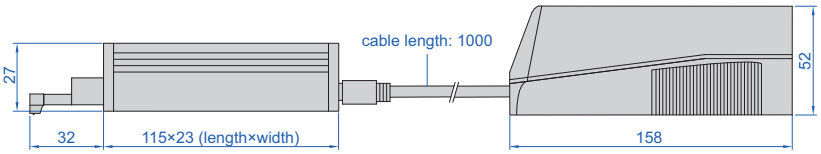
DATA OUTPUT



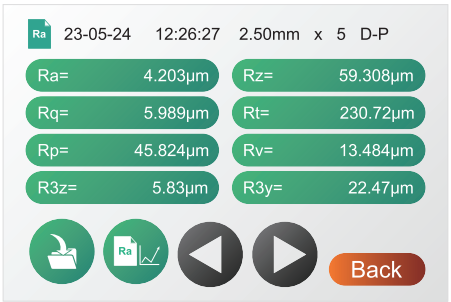
**ISR-C300**

- Roughness tester can be operated by mobile phones or computers
- Data can be sent to Excel by connecting to computers via bluetooth or SPC cable
- Support bluetooth printer
- 22 roughness parameters
- Meet ISO, DIN, ANSI, JIS standards
- Display roughness values, profile and curve
- Memory of maximum 100 data and waveform
- Built-in lithium battery, working time more than 50 hours
- Touch screen
- Automatic power off

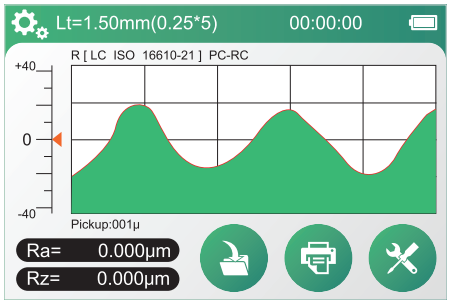
Unit: mm



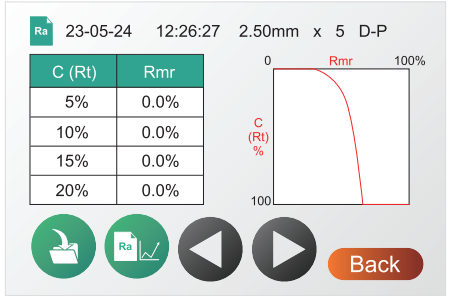

roughness tester screen display




measurement result




roughness profile




Rmr analysis



probe and main unit
can be combined together

operate roughness tester by mobile phones



connect to mobile phones via bluetooth
display roughness values, profile and curve



software flash disk
(included)

operate roughness tester by computers



connect to computers via USB cable (software is included),
display roughness values, profile and curve



bluetooth printer
(**optional**)

To be continued



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data can be sent to Excel by connecting to computer via bluetooth or SPC cable

**via bluetooth**

receiver (**optional**)



**via SPC cable**

SPC cable (**optional**)



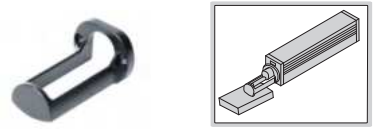
receiver (**optional**)



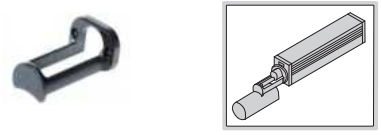


probe support (**optional**)

support for flat surfaces



support for cylindrical surfaces



adjustable stand (included)

height is adjustable (40mm)



magnetic stand adapter (included)






can be installed on magnetic stands

height gauge adapter (**optional**)






can be installed on height gauges

**NOTE**: Please check whether the adapter can fit your height gauges. When using **INSIZE** height gauges, please use the dial test indicator holder of height gauges

light duty test stand (**optional**)



the maximum workpiece height is 220mm

heavy duty test stand (**optional**)



the maximum workpiece height is 310mm

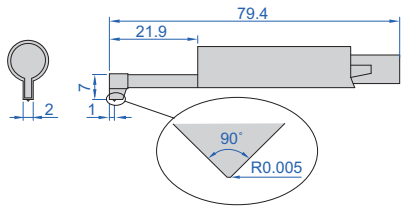
To be continued

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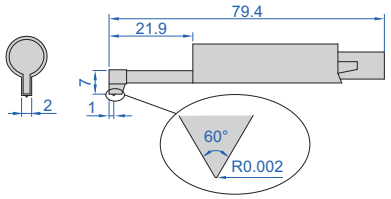
**optional probes**

Unit: mm

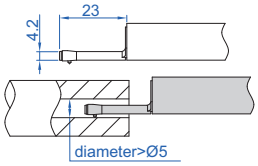
**standard probe, 5μm/90° (included in ISR-C300)**
**code ISR-C300-PROBE**



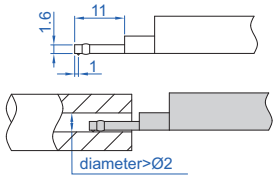

**standard probe, 2μm/60° (included in ISR-C301)**
**code ISR-C301-PROBE**
**(When Ra<0.5μm, the measurement accuracy with this probe is better)**



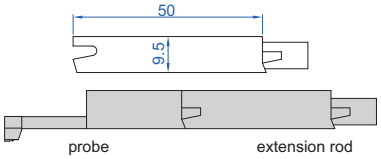

**small hole probe, 5μm/90° (optional),**
**code ISR-C002-PROBE**



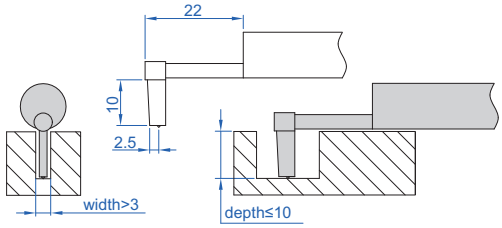

**tiny hole probe, 5μm/90° (optional),**
**code ISR-C002-SBP**



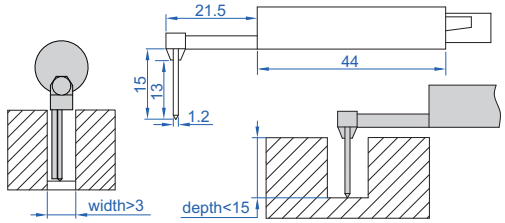

**extension rod (optional),**
**code ISR-C002-ER**




**deep groove probe, 5μm/90° (optional),**
**code ISR-C002-DGP**




**deep groove probe, 5μm/90° (optional),**
**code ISR-C002-DGP1**




**SPECIFICATION**

| Code | | ISR-C300 | ISR-C301 |
|---|---|---|---|
| Measuring force | | 4mN | 0.75mN |
| Stylus radius/angle | | 5μm/90° | 2μm/60° |
| Parameters | | Ra, Rz, Rq, Rv, Rp, Rs, R3z, R3y, Rt, Rc, Rz (JIS), Rk, Rku, Rsm, Rpc, Rpk, Rvk, Rsk, Mr1, Mr2, Ry, Rmax | |
| Probe type | | inductive | |
| Stylus material | | diamond | |
| Range | X axis | 17.5mm | |
| | Z axis | 320μm (-160μm~160μm) | |
| Accuracy | | ±10% | |
| Resolution (Ra) | | 0.001μm | |
| Measuring unit | | μm/μin | |
| Cut off | | 0.25/0.8/2.5mm | |
| Number of cut-offs | | 1~5 | |
| Moving speed | | 0.135mm/s, 0.5mm/s, 1mm/s | |
| Memory | | 100 measurement results | |
| Output | | USB and bluetooth | |
| Power supply | | built-in rechargeable battery | |
| Dimension (L×W×H) | | 158×64×52mm | |
| Weight | | 400g | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Standard probe (included in ISR-C300) | 1 pc |
| Standard probe (included in ISR-C301) | 1 pc |
| Calibration block and support | 1 pc of each |
| Connecting cable (long and short) | 1 pc of each |
| Magnetic stand adapter | 1 pc |
| Adjustable stand | 1 pc |
| Touch pen | 1 pc |
| Software and USB cable | 1 pc |
| AC/DC adapter | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Extension rod | ISR-C002-ER |
| Small hole probe | ISR-C002-PROBE |
| Tiny hole probe | ISR-C002-SBP |
| Deep groove probe | ISR-C002-DGP |
| Deep groove probe | ISR-C002-DGP1* |
| Standard probe | ISR-C301-PROBE |
| Standard probe | ISR-C300-PROBE |
| Bluetooth printer | ISR-C002-PRINTER |
| Height gauge adapter | ISR-C300-LB1 |
| Receiver | ISR-C300-RECEIVER |
| SPC cable | ISR-C300-SPC |
| Support for flat surface | ISR-C300-COVER1 |
| Support for cylindrical surface | ISR-C300-COVER2 |
| Light duty test stand | ISR-C002-STAND1 |
| Heavy duty test stand | ISR-C002-STAND |

*Need to be delivered with roughness tester **ISR-C300**



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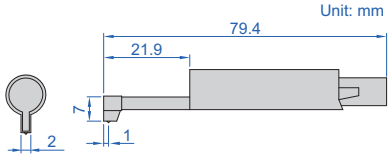
DATA OUTPUT | BLUETOOTH | TOUCH SCREEN | CAN BE OPERATED BY MOBILE PHONES OR COMPUTERS

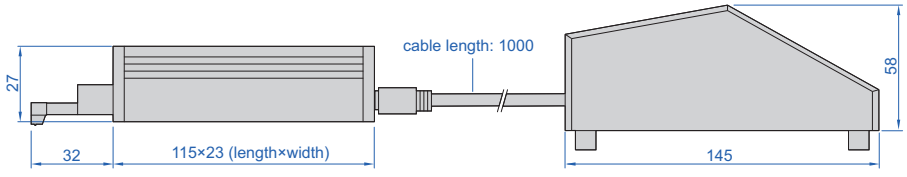
# ROUGHNESS TESTER
# CODE ISR-T120

VIDEO




- Roughness tester can be operated by mobile phones (only Android system) or computers
- Data can be sent to Excel by connecting to computers via bluetooth or SPC cable
- Built-in printer can print measurement results and graphics
- 22 roughness parameters
- Meet ISO, DIN, ANSI, JIS standards
- Display roughness values, profile and curve
- Memory of maximum 100 data and waveform
- Built-in lithium battery, working time more than 50 hours
- Automatic power off

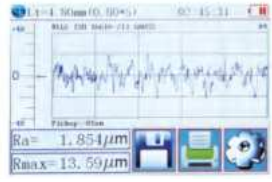



roughness tester screen display



measurement result



roughness profile



Rmr analysis

operate roughness tester by mobile phones



connect to mobile phones via bluetooth (only Android system), display roughness values, profile and curve

operate roughness tester by computers



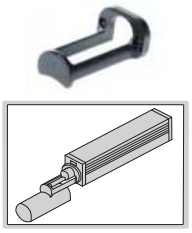
connect to computers via USB cable (software is included), display roughness values, profile and curve

To be continued

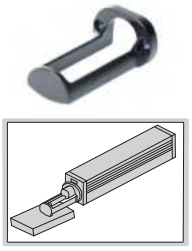
Continued from previous page

probe support (**optional**)

support for cylindrical surface



support for flat surface



data can be sent to Excel by connecting to computer via bluetooth or SPC cable

**via bluetooth**

receiver (**optional**)



**via SPC cable**

SPC cable (**optional**)



receiver (**optional**)





height gauge adapter (**optional**)






can be installed on height gauges

**NOTE**: Please check whether the adapter can fit your height gauges. When using **INSIZE** height gauges, please use the dial test indicator holder of height gauges

magnetic stand adapter (included)



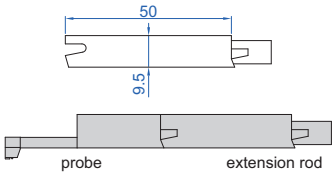



can be installed on magnetic stands

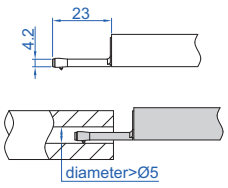
optional probes

Unit: mm

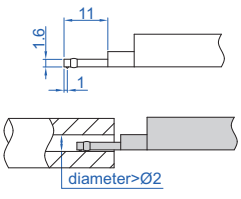
**extension rod (optional), code ISR-C002-ER**



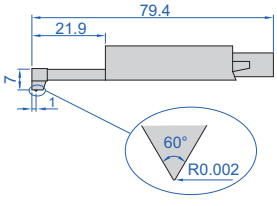

**small hole probe (optional), code ISR-C002-PROBE**



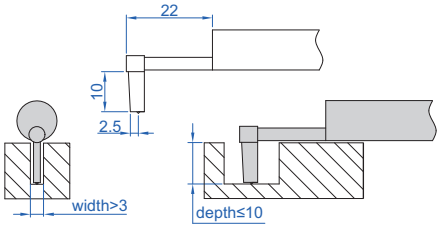

**tiny hole probe (optional), code ISR-C002-SBP**



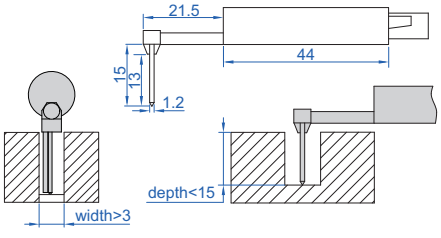

**2μm/60° probe (optional), code ISR-C300-P2UM (When Ra<0.5μm, the accuracy with this probe is better)**




**deep groove probe (optional), code ISR-C002-DGP**




**deep groove probe (optional), code ISR-C002-DGP1**




To be continued

Continued from previous page

light duty test stand (**optional**)



the maximum workpiece height is 220mm

heavy duty test stand (**optional**)



the maximum workpiece height is 310mm

**SPECIFICATION**

| | | |
|---|---|---|
| **Parameters** | | Ra, Rz, Rq, Rv, Rp, Rs, R3z, R3y, Rt, Rc, Rz (JIS), Rk, Rku, Rsm, Rpc, Rpk, Rvk, Rsk, Mr1, Mr2, Ry, Rmax |
| **Range** | **X axis** | 17.5mm |
| | **Z axis** | 640μm (-320μm~320μm) |
| **Accuracy** | | ±10% |
| **Resolution (Ra)** | | 0.001μm |
| **Probe** | **type** | inductive |
| | **stylus radius/angle** | 5μm/90° |
| | **stylus material** | diamond |
| **Measuring force** | | 4mN |
| **Measuring unit** | | μm/μin |
| **Cut off** | | 0.25/0.8/2.5mm |
| **Number of cut-offs** | | 1~5 |
| **Traverse speed** | | 0.135mm/s, 0.5mm/s, 1mm/s |
| **Memory** | | 100 measurement results |
| **Output** | | bluetooth and USB |
| **Power supply** | | built-in rechargeable battery |
| **Dimension (L×W×H)** | | 155×145×58mm |
| **Weight** | | 1000g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Standard probe** | 1 pc |
| **Calibration block and support** | 1 pc of each |
| **Magnetic stand adapter** | 1 pc |
| **Adjustable stand** | 1 pc |
| **Touch pen** | 1 pc |
| **Software and USB cable** | 1 pc |
| **AC/DC adapter** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Extension rod** | **ISR-C002-ER** |
| **Small hole probe** | **ISR-C002-PROBE** |
| **Tiny hole probe** | **ISR-C002-SBP** |
| **2μm/60° probe** | **ISR-C300-P2UM** |
| **Deep groove probe** | **ISR-C002-DGP** |
| **Deep groove probe** | **ISR-C002-DGP1*** |
| **Height gauge adapter** | **ISR-C300-LB1** |
| **Receiver** | **ISR-C300-RECEIVER** |
| **SPC cable** | **ISR-C300-SPC** |
| **Support for flat surface** | **ISR-C300-COVER1** |
| **Support for cylindrical surface** | **ISR-C300-COVER2** |
| **Light duty test stand** | **ISR-C002-STAND1** |
| **Heavy duty test stand** | **ISR-C002-STAND** |

*Need to be delivered with roughness tester **ISR-T120**

## ROUGHNESS TESTER (BASIC TYPE)
## CODE ISR-C003

**ATTENTION: THIS ROUGHNESS TESTER IS NOT SUITABLE FOR ROUGH TURNING, MILLING AND PLANING WORKPIECES**

- Unit: μm, μin
- Automatic power off




VIDEO

### SPECIFICATION

| | | |
|---|---|---|
| **Parameters*** | | Ra, Rz, Rq, Rt |
| **Range** | | Ra, Rq: 0.05~15μm<br>Rz, Rt: 0.1~50μm |
| **Accuracy** | | ±10% |
| **Resolution (Ra)** | | 0.01μm |
| **Probe** | **type** | piezoelectric |
| | **stylus radius/angle** | 10μm/90° |
| | **stylus material** | diamond |
| **Measuring force** | | 5mN |
| **Measuring unit** | | μm/μin |
| **Cut off** | | 0.25/0.8/2.5mm |
| **Evaluation length** | | 1.25mm for cut off 0.25mm<br>4mm for cut off 0.8mm<br>5mm for cut off 2.5mm |
| **Moving speed** | | 0.75mm/s |
| **Power supply** | | built-in rechargeable battery |
| **Dimension (L×W×H)** | | 106×70×24mm |
| **Weight** | | 200g |

* Rmax parameter can be customized

fixture for small shafts (**optional**)



clamping range:
Ø3~20mm



application



calibration block (included)

### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Calibration block** | 1 pc |
| **AC/DC adapter** | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| **Fixture for small shafts** | **ISR-C003-FIXTURE** |

## SURFACE ROUGHNESS SPECIMEN SET
## CODE ISR-CS130-W

INSIZE PLUS
MADE IN EUROPE



- For checking, identifying and specifying the roughness by symbol
- Rust-proof, made of pure Nickel

| Machining method | Roughness (Ra)* | Roughness (Rz)* | Quantity |
|---|---|---|---|
| Flat lapping | 0.05, 0.1, 0.2μm<br>2, 4, 8μin | 0.55, 1, 1.6μm | 3 pcs |
| Reaming | 0.4, 0.8, 1.6μm<br>16, 32, 63μin | 3, 6, 10μm | 3 pcs |
| Plain grinding | 0.05, 0.1, 0.2, 0.4, 0.8, 1.6μm<br>2, 4, 8, 16, 32, 63μin | 0.55, 1, 1.6, 3, 6, 10μm | 6 pcs |
| Horizontal milling | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5μm<br>16, 32, 63, 125, 250, 500μin | 2.5, 4, 8, 16, 32, 50μm | 6 pcs |
| Vertical milling | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5μm<br>16, 32, 63, 125, 250, 500μin | 2.5, 4, 8, 16, 32, 50μm | 6 pcs |
| Turning | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5μm<br>16, 32, 63, 125, 250, 500μin | 2.5, 4, 8, 16, 32, 50μm | 6 pcs |

* The actual value is the value to be calibrated



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ATTENTION: PLEASE APPLY ANTI-RUST OIL AFTER USE

## SURFACE ROUGHNESS SPECIMEN SET CODE ISR-CS2

- For checking, identifying and specifying he roughness by symbol
- Made of carbon steel



| Maching method | Roughness (Ra)* | Roughness (Rz)* | Quantity |
|---|---|---|---|
| Horizontal milling | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 1.6, 3.2, 6.3, 12.5, 25, 50µm | 6 pcs |
| Vertical milling | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 1.6, 3.2, 6.3, 12.5, 25, 50µm | 6 pcs |
| Turning | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 1.6, 3.2, 6.3, 12.5, 25, 50µm | 6 pcs |
| Plain grinding | 0.05, 0.1, 0.2, 0.4, 0.8, 1.6µm | 0.2, 0.4, 0.8, 1.6, 3.2, 6.3µm | 6 pcs |
| Flat lapping | 0.05, 0.1µm | 0.2, 0.4µm | 2 pcs |
| External grinding | 0.2, 0.4, 0.8, 1.6µm | 0.8, 1.6, 3.2, 6.3µm | 4 pcs |

* The actual value is the value to be calibrated

## SURFACE ROUGHNESS SPECIMENS

INSIZE PLUS
MADE IN EUROPE

- For checking, identifying and specifying the roughness by symbol
- Rust-proof, made of pure Nickel



ISR-CS315

| Code | Machining method | | Roughness (Ra)* | Roughness (Rz)* | Quantity |
|---|---|---|---|---|---|
| ISR-CS315 | surface grinding | | 0.025, 0.05, 0.1, 0.2, 0.4, 0.8, 1.6, 3.2µm | 0.29, 0.55, 0.91, 1.74, 2.6, 4.65, 7.87, 15.6µm | 8 pcs |
| ISR-CS316 | cylindrical grinding | | 0.025, 0.05, 0.1, 0.2, 0.4, 0.8, 1.6, 3.2µm | 0.3, 0.53, 0.88, 1.56, 2.64, 4.4, 7.71, 15.3µm | 8 pcs |
| ISR-CS317 | flat lapping | criss-cross | 0.025, 0.05, 0.1, 0.2µm | 0.4, 0.6, 0.74, 1.26µm | 4 pcs |
| | | parallel | 0.025, 0.05, 0.1, 0.2µm | 0.34, 0.56, 1.12, 1.5µm | 4 pcs |
| ISR-CS318 | cylindrical lapping | | 0.025, 0.05, 0.1, 0.2µm | 0.46, 0.54, 0.63, 1.23µm | 4 pcs |
| | superfinishing | | 0.025, 0.05, 0.1, 0.2µm | 0.36, 0.7, 1, 1.4µm | 4 pcs |
| ISR-CS319 | face turning | | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50µm | 1.92, 3.2, 6.15, 12.5, 23.7, 48.7, 102, 185µm | 8 pcs |
| ISR-CS320 | cylindrical turning | | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50µm | 1.7, 3.2, 6.1, 12.2, 23.7, 47.5, 95, 190µm | 8 pcs |
| ISR-CS321 | end milling | | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50µm | 1.92, 3.82, 6.45, 12.2, 25.2, 49.8, 92.6, 191µm | 8 pcs |
| ISR-CS322 | reaming | | 0.4, 0.8, 1.6, 3.2µm | 1.7, 3.2, 6.4, 12.8µm | 4 pcs |
| | drilling | | 1.6, 3.2, 6.3, 12.5µm | 7.5, 15.5, 31, 60µm | 4 pcs |
| ISR-CS323 | horizontal milling | | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50µm | 1.8, 3.68, 6.63, 12.8, 25.6, 53, 97.5, 197µm | 8 pcs |
| ISR-CS325 | shaping (planing) | | 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50, 100µm | 3.84, 6.7, 12.2, 25.2, 48.7, 99.9, 190, 361µm | 8 pcs |
| ISR-CS326 | linishing (belt sanding) | | 0.1, 0.2, 0.4, 0.8, 1.6, 3.2µm | 0.9, 1.55, 3.37, 7.42, 18.5, 31µm | 6 pcs |
| ISR-CS328 | vertical grinding | | 0.2, 0.4, 0.8, 1.6, 3.2, 6.3µm | 1.1, 3.5, 6.15, 8.78, 22.19, 40.8µm | 6 pcs |
| ISR-CS329 | grit blasting | | 3.2, 10.5, 18, 25µm | 19.2, 63, 108, 150µm | 4 pcs |
| | shot blasting | | 3.2, 8, 13, 18µm | 19.2, 48, 78, 108µm | 4 pcs |
| ISR-CS331 | spark erosion (EDM) | | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50µm | 2.5, 4.5, 7.2, 14.2, 24.7, 51.2, 105, 196µm | 8 pcs |
| ISR-CS333 | hand filing | | 0.4, 0.8, 1.6, 3.2, 6.3µm | 3, 5.6, 12.4, 22.5, 61µm | 5 pcs |
| ISR-CS334 | castings | | 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50µm | 3.2, 8, 16, 32, 56, 112, 225µm | 7 pcs |
| ISR-CS335 | honing | | 0.05, 0.1, 0.2, 0.4, 0.8, 1.6µm | 0.31, 0.56, 1, 2, 4.2, 9µm | 6 pcs |
| ISR-CS336 | polishing | | 0.0125, 0.025, 0.05, 0.1, 0.2µm | 0.29, 0.35, 0.67, 0.72, 1.52µm | 5 pcs |

* The actual value is the value to be calibrated





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## SHOT AND GRIT BLASTING SURFACE ROUGHNESS SPECIMENS

INSIZE PLUS
MADE IN EUROPE

- To check the roughness of steel surfaces which have been blast cleaned before painting
- Meets ISO 8503/1
- Rust-proof, made of pure Nickel
- Each piece contains 4 parts



ISR-CS017

| Code | Machining method | Roughness (Ra)* | Roughness (Rz)* |
|---|---|---|---|
| ISR-CS017 | shot blasting | 3.2, 8, 13, 18μm | 19.2, 48, 78, 108μm |
| ISR-CS018 | grit blasting | 3.2, 10.5, 18, 25μm | 19.2, 63, 108, 150μm |

* The actual value is the value to be calibrated

## SURFACE ROUGHNESS REFERENCE SPECIMENS

INSIZE PLUS
MADE IN EUROPE

MEASURING ACCURACY OF ROUGHNESS TESTERS CAN BE IMPROVED, IF THE CALIBRATION IS MADE ON A REFERENCE SPECIMEN WITH THE ROUGHNESS VALUE CLOSE TO THE WORKPIECE TO BE MEASURED

- To calibrate roughness testers
- Meets ISO 5436-1: 2000
- Rust proof, made of pure Nickel



ISR-RS529X

| Code | Roughness (Ra) |
|---|---|
| ISR-RS525X | 6.25μm* |
| ISR-RS526X | 3.15μm* |
| ISR-RS527X | 3.0μm * |
| ISR-RS528X | 0.5μm * |
| ISR-RS529X | 0.1μm * |
| ISR-RS530X | 1.0μm * |
| ISR-RS531X | 0.3μm * |

*The actual value may be slightly different

## SURFACE ROUGHNESS REFERENCE SPECIMENS

MEASURING ACCURACY OF ROUGHNESS TESTERS CAN BE IMPROVED, IF THE CALIBRATION IS MADE ON A REFERENCE SPECIMEN WITH THE ROUGHNESS VALUE CLOSE TO THE WORKPIECE TO BE MEASURED

- To calibrate roughness testers
- Made of glass




ISR-LS603

| Code | Roughness (Ra) | Deviation* | Uniformity |
|---|---|---|---|
| ISR-LS601 | 0.1μm | -20%~+10% | 3% |
| ISR-LS602 | 0.2μm | ±10% | 3% |
| ISR-LS603 | 0.4μm | ±10% | 3% |
| ISR-LS604 | 0.8μm | ±10% | 3% |
| ISR-LS605 | 1.6μm | ±10% | 3% |
| ISR-LS606 | 3.2μm | ±10% | 2% |
| ISR-LS607 | 6.4μm | ±10% | 2% |

*Deviation between the actual value when supply and the nominal value



**CMM**
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**Measuring Arms**
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**Styli For CMM**
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**Ceramic Ball Gauges**
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**Gauge Block Stands For CMM**
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**CMM Check Masters**
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**Jigs For CMM**
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# COORDINATE MEASURING MACHINES (LARGE RANGE)

VIDEO

### FEATURES

- Classic bridge structure, integrated workbench
- High precision air bearing
- Special non-linear spring system to minimize guide way error

### RENISHAW SYSTEMS

- Precision grating system, including grating and data acquisition device
- UCC control system, including control box and manual operator
- Probe system, including probe head, probe body and styli

### Visusal DMIS CNC CAD+ SOFTWARE

- The software is designed and developed based on the DMIS standard, with excellent compatibility and versatility
- Geometric element measurement, evaluation of shape and position
- Bidirectional data transfer with mainstream CAD systems, complete graphical display
- Optional specialized modules, such as gear module, worm module, pipeline module, blade module, SPC data analysis module, etc.



CMM-PM10128A

### STANDARD ACCURACY (PM SERIES)

| Code | Range (X×Y×Z) | Probe system | | Accuracy | | Max. load | Overall dimension (mm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| | | Head | Body | MPEE (μm) | MPEP | | | |
| CMM-PM686A | 600×800×600mm | PH10T | TP20 | ±(2.1+L/300) | 2.4μm | 800kg | 1485×1800×2730 | 1650 |
| CMM-PM686B | | PH10M | SP25M | ±(1.5+L/300) | 1.5μm | | | |
| CMM-PM8127A | 800×1200×700mm | PH10T | TP20 | ±(2.3+L/300) | 2.6μm | 1000kg | 1685×2200×2900 | 2600 |
| CMM-PM8127B | | PH10M | SP25M | ±(1.7+L/300) | 1.7μm | | | |
| CMM-PM8157A | 800×1500×700mm | PH10T | TP20 | ±(2.3+L/300) | 2.6μm | 1000kg | 1685×2500×2930 | 3000 |
| CMM-PM8157B | | PH10M | SP25M | ±(1.7+L/300) | 1.7μm | | | |
| CMM-PM10128A | 1000×1200×800mm | PH10T | TP20 | ±(2.7+L/300) | 3.0μm | 1500kg | 1885×2200×3130 | 2900 |
| CMM-PM10128B | | PH10M | SP25M | ±(2.1+L/300) | 2.1μm | | | |
| CMM-PM10158A | 1000×1500×800mm | PH10T | TP20 | ±(2.7+L/300) | 3.0μm | 1500kg | 1885×2500×3130 | 3300 |
| CMM-PM10158B | | PH10M | SP25M | ±(2.1+L/300) | 2.1μm | | | |
| CMM-PM10228A | 1000×2200×800mm | PH10T | TP20 | ±(2.7+L/300) | 3.0μm | 1800kg | 1885×3580×3130 | 4200 |
| CMM-PM10228B | | PH10M | SP25M | ±(2.1+L/300) | 2.1μm | | | |
| CMM-PM10258A | 1000×2500×800mm | PH10T | TP20 | ±(2.7+L/300) | 3.0μm | 1800kg | 1885×3880×3070 | 5200 |
| CMM-PM10258B | | PH10M | SP25M | ±(2.1+L/300) | 2.1μm | | | |
| CMM-PM10308A | 1000×3000×800mm | PH10T | TP20 | ±(2.7+L/300) | 3.0μm | 1800kg | 1885×4380×3070 | 5900 |
| CMM-PM10308B | | PH10M | SP25M | ±(2.1+L/300) | 2.1μm | | | |
| CMM-PM121510A | 1200×1500×1000mm | PH10T | TP20 | ±(3.1+L/300) | 3.4μm | 2000kg | 2085×2500×3530 | 3600 |
| CMM-PM121510B | | PH10M | SP25M | ±(2.5+L/300) | 2.5μm | | | |

To be continued



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Continued from previous page

**STANDARD ACCURACY (PM SERIES)**

| Code | Range (X×Y×Z) | Probe system | | Accuracy | | Max. load | Overall dimension (mm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| | | Head | Body | MPEE (μm) | MPEP | | | |
| CMM-PM12210A | 1200×2200×1000mm | PH10T | TP20 | ±(3.1+L/300) | 3.4μm | 2000kg | 2085×3580×3530 | 4600 |
| CMM-PM12210B | | PH10M | SP25M | ±(2.5+L/300) | 2.5μm | | | |
| CMM-PM122510A | 1200×2500×1000mm | PH10T | TP20 | ±(3.1+L/300) | 3.4μm | 2000kg | 2085×3880×3470 | 5500 |
| CMM-PM122510B | | PH10M | SP25M | ±(2.5+L/300) | 2.5μm | | | |
| CMM-PM123010A | 1200×3000×1000mm | PH10T | TP20 | ±(3.1+L/300) | 3.4μm | 2000kg | 2085×4380×3470 | 6500 |
| CMM-PM123010B | | PH10M | SP25M | ±(2.5+L/300) | 2.5μm | | | |
| CMM-PM152210A | 1500×2200×1000mm | PH10T | TP20 | ±(3.5+L/300) | 3.8μm | 2200kg | 2385×3580×3470 | 5900 |
| CMM-PM152210B | | PH10M | SP25M | ±(2.9+L/300) | 2.9μm | | | |
| CMM-PM152510A | 1500×2500×1000mm | PH10T | TP20 | ±(3.5+L/300) | 3.8μm | 2200kg | 2385×3880×3470 | 6500 |
| CMM-PM152510B | | PH10M | SP25M | ±(2.9+L/300) | 2.9μm | | | |
| CMM-PM153010A | 1500×3000×1000mm | PH10T | TP20 | ±(3.5+L/300) | 3.8μm | 2200kg | 2385×4380×3470 | 7500 |
| CMM-PM153010B | | PH10M | SP25M | ±(2.9+L/300) | 2.9μm | | | |
| CMM-PM182510A | 1800×2500×1000mm | PH10T | TP20 | ±(3.9+L/300) | 4.2μm | 2500kg | 2685×3880×3470 | 7300 |
| CMM-PM182510B | | PH10M | SP25M | ±(3.3+L/300) | 3.3μm | | | |
| CMM-PM183010A | 1800×3000×1000mm | PH10T | TP20 | ±(3.9+L/300) | 4.2μm | 2500kg | 2685×4380×3470 | 8500 |
| CMM-PM183010B | | PH10M | SP25M | ±(3.3+L/300) | 3.3μm | | | |
| CMM-PM183510A | 1800×3500×1000mm | PH10T | TP20 | ±(3.9+L/300) | 4.2μm | 2500kg | 2685×4880×3470 | 9700 |
| CMM-PM183510B | | PH10M | SP25M | ±(3.3+L/300) | 3.3μm | | | |
| CMM-PM184010A | 1800×4000×1000mm | PH10T | TP20 | ±(3.9+L/300) | 4.2μm | 2500kg | 2685×5380×3470 | 10800 |
| CMM-PM184010B | | PH10M | SP25M | ±(3.3+L/300) | 3.3μm | | | |

**HIGH ACCURACY (PE SERIES)**

| Code | Range (X×Y×Z) | Probe system | | Accuracy | | Max. load | Overall dimension (mm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| | | Head | Body | MPEE (μm) | MPEP | | | |
| CMM-PE686A | 600×800×600mm | PH10T | TP20 | ±(1.8+L/350) | 2.0μm | 800kg | 1485×1800×2730 | 1650 |
| CMM-PE686B | | PH10M | SP25M | ±(1.2+L/350) | 1.2μm | | | |
| CMM-PE8127A | 800×1200×700mm | PH10T | TP20 | ±(2.0+L/350) | 2.2μm | 1000kg | 1685×2200×2900 | 2600 |
| CMM-PE8127B | | PH10M | SP25M | ±(1.4+L/350) | 1.4μm | | | |
| CMM-PE8157A | 800×1500×700mm | PH10T | TP20 | ±(2.0+L/350) | 2.2μm | 1000kg | 1685×2500×2930 | 3000 |
| CMM-PE8157B | | PH10M | SP25M | ±(1.4+L/350) | 1.4μm | | | |
| CMM-PE10128A | 1000×1200×800mm | PH10T | TP20 | ±(2.3+L/350) | 2.5μm | 1500kg | 1885×2200×3130 | 2900 |
| CMM-PE10128B | | PH10M | SP25M | ±(1.7+L/350) | 1.7μm | | | |
| CMM-PE10158A | 1000×1500×800mm | PH10T | TP20 | ±(2.3+L/350) | 2.5μm | 1500kg | 1885×2500×3130 | 3300 |
| CMM-PE10158B | | PH10M | SP25M | ±(1.7+L/350) | 1.7μm | | | |
| CMM-PE10228A | 1000×2200×800mm | PH10T | TP20 | ±(2.3+L/350) | 2.5μm | 1800kg | 1885×3580×3130 | 4200 |
| CMM-PE10228B | | PH10M | SP25M | ±(1.7+L/350) | 1.7μm | | | |
| CMM-PE10258A | 1000×2500×800mm | PH10T | TP20 | ±(2.3+L/350) | 2.5μm | 1800kg | 1885×3880×3070 | 5200 |
| CMM-PE10258B | | PH10M | SP25M | ±(1.7+L/350) | 1.7μm | | | |
| CMM-PE10308A | 1000×3000×800mm | PH10T | TP20 | ±(2.3+L/350) | 2.5μm | 1800kg | 1885×4380×3070 | 5900 |
| CMM-PE10308B | | PH10M | SP25M | ±(1.7+L/350) | 1.7μm | | | |
| CMM-PE121510A | 1200×1500×1000mm | PH10T | TP20 | ±(2.7+L/350) | 2.9μm | 2000kg | 2085×2500×3530 | 3600 |
| CMM-PE121510B | | PH10M | SP25M | ±(2.1+L/350) | 2.1μm | | | |



To be continued

Continued from previous page

**HIGH ACCURACY (PE SERIES)**

| Code | Range (X×Y×Z) | Probe system | | Accuracy | | Max. load | Overall dimension (mm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| | | Head | Body | MPEE (μm) | MPEP | | | |
| CMM-PE12210A | 1200×2200×1000mm | PH10T | TP20 | ±(2.7+L/350) | 2.9μm | 2000kg | 2085×3580×3530 | 4600 |
| CMM-PE12210B | | PH10M | SP25M | ±(2.1+L/350) | 2.1μm | | | |
| CMM-PE122510A | 1200×2500×1000mm | PH10T | TP20 | ±(2.7+L/350) | 2.9μm | 2000kg | 2085×3880×3470 | 5500 |
| CMM-PE122510B | | PH10M | SP25M | ±(2.1+L/350) | 2.1μm | | | |
| CMM-PE123010A | 1200×3000×1000mm | PH10T | TP20 | ±(2.7+L/350) | 2.9μm | 2000kg | 2085×4380×3470 | 6500 |
| CMM-PE123010B | | PH10M | SP25M | ±(2.1+L/350) | 2.1μm | | | |
| CMM-PE152210A | 1500×2200×1000mm | PH10T | TP20 | ±(3.1+L/350) | 3.3μm | 2200kg | 2385×3580×3470 | 5900 |
| CMM-PE152210B | | PH10M | SP25M | ±(2.5+L/350) | 2.5μm | | | |
| CMM-PE152510A | 1500×2500×1000mm | PH10T | TP20 | ±(3.1+L/350) | 3.3μm | 2200kg | 2385×3880×3470 | 6500 |
| CMM-PE152510B | | PH10M | SP25M | ±(2.5+L/350) | 2.5μm | | | |
| CMM-PE153010A | 1500×3000×1000mm | PH10T | TP20 | ±(3.1+L/350) | 3.3μm | 2200kg | 2385×4380×3470 | 7500 |
| CMM-PE153010B | | PH10M | SP25M | ±(2.5+L/350) | 2.5μm | | | |
| CMM-PE182510A | 1800×2500×1000mm | PH10T | TP20 | ±(3.5+L/350) | 3.7μm | 2500kg | 2685×3880×3470 | 7300 |
| CMM-PE182510B | | PH10M | SP25M | ±(2.9+L/350) | 2.9μm | | | |
| CMM-PE183010A | 1800×3000×1000mm | PH10T | TP20 | ±(3.5+L/350) | 3.7μm | 2500kg | 2685×4380×3470 | 8500 |
| CMM-PE183010B | | PH10M | SP25M | ±(2.9+L/350) | 2.9μm | | | |
| CMM-PE183510A | 1800×3500×1000mm | PH10T | TP20 | ±(3.5+L/350) | 3.7μm | 2500kg | 2685×4880×3470 | 9700 |
| CMM-PE183510B | | PH10M | SP25M | ±(2.9+L/350) | 2.9μm | | | |
| CMM-PE184010A | 1800×4000×1000mm | PH10T | TP20 | ±(3.5+L/350) | 3.7μm | 2500kg | 2685×5380×3470 | 10800 |
| CMM-PE184010B | | PH10M | SP25M | ±(2.9+L/350) | 2.9μm | | | |

**STANDARD DELIVERY**

| | | |
|---|---|---|
| Main unit | | 1 pc |
| Probe system | probe head | 1 pc |
| | probe body | 1 pc |
| | styli | 1 set |
| Control system | | 1 set |
| Calibration sphere | | 1 pc |
| Universal sphere seat | | 1 pc |
| Computer | | 1 pc |
| Printer | | 1 pc |
| Software | | 1 set |
| Table and chair | | 1 set |

**OPERATION ENVIRONMENT**

| | |
|---|---|
| Air pressure | 0.6-0.8MPa |
| Air supply | 200L/min |
| Temperature | 20±2°C; <0.5°C/h, <1°C/24h |
| Humidity | 30%~70% |
| Max. power | 1000W |
| Power supply | 220V±5%, 50Hz |



To be continued

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**PH10T AND PH10M SPECIFICATION**

| | |
|---|---|
| **Angular movement with horizontal axis** | 0°~105° in 7.5 steps |
| **Angular movement with vertical axis** | ±180° in 7.5 steps |
| **Number of positions** | 720 |
| **Steering mode** | motorized |
| **Max. output torque** | 0.45N.m |
| **Max. extension length** | 300mm |
| **Weight** | 649g |

**STYLI SET INCLUDED IN TP20**

| Type | Material | Ball diameter | Length | Stem diameter | Effective working length | Quantity |
|---|---|---|---|---|---|---|
| Styli | ruby ball / stainless steel stem | SØ2.5mm | 20mm | Ø1.4mm | 14mm | 4 pcs |
| | | SØ4mm | | Ø1.5mm | 20mm | 1 pc |
| | | SØ3mm | 10mm | Ø1.5mm | 7.5mm | 1 pc |

| Type | Material | Diameter | Length | Quantity |
|---|---|---|---|---|
| Extension | stainless steel | Ø3mm | 20mm | 1 pc |
| | | Ø3mm | 30mm | 1 pc |

| Type | Material | Diameter | Length | Quantity |
|---|---|---|---|---|
| Center base | stainless steel | 7mm | 7.5mm | 1 pc |

**STYLI SET INCLUDED IN SP25M**

| Type | Material | Ball diameter | Length | Stem diameter | Effective working length | Quantity |
|---|---|---|---|---|---|---|
| Styli | ruby ball/ stainless steel stem | SØ1.5mm | 21mm | Ø1mm | 14mm | 1 pc |
| | | SØ2mm | | Ø1.4mm | 8mm | 1 pc |
| | | SØ3mm | | Ø1.5mm | 12mm | 4 pcs |
| | | SØ4mm | 31mm | Ø2.5mm | 27mm | 1 pc |
| | ruby ball/ carbon fiber stem | SØ5mm | 50mm | Ø3mm | 42.5mm | 1 pc |
| | | SØ6mm | 75mm | Ø4mm | 75mm | 1 pc |

| Type | Material | Diameter | Length | Quantity |
|---|---|---|---|---|
| Extension | stainless steel | Ø5mm | 10mm | 1 pc |
| | | Ø4mm | 20mm | 1 pc |

| Type | Material | Diameter | Length | Quantity |
|---|---|---|---|---|
| Center base | stainless steel | 10mm | 13mm | 1 pc |

# COORDINATE MEASURING MACHINES (SMALL RANGE)

VIDEO

### FEATURES

- Classic bridge structure, integrated workbench
- High precision air bearing
- Unique Z-axis anti torque design to reduce rotation error

### RENISHAW SYSTEMS

- Precision grating system, including grating and data acquisition device
- UCC control system, including control box and manual operator
- Probe system, including probe head, probe body and styli

### VISUSAL DMIS CNC CAD+SOFTWARE

- The software is designed and developed based on the DMIS standard, with excellent compatibility and versatility
- Geometric element measurement, evaluation of shape and position
- Bidirectional data transmission with mainstream CAD systems, complete graphical display
- Optional specialized modules, such as gear module, worm module, pipeline module, blade module, SPC data analysis module, etc.



CMM-LM564A

### STANDARD DELIVERY

| | | |
|---|---|---|
| Main unit | | 1 pc |
| Probe system | probe head | 1 pc |
| | probe body | 1 pc |
| | styli | 1 set |
| Control system | | 1 set |
| Calibration sphere | | 1 pc |
| Universal sphere seat | | 1 pc |
| Computer | | 1 pc |
| Printer | | 1 pc |
| Software | | 1 set |
| Table and chair | | 1 set |

### OPERATION ENVIRONMENT

| | |
|---|---|
| Air pressure | 0.6-0.8MPa |
| Air supply | 200L/min |
| Temperature | 20°C±2°C; <0.5°C/h, <1°C/24h |
| Humidity | 30%~70% |
| Max. power | 1000W |
| Power supply | 220V±5%, 50Hz |

### STANDARD ACCURACY (LM SERIES)

| Code | Range (X×Y×Z) | Probe system | | Accuracy | | Max. load | Overall dimension (mm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| | | Head | Body | MPEE (μm) | MPEP | | | |
| CMM-LM564A | 500×600×400mm | MH20i | TP20 | ±(2.3+L/250) | 2.4μm | 500kg | 1135×1420×2350 | 900 |
| CMM-LM564B | | PH10T | | | | | | |
| CMM-LM686A | 600×800×600mm | MH20i | TP20 | ±(2.6+L/250) | 2.7μm | 800kg | 1420×1740×2760 | 1300 |
| CMM-LM686B | | PH10T | | | | | | |
| CMM-LM686C | | PH10M | SP25M | ±(2.1+L/250) | 2.1μm | | | |
| CMM-LM8106A | 800×1000×600mm | MH20i | TP20 | ±(2.7+L/250) | 2.8μm | 1000kg | 1620×1940×2760 | 1700 |
| CMM-LM8106B | | PH10T | | | | | | |
| CMM-LM8106C | | PH10M | SP25M | ±(2.2+L/250) | 2.2μm | | | |
| CMM-LM8126A | 800×1200×600mm | MH20i | TP20 | ±(2.7+L/250) | 2.8μm | | 1620×2140×2760 | 1900 |
| CMM-LM8126B | | PH10T | | | | | | |
| CMM-LM8126C | | PH10M | SP25M | ±(2.2+L/250) | 2.2μm | | | |
| CMM-LM8156A | 800×1500×600mm | MH20i | TP20 | ±(2.7+L/250) | 2.8μm | | 1620×2440×2760 | 2200 |
| CMM-LM8156B | | PH10T | | | | | | |
| CMM-LM8156C | | PH10M | SP25M | ±(2.2+L/250) | 2.2μm | | | |

To be continued



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### HIGH ACCURACY (LE SERIES)

| Code | Range (X×Y×Z) | Probe system | | Accuracy | | Max. load | Overall dimension (mm) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|
| | | Head | Body | MPEE (μm) | MPEP | | | |
| CMM-LE564A | 500×600×400mm | MH20i | TP20 | ±(1.9+L/330) | 2.1μm | 500kg | 1135×1420×2350 | 900 |
| CMM-LE564B | | PH10T | | | | | | |
| CMM-LE686A | 600×800×600mm | MH20i | TP20 | ±(2.0+L/330) | 2.2μm | 800kg | 1420×1740×2760 | 1300 |
| CMM-LE686B | | PH10T | | | | | | |
| CMM-LE686C | | PH10M | SP25M | ±(1.6+L/330) | 1.6μm | | | |
| CMM-LE8106A | 800×1000×600mm | MH20i | TP20 | ±(2.1+L/330) | 2.3μm | 1000kg | 1620×1940×2760 | 1700 |
| CMM-LE8106B | | PH10T | | | | | | |
| CMM-LE8106C | | PH10M | SP25M | ±(1.7+L/330) | 1.7μm | | | |
| CMM-LE8126A | 800×1200×600mm | MH20i | TP20 | ±(2.1+L/330) | 2.3μm | | 1620×2140×2760 | 1900 |
| CMM-LE8126B | | PH10T | | | | | | |
| CMM-LE8126C | | PH10M | SP25M | ±(1.7+L/330) | 1.7μm | | | |
| CMM-LE8156A | 800×1500×600mm | MH20i | TP20 | ±(2.1+L/330) | 2.3μm | | 1620×2440×2760 | 2200 |
| CMM-LE8156B | | PH10T | | | | | | |
| CMM-LE8156C | | PH10M | SP25M | ±(1.7+L/330) | 1.7μm | | | |

### MH20i SPECIFICATION

| | |
|---|---|
| Angular movement with horizontal axis | 0°~90° in 15 steps |
| Angular movement with vertical axis | ±180° in 15 steps |
| Number of positions | 168 |
| Steering mode | manual |
| Max. extension length | 75mm |
| Weight | 210g |

### PH10T AND PH10M SPECIFICATION

| | |
|---|---|
| Angular movement with horizontal axis | 0°~105° in 7.5 steps |
| Angular movement with vertical axis | ±180° in 7.5 steps |
| Number of positions | 720 |
| Steering mode | motorized |
| Max. output torque | 0.45N.m |
| Max. extension length | 300mm |
| Weight | 649g |

### STYLI SET INCLUDED IN TP20

| Type | Material | Ball diameter | Length | Stem diameter | Effective working length | Quantity |
|---|---|---|---|---|---|---|
| Styli | ruby ball/ stainless steel stem | SØ2.5mm | 20mm | Ø1.4mm | 14mm | 4 pcs |
| | | SØ4mm | | Ø1.5mm | 20mm | 1 pc |
| | | SØ3mm | 10mm | | 7.5mm | 1 pc |

| Type | Material | Diameter | Length | Quantity |
|---|---|---|---|---|
| Extension | stainless steel | Ø3mm | 20mm | 1 pc |
| | | | 30mm | 1 pc |
| Center base | | 7mm | 7.5mm | 1 pc |

### STYLI SET INCLUDED IN SP25M

| Type | Material | Ball diameter | Length | Stem diameter | Effective working length | Quantity |
|---|---|---|---|---|---|---|
| Styli | ruby ball/ stainless steel stem | SØ1.5mm | 21mm | Ø1mm | 14mm | 1 pc |
| | | SØ2mm | | Ø1.4mm | 8mm | 1 pc |
| | | SØ3mm | | Ø1.5mm | 12mm | 4 pcs |
| | | SØ4mm | 31mm | Ø2.5mm | 27mm | 1 pc |
| | ruby ball/ carbon fiber stem | SØ5mm | 50mm | Ø3mm | 42.5mm | 1 pc |
| | | SØ6mm | 75mm | Ø4mm | 75mm | 1 pc |

| Type | Material | Diameter | Length | Quantity |
|---|---|---|---|---|
| Extension | stainless steel | Ø5mm | 10mm | 1 pc |
| | | Ø4mm | 20mm | 1 pc |
| Center base | | 10mm | 13mm | 1 pc |

# MEASURING ARMS

VIDEO

- In accordance with ISO 10360-12
- Internal balance
- Dual high performance batteries
- Equivalent-arm design
- High-speed WiFi performance
- Aerospace grade carbon-fiber material
- Automatic power off
- U-shaped anti-collision design of the base



CMM-CM30

**STANDARD PRECISION, BE SERIES, 6-AXIS** (mm)

| Code | Measuring range | Maximum permissible error | | | | |
|---|---|---|---|---|---|---|
| | | SPAT | $E_{UNI}$ | $P_{SIZE}$ | $P_{FORM}$ | $L_{DIA}$ |
| CMM-BE15 | 1500 | 0.028 | 0.036 | 0.015 | 0.029 | 0.038 |
| CMM-BE20 | 2000 | 0.030 | 0.040 | 0.018 | 0.035 | 0.041 |
| CMM-BE25 | 2500 | 0.035 | 0.045 | 0.020 | 0.038 | 0.050 |
| CMM-BE30 | 3000 | 0.055 | 0.065 | 0.028 | 0.045 | 0.080 |
| CMM-BE35 | 3500 | 0.075 | 0.080 | 0.035 | 0.058 | 0.098 |
| CMM-BE40 | 4000 | 0.090 | 0.100 | 0.044 | 0.068 | 0.116 |
| CMM-BE45 | 4500 | 0.112 | 0.120 | 0.048 | 0.086 | 0.128 |

**HIGH PRECISION, CM SERIES, 6-AXIS** (mm)

| Code | Measuring range | Maximum permissible error | | | | |
|---|---|---|---|---|---|---|
| | | SPAT | $E_{UNI}$ | $P_{SIZE}$ | $P_{FORM}$ | $L_{DIA}$ |
| CMM-CM15 | 1500 | 0.018 | 0.025 | 0.009 | 0.016 | 0.026 |
| CMM-CM20 | 2000 | 0.020 | 0.028 | 0.010 | 0.018 | 0.032 |
| CMM-CM25 | 2500 | 0.023 | 0.030 | 0.012 | 0.022 | 0.038 |
| CMM-CM30 | 3000 | 0.034 | 0.042 | 0.016 | 0.032 | 0.052 |
| CMM-CM35 | 3500 | 0.043 | 0.056 | 0.020 | 0.038 | 0.066 |
| CMM-CM40 | 4000 | 0.052 | 0.066 | 0.024 | 0.044 | 0.083 |
| CMM-CM45 | 4500 | 0.061 | 0.089 | 0.038 | 0.078 | 0.108 |

**HIGH PRECISION, CM SERIES, 7-AXIS** (mm)

| Code | Measuring range | Maximum permissible error | | | | |
|---|---|---|---|---|---|---|
| | | SPAT | $E_{UNI}$ | $P_{SIZE}$ | $P_{FORM}$ | $L_{DIA}$ |
| CMM-CM20S | 2000 | 0.022 | 0.030 | 0.012 | 0.022 | 0.040 |
| CMM-CM25S | 2500 | 0.027 | 0.032 | 0.013 | 0.025 | 0.048 |
| CMM-CM30S | 3000 | 0.042 | 0.053 | 0.020 | 0.035 | 0.078 |
| CMM-CM35S | 3500 | 0.055 | 0.066 | 0.024 | 0.043 | 0.092 |
| CMM-CM40S | 4000 | 0.065 | 0.082 | 0.029 | 0.048 | 0.102 |
| CMM-CM45S | 4500 | 0.073 | 0.099 | 0.043 | 0.082 | 0.132 |

To be continued

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**ULTRA HIGH PRECISE, HP SERIES, 6-AXIS** (mm)

| Code | Measuring range | Maximum permissible error | | | | |
|---|---|---|---|---|---|---|
| | | SPAT | $E_{UNI}$ | $P_{SIZE}$ | $P_{FORM}$ | $L_{DIA}$ |
| CMM-HP15 | 1500 | 0.012 | 0.022 | 0.007 | 0.012 | 0.024 |
| CMM-HP20 | 2000 | 0.016 | 0.024 | 0.008 | 0.015 | 0.030 |
| CMM-HP25 | 2500 | 0.018 | 0.026 | 0.009 | 0.018 | 0.032 |
| CMM-HP30 | 3000 | 0.026 | 0.038 | 0.012 | 0.025 | 0.045 |
| CMM-HP35 | 3500 | 0.036 | 0.052 | 0.016 | 0.034 | 0.060 |
| CMM-HP40 | 4000 | 0.045 | 0.063 | 0.020 | 0.038 | 0.077 |
| CMM-HP45 | 4500 | 0.055 | 0.080 | 0.028 | 0.050 | 0.101 |

**ULTRA HIGH PRECISE, HP SERIES, 7-AXIS** (mm)

| Code | Measuring range | Maximum permissible error | | | | |
|---|---|---|---|---|---|---|
| | | SPAT | $E_{UNI}$ | $P_{SIZE}$ | $P_{FORM}$ | $L_{DIA}$ |
| CMM-HP20S | 2000 | 0.018 | 0.026 | 0.010 | 0.019 | 0.038 |
| CMM-HP25S | 2500 | 0.020 | 0.028 | 0.011 | 0.022 | 0.042 |
| CMM-HP30S | 3000 | 0.032 | 0.048 | 0.016 | 0.032 | 0.072 |
| CMM-HP35S | 3500 | 0.045 | 0.061 | 0.020 | 0.039 | 0.088 |
| CMM-HP40S | 4000 | 0.055 | 0.076 | 0.026 | 0.044 | 0.098 |
| CMM-HP45S | 4500 | 0.065 | 0.095 | 0.036 | 0.065 | 0.122 |

SPAT Single-point articulation test

$E_{UNI}$ Distance measurement error between two points

$P_{FORM}$ Sphere form measurement error

$P_{SIZE}$ Sphere size measurement error

$L_{DIA}$ Sphere diameter obtained from performing the articulated location test (diameter of the spherical zone containing the centers of a sphere measured from multiple orientations)

**SPECIFICATION**

| | |
|---|---|
| Temperature rate | 3°C/5min |
| Battery life | 5h for one battery;<br>10h for two batteries |
| Output | USB, WIFI |
| Operation temperature | 5°C~45°C |
| Operation humidity | 0~95%, non-condensing |
| Power supply | 100~240VAC, 50/60Hz |
| Weight | 8.8kg~10.6kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| 3mm zircon ball probe | 1 pc |
| 6mm zircon ball probe | 1 pc |
| Calibration cone | 1 pc |
| Lithium batteries | 2 pcs |
| USB cable | 1 pc |
| Power adapter | 1 pc |
| Dust cover | 1 pc |



3mm zircon ball probe (included)



6mm zircon ball probe (included)



calibration cone (included)

To be continued

Continued from previous page



laser line probe
(**optional**)



electric vacuum base
(**optional**)



DELL laptop
(**optional**)

### LASER LINE PROBE SPECIFICATION

| Code | CMM-CEM-SD | CMM-CEM-HD |
|---|---|---|
| Accuracy | ±28μm (2σ) | ±15μm (2σ) |
| Working distance | 115mm | |
| Effective scan width | near field 80mm, far field 150mm | |
| Points per line | maximum 4000 points per line | |
| Scan rate | 1200000 points per second | |
| Laser | class 2 | |
| Weight | 536g | |



magnetic base
(**optional**)

### SYSTEM ACCURACY WITH LASER LINE PROBE

| Code | CMM-CEM-SD | CMM-CEM-HD |
|---|---|---|
| CMM-CM20S | 0.050mm | 0.040mm |
| CMM-CM25S | 0.055mm | 0.045mm |
| CMM-CM30S | 0.062mm | 0.052mm |
| CMM-CM35S | 0.076mm | 0.065mm |
| CMM-CM40S | 0.090mm | 0.081mm |
| CMM-CM45S | 0.139mm | 0.131mm |
| CMM-HP20S | 0.043mm | 0.038mm |
| CMM-HP25S | 0.048mm | 0.042mm |
| CMM-HP30S | 0.055mm | 0.047mm |
| CMM-HP35S | 0.068mm | 0.060mm |
| CMM-HP40S | 0.080mm | 0.074mm |
| CMM-HP45S | 0.125mm | 0.120mm |

### OPTIONAL ACCESSORY

| | |
|---|---|
| DELL laptop | CMM-CEM-PCE |
| Polyworks software | CMM-CEM-PW |
| Adjustable tripod | CMM-CEM-FAT |
| Electric vacuum base | CMM-CEM-EVCP |
| Magnetic base | CMM-CEM-IMM |
| Magnetic cones | CMM-CEM-MC |
| Magnetic spheres | CMM-CEM-MS |
| Point probe | CMM-CEM-PP |
| 2mm ruby ball probe | CMM-CEM-RP2 |
| 5mm zircon ball probe | CMM-CEM-ZP5 |
| 10mm zircon ball probe | CMM-CEM-ZP10 |
| 3" straight probe extension | CMM-CEM-SPE3 |
| 4" straight probe extension | CMM-CEM-SPE4 |
| 60° probe adapter | CMM-CEM-DP60 |
| 90° probe adapter | CMM-CEM-DP90 |
| 3mm extended ball probe | CMM-CEM-EPB3 |
| 6mm extended ball probe | CMM-CEM-EPB6 |
| Probe adapter | CMM-CEM-PA |
| High accuracy laser line probe | CMM-CEM-HD* |
| Standard accuracy laser line probe | CMM-CEM-SD* |

*Laser line probes are suitable for 7-axis measuring arms only



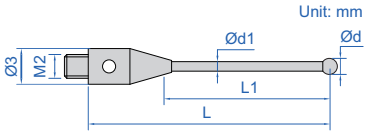
adjustable tripod (**optional**)

# STYLI FOR CMM

- Roundness: 0.25μm



ISQ-20-071



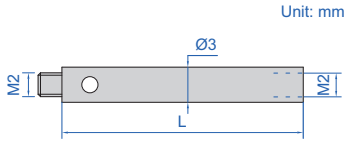



ISQ-25-125

**M2 styli** **(mm)**

| Code | Ød | Ød1 | L | L1* | Material of rod | Material of tip |
|---|---|---|---|---|---|---|
| ISQ-20-002 | 1 | 0.7 | 10 | 4.5 | stainless steel | ruby |
| ISQ-20-006 | 2 | 1 | 10 | 6 | | |
| ISQ-20-010 | 3 | 1.5 | 10 | 10 | | |
| ISQ-20-021 | 2 | 1.4 | 20 | 14 | | |
| ISQ-20-025 | 3 | 1.5 | 20 | 17.5 | | |
| ISQ-20-027 | 4 | 2 | 20 | 20 | | |
| ISQ-20-052 | 0.5 | 0.3 | 10 | 3 | carbide | |
| ISQ-20-071 | 1 | 0.7 | 20 | 12.5 | | |
| ISQ-20-105 | 2 | 1.5 | 30 | 22.5 | | |
| ISQ-20-120 | 3 | 2 | 30 | 27.5 | ceramic | |
| ISQ-20-201 | 4 | 3 | 50 | 50 | carbon fibre | |

*L1 is the effective working length, which is the distance from the center of the tip to the section of the stem with the same diameter as the tip

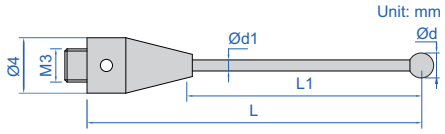



**M2 extension rods of styli** **(mm)**

| Code | L | Material |
|---|---|---|
| ISQ-25-105 | 10 | stainless steel |
| ISQ-25-110 | 20 | |
| ISQ-25-125 | 30 | ceramic |



ISQ-30-066



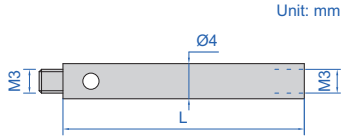

**M3 styli** **(mm)**

| Code | Ød | Ød1 | L | L1* | Material of rod | Material of tip |
|---|---|---|---|---|---|---|
| ISQ-30-001 | 1 | 0.7 | 21 | 4 | carbide | ruby |
| ISQ-30-003 | 2 | 1 | 21 | 8 | | |
| ISQ-30-005 | 3 | 1.5 | 21 | 12 | | |
| ISQ-30-031 | 2 | 1.5 | 30 | 22.5 | | |
| ISQ-30-066 | 3 | 2 | 50 | 42.5 | ceramic | |
| ISQ-30-080 | 6 | 4 | 75 | 75 | carbon fibre | |

*L1 is the effective working length, which is the distance from the center of the tip to the section of the stem with the same diameter as the tip



ISQ-35-110




**M3 extension rods of styli** **(mm)**

| Code | L | Material |
|---|---|---|
| ISQ-35-101 | 10 | stainless steel |
| ISQ-35-105 | 20 | |
| ISQ-35-110 | 35 | |
| ISQ-35-115 | 50 | ceramic |

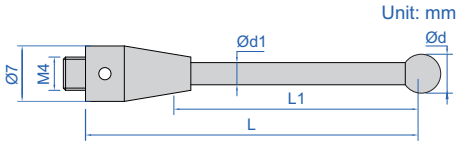
**M4 styli** **(mm)**

| Code | Ød | Ød1 | L | L1* | Material of rod | Material of tip |
|---|---|---|---|---|---|---|
| ISQ-40-113 | 3 | 2 | 18.5 | 13 | stainless steel | ruby |
| ISQ-40-208 | 6 | 4 | 50 | 36 | | |
| ISQ-40-106 | 1 | 0.7 | 19.5 | 4 | carbide | |
| ISQ-40-109 | 2 | 1.4 | 19 | 8 | | |
| ISQ-40-141 | 1 | 0.7 | 20 | 10 | | |
| ISQ-40-195 | 2 | 1.5 | 50 | 40 | | |
| ISQ-40-202 | 4 | 2 | 50 | 38 | | |
| ISQ-40-173 | 5 | 4 | 50 | 34 | ceramic | |
| ISQ-40-179 | 6 | 4 | 50 | 36 | | |
| ISQ-40-222 | 6 | 4 | 75 | 63 | | |
| ISQ-40-240 | 5 | 4 | 100 | 84 | | |
| ISQ-40-245 | 6 | 4 | 100 | 86 | | |

*L1 is the effective working length, which is the distance from the center of the tip to the section of the stem with the same diameter as the tip



ISQ-40-195

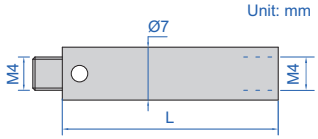



To be continued

Continued from previous page



ISQ-45-025

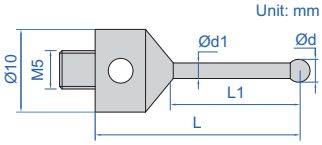


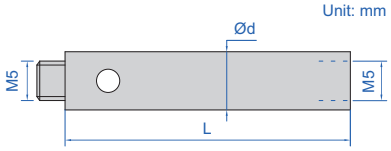

**M4 extension rods of styli** (mm)

| Code | L | Material |
|---|---|---|
| ISQ-45-025 | 30 | ceramic |
| ISQ-45-028 | 50 | |



ISQ-50-059




**M5 styli** (mm)

| Code | Ød | Ød1 | L | L1* | Material of rod | Material of tip |
|---|---|---|---|---|---|---|
| ISQ-50-051 | 1 | 0.7 | 20 | 5 | carbide | ruby |
| ISQ-50-059 | 2 | 1.5 | 20 | 11 | | |
| ISQ-50-067 | 3 | 2 | 20 | 11 | | |
| ISQ-50-071 | 4 | 2 | 20 | 11 | | |
| ISQ-50-075 | 5 | 3 | 20 | 11 | | |

*L1 is the effective working length, which is the distance from the center of the tip to the section of the stem with the same diameter as the tip

**M5 extension rods of styli** (mm)

| Code | L | Ød | Material |
|---|---|---|---|
| ISQ-55-012 | 20 | 10 | stainless steel |
| ISQ-55-014 | 30 | 10 | |
| ISQ-55-016 | 50 | 10 | |
| ISQ-55-018 | 100 | 10 | |
| ISQ-55-031 | 50 | 20 | aluminum |
| ISQ-55-035 | 100 | 20 | |
| ISQ-55-039 | 200 | 20 | |

## STANDARD BALLS FOR CMM

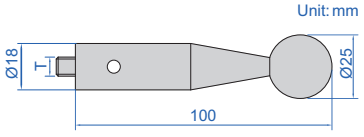
INSIZE PLUS
MADE IN EUROPE

INSPECTION CERTIFICATE

- Diameter accuracy of ceramic ball: +1.25μm/-1μm, roundness: 0.13μm
- Mirror surface
- Stainless steel measuring rod
- Supplied with manufacturer inspection certificate



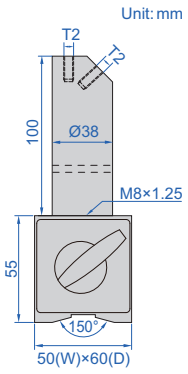
ISQ-16-025CE-M8







ISQ-16-BASE-M8




(mm)

| Code | T | Remark |
|---|---|---|
| ISQ-16-025CE-M6 | M6 | including measuring rod |
| ISQ-16-025CE-M8 | M8 | |
| ISQ-16-025CE-M10 | M10 | |
| ISQ-16-025CE-M12 | M12 | |

**MAGNETIC BASE** (mm)

| Code | T2 | Magnetic force |
|---|---|---|
| ISQ-16-BASE-M6 | M6 | 80kgf |
| ISQ-16-BASE-M8 | M8 | 80kgf |
| ISQ-16-BASE-M10 | M10 | 80kgf |
| ISQ-16-BASE-M12 | M12 | 80kgf |



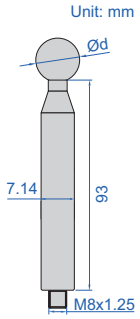
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# CERAMIC BALL GAUGES

INSPECTION CERTIFICATE

- To calibrate CMM probes
- Zirconia material, high strength and hardness, extremly wear resistance and corrosion resistance good insulation, antistatic and magnetic resistance
- Mirror surface, with pole
- Supplied with manufacturer inspection certificate






**4198-20**

**High accuracy**

| Code | Diameter (Ød) | Accuracy | Roundness |
|---|---|---|---|
| **4198-8** | 8mm | ±5μm | 0.5μm |
| **4198-10** | 10mm | ±5μm | 0.5μm |
| **4198-12D7** | 12.7mm | ±5μm | 0.5μm |
| **4198-13** | 13mm | ±5μm | 0.5μm |
| **4198-14** | 14mm | ±5μm | 0.5μm |
| **4198-15** | 15mm | ±5μm | 0.5μm |
| **4198-16** | 16mm | ±5μm | 0.5μm |
| **4198-17** | 17mm | ±5μm | 0.5μm |
| **4198-20** | 20mm | ±5μm | 0.5μm |
| **4198-25D4** | 25.4mm | ±5μm | 0.5μm |

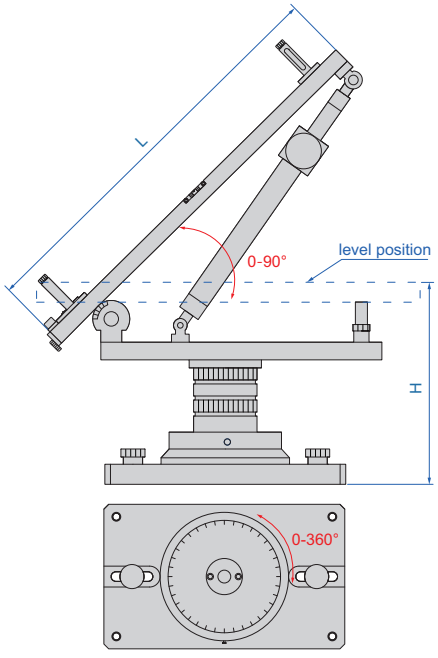
**Standard accuracy**

| Code | Diameter (Ød) | Accuracy | Roundness |
|---|---|---|---|
| **4198-8A** | 8mm | ±5μm | 1μm |
| **4198-10A** | 10mm | ±5μm | 1μm |
| **4198-12D7A** | 12.7mm | ±5μm | 1μm |
| **4198-13A** | 13mm | ±5μm | 1μm |
| **4198-14A** | 14mm | ±5μm | 1μm |
| **4198-15A** | 15mm | ±5μm | 1μm |
| **4198-16A** | 16mm | ±5μm | 1μm |
| **4198-17A** | 17mm | ±5μm | 1μm |
| **4198-20A** | 20mm | ±5μm | 1μm |
| **4198-25D4A** | 25.4mm | ±5μm | 1μm |

# GAUGE BLOCK STAND FOR CMM

VIDEO






**6885-1000**

- Made of aluminum
- Used with gauge blocks to calibrate CMM
- Optional accessory: gauge blocks (**4101**, **4103** and **4104** series)

**(mm)**

| Code | Length (L) | Height (H) |
|---|---|---|
| **6885-1000** | 500, 600, 650, 700, 750, 800, 850, 900, 1000 | 235, 355, 475 |



height column (included, 2pcs)



extension plate (included, 4pcs)

# CMM CHECK MASTERS

INSPECTION CERTIFICATE

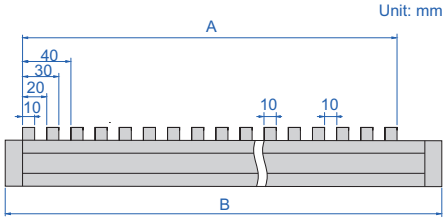



horizontal use



6882-600A

Unit: mm




- To check the accuracy of table movements of machine tools and calibrate CMM, digital height gauge, height gauge, caliper
- Horizontal use and vertical use
- Constructed with ceramic gauge blocks
- Can be used with stand

**STANDARD ACCURACY**

| Code | Size | Step | A (mm) | B (mm) | Range of inside measurement (mm) | Range of outside measurement (mm) | Range of height measurement (mm) |
|---|---|---|---|---|---|---|---|
| **6882-300A*** | 0-300mm | 10mm | 310 | 350 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330 |
| **6882-400A*** | 0-400mm | 10mm | 410 | 450 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430 |
| **6882-500A*** | 0-500mm | 10mm | 510 | 550 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530 |
| **6882-600A*** | 0-600mm | 10mm | 610 | 650 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630 |
| **6882-1000A*** | 0-1000mm | 10mm | 1010 | 1050 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870, 890, 910, 930, 950, 970, 990 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870, 890, 910, 930, 950, 970, 990, 1010 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870, 890, 910, 930, 950, 970, 990, 1010, 1030 |

To be continued



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Continued from previous page

**HIGH ACCURACY**

| Code | Size | Step | A (mm) | B (mm) | Range of inside measurement (mm) | Range of outside measurement (mm) | Range of height measurement (mm) |
|---|---|---|---|---|---|---|---|
| **6882-300H*** | 0-300mm | 10mm | 310 | 350 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330 |
| **6882-400H*** | 0-400mm | 10mm | 410 | 450 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430 |
| **6882-500H*** | 0-500mm | 10mm | 510 | 550 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530 |
| **6882-600H*** | 0-600mm | 10mm | 610 | 650 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630 |
| **6882-1000H*** | 0-1000mm | 10mm | 1010 | 1050 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870, 890, 910, 930, 950, 970, 990 | 10, 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870, 890, 910, 930, 950, 970, 990, 1010 | 30, 50, 70, 90, 110, 130, 150, 170, 190, 210, 230, 250, 270, 290, 310, 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870, 890, 910, 930, 950, 970, 990, 1010, 1030 |

*Supplied with manufacturer inspection certificate

**Accuracy**

| Range (mm) | Standard accuracy | High accuracy |
|---|---|---|
| ≤300 | ±1.3μm | ±0.8μm |
| >300, ≤400 | ±1.6μm | ±1.0μm |
| >400, ≤500 | ±2.0μm | ±1.0μm |
| >500, ≤600 | ±2.5μm | ±1.0μm |
| >600, ≤800 | ±3.0μm | ±2.5μm |
| >800, ≤1000 | ±4.0μm | ±2.5μm |

**Stand (optional)**

| Code | Applicable check masters |
|---|---|
| **6882-S1** | 6882-300A, 6882-300H |
| **6882-S2** | 6882-400A, 6882-400H |
| **6882-S3** | 6882-500A, 6882-500H |
| **6882-S4** | 6882-600A, 6882-600H |
| **6882-S5** | 6882-1000A, 6882-1000H |

can be used with stand **(optional)**

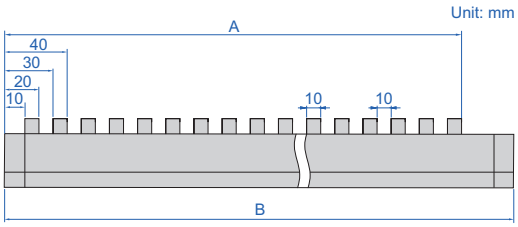


# CMM CHECK MASTERS (ADVANCED TYPE)

INSPECTION CERTIFICATE



6874-1000




- To check the accuracy of table movements of machine tools and calibrate CMM
- Horizontal use and vertical use
- Constructed with ceramic gauge blocks
- Can be used with stand

| Code | Size | Step | A | B |
|---|---|---|---|---|
| **6874-300** * | 0-300mm | 10mm | 320mm | 345mm |
| **6874-450** * | 0-450mm | 10mm | 470mm | 495mm |
| **6874-600** * | 0-600mm | 10mm | 620mm | 645mm |
| **6874-1000** * | 0-1000mm | 10mm | 1020mm | 1045mm |

*Supplied with ISO17025 calibration cartificate of Shenzhen Institute of Metrology&Quality Inspection (SMQ)




ISO17025 calibration certificate

**Accuracy**

| Range (mm) | Accuracy | Work face size variation |
|---|---|---|
| ≤100 | ±1.0μm | 0.5μm |
| >100, ≤200 | ±1.1μm | 0.5μm |
| >200, ≤300 | ±1.3μm | 0.6μm |
| >300, ≤400 | ±1.6μm | 0.7μm |
| >400, ≤500 | ±2.0μm | 0.8μm |
| >500, ≤600 | ±2.5μm | 1.0μm |
| >600, ≤800 | ±3.0μm | 1.4μm |
| >800, ≤1000 | ±4.0μm | 1.8μm |



can be used with stand **(optional)**

**Stand (optional)**

| Code | Applicable check masters |
|---|---|
| **6874-A** | 6874-300, 6874-450, 6874-600 |
| **6874-B** | 6874-1000 |

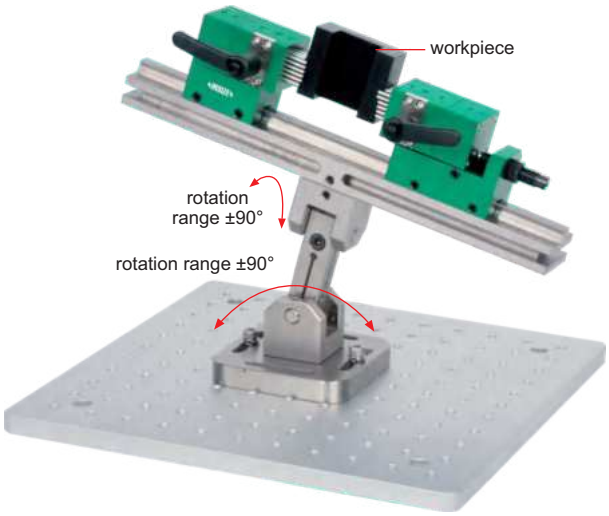


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VIDEO

CAN BE CUSTOMIZED

# JIGS FOR CMM (ANVIL Ø2.5mm)




**ISY-200**



**ISY-200-A**



**ISY-200-3**



**ISY-200-5**

| Code | Product | Remark |
|---|---|---|
| **ISY-200** | 3-piece jig set | including 1 pc **ISY-200-A**, 1 pc **ISY-200-3**, 1 pc **ISY-200-5** |

**(mm)**

| Code | Product | Clamping range | Anvil area | Anvil stroke |
|---|---|---|---|---|
| **ISY-200-A** | jigs for cmm | 0~170 | 20.5×23.3 | 12 |

**(mm)**

| Code | Product | Size | Hole size |
|---|---|---|---|
| **ISY-200-3** | base plate | 300×300×12 | M6 |

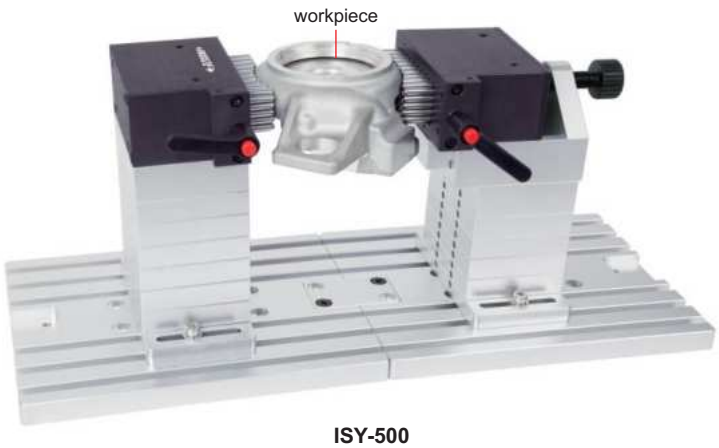
**(mm)**

| Code | Product | Size |
|---|---|---|
| **ISY-200-5** | two-way adjustable stand | 95×95×134.5 |

# JIGS FOR CMM (ANVIL Ø6mm)

CAN BE CUSTOMIZED

VIDEO




ISY-500



ISY-500-1



ISY-500-2



ISY-500-3



ISY-500-4



ISY-500-5



ISY-500-6



ISY-500-7

| Code | Product | Remark |
|---|---|---|
| ISY-500 | 19-piece jig set | including 1 pc **ISY-500-1**, 1 pc **ISY-500-2**, 2 pcs **ISY-500-3**, 10 pcs **ISY-500-4**, 2 pcs **ISY-500-5**, 1 pc **ISY-500-6**, 2 pcs **ISY-500-7** |

(mm)

| Code | Product | Size | Anvil area | Anvil stroke |
|---|---|---|---|---|
| ISY-500-1 | spring anvil | 134×90×90 | 36×100 | 24 |
| ISY-500-2 | adjustable spring anvil (range 0-40mm) | 134×120×130 | 36×100 | 24 |

(mm)

| Code | Product | Size |
|---|---|---|
| ISY-500-3 | base plate | 300×240×20 |
| ISY-500-4 | block | 120×90×20 |
| ISY-500-5 | connecting plate | 170×90×15 |
| ISY-500-6 | connecting block of base plate | 80×50×10 |
| ISY-500-7 | clamp handle | — |

VIDEO

CAN BE CUSTOMIZED

# JIGS FOR CMM (ANVIL Ø2.5mm)



ISY-300-1




ISY-300



ISY-300-2



ISY-300-3



ISY-300-4



ISY-300-5



ISY-300-6



ISY-300-7



ISY-300-8



ISY-300-9



ISY-300-10



ISY-300-11



ISY-300-12



ISY-300-13

| Code | Product | Remark |
|---|---|---|
| ISY-300 | 46-piece jig set | including 1 pc **ISY-300-1**, 2 pcs **ISY-300-2**, 1 pc **ISY-300-3**, 2 pcs **ISY-300-4**, 14 pcs **ISY-300-5**, 2 pcs **ISY-300-6**, 8 pcs **ISY-300-7**, 6 pcs **ISY-300-8**, 2 pcs **ISY-300-9**, 2 pcs **ISY-300-10**, 2 pcs **ISY-300-11**, 2 pcs **ISY-300-12**, 2 pcs **ISY-300-13** |

| Code | Product | Size | Hole size |
|---|---|---|---|
| ISY-300-1 | base plate | 300×300×12mm | M8 |

(mm)

| Code | Product | Size | Anvil area | Anvil stroke |
|---|---|---|---|---|
| ISY-300-2 | spring anvil | 60×40×75 | 20.5×23 | 14 |
| ISY-300-3 | spring anvil | Ø26×73 | 3.1cm² (hexagon) | 14 |

(mm)

| Code | Product | Size |
|---|---|---|
| ISY-300-4 | block | 50×50×50 |
| ISY-300-5 | block | 50×50×20 |
| ISY-300-6 | connecting plate | 110×50×10 |
| ISY-300-7 | block | Ø26×20 |
| ISY-300-8 | block | Ø26×30 |
| ISY-300-9 | connecting plate | 150×26×10 |
| ISY-300-10 | clip | 65×11 |
| ISY-300-11 | clip | 100×11 |
| ISY-300-12 | connecting block of clip stand | Ø26×20 |
| ISY-300-13 | clip stand | Ø8×75 |

# JIGS FOR CMM (ANVIL Ø6mm)

CAN BE CUSTOMIZED

VIDEO




**ISY-400**



**ISY-400-1**



**ISY-400-2**



**ISY-400-3**



**ISY-400-4**



**ISY-400-5**



**ISY-400-6**

| Code | Product | Remark |
|---|---|---|
| **ISY-400** | 28-piece jig set | including 3 pcs **ISY-400-1**, 9 pcs **ISY-400-2**, 9 pcs **ISY-400-3**, 1 pc **ISY-400-4**, 3 pcs **ISY-400-5**, 3 pcs **ISY-400-6** |

(mm)

| Code | Product | Size | Anvil area | Anvil stroke |
|---|---|---|---|---|
| **ISY-400-1** | spring anvil | 135×60×90 | 36×100 | 24 |

(mm)

| Code | Product | Size |
|---|---|---|
| **ISY-400-2** | block | 120×60×20 |
| **ISY-400-3** | block | 120×60×30 |
| **ISY-400-4** | base plate | 500×500×12 |
| **ISY-400-5** | connecting plate | 130×120×12 |
| **ISY-400-6** | clamp handle | — |



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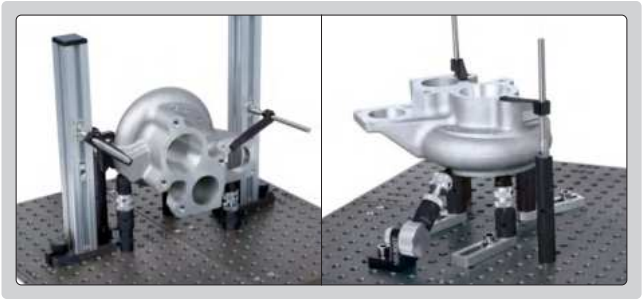
VIDEO

# 158-PIECE JIG SET FOR CMM
# CODE ISY-100



ISY-100

application examples

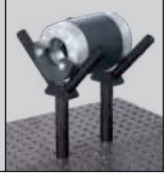


| Product | Code | Size (mm) | Quantity | Application |
|---|---|---|---|---|
| stand | **ISY-100-1001** | Ø16×30 | 5 | |
| | **ISY-100-1002** | Ø16×50 | 5 | |
| | **ISY-100-1003** | Ø16×100 | 3 | |
| stand | **ISY-100-1004** | Ø20×30 | 5 | |
| | **ISY-100-1005** | Ø20×50 | 5 | |
| | **ISY-100-1006** | Ø20×100 | 3 | |
| stand with fine adjustment | **ISY-100-2001** | Ø16×45~60 | 2 | height adjustment: 45~60mm |
| stand with fine adjustment | **ISY-100-2003** | Ø20×45~60 | 2 | |
| horizontal spring stand | **ISY-100-4001** | — | 2 | |

| Product | Code | Size (mm) | Quantity | Application |
|---|---|---|---|---|
| horizontal screw stand | **ISY-100-5001** | — | 2 | |
| magnetic stand (magnetic top surface ) | **ISY-100-7001** | Ø20×25 | 3 | |
| stand for slice parts | **ISY-100-8001** | Ø20×25 | 2 | **ISY-100-8001** and **ISY-100-8002** use cooperatively |
| clamping stand for slice parts | **ISY-100-8002** | | 1 | |

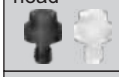
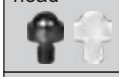
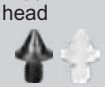
To be continued

Continued from previous page

| Product | Code | Size (mm) | Quantity | Application |
|---|---|---|---|---|
| clip  | **ISY-100-1201** | — | 2 |  |
| clip  | **ISY-100-1301** | — | 2 |  |
| clip stand  | **ISY-100-1401** | Ø6×60 | 2 | |
| | **ISY-100-1402** | Ø6×100 | 2 | |
| vertical square column  | **ISY-100-3003** | 30×30×250 | 2 |  |
| sliding support plate  | **ISY-100-1801** | 78×20×10 | 3 |  |
| clamping screw  | **ISY-100-2301** | Ø8×20 | 6 | |
| screw  | **ISY-100-2302** | Ø8×20 | 6 |  |
| base plate  | **ISY-600-400200** | 400×400×12 hole size: M8×1.25 hole center distance: 20 | 2 pieces | — |
| wrench  | **ISY-100-3701** | Ø3.8×70 | 1 | — |
| wrench  | **ISY-100-3801** | M2.5 | 1 | — |
| | **ISY-100-3802** | M5 | 1 | — |
| | **ISY-100-3803** | M6 | 1 | — |
| 45° stand   | **ISY-100-9001** | — | 2 |  |
| V shaped support   | **ISY-100-1901** | — | 2 |  |

| Product | Code | Quantity | Application |
|---|---|---|---|
| V shaped support   | **ISY-100-1902** | 2 |  |
| marker   | **ISY-6100-1501** | 52* |  |
| dust cleaner  | **ISY-100-3501** | 1 | — |
| lubricating oil  | **ISY-100-3601** | 1 | — |

*Letter A~Z, number 0~25

| Product | Code | Quantity | Material | Application |
|---|---|---|---|---|
| support head  | **ISY-100-27016** | 2 | aluminum |  |
| | **ISY-100-27018** | 2 | nylon | |
| support head  | **ISY-100-27026** | 2 | aluminum | |
| | **ISY-100-27028** | 2 | nylon | |
| support head  | **ISY-100-27036** | 2 | aluminum | |
| | **ISY-100-27038** | 2 | nylon | |
| support head  | **ISY-100-27046** | 2 | aluminum | |
| | **ISY-100-27048** | 2 | nylon | |
| support head  | **ISY-100-27056** | 2 | aluminum | |
| | **ISY-100-27058** | 2 | nylon | |
| support head  | **ISY-100-27066** | 2 | aluminum | |
| | **ISY-100-27068** | 2 | nylon | |
| support head  | **ISY-100-27076** | 2 | aluminum | |
| | **ISY-100-27078** | 2 | nylon | |



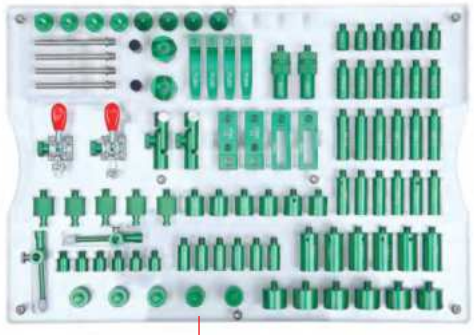
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# 99-PIECE JIG SET FOR CMM
# CODE ISY-600

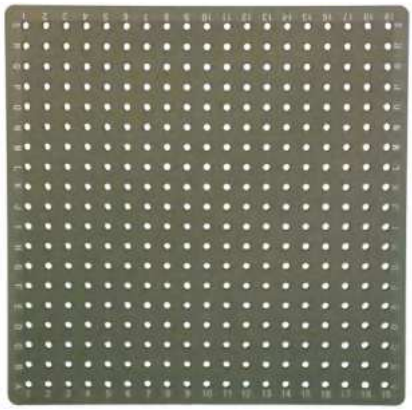
VIDEO

application example





acrylic tray (included)



**ISY-600**

| Product | Code | Size (mm) | Quantity |
|---|---|---|---|
| stand | **ISY-600-P1301** | Ø13×13 | 6 |
| | **ISY-600-P1302** | Ø13×20 | 6 |
| | **ISY-600-P1303** | Ø13×26 | 6 |
| stand | **ISY-600-P1304** | Ø13×32 | 6 |
| | **ISY-600-P1305** | Ø13×40 | 6 |
| | **ISY-600-P1306** | Ø13×45 | 6 |
| stand | **ISY-600-P1902** | Ø20×20 | 6 |
| | **ISY-600-P1905** | Ø20×38 | 6 |
| | **ISY-600-P2602** | Ø26×20 | 6 |
| spring stand | **ISY-600-P1522** | — | 2 |
| universal support | **ISY-600-J1560** | — | 2 |
| stand with fine adjustment | **ISY-600-J1501** | 48~60 | 2 |
| magnetic stand (magnetic top surface) | **ISY-600-J2020** | Ø20×20 | 5 |
| adaptor | **ISY-600-J2021** | Ø20×19 | 5 |
| V shaped support | **ISY-600-J2520** | Ø25×20 | 2 |
| clamping screw | **ISY-600-P2003** | M8x1.25 | 4 |

| Product | Code | Size (mm) | Quantity |
|---|---|---|---|
| sliding support plate | **ISY-600-J2060** | 60×20×10 | 2 |
| sliding support plate | **ISY-600-J2060-2** | 60×20×10 | 2 |
| clip | **ISY-600-P1266** | 12×66 | 4 |
| chuck support | **ISY-600-JS201** | — | 2 |
| clip stand | **ISY-600-P0684** | Ø6×74 | 4 |
| aluminum support head | **ISY-600-P2002** | — | 4 |
| nylon support head | **ISY-600-P2001** | — | 4 |
| base plate | **ISY-600-400** | 400×400×18 hole size: M8X1.25 | 1 |

# 22 PROFILE PROJECTORS, QUICK MEASUREMENT SYSTEMS, VISION MEASURING SYSTEMS



**Profile Projectors**
**Page 630-641**



**Quick Measurement Systems**
**Page 642-649**



**Horizontal Quick Measurement Systems**
**Page 650-651**



**2D+3D Composite CNC Vision Measuring Systems**
**Page 652-653**



**Horizontal Vision Measuring Systems**
**Page 654**



**Vision Measuring Systems**
**Page 655-670**



**Vision Measuring Softwares**
**Page 671-672**



**Jig Set For Vision Measuring Systems**
**Page 673**



**Standard Glass Scales**
**Page 674**



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INSPECTION CERTIFICATE

VIDEO



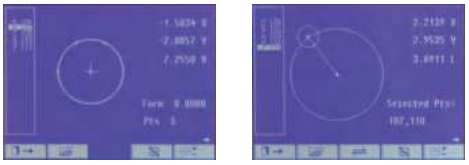
ISP-Z3015




ISP-A1000E

digital readout of **ISP-A1000E**

- touch buttons
- USB data output to Excel and CAD
- show diagram





software flash disk (included, only for **ISP-A1000E**)

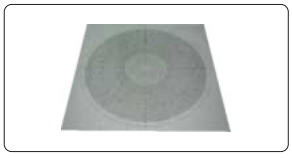
## OPTIONAL ACCESSORY



lens



rotary table (glass plate diameter 100mm)



overlay chart (protractor with 1° graduation, radius with 1mm increment)



holder with clamp



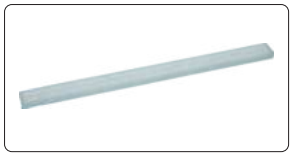
swivel center support



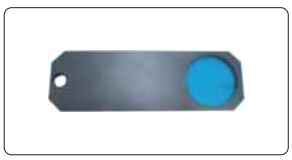
V-block with clamp



50mm reading scale (check magnification accuracy)



300mm calibration scale (check magnification accuracy together with 50mm reading scale or calibrate measuring accuracy)



blue filter



demo sample



printer (only for **ISP-A1000E**)

To be continued

Continued from previous page

## SPECIFICATION

| Code | | ISP-Z3015 | | ISP-A1000E | |
|---|---|---|---|---|---|
| Edge detector | | not included | | included | |
| Lens | magnification | 10X (included) | 20X (**optional**) | 50X (**optional**) | 100X (**optional**) |
| | view field | Ø30mm | Ø15mm | Ø6mm | Ø3mm |
| | working distance | 77.7mm | 44.3mm | 38.4mm | 25.3mm |
| Max. workpiece height | | 90mm | 90mm | 90mm | 90mm |
| Magnification accuracy | | ±0.08% | | | |
| Image | | erect image | | | |
| Projector screen | | diameter: Ø300mm | | | |
| | | rotation range: 0°~360°, resolution: 1" or 0.01° | | | |
| | | reference lines: cross-hairs | | | |
| Stage | metal stage size | 340×152mm | | | |
| | glass stage size | 196×96mm | | | |
| | X-Y stage travel | range: 150×50mm | | | |
| | | resolution: 0.5μm | | | |
| | | accuracy: (4+L/25)μm L is the measuring length in mm | | | |
| | Z (focus) travel range | 90mm | | | |
| | max. load capacity | 4kg | | | |
| Illumination | | contour illumination: 24V/150W halogen lamp, brightness is adjustable | | | |
| | | surface illumination: 24V/150W halogen lamp | | | |
| Data processing unit | display | X-Y stage travel, screen rotation | | | |
| | output | RS232C | | RS232C, USB (data output to Excel and CAD) | |
| | function | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>set origin of coordinate<br>coordinate transform<br>set midpoint of coordinate | | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>coordinate transform<br>choose measurement object automatically according to the selective point and display the result | |
| | advanced function | — | | programming for batch measurements | |
| Power supply | | 110/220V, 50/60Hz | | | |
| Dimension (L×W×H) | | 550×770×1100mm | | | |
| Weight | | 135kg | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 10X lens with half-reflection mirror and oblique illuminator mirror | 1 pc |
| Overlay chart clip | 4 pcs |
| Foot-switch | 1 pc |
| Anti-dust cover | 1 pc |
| Software (only for ISP-A1000E) and USB cable | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 20X lens with half-reflection mirror and oblique illuminator mirror | ISP-Z3015-LENS20X |
| 50X lens with half-reflection mirror | ISP-Z3015-LENS50X |
| 100X lens with half-reflection mirror | ISP-Z3015-LENS100X |
| Rotary table | ISP-Z3015-TABLE |
| Overlay chart | ISP-Z3015-CHART |
| Holder with clamp | ISP-Z3015-HOLDER |

| | |
|---|---|
| Swivel center support | ISP-Z3015-SUPPORT |
| V-block with clamp | ISP-Z3015-VBLOCK |
| 50mm reading scale | ISP-Z3015-SCALE50 |
| 300mm calibration scale | ISP-Z3015-RULE |
| Blue filter | ISP-Z3015-FILTER |
| Demo sample | ISP-Z3015-DEMO |
| Printer (only for ISP-A1000E) | ISP-A1000-PRINTER |

THE STAGE DOESN'T MOVE UP AND DOWN

INSPECTION CERTIFICATE

# HIGH PRECISION PROFILE PROJECTORS (WITH EDGE DETECTOR)

VIDEO



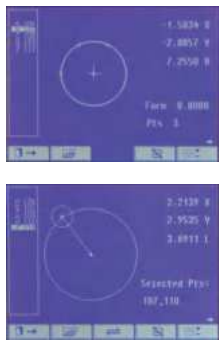

ISP-A5000E



software flash disk (included)

- Adjust the focus by ascending and descending the projector head, the stage doesn't move up and down
- Maximum workpiece weight 30kg

digital readout



- touch buttons
- USB data output to Excel and CAD
- show diagram

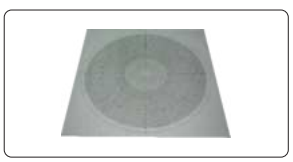
## OPTIONAL ACCESSORY



lens



rotary table (glass plate diameter 100mm)



overlay chart (protractor with 1° graduation, radius with 1mm increment)



holder with clamp



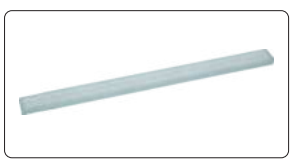
swivel center support



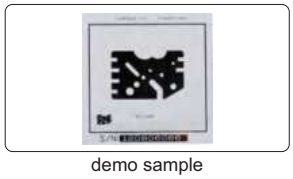
V-block with clamp



50mm reading scale (check magnification accuracy)



300mm calibration scale (check magnification accuracy together with 50mm reading scale or calibrate measuring accuracy)



demo sample



printer

To be continued

Continued from previous page

**SPECIFICATION**

| Code | | ISP-A4500E | ISP-A5000E | ISP-A5001E | ISP-A5002E | ISP-A5003E |
|---|---|---|---|---|---|---|
| Edge detector | | included | | | | |
| Lens | magnification | 10X (included) | 20X (**optional**) | 50X (**optional**) | 100X (**optional**) | |
| | view field | Ø30mm | Ø15mm | Ø6mm | Ø3mm | |
| | working distance | 77.7mm | 44.3mm | 38.4mm | 25.3mm | |
| Max. workpiece height | | 90mm | 90mm | 90mm | 90mm | |
| Magnification accuracy | | ±0.08% | | | | |
| Image | | erect image | | | | |
| Projector screen | | diameter: Ø300mm | | | | |
| | | rotation range: 0°~360°, resolution: 1" or 0.01° | | | | |
| | | reference lines: cross-hairs | | | | |
| Stage | metal stage size | 354×228mm | 404×228mm | 450×280mm | 500×330mm | 606×466mm |
| | glass stage size | 210×160mm | 260×160mm | 306×196mm | 321×221mm | 450×350mm |
| | X-Y stage travel range | 150×100mm | 200×100mm | 250×150mm | 295×195mm | 400×300mm |
| | resolution | 0.5μm | | | | |
| | accuracy | (3+L/75)μm L is the measuring length in mm | | | | |
| | Z (focus) travel range | 100mm | | | | |
| | max. load capacity | 30kg | | | | |
| Illumination | | contour illumination: 24V/150W halogen lamp, brightness is adjustable | | | | |
| | | surface illumination: 24V/150W halogen lamp | | | | |
| Data processing unit | display | X-Y stage travel, screen rotation | | | | |
| | output | RS232C, USB (data output to Excel and CAD) | | | | |
| | function | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>coordinate transform<br>choose measurement object automatically according to the selective point and display the result | | | | |
| | advanced function | programming for batch measurements | | | | |
| Power supply | | 110/220V, 50/60Hz | | | | |
| Dimension (L×W×H) | | 780×780×1100mm | 780×780×1100mm | 810×780×1120mm | 900×780×1120mm | 1040×780×1120mm |
| Weight | | 160kg | 160kg | 180kg | 180kg | 250kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| 10X lens with half-reflection mirror and oblique illuminator mirror | 1 pc |
| Overlay chart clip | 4 pcs |
| Foot-switch | 1 pc |
| Blue filter | 1 pc |
| Anti-dust cover | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| 20X lens with half-reflection mirror and oblique illuminator mirror | ISP-A5000-LENS20X |
| 50X lens with half-reflection mirror | ISP-A5000-LENS50X |
| 100X lens with half-reflection mirror | ISP-A5000-LENS100X |
| Rotary table (for ISP-A4500E/A5000E) | ISP-A5000-TABLE |
| Rotary table (for ISP-A5001E/A5002E) | ISP-A5001-TABLE |
| Rotary table (for ISP-A5003E) | ISP-A5003-TABLE |
| Printer | ISP-A5000-PRINTER |
| Swivel center support (for ISP-A4500E) | ISP-A4500-SUPPORT |
| Swivel center support (for ISP-A5000E/A5001E) | ISP-A5000-SUPPORT |
| Overlay chart | ISP-A5000-CHART |
| Holder with clamp | ISP-A5000-HOLDER |
| V-block with clamp | ISP-A5000-VBLOCK |
| 50mm reading scale | ISP-A5000-SCALE50 |
| 300mm calibration scale | ISP-A5000-RULE |
| Demo sample | ISP-A5000-DEMO |

THE STAGE DOESN'T MOVE UP AND DOWN

INSPECTION CERTIFICATE

# HIGH PRECISION PROFILE PROJECTORS (WITHOUT EDGE DETECTOR)

VIDEO



ISP-AZ3020

- Adjust the focus by ascending and descending the projector head, the stage doesn't move up and down
- Maximum workpiece weight 30kg

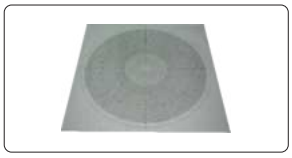
## OPTIONAL ACCESSORY



lens



rotary table
(glass plate diameter 100mm)



overlay chart (protractor with 1° graduation, radius with 1mm increment)



holder with clamp



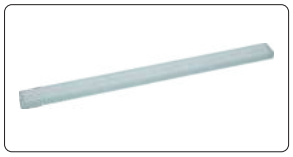
swivel center support



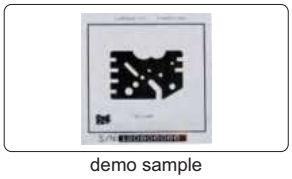
V-block with clamp



50mm reading scale
(check magnification accuracy)



300mm calibration scale (check magnification accuracy together with 50mm reading scale or calibrate measuring accuracy)



demo sample

To be continued

Continued from previous page

**SPECIFICATION**

| Code | | ISP-AZ3010 | ISP-AZ3020 | ISP-AZ3025 | ISP-AZ3030 | ISP-AZ3040 |
|---|---|---|---|---|---|---|
| Edge detector | | not included | | | | |
| Lens | magnification | 10X (included) | 20X (**optional**) | 50X (**optional**) | 100X (**optional**) | |
| | view field | Ø30mm | Ø15mm | Ø6mm | Ø3mm | |
| | working distance | 77.7mm | 44.3mm | 38.4mm | 25.3mm | |
| Max. workpiece height | | 90mm | 90mm | 90mm | 90mm | |
| Magnification accuracy | | ±0.08% | | | | |
| Image | | erect image | | | | |
| Projector screen | | diameter: Ø300mm | | | | |
| | | rotation range: 0°~360°, resolution: 1" or 0.01° | | | | |
| | | reference lines: cross-hairs | | | | |
| Stage | metal stage size | 354×228mm | 404×228mm | 450×280mm | 500×330mm | 606×466mm |
| | glass stage size | 210×160mm | 260×160mm | 306×196mm | 321×221mm | 450×350mm |
| | X-Y stage travel range | 150×100mm | 200×100mm | 250×150mm | 295×195mm | 400×300mm |
| | resolution | 0.5μm | | | | |
| | accuracy | (3+L/75)μm L is the measuring length in mm | | | | |
| | Z (focus) travel range | 100mm | | | | |
| | max. load capacity | 30kg | | | | |
| Illumination | | contour illumination: 24V/150W halogen lamp, brightness is adjustable | | | | |
| | | surface illumination: 24V/150W halogen lamp | | | | |
| Data processing unit | display | X-Y stage travel, screen rotation | | | | |
| | output | RS232C | | | | |
| | function | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>set origin of coordinate<br>coordinate transform<br>set midpoint of coordinate | | | | |
| Power supply | | 110/220V, 50/60Hz | | | | |
| Dimension (L×W×H) | | 780×780×1100mm | 780×780×1100mm | 810×780×1120mm | 900×780×1120mm | 1040×780×1120mm |
| Weight | | 160kg | 160kg | 180kg | 180kg | 250kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| 10X lens with half-reflection mirror and oblique illuminator mirror | 1 pc |
| Overlay chart clip | 4 pcs |
| Foot-switch | 1 pc |
| Blue filter | 1 pc |
| Anti-dust cover | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| 20X lens with half-reflection mirror and oblique illuminator mirror | ISP-A5000-LENS20X |
| 50X lens with half-reflection mirror | ISP-A5000-LENS50X |
| 100X lens with half-reflection mirror | ISP-A5000-LENS100X |
| Rotary table (for ISP-AZ3010/3020) | ISP-A5000-TABLE |
| Rotary table (for ISP-AZ3025/3030) | ISP-A5001-TABLE |
| Rotary table (for ISP-AZ3040) | ISP-A5003-TABLE |

| | |
|---|---|
| Swivel center support (for ISP-AZ3010) | ISP-A4500-SUPPORT |
| Swivel center support (for ISP-AZ3020/3025) | ISP-A5000-SUPPORT |
| Overlay chart | ISP-A5000-CHART |
| Holder with clamp | ISP-A5000-HOLDER |
| V-block with clamp | ISP-A5000-VBLOCK |
| 50mm reading scale | ISP-A5000-SCALE50 |
| 300mm calibration scale | ISP-A5000-RULE |
| Demo sample | ISP-A5000-DEMO |



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VIDEO

INSPECTION CERTIFICATE

# HORIZONTAL PROFILE PROJECTORS



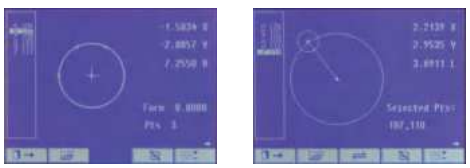
ISP-W3020




ISP-A3000E

digital readout of **ISP-A3000E**

- touch buttons
- USB data output to Excel and CAD
- show diagram



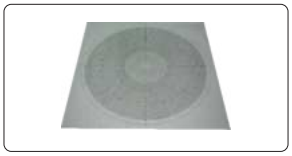


software flash disk (included, only for **ISP-A3000E**)

## OPTIONAL ACCESSORY



lens



overlay chart (protractor with 1° graduation, radius with 1mm increment)



50mm reading scale (check magnification accuracy)



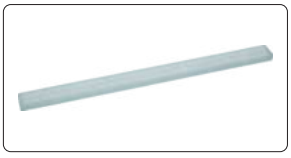
demo sample



vise



rotary table



300mm calibration scale (check magnification accuracy together with 50mm reading scale or calibrate measuring accuracy)



printer (only for **ISP-A3000E**)

To be continued

Continued from previous page

## SPECIFICATION

| Code | | ISP-W3020 | | ISP-A3000E | |
|---|---|---|---|---|---|
| Edge detector | | not included | | included | |
| Lens | magnification | 10X (included) | 20X (**optional**) | 50X (**optional**) | 100X (**optional**) |
| | view field | Ø30mm | Ø15mm | Ø6mm | Ø3mm |
| | working distance | 77.7mm | 44.3mm | 38.4mm | 25.3mm |
| Magnification accuracy | | ±0.08% | | | |
| Projector screen | | diameter: Ø300mm | | | |
| | | rotation range: 0°~360°, resolution: 1' or 0.01° | | | |
| | | reference lines: cross-hairs | | | |
| Stage | metal stage size | 400×150mm | | | |
| | turning range | ±15° | | | |
| | X-Z stage travel | range: 200×100mm | | | |
| | | resolution: 0.5μm | | | |
| | | accuracy: (4+L/25)μm L is the measuring length in mm | | | |
| | Y (focus) travel range | 75mm | | | |
| | max. load capacity | 50kg | | | |
| Illumination | | contour illumination: 24V/150W halogen lamp, brightness is adjustable | | | |
| | | surface illumination: 12V/150W halogen lamp (with 2 fibers), position is adjustable | | | |
| Data processing unit | display | X-Z stage travel, screen rotation | | | |
| | output | RS232C | | RS232C, USB (data output to Excel and CAD) | |
| | function | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>set origin of coordinate<br>coordinate transform<br>set midpoint of coordinate | | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>coordinate transform<br>choose measurement object automatically according to the selective point and display the result | |
| | advanced function | — | | programming for batch measurements | |
| Power supply | | 110/220V, 50/60Hz | | | |
| Dimension (L×W×H) | | 830×1090×1010mm | | | |
| Weight | | 160kg | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 10X lens | 1 pc |
| Overlay chart clip | 4 pcs |
| Foot-switch | 1 pc |
| Anti-dust cover | 1 pc |
| Software (only for ISP-A3000E) and USB cable | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 20X lens | ISP-A3000-LENS20X |
| 50X lens | ISP-A3000-LENS50X |
| 100X lens | ISP-A3000-LENS100X |
| Overlay chart | ISP-A3000-CHART |
| 50mm reading scale | ISP-A3000-SCALE50 |
| 300mm calibration scale | ISP-A3000-RULE |

| | |
|---|---|
| Demo sample | ISP-A3000-DEMO |
| V-block with clamp | ISP-A3000-VBLOCK |
| Rotary table | ISP-A3000-RTABLE |
| Vise | ISP-A3000-VISE |
| Printer (only for ISP-A3000E) | ISP-A3000-PRINTER |

VIDEO

INSPECTION CERTIFICATE

# HORIZONTAL PROFILE PROJECTORS



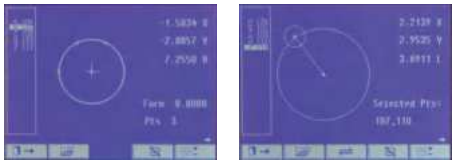
**ISP-W4025**




**ISP-A7000E**

digital readout of **ISP-A7000E**

- touch buttons
- USB data output to Excel and CAD
- show diagram



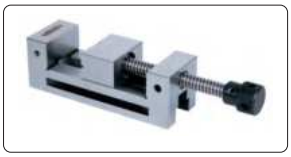


software flash disk (included, only for **ISP-A7000E**)

## OPTIONAL ACCESSORY



lens



vise



rotary table



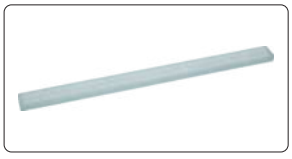
demo sample (need rotary table)



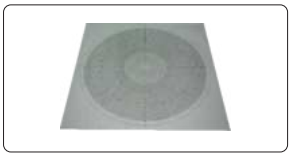
printer (only for **ISP-A7000E**)



50mm reading scale (check magnification accuracy)



300mm calibration scale (check magnification accuracy together with 50mm reading scale or calibrate measuring accuracy)



Ø300mm overlay chart (protractor with 1° graduation, radius with 1mm increment)

To be continued

Continued from previous page

## SPECIFICATION

| | | | | | | |
|---|---|---|---|---|---|---|
| **Code** | | **ISP-W4025** | | **ISP-A7000E** | | |
| **Edge detector** | | not included | | included | | |
| **Lens** | **magnification** | 5X (**optional**) | 10X (standard) | 20X (**optional**) | 50X (**optional**) | 100X (**optional**) |
| | **view field** | Ø80mm | Ø40mm | Ø20mm | Ø8mm | Ø4mm |
| | **working distance** | 93.7mm | 103.9mm | 95.1mm | 65.7mm | 35mm |
| **Magnification accuracy** | | ±0.08% | | | | |
| **Image** | | erect image | | | | |
| **Projector screen** | | diameter: Ø400mm | | | | |
| | | rotation range: 0°~360°, resolution: 1' or 0.01° | | | | |
| | | reference lines: cross-hairs | | | | |
| **Stage** | **metal stage size** | 450×200mm | | | | |
| | **turning range** | ±15° | | | | |
| | **X-Z stage travel** | range: 250×150mm | | | | |
| | | resolution: 0.5μm | | | | |
| | | accuracy: (4+L/25)μm L is the measuring length in mm | | | | |
| | **Y (focus) travel range** | 100mm | | | | |
| | **max. load capacity** | 50kg | | | | |
| **Illumination** | | contour illumination: 24V/150W halogen lamp, brightness is adjustable | | | | |
| | | surface illumination: 12V/150W halogen lamp (with 2 fibers), position is adjustable | | | | |
| **Data processing unit** | **display** | X-Z stage travel, screen rotation | | | | |
| | **output** | RS232C | | RS232C, USB (data output to Excel and CAD) | | |
| | **function** | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>set origin of coordinate<br>coordinate transform<br>set midpoint of coordinate | | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>coordinate transform<br>choose measurement object automatically according to the selective point and display the result | | |
| | **advanced function** | — | | programming for batch measurements | | |
| **Power supply** | | 110/220V, 50/60Hz | | | | |
| **Dimension (L×W×H)** | | 646×1215×1210mm | | | | |
| **Weight** | | 240kg | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **10X lens** | 1 pc |
| **Overlay chart clip** | 4 pcs |
| **Foot-switch** | 1 pc |
| **Anti-dust cover** | 1 pc |
| **Software (only for ISP-A7000E) and USB cable** | 1 pc |



## OPTIONAL ACCESSORY

| | |
|---|---|
| **5X lens** | **ISP-W4025-LENS5X** |
| **20X lens** | **ISP-W4025-LENS20X** |
| **50X lens** | **ISP-W4025-LENS50X** |
| **100X lens** | **ISP-W4025-LENS100X** |
| **Ø300mm overlay chart** | **ISP-A3000-CHART** |
| **50mm reading scale** | **ISP-A3000-SCALE50** |

| | |
|---|---|
| **300mm calibration scale** | **ISP-A3000-RULE** |
| **Demo sample** | **ISP-A3000-DEMO** |
| **V-block with clamp** | **ISP-A3000-VBLOCK** |
| **Rotary table** | **ISP-A3000-RTABLE** |
| **Vise** | **ISP-A3000-VISE** |
| **Printer (only for ISP-A7000E)** | **ISP-A3000-PRINTER** |



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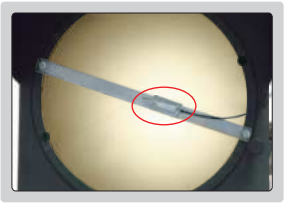
VIDEO

INSPECTION CERTIFICATE

# PROFILE PROJECTORS



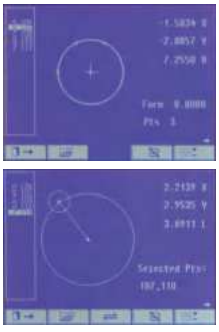

**ISP-A6000 (without edge detector)**



edge detector (for **ISP-A6000E**)

digital readout

- touch buttons
- USB data output to Excel and CAD
- show diagram





software flash disk (included)

## OPTIONAL ACCESSORY



lens



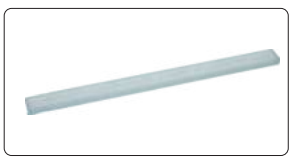
rotary table
(glass plate diameter 100mm)



holder with clamp



printer



300mm calibration scale (check magnification accuracy together with 50mm reading scale or calibrate measuring accuracy)



50mm reading scale
(check magnification accuracy)



demo sample

To be continued

Continued from previous page

## SPECIFICATION

| Code | | ISP-A6000 | | | | ISP-A6000E |
|---|---|---|---|---|---|---|
| Edge detector | | not included | | | | included |
| Projector screen | | diameter: Ø600mm | | | | |
| | | rotation range: 0°~360°, resolution: 1' or 0.01° | | | | |
| | | reference lines: cross-hairs | | | | |
| Lens | magnification | 5X (**optional**) | 10X (included) | 20X (**optional**) | 50X (**optional**) | 100X (**optional**) |
| | view field | Ø120mm | Ø60mm | Ø30mm | Ø12mm | Ø6mm |
| | working distance | 242.8mm | 143.2mm | 85.5mm | 92mm | 48.5mm |
| Magnification accuracy | | ±0.08% | | | | |
| Image | | erect image | | | | |
| Stage | metal stage size | 404×265mm | | | | |
| | glass stage size | 270×170mm | | | | |
| | X-Y stage travel | range: 200×100mm | | | | |
| | | resolution: 0.5μm | | | | |
| | | accuracy: (3+L/50)μm L is the measuring length in mm | | | | |
| | Z (focus) travel range | 50mm | | | | |
| | max. load capacity | 5kg | | | | |
| Illumination | | contour illumination: 24V/150W halogen lamp, brightness is adjustable | | | | |
| | | surface illumination: 12V/150W halogen lamp (with 2 fibers), position is adjustable | | | | |
| Data processing unit | display | X-Y stage travel, screen rotation | | | | |
| | output | RS232C, USB (data output to Excel and CAD) | | | | |
| | function | measure coordinate of point<br>measure coordinate of line<br>measure center coordinate, radius of circle with three points<br>measure distance between two objects<br>measure angle with four points or two lines<br>coordinate transform<br>choose measurement object automatically according to the selective point and display the result | | | | |
| | advanced function | programming for batch measurements | | | | |
| Power supply | | 110/220V, 50/60Hz | | | | |
| Dimension (L×W×H) | | 1200×1140×1940mm | | | | |
| Weight | | 360kg | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 10X lens | 1 pc |
| Foot-switch | 1 pc |
| Software and USB cable | 1 pc |
| Overlay chart clip | 4 pcs |
| Anti-dust cover | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 5X lens | ISP-A6000-LENS5X |
| 20X lens | ISP-A6000-LENS20X |
| 50X lens | ISP-A6000-LENS50X |
| 100X lens | ISP-A6000-LENS100X |
| Holder with clamp | ISP-A6000-HOLDER |

| | |
|---|---|
| 300mm calibration scale | ISP-A6000-RULE |
| 50mm reading scale | ISP-A6000-SCALE50 |
| Rotary table | ISP-A6000-TABLE |
| Demo sample | ISP-A6000-DEMO |
| Printer | ISP-A6000-PRINTER |

# LARGE SIZE QUICK MEASUREMENT SYSTEM
# CODE QMS-A450




**SPECIFICATION**

| | | | |
|---|---|---|---|
| **Optical lens** | | dual-field dual-telecentric low-distortion lens | |
| **Measurement range** | | wide view field | small view field |
| | | 500×400mm | 430×350mm |
| **Measurement Accuracy*** | **without stitching** | ±3μm① | ±1μm② |
| | **with stitching** | ±(5+0.02L)μm③ | ±(3+0.02L)μm④ |
| **Repeatability** | **without stitching** | ±1μm | ±0.5μm |
| | **with stitching** | ±2μm | ±1.5μm |
| **Illumination system** | **transmission light** | telecentric illuminator, green light | |
| | **surface light** | vertical illuminator, high angle ring white light<br>vertical illuminator, 4-zone low and medium angle ring white light (eletric)<br>vertical illuminator, circular (directional) green light (eletric) | |
| | **coaxial light (optional)** | vertical illuminator, white light | |
| **Max. weight of workpiece** | | 25kg | |
| **Measurement time** | | <2s | |
| **Measurement data** | | 2D measurement | |
| **Environmental requirement** | | temperature: 20°C±2°C, relative humidity: 30%~80%, vibration: <0.002g, less than 15Hz | |
| **Power supply** | | 220V, 50Hz, 1200W | |
| **Dimension (L×W×H)** | | 1060×860×1890mm | |
| **Weight** | | 650kg | |

* The optimum temperature is 20°C±1°C
①Within 73×49mm, on focal position and environment temperature at 20°C±1°C
②Within 16×12mm, on focal position and environment temperature at 20°C±1°C
③Within 450×360mm, on focal position and environment temperature at 20°C±1°C
④Within 387×315mm, on focal position and environment temperature at 20°C±1°C

To be continued

Continued from previous page

- One or more workpieces can be measured by one step operation
- Place workpieces at any position
- Focus and measure automatically
- Measurement of 999+dimensions and 200+workpieces
- Suitable for parts with high precision requirements for large, medium, and small sizes

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |

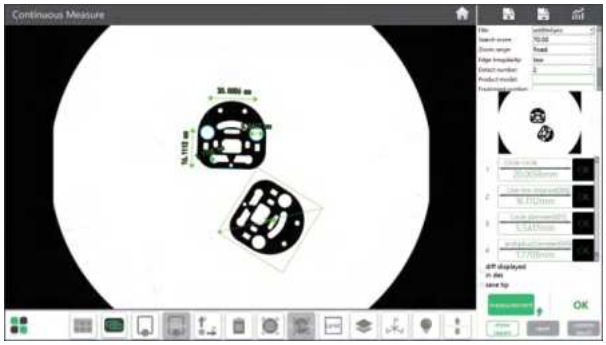
**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Coaxial light illumination** | **QMS-43-A1** |
| **Data transmission function of software** | **QMS-23-D1** |
| **CAD import function of software** | **QMS-23-C1** |
| **Laser sensor** | **QMS-43-SJ1** |
| **Foot-switch** | **QMS-43-FS1** |

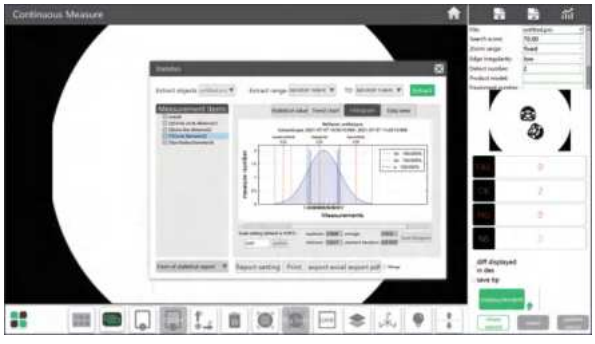
**Software (included)**

- Automatically measure widths, holes, rings, angles at the same time, simple and efficient




- Measuring result can be stored automatically. OK items and NG items can be counted automatically






SMALL VIEW FIELD SUITABLE FOR MEASURING SMALL SIZES SUCH AS THREADS AND CHAMFERS

# HIGH PRECISION QUICK MEASUREMENT SYSTEM
# CODE QMS-H210

VIDEO




**SPECIFICATION**

| | | | |
|---|---|---|---|
| **Optical lens** | | dual-field dual-telecentric low-distortion lens | |
| **Measurement range** | | wide view field | small view field |
| | | 210×130mm | 200×100mm |
| **Measurement Accuracy*** | **without stitching** | ±2μm① | ±0.7μm② |
| | **with stitching** | ±(4+0.02L)μm③ | ±(2.7+0.02L)μm④ |
| **Repeatability** | **without stitching** | ±1μm | ±0.25μm |
| | **with stitching** | ±2μm | ±1.25μm |
| **Illumination system** | **transmission light** | telecentric illuminator, green light | |
| | **surface light** | vertical illuminator, high angle ring white light<br>vertical illuminator, 4-zone low and medium angle ring white light (eletric)<br>vertical illuminator, circular (directional) green light (eletric) | |
| | **coaxial light** | vertical illuminator, white light | |
| **Max. weight of workpiece** | | 5kg | |
| **Measurement time** | | <2s | |
| **Measurement data** | | 2D measurement | |
| **Environmental requirement** | | temperature: 20°C±2°C, relative humidity: 30%~80%, vibration: <0.002g, less than 15Hz | |
| **Power supply** | | 220V, 50Hz, 600W | |
| **Dimension (L×W×H)** | | 460×515×740mm | |
| **Weight** | | 45kg | |

*The optimum temperature is 20°C±1°C
① Within 20×20mm, on focal position and environment temperature at 20°C±1°C
② Within 8×5mm, on focal position and environment temperature at 20°C±1°C
③ Within 189×117mm, on focal position and environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the travel of stage
④ Within 180×90mm, on focal position and environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the travel of stage

To be continued



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Continued from previous page

- One or more workpieces can be measured by one step operation
- Place workpieces at any position
- Focus and measure automatically
- Measurement of 999+dimensions and 300+workpieces
- Suitable for parts with high precision for medium and small sizes



rotary table (**optional**)



11.6" LCD (**optional**)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |

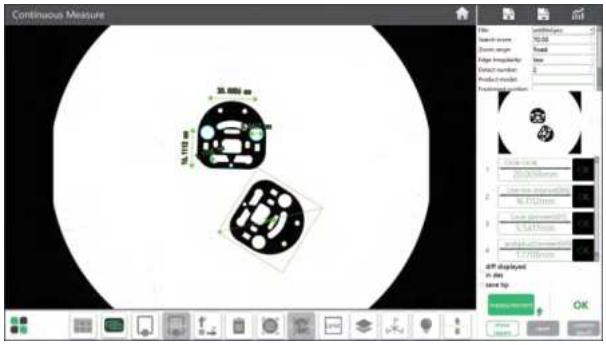
**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Data transmission function of software** | **QMS-23-D1** |
| **CAD import function of software** | **QMS-23-C1** |
| **Laser sensor** | **QMS-43-SJ1** (must be installed in factory) |
| **Foot-switch** | **QMS-43-FS1** |
| **11.6" LCD** | **QMS-23-B1** (must be installed in factory) |
| **MES transmission function of software** | **QMS-23-E1** |
| **Rotary table** | **QMS-43-RT1** (must be installed in factory) |

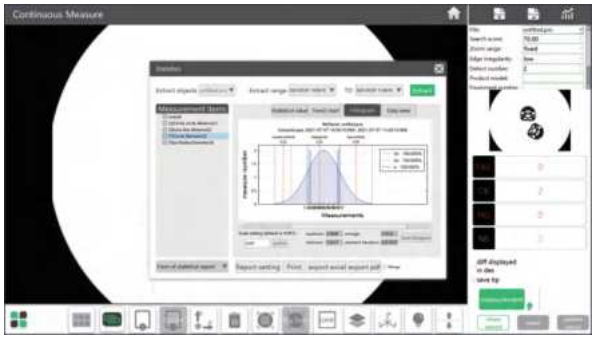
**Software (included)**

- Automatically measure widths, holes, rings, angles at the same time, simple and efficient




- Measuring result can be stored automatically. OK items and NG items can be counted automatically






SMALL VIEW FIELD OF QMS-A220 AND QMS-A315 SUITABLE FOR MEASURING SMALL SIZES SUCH AS THREADS AND CHAMFERS

# QUICK MEASUREMENT SYSTEMS (WITH STITCHING)

VIDEO




QMS-A220 QMS-A320

**SPECIFICATION**

| Code | | QMS-A220 | | QMS-A315 | | QMS-A320 | |
|---|---|---|---|---|---|---|---|
| Optical lens | | dual-field dual-telecentric low-distortion lens | | | | | |
| | | wide view field: Ø100mm<br>small view field: Ø25mm | | wide view field: Ø100mm<br>small view field: Ø25mm | | wide view field: Ø150mm<br>small view field: Ø50mm | |
| View field range | | wide view field | small view field | wide view field | small view field | wide view field | small view field |
| | | 93×62mm | 20×16mm | 100×80mm | 25×20mm | 150×110mm | 50×35mm |
| Measurement range | | 200×200mm | 130×130mm | 300×200mm | 230×130mm | 300×210mm | 200×135mm |
| Measurement accuracy * | without stitching | ±3μm① | ±1μm② | ±3μm① | ±1μm② | ±5μm③ | ±2μm④ |
| | with stitching | ±(5+0.02L)μm⑤ | ±(3+0.02L)μm⑥ | ±(5+0.02L)μm⑦ | ±(3+0.02L)μm⑧ | ±(7+0.02L)μm⑨ | ±(4+0.02L)μm⑩ |
| Repeatability | without stitching | ±1μm | ±0.5μm | ±1μm | ±0.5μm | ±1μm | ±0.5μm |
| | with stitching | ±2μm | ±1.5μm | ±2μm | ±1.5μm | ±2μm | ±1.5μm |
| Max. weight of workpiece | | 5kg | | | | | |
| Measurement time | | <2s | | | | | |
| Measurement data | | 2D measurement | | | | | |
| Power supply | | 220V, 50Hz, 600W | | | | | |
| Illumination system | back light | telecentric illuminator, green light | | | | | |
| | ring light | 4-zone circular white high light<br>circular (directional) low-angle green light (eletric) | | | | | |
| | coaxial light (optional) | vertical illuminator, white light | | | | | |
| Environmental requirement | | temperature: 20°C±2°C, relative humidity: 30%~80%, vibration: <0.002g, less than 15Hz | | | | | |
| Dimension (L×W×H) | | 532×480×766mm | | 532×497×766mm | | 669×510×883mm | |
| Weight | | 50kg | | 60kg | | 68kg | |

* The optimum temperature is 20°C±1°C
① Within 80×64mm, on focal position and environment temperature at 20°C±1°C
② Within 20×16mm, on focal position and environment temperature at 20°C±1°C
③ Within 120×88mm, on focal position and environment temperature at 20°C±1°C
④ Within 40×28mm, on focal position and environment temperature at 20°C±1°C
⑤ Within 180×180mm, on focal position, environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the travel of stage
⑥ Within 117×117mm, on focal position, environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the travel of stage
⑦ Within 270×180mm, on focal position, environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the travel of stage
⑧ Within 207×117mm, on focal position, environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the travel of stage
⑨ Within 270×189mm, on focal position, environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the travel of stage
⑩ Within 180×121mm, on focal position, environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the travel of stage

To be continued

Continued from previous page

- One or more workpieces can be measured by one step operation
- Place workpieces at any position
- Focus and measure automatically
- Measurement of 999+dimensions and 200+workpieces
- **QMS-A220** and **QMS-A315** are suitable for small and medium-size parts with high precision requirements
- **QMS-A320** is suitable for medium-size parts with low accuracy requirements and fast efficiency requirements



rotary table (**optional**)



11.6" LCD (**optional**)

**STANDARD DELIVERY**

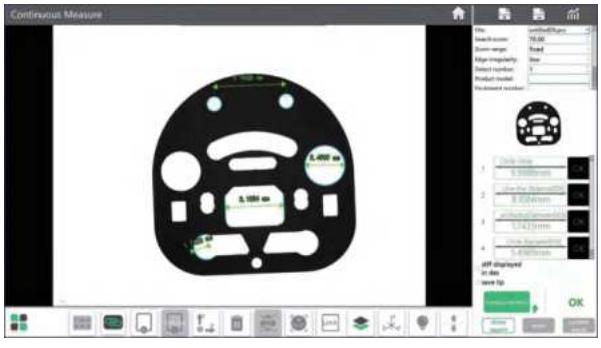
| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |

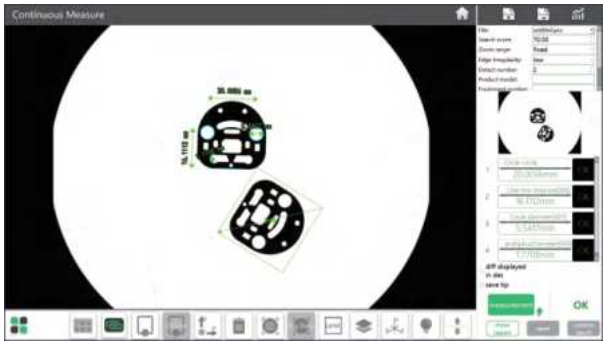
**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Coaxial light illumination** | **QMS-23-A3** (for **QMS-A220, QMS-A315**) |
| | **QMS-23-A4** (for **QMS-A320**) |
| **Data transmission function of software** | **QMS-23-D1** |
| **CAD import function of software** | **QMS-23-C1** |
| **Laser sensor** | **QMS-43-SJ1** (for **QMS-A315**) |
| **Foot-switch** | **QMS-43-FS1** |
| **11.6" LCD** | **QMS-23-B1** (must be installed in factory) |
| **Rotary table** | **QMS-43-RT1** (must be installed in factory) |

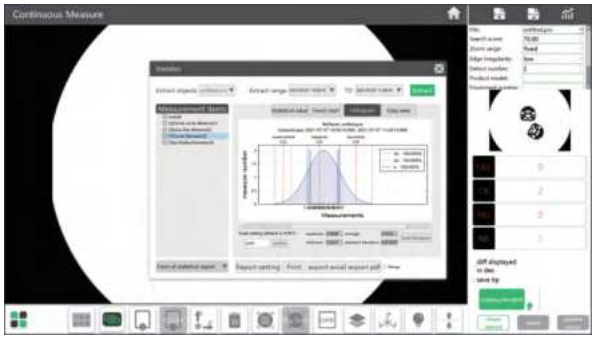
**Software (included)**

- Automatically measure widths, holes, rings, angles at the same time, simple and efficient




- Measuring result can be stored automatically. OK items and NG items can be counted automatically






NOTE: NOT SUITABLE FOR SMALL SIZES SUCH AS THREADS, CHAMFERS, ETC.

# QUICK MEASUREMENT SYSTEMS (WITHOUT STITCHING)

VIDEO




QMS-A110




QMS-A200

**SPECIFICATION**

| Code | | QMS-A110 | QMS-A200 | |
|---|---|---|---|---|
| Optical lens | | low-distortion lens, single-field telecentric Ø100mm | dual-field dual-telecentric low-distortion lens<br>wide view field: Ø150mm<br>small view field: Ø50mm | |
| View field range | | 100×80mm | wide view field | small view field |
| | | | 150×110mm | 50×35mm |
| Measurement range (X×Y) | | 98×78mm | 148×108mm | 48×33mm |
| Measurement accuracy * | | ±3μm ① | ±5μm ② | ±2μm ③ |
| Repeatability | | ±1μm | ±1μm | ±0.5μm |
| Max. weight of workpiece | | 5kg | | |
| Measurement time | | <2s | | |
| Measurement data | | 2D measurement | | |
| Power supply | | 220V, 50Hz, 600W | | |
| Illumination system | back light | telecentric illuminator, green light | | |
| | ring light | 4-zone circular white high light<br>circular (directional) low-angle green light (eletric) | | |
| | coaxial light (optional) | vertical illuminator, white light | | |
| Environmental requirement | | temperature: 20°C±2°C, relative humidity: 30%~80%, vibration: <0.002g, less than 15Hz | | |
| Dimension (L×W×H) | | 580×235×790mm | 638×336×885mm | |
| Weight | | 40kg | 60kg | |

* The optimum temperature is 20°C±1°C
① Within 80×64mm, on focal position and environment temperature at 20°C±1°C
② Within 120×88mm, on focal position and environment temperature at 20°C±1°C
③ Within 40×28mm, on focal position and environment temperature at 20°C±1°C

To be continued

Continued from previous page

- One or more workpieces can be measured by one step operation
- Place workpieces at any position
- Focus and measure automatically
- Measurement of 999+dimensions and 200+workpieces
- **QMS-A110** is suitable for measuring small flat parts
- **QMS-A200** is suitable for measuring flat parts with low precision requirements and small surface sizes



11.6" LCD (**optional**)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |

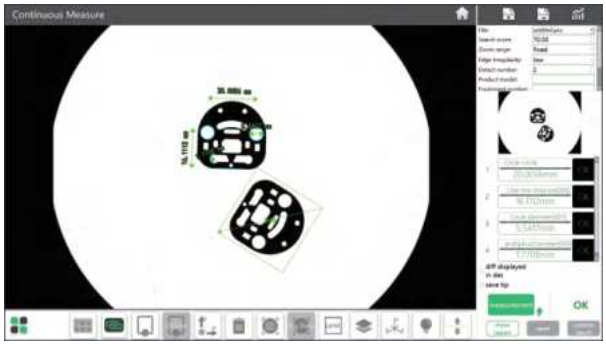
**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Coaxial light illumination** | **QMS-23-A3** (for **QMS-A110**) |
| | **QMS-23-A4** (for **QMS-A200**) |
| **Data transmission function of software** | **QMS-23-D1** |
| **CAD import function of software** | **QMS-23-C1** |
| **Foot-switch** | **QMS-43-FS1** |
| **11.6" LCD** | **QMS-23-B1** (must be installed in factory) |

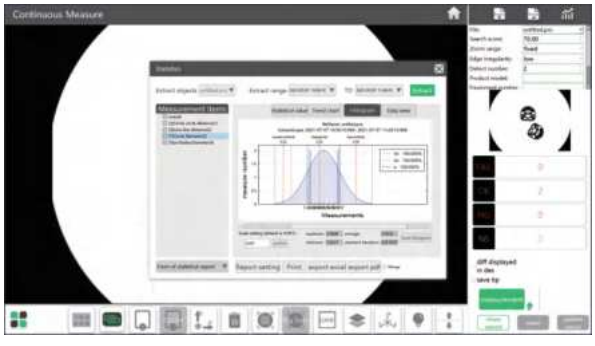
**Software (included)**

- Automatically measure widths, holes, rings, angles at the same time, simple and efficient





- Measuring result can be stored automatically. OK items and NG items can be counted automatically





SUITABLE FOR MEASURING SHAFT WORKPIECES

# HORIZONTAL QUICK MEASUREMENT SYSTEM
# CODE QMS-B530

VIDEO




- One or more workpieces can be measured by one step operation
- Focus and measure automatically
- Suitable for measuring shaft workpieces

**SPECIFICATION**

| | | |
|---|---|---|
| **Optical lens** | | Ø100mm dual-telecentric lens |
| **Measurement range** | | 100×80mm |
| **Measurement accuracy*** | **axial** | ±(5+L/20)μm① |
| | **radial** | ±(3+D/20)μm② |
| **Repeatability** | **axial** | ±2μm |
| | **radial** | ±1μm |
| **Illumination system** | **transmission light** | telecentric illuminator, green light |
| | **surface light (optional)** | high angle ring, white light |
| **Max. weight of workpiece** | | 3kg |
| **Measurement time** | | <2s |
| **Measurement data** | | 2D measurement |
| **Environmental requirement** | | temperature: 20°C±2°C, relative humidity: 30%~80%, vibration: <0.002g, less than 15Hz |
| **Power supply** | | 220V, 50Hz, 600W |
| **Dimension (L×W×H)** | | 790×230×385mm |
| **Weight** | | 27kg |

* The optimum temperature is 20°C±1°C
① on focal position and environment temperature at 20°C±1°C, and workpiece is less than 2kg, L is the workpiece length in mm
②on focal position and environment temperature at 20°C±1°C, and workpiece is less than 2kg, D is the workpiece diameter in mm

To be continued



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**STANDARD DELIVERY**

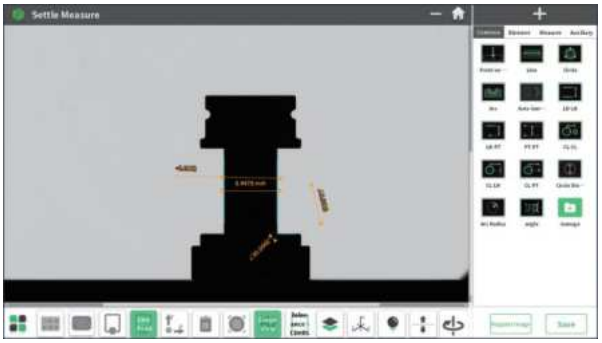
| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Data transmission software** | **QMS-23-D1** |
| **CAD import software** | **QMS-23-C1** |
| **Foot-switch** | **QMS-43-FS1** |
| **MES transmission software** | **QMS-23-E1** |
| **Surface light** | **QMS-23-F1** (must be installed in factory) |

**Software (included)**

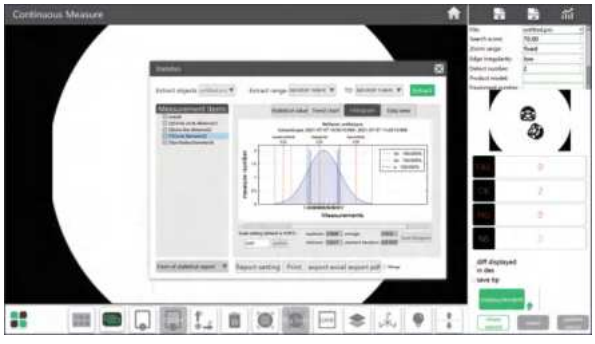
- Automatically measure heights, diameters, perpendicularity, angles at the same time, simple and efficient







- Measuring result can be stored automatically. OK items and NG items can be counted automatically






3D PROBE WITH 3D SOFTWARE FOR 3D MEASUREMENT

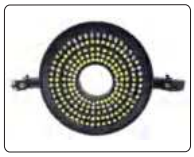
VIDEO

INSPECTION CERTIFICATE

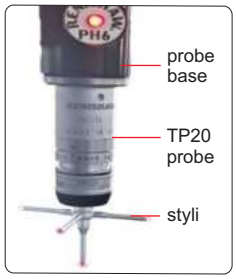
# 2D+3D COMPOSITE CNC VISION MEASURING SYSTEMS



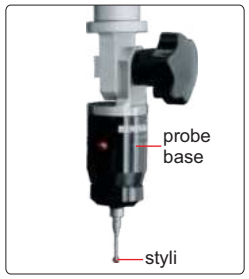
lens with coaxial light (included)



programmable segmented ring light (included)




advanced probe set **(optional)**




standard probe set (**optional**)




**ISD-U322**

- Motorized zoom objective
- Can import 3D drawings
- Vision mearsurement and probe mearsurement can be used in the same program
- Granite platform, column and stage, more stable
- Double close-loop motion control, with precise positioning performance in high-speed movement
- Panasonic servo control motor
- 40 independent surface light source, 200-step adjustment
- Servo motors for X, Y, Z axis

**SPECIFICATION**

| Code | | ISD-U322 | ISD-U432 | ISD-U532 | ISD-U542 |
|---|---|---|---|---|---|
| Measuring range (X×Y×Z) | | 300×200×200mm | 400×300×200mm | 500×300×200mm | 500×400×200mm |
| Stage size | | 600×390mm | 700×490mm | 800×490mm | 800×590mm |
| Glass stage size | | 350×250mm | 450×350mm | 550×350mm | 550×450mm |
| Resolution of X/Y/Z axis | | 0.5μm | | | |
| Accuracy (vision) | | ≤(2+L/200)μm (L is the measuring length in mm) | | | |
| Accuracy (probe) | | ≤(3+L/200)μm (L is the measuring length in mm) | | | |
| Repeatability | | 1.5μm | | | |
| Objective | | 0.7X~4.5X (zoom) | | | |
| Working distance | | 55mm | | | |
| View field (diagonal length) | | 1.3~7.9mm | | | |
| Magnification | | 36X~210X (on 21.5" monitor) | | | |
| Camera | | 1/2"color CCD, 2M pixel | | | |
| Illumination | surface | coaxial light, programmable segmented ring light | | | |
| | contour | adjustable LED light | | | |
| Max. height of workpiece | | 195mm | | | |
| Max. weight of workpiece | | 20kg | 30kg | 35kg | 35kg |
| Operation system | | Windows 10/11 | | | |
| Drive method | | automatic | | | |
| Power supply | | 220V, 50/60Hz | | | |
| Dimension (L×W×H) | | 1400×900×1780mm | 1600×1120×1780mm | 1650×1120×1780mm | 1650×1220×1780mm |
| Weight | | 440kg | 560kg | 580kg | 620kg |

To be continued

Continued from previous page

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Dongle | 1 pc |
| Software | 1 pc |
| Lens with coaxial light | 1 pc |
| Controller | 1 pc |
| Computer | 1 pc |
| Calibration glass chart | 1 pc |
| Laser positioner | 1 pc |
| Clay | 1 pc |
| Anti-dust cover | 1 pc |

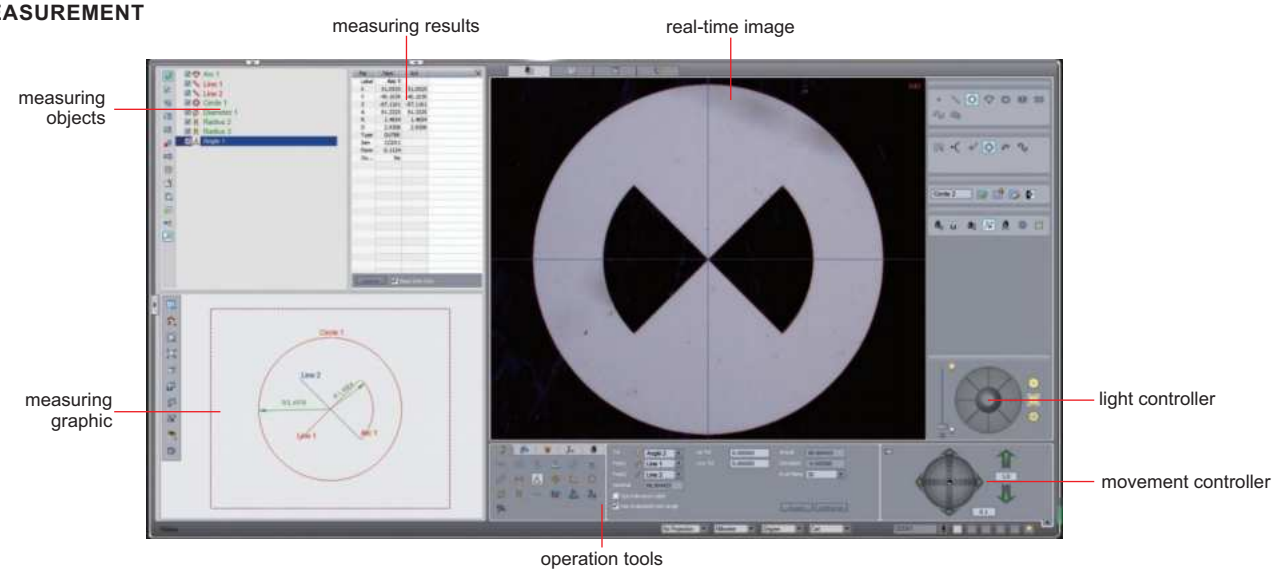
## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| 0.5X auxiliary objective | | code: **ISD-U-OB05X**, working distance: 175mm magnification: 18~105X (on 21.5" monitor) |
| 2X auxiliary objective | | code: **ISD-U-OB2X**, working distance: 36mm magnification: 72~420X (on 21.5" monitor) |
| Standard probe set * (RENISHAW) | | code: **ISD-U-MCP** (must be installed in factory) includes MCP probe base, Ø2mm and Ø3mm styli, Ø25mm calibration ball |
| Advanced probe set * (RENISHAW) | probe base | code: **ISD-U-BASE** (must be installed in factory) |
| | probe | code: **ISD-U-TP20**, includes Ø2mm styli |
| | styli | **ISQ-20** series (M2) **optional**, refer to page 616 |
| Probe replacement rack | | code: **ISD-U-MCR20** |
| Office software | | code: **7313-OFFICE** |

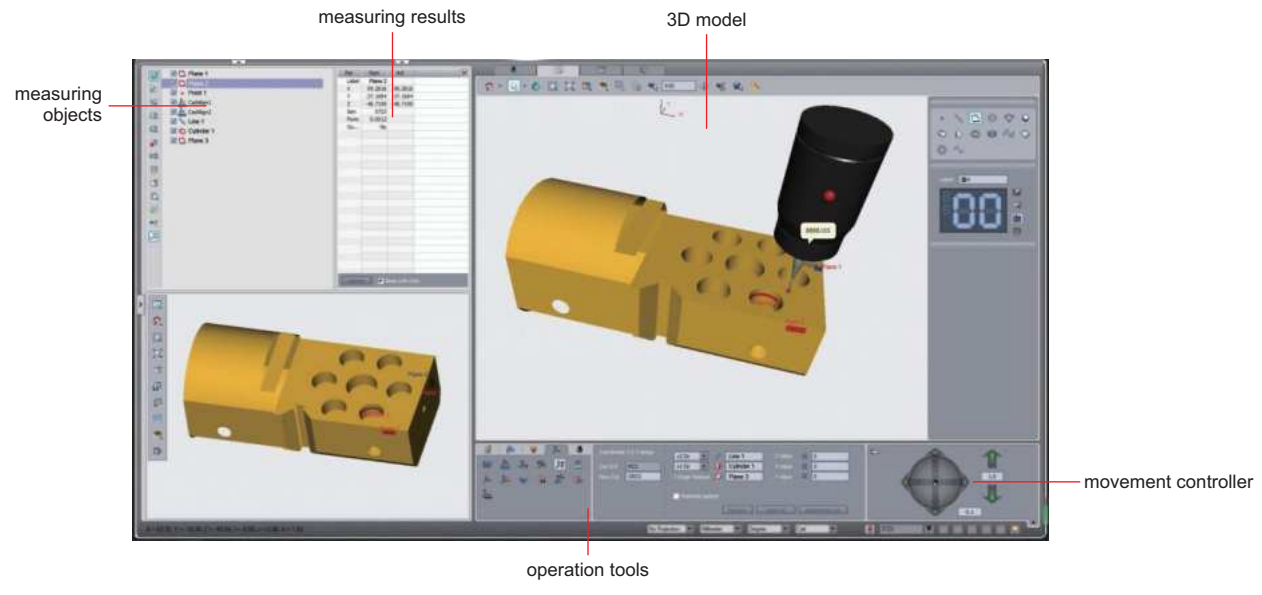
* Must purchase standard probe set or advanced probe set

## SOFTWARE (INCLUDED)

### 2D MEASUREMENT




### 3D MEASUREMENT






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VIDEO

INSPECTION CERTIFICATE

# HORIZONTAL VISION MEASURING SYSTEM
# CODE ISD-W3150



demo sample (**optional**)



vise (**optional**)



**computer is included**

## SPECIFICATION

| | | |
|---|---|---|
| **Measuring range (X×Z)** | | 300×150mm |
| **Accuracy** | | ≤(4+L/25)μm L is the measuring length in mm |
| **Resolution** | | 0.5μm |
| **Y travel range (focus)** | | 125mm |
| **Stage** | **metal stage size** | 455×126mm |
| | **turning range** | ±15° |
| | **max. load capacity** | 30kg |
| **Objective** | | 0.7X~4.5X (zoom) |
| **Working distance** | | 96mm |
| **View field (diagonal length)** | | 1.3~8.2mm |
| **Magnification** | | 34X~213X |
| **Display** | | 19" |
| **Camera** | | 1/3" CMOS, 0.8M pixel |
| **Illumination** | | surface and contour with adjustable LED |
| **Operation system** | | Windows 10 |
| **Drive method** | | manual |
| **Power supply** | | 220V, 50Hz |
| **Dimension (L×W×H)** | | 1164×634×1048mm |
| **Weight** | | 200kg |



table (**optional**)

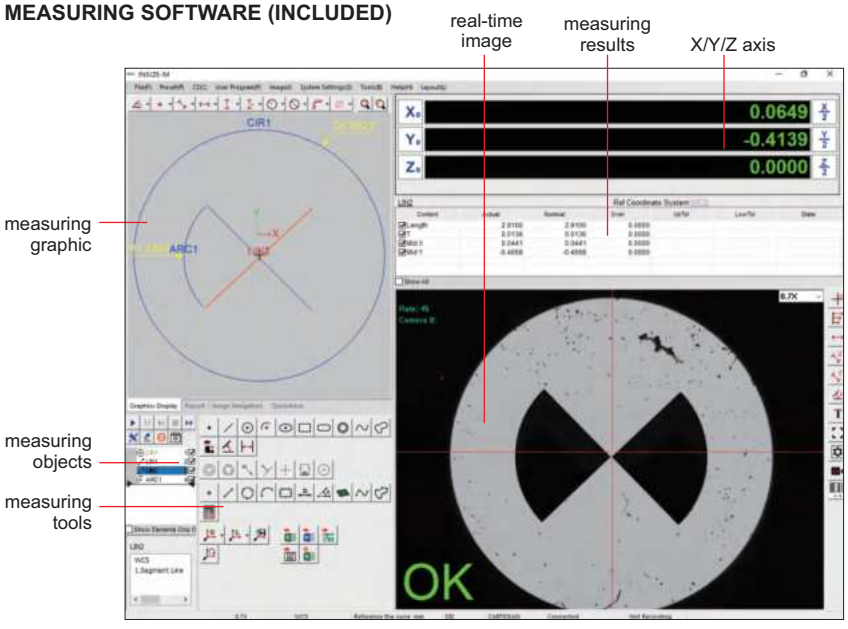
## STANDARD DELIVERY

| | |
|---|---|
| **Main unit (including computer)** | 1 pc |
| **Software** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Clay** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **0.5X auxiliary objective** | code: **ISD-W-OB05X** working distance: 175mm magnification: 17~106.5X |
| **2X auxiliary objective** | code: **ISD-W-OB2X** working distance: 32mm magnification: 68~426X |
| **Office software** | code: **7313-OFFICE** |
| **Table** | code: **ISD-W-TABLE** |
| **Vise** | code: **ISP-A3000-VISE** |
| **Demo sample** | code: **ISP-A3000-DEMO** |

## MEASURING SOFTWARE (INCLUDED)



# AUTOMATIC CNC VISION MEASURING SYSTEM (ADVANCED TYPE)
# CODE ISD-F432

VIDEO



computer is included

- Stable and high-precision measurement under high-speed, silent and stable mode
- Accurately detect the edge of surface size



six-ring eight-zone ring light (included)



vertical light (included)

**SPECIFICATION**

| | | |
|---|---|---|
| **Camera** | | giga-bit network camera (650TVL) |
| **Measuring range (X×Y×Z)** | | 400×300×200mm |
| **Granite stage size** | | 827×480mm |
| **Glass stage size** | | 450×350mm |
| **Resolution of X/Y/Z axis** | | 0.5μm |
| **Accuracy of X/Y axis** | | ≤(2+L/250)μm (L is the measuring length in mm) |
| **Accuracy of Z axis** | | ≤(3+L/150)μm (L is the measuring length in mm) |
| **Objective** | | 0.7X~5X (zoom) |
| **Working distance** | | 68mm |
| **Magnification** | | 28X~155X (on 23.5" monitor) |
| **Illumination** | **surface** | six-ring eight-zone ring light and vertical light |
| | **contour** | bottom horizontal light |
| **Max. height of workpiece** | | 200mm |
| **Max. weight of workpiece** | | 30kg |
| **Operation system** | | Windows 10 |
| **Power supply** | | 220V±10% (AC), 50Hz |
| **Environment requirement** | | temperature: 18~24°C, relative humidity: 30~75% |
| **Dimension (L×W×H)** | | 1270×910×1750mm |
| **Weight** | | 360kg |

To be continued



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Continued from previous page

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Computer table** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Software** | 1 pc |



laser probe (**optional**)



plate clamp (**optional**)

**OPTIONAL ACCESSORY**

| | | |
|---|---|---|
| **Advanced probe** | **probe base*** | code **ISD-F-BASE1** (must be installed before shipment) |
| | **probe*** | code **ISD-F-TP20** (must be installed before shipment) |
| | **ruby probe** | optional M2 probe series with **ISQ-01** |
| **Standard probe** | **probe base*** | code **ISD-F-BASE2** (must be installed before shipment) |
| | **ruby probe** | code **ISD-F-P2** |
| | | code **ISD-F-P3** |
| **Laser probe** ** **(can measure glass thickness, step height, flatness, height etc.)** | | code **ISD-F-PB** (must be installed before shipment) |
| **Special lens for large field navigation** | | code **ISD-F-LENS** (must be installed before shipment) |
| **PLC full-angle intelligent programmable lighting system** | | code **ISD-F-LIGHT** (must be installed before shipment) |
| **Plate fixture (manual self-locking tempered glass)** | | code **ISD-F-HOLDER** glass size: 450×350mm can be customized |
| **Protector** | | code **ISD-F-PROTECTOR** (must be installed before shipment) |
| **Contour comparison module** | | code **ISD-F-PROFILE** |
| **Office software** | | code **7313-OFFICE** |

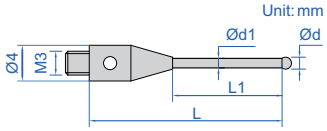



advanced probe (**optional**)




standard probe (**optional**)

* The probe head and probe are Renishaw brand
** Laser probe is KEYENCE brand



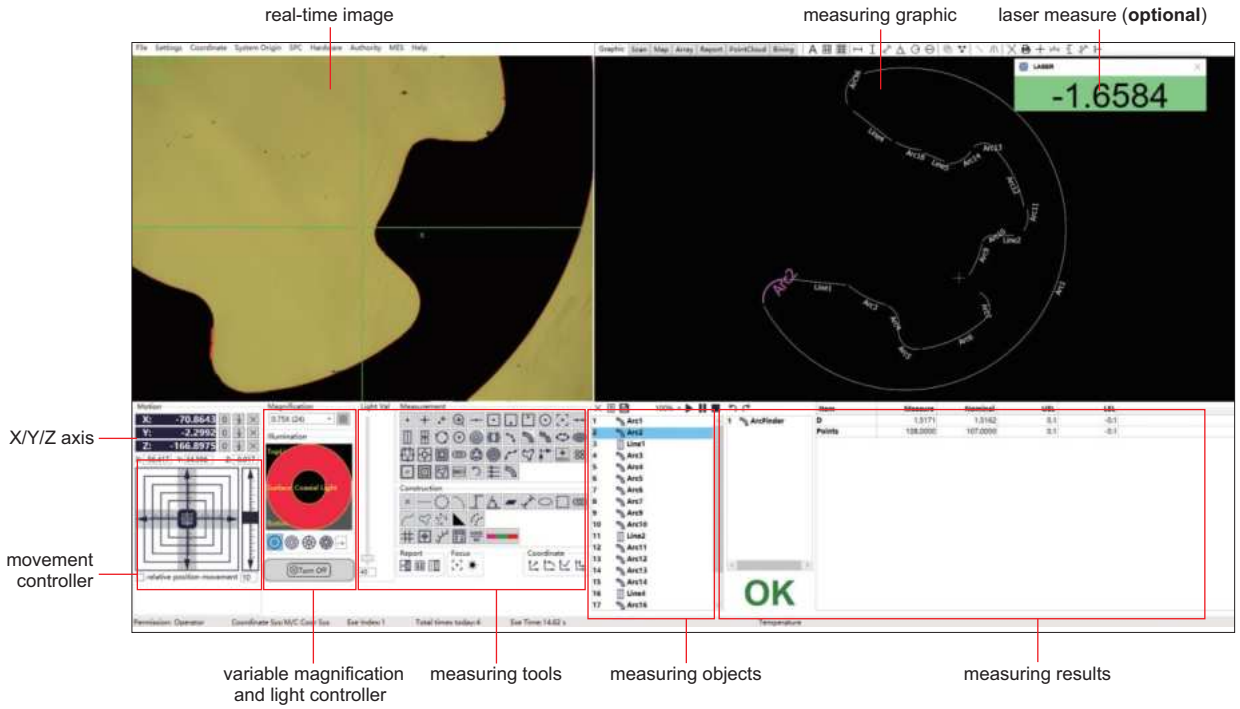

**STYLUS (INCLUDED) SPECIFICATION**

| Code | Material | Ød | Ød1 | L | L1 | Quantity |
|---|---|---|---|---|---|---|
| **ISD-F-P2** | ruby ball/stainles steel stem | Ø2mm | Ø1.4mm | 21mm | 8mm | 1 pc |
| **ISD-F-P3** | | Ø3mm | Ø1.5mm | | 12mm | 1 pc |

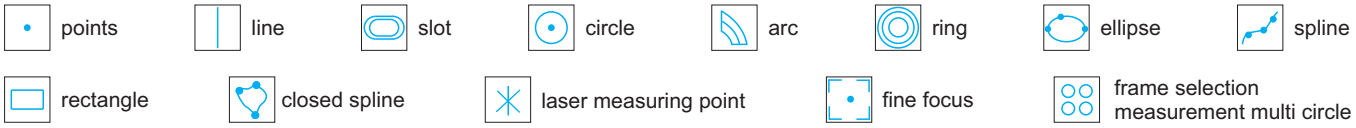
To be continued

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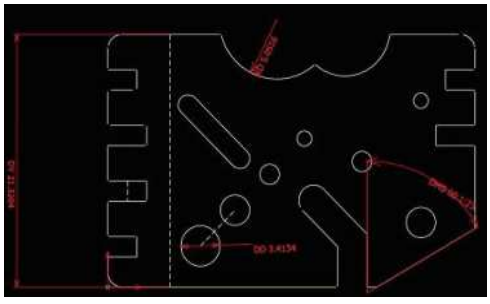
## MEASURING SOFTWARE (INCLUDED)



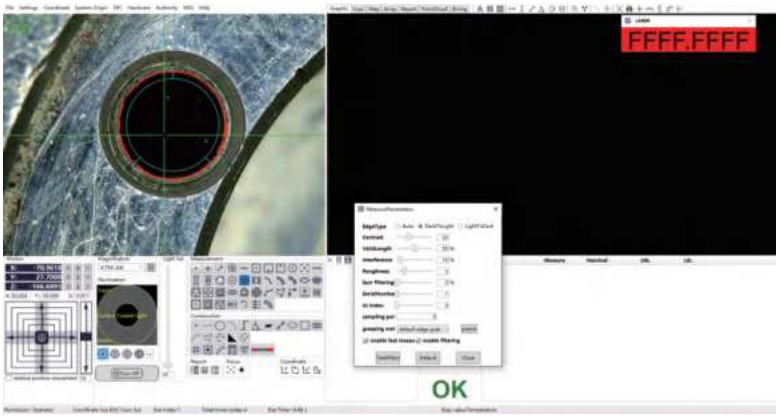

- Operation system: Windows 10
- Language: English
- Image measuring methods: crosshair point, manual point, auto point, zoom in point, line point, center point, lowest point, highest point, cloest point, focus point
- Constructable elements: point, line circle, arc, height, angle, plane, distance, ellipse, rectangle, construction ringgroove, spline, closed spline, profile, geometric tolerance
- Geometric tolerance: concentricity, parallelism, verticality, angularity, summetry, circular, arc profile
- Measurement elements can be translated and rotated
- Measuring data can export to Excel, DXF and other format files. The image area can save BMP image format
- The software includes CAD drawing import module
- The software includes SPC analysis module. The measurement software is seamlessly linked with the SPC module. After the measurement is completed, the measurement software automatically imports the data into the SPC database, allowing simple data analysis
- Dimension measuring tools:




- Element annotations



- Accurately detect the edge of the surface size





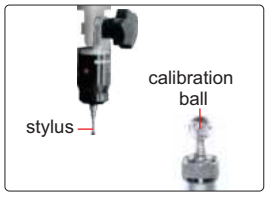

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MOTORIZED ZOOM OBJECTIVE IS OPTIONAL

VIDEO

INSPECTION CERTIFICATE

# CNC VISION MEASURING SYSTEMS (BASIC TYPE)




probe (**optional**), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10μm

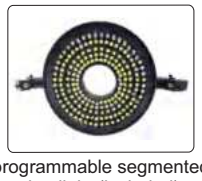



ISD-R320

- Automatic edge-detection, focus, measuring, contour scanning, calibration, etc.
- Double close-loop motion control, with precise positioning performance in high-speed movement
- Granite body, more stable
- Servo motors for X, Y, Z axis
- SPC function for large quantity measurement

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Software** | 1 pc |
| **Dongle** | 1 pc |
| **Controller** | 1 pc |
| **Computer** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Clay** | 1 pc |
| **Anti-dust cover** | 1 pc |



programmable segmented ring light (included)



lens with coaxial light (**optional**)

## SPECIFICATION

| **Code** | | **ISD-R320** | **ISD-R430** | **ISD-R540** |
|---|---|---|---|---|
| **Measuring range (XxYxZ)** | | 300×200×150mm | 400×300×150mm | 500×400×150mm |
| **Stage size** | | 500×330mm | 606×466mm | 706×566mm |
| **Glass stage size** | | 350×280mm | 450×350mm | 550×450mm |
| **Resolution of X/Y/Z axis** | | 0.5μm | | |
| **Accuracy of X/Y axis** | | ≤(3+L/200)μm (L is the measuring length in mm) | | |
| **Repeatability of X/Y axis** | | 2μm | | |
| **Objective** | | 0.7X~4.5X (zoom) | | |
| **Working distance** | | 55mm | | |
| **View field (diagonal length)** | | 1.3~7.6mm | | |
| **Magnification** | | 29X~143X (on 21.5" monitor) | | |
| **Camera** | | 1/3" color CCD, 0.3M pixel | | |
| **Illumination** | **contour** | programmable segmented ring light | | |
| | **surface** | adjustable LED light | | |
| **Max. height of workpiece** | | 150mm | | |
| **Max. weight of workpiece** | | 20kg | | |
| **Operation system** | | Windows 10/11 | | |
| **Drive method** | | automatic | | |
| **Power supply** | | 220V, 50/60Hz | | |
| **Dimension (L×W×H)** | | 720×770×1780mm | 700×1000×1780mm | 800×1040×1780mm |
| **Weight** | | 270kg | 325kg | 500kg |

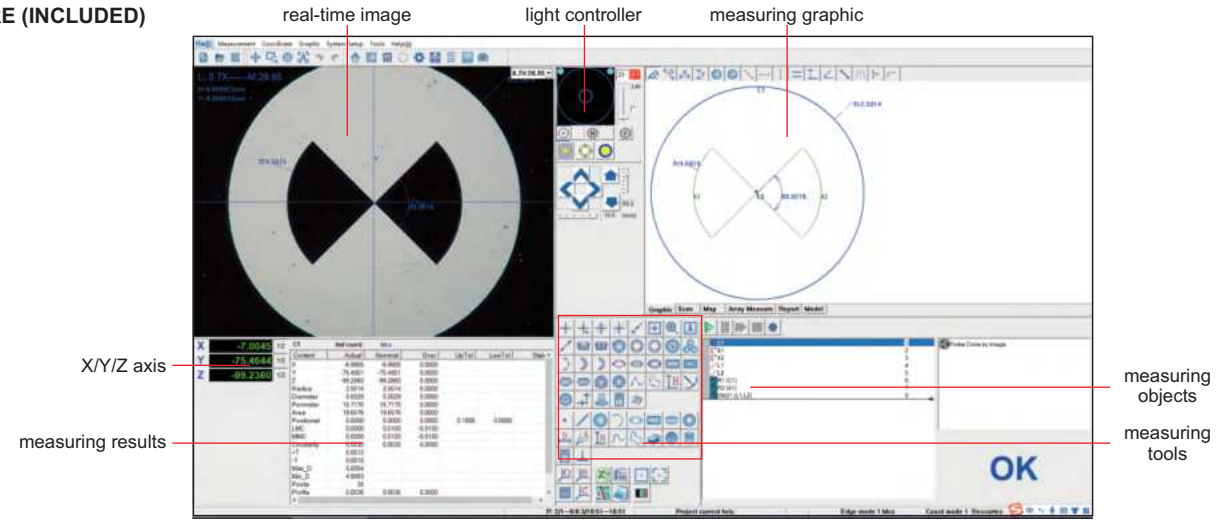
To be continued

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**OPTIONAL ACCESSORY**

| | |
|---|---|
| **0.5X auxiliary objective** | code: **ISD-Y-OB05X**<br>working distance: 175mm; magnification: 14.5~71.5X (on 21.5" monitor) |
| **2X auxiliary objective** | code: **ISD-Y-OB2X**<br>working distance: 36mm; magnification: 58~286X (on 21.5" monitor) |
| **Probe** | code: **ISD-Y-PROBE**<br>includes Ø2mm and Ø3mm styli, Ø25mm calibration ball |
| **Vision measuring system with coaxial light lens** | code: **ISD-R320L**, **ISD-R430L**, **ISD-R540L** |
| **Office software** | code: **7313-OFFICE** |

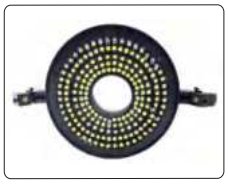
**SOFTWARE (INCLUDED)**




## CNC VISION MEASURING SYSTEMS (WITH STAND)

**MOTORIZED ZOOM OBJECTIVE IS OPTIONAL**


lens with coaxial light (included)


programmable segmented ring light (included)


software flash disk (included)

- Automatic edge-detection, focus, measuring, contour scanning, calibration, etc.
- Servo motors for X, Y, Z axis
- Granite body, more stable
- SPC function for large quantity measurement
- Measuring software is included (page 671~672)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Dongle** | 1 pc |
| **Software** | 1 pc |
| **Computer** | 1 pc |
| **Dispaly** | 1 pc |
| **Lens with coaxial light** | 1 pc |
| **Controller** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Laser positioner** | 1 pc |
| **Clay** | 1 pc |
| **Anti-dust cover** | 1 pc |



**ISD-E320**

VIDEO

To be continued

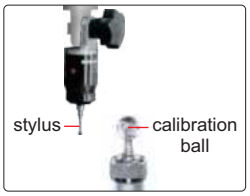
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## SPECIFICATION

| Code | | ISD-E320 | ISD-E430 |
|---|---|---|---|
| Measuring range (X×Y×Z) | | 300×200×200mm | 400×300×200mm |
| Stage size | | 556×406mm | 561×556mm |
| Glass stage size | | 350×250mm | 450×350mm |
| Resolution of X/Y/Z axis | | 0.5μm | |
| Accuracy of X/Y axis | | ≤(2.5+L/200)μm (L is measuring length in mm) | ≤(3.5+L/200)μm (L is measuring length in mm) |
| Repeatability of X/Y axis | | 2μm | |
| Objective (manual zoom) | | 0.7X~4.5X (zoom) | |
| Working distance | | 92mm | |
| View field (diagonal length) | | 1.7~11.1mm | |
| Magnification | | 33X~208.6X (on 24" monitor) | |
| Camera | | giga-bit network camera | |
| Illumination | surface | coaxial light, programmable segmented ring light | |
| | contour | adjustable LED light | |
| Max. height of workpieces | | 200mm | |
| Max. weight of workpieces | | 30kg | |
| Operation system | | Windows 7/8/10 | |
| Drive method | | automatic | |
| Power supply | | 220V, 50/60Hz | |
| Dimension (L×W×H) | | 1420×915×1830mm | 1650×1170×1900mm |
| Weight | | 500kg | 700kg |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 0.5X auxiliary objective | code: **ISD-V-OB05X**<br>working distance: 175mm<br>magnification: 16.5~104.3X (on 24" monitor) |
| 2X auxiliary objective | code: **ISD-V-OB2X**<br>working distance: 36mm<br>magnification: 66~417.2X (on 24" monitor) |
| Probe | code: **ISD-V-PROBE**<br>includes Ø2mm and Ø3mm styli,<br>Ø25mm calibration ball |
| Office software | code: **7313-OFFICE** |
| Laser probe | code: **ISD-V-LASER** |



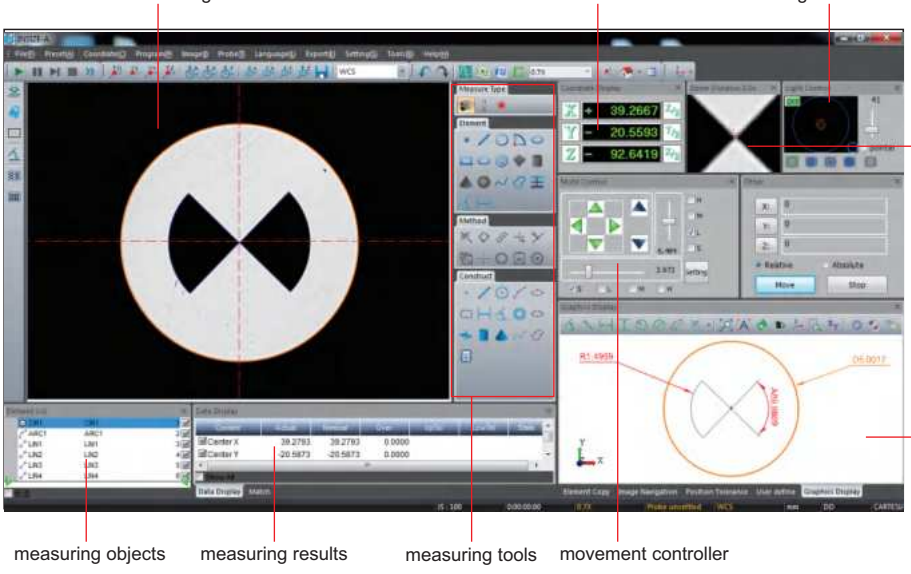

probe (**optional**), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10μm



laser probe (**optional**) measuring accuracy is 5μm

## SOFTWARE (INCLUDED)

- Refer to page 671~672 for details



# CNC VISION MEASURING SYSTEMS (STANDARD TYPE)

INSPECTION CERTIFICATE

VIDEO




**ISD-V220CNCA**

- Automatic edge-detection, focus, measuring, contour scanning, calibration, etc.
- Servo motors for X, Y, Z axis
- SPC function for large quantity measurement
- Measuring software is included (page 671~672)

**SPECIFICATION**

| Code | motorized zoom lens | ISD-V220ZA | ISD-V220ZHN | ISD-V270ZA | ISD-V270ZHN | ISD-V370ZA | ISD-V370ZHN |
|---|---|---|---|---|---|---|---|
| | manual zoom lens | ISD-V220CNCA | ISD-V220HN | ISD-V270CNCA | ISD-V270HN | ISD-V370CNCA | ISD-V370HN |
| Measuring range (X×Y×Z) | | 220×120 ×150mm | 220×120 ×300mm | 270×170 ×150mm | 270×170 ×300mm | 370×270 ×150mm | 370×270 ×300mm |
| Stage size | | 450×280mm | 450×280mm | 500×330mm | 500×330mm | 606×466mm | 606×466mm |
| Glass stage size | | 306×196mm | 306×196mm | 350×250mm | 350×250mm | 450×350mm | 450×350mm |
| Resolution of X/Y/Z axis | | 0.5μm | | | | | |
| Accuracy of X/Y axis | | ≤(2.5+L/100)μm (L is the measuring length in mm) | | | | ≤(3.5+L/100)μm (L is the measuring length in mm) | |
| Repeatability of X/Y axis | | 2μm | | | | | |
| Objective | | 0.7X~4.5X (zoom) | | | | | |
| Working distance | | 92mm | | | | | |
| Magnification | | 33.0X~208.6X (with manual zoom lens, on 24" monitor) | | | | | |
| | | 31.9X~188.7X (with motorized zoom lens, on 24" monitor) | | | | | |
| Camera | | giga-bit network camera | | | | | |
| Illumination | surface | coaxial light, programmable segmented ring light | | | | | |
| | contour | adjustable LED light | | | | | |
| View field (diagonal length) | | 1.5~10.8mm | | | | | |
| Max. height of workpiece | | 150mm | 300mm | 150mm | 300mm | 150mm | 300mm |
| Max. weight of workpiece | | 30kg | | | | | |
| Operation system | | Windows 7/8/10 | | | | | |
| Drive method | | automatic | | | | | |
| Power supply | | 220V, 50/60Hz | | | | | |
| Dimension (L×W×H) | | 760×600 ×900mm | 760×600 ×1050mm | 760×600 ×900mm | 760×600 ×1050mm | 970×670 ×940mm | 970×670 ×1090mm |
| Weight | | 146kg | 156kg | 168kg | 178kg | 266kg | 276kg |

To be continued



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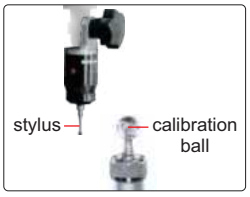
software flash disk
(included)

desk (**optional**)





laser probe (**optional**)
measuring accuracy is 5μm




probe (**optional**), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10μm

## STANDARD DELIVERY

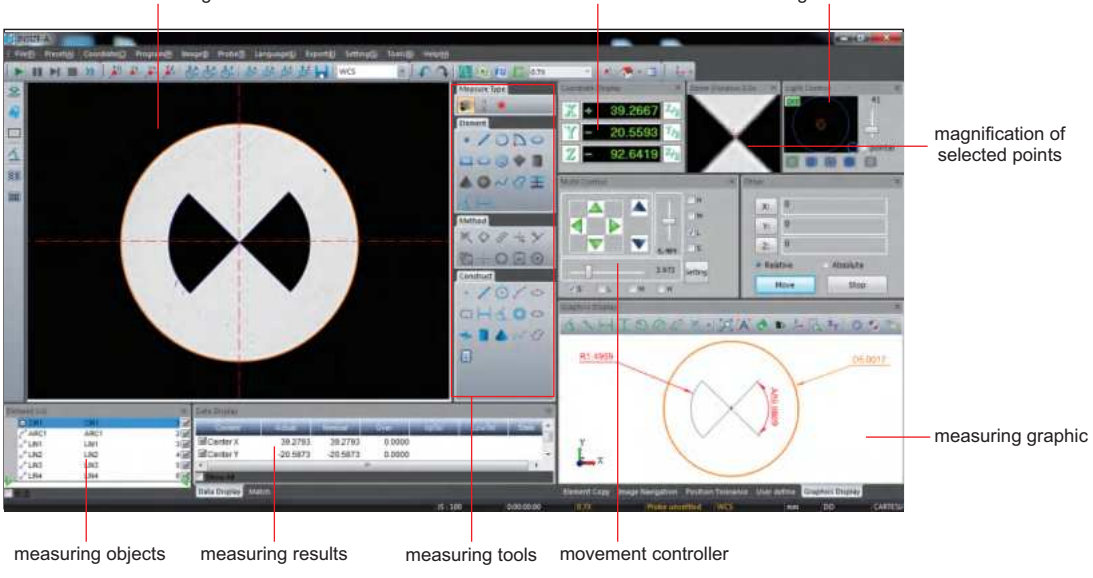
| | |
|---|---|
| **Main unit** | 1 pc |
| **Software** | 1 pc |
| **Computer** | 1 pc |
| **24" display** | 1 pc |
| **Len with coaxial light** | 1 pc |
| **Controller** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Laser positioner** | 1 pc |
| **Clay** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **0.5X auxiliary objective** | code: **ISD-V-OB05X**, working distance: 175mm<br>magnification: 16.5~104.3X (with manual zoom lens, on 24" monitor),<br>16.0~94.4X (with motorized zoom lens, on 24" monitor) |
| **2X auxiliary objective** | code: **ISD-V-OB2X**, working distance: 36mm<br>magnification: 66~417.2X (with manual zoom lens, on 24" monitor),<br>63.8~377.4X (with motorized zoom lens, on 24" monitor) |
| **Probe** | code: **ISD-V-PROBE**, includes Ø2mm and Ø3mm styli, Ø25mm calibration ball |
| **Laser probe** | code: **ISD-V-LASER** |
| **Office software** | code: **7313-OFFICE** |
| **Desk** | code: **ISD-V-DESK** |

## SOFTWARE (INCLUDED)

- Refer to page 671~672 for details



# HIGH-DEFINITION MANUAL VISION MEASURING SYSTEMS

INSPECTION CERTIFICATE

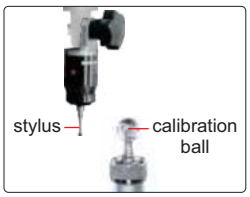
VIDEO




ISD-H210



lens with coaxial light (**optional**, must be installed in factory)




probe (**optional**), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10μm

- High-definition image
- Large view field
- Electronic magnification feedback lens: when the objective lens magnification is changed manually, the software automatically selects the corresponding pre-calibration data and calibration is not needed

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Clay** | 1 pc |
| **Foot switch** | 1 pc |
| **Anti-dust cover** | 1 pc |

**SPECIFICATION**

| **Code** | **ISD-H210** | **ISD-H320** | **ISD-H430** |
|---|---|---|---|
| **Measuring range (X×Y×Z)** | 200×100×150mm | 300×200×150mm | 400×300×150mm |
| **Stage size** | 404×228mm | 500×330mm | 606×466mm |
| **Glass stage size** | 260×160mm | 350×250mm | 450×350mm |
| **Resolution of X/Y/Z axis** | 0.5μm | | |
| **Accuracy of X/Y axis** | ≤(2.5+L/100)μm (L is the measuring length in mm) | | |
| **Repeatability of X/Y axis** | 2μm | | |
| **Objective** | 0.58X~7.5X (zoom) | | |
| **View field (diagonal length)** | 1.4mm~14mm | | |
| **Working distance** | 82mm | | |
| **Magnification** | 27.4X~351X (on 24" monitor) | | |
| **Camera** | giga-bit network camera | | |
| **Illumination** | surface and contour with adjustable LED | | |
| **Max. height of workpiece** | 150mm | | |
| **Max. weight of workpiece** | 20kg | | |
| **Operation system** | Windows 7/8/10 | | |
| **Drive method** | manual | | |
| **Power supply** | 110~240V, 50/60Hz | | |
| **Dimension (L×W×H)** | 540×560×850mm | 760×600×900mm | 970×670×940mm |
| **Weight** | 110kg | 140kg | 240kg |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **0.5X auxiliary objective** | code: **ISD-H-OB05X**<br>working distance: 155mm<br>magnification: 13.7~175.5X (on 24" monitor) |
| **2X auxiliary objective** | code: **ISD-H-OB2X**<br>working distance: 34.5mm<br>magnification: 54.8~702X (on 24" monitor) |
| **Probe** | code: **ISD-V-PROBE**<br>includes Ø2mm and Ø3mm styli, Ø25mm calibration ball |
| **Vision measuring system with coaxial light lens** | code: **ISD-H210CL, ISD-H320CL, ISD-H430CL** |
| **Office software** | code: **7313-OFFICE** |

To be continued

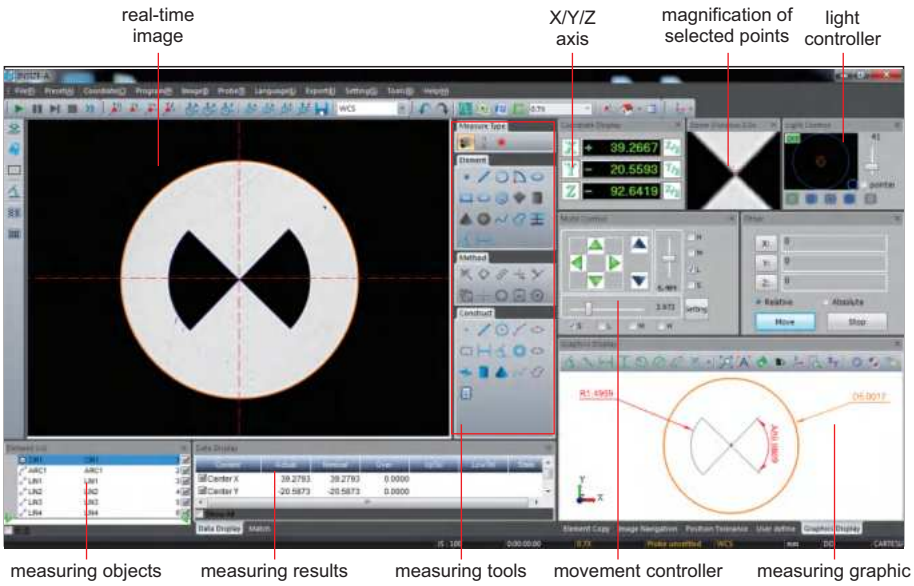


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**SOFTWARE (INCLUDED)**

- Refer to page 671~672 for details




INSPECTION CERTIFICATE

VIDEO

# MANUAL VISION MEASURING SYSTEMS (STANDARD TYPE)

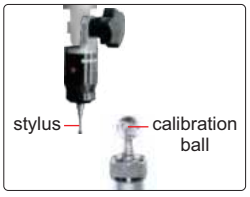


**computer is included**

ISD-V250A



lens with coaxial light (**optional**, must be installed in factory)




probe (**optional**), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10μm

**SPECIFICATION**

| Code | ISD-V150A | ISD-V250A | ISD-V300A | ISD-V400A |
|---|---|---|---|---|
| Measuring range (X×Y×Z) | 150×100×150mm | 250×150×150mm | 300×200×150mm | 400×300×150mm |
| Stage size | 354×228mm | 450×280mm | 500×330mm | 606×466mm |
| Glass stage size | 210×160mm | 306×196mm | 350×250mm | 450×350mm |
| Resolution of X/Y/Z axis | 0.5μm | | | |
| Accuracy of X/Y axis | ≤(2.5+L/100)μm (L is the measuring length in mm) | | | |
| Repeatability of X/Y axis | 2μm | | | |
| Objective | 0.7X~4.5X (zoom) | | | |
| Working distance | 92mm | | | |
| Magnification | 29X~184X (on 21.5" monitor) | | | |
| Camera | 1/3" color CCD, 0.3M pixel | | | |
| Illumination | surface and contour with adjustable LED | | | |
| Max. height of workpiece | 150mm | | | |
| Max. weight of workpiece | 20kg | | | |
| Operation system | Windows 7/8/10 | | | |
| Drive method | manual | | | |
| Power supply | 110/220V, 50/60Hz | | | |
| Dimension (L×W×H) | 560×540×850mm | 760×600×900mm | 760×600×900mm | 970×670×940mm |
| Weight | 100kg | 120kg | 140kg | 240kg |

To be continued

Continued from previous page

**STANDARD DELIVERY**

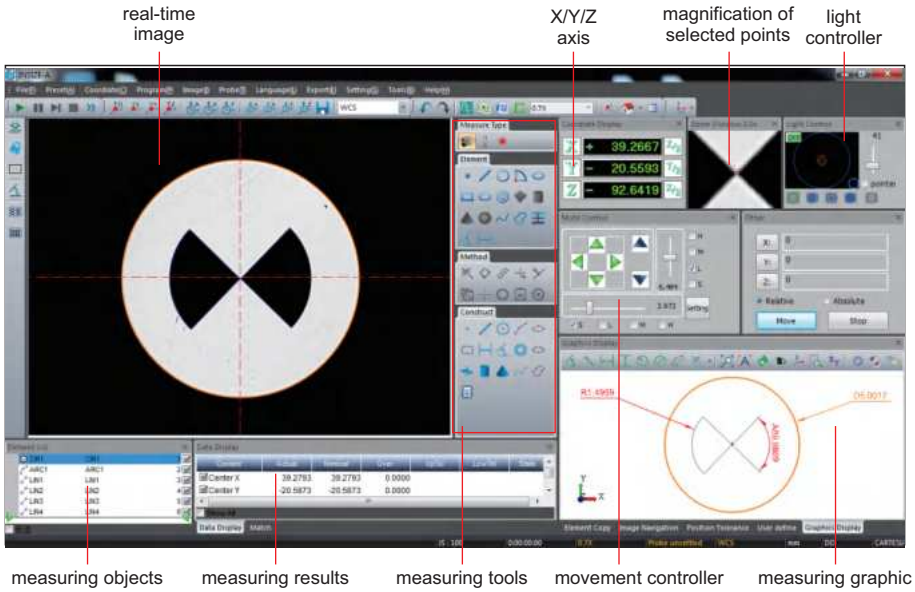
| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Clay** | 1 pc |
| **Foot switch** | 1 pc |
| **Anti-dust cover** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **0.5X auxiliary objective** | code: **ISD-V-OB05X**<br>working distance: 175mm<br>magnification: 14.5~92X (on 21.5" monitor) |
| **2X auxiliary objective** | code: **ISD-V-OB2X**<br>working distance: 36mm<br>magnification: 58~368X (on 21.5" monitor) |
| **Probe** | code: **ISD-V-PROBE**<br>includes Ø2mm and Ø3mm styli,<br>Ø25mm calibration ball |
| **Vision measuring system with coaxial light lens (with computer)** | code: **ISD-V150ACL**,<br>**ISD-V250ACL**,<br>**ISD-V300ACL**,<br>**ISD-V400ACL** |
| **Office software** | code: **7313-OFFICE** |

**SOFTWARE (INCLUDED)**

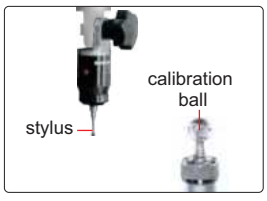
- Refer to page 671~672 for details




## MANUAL VISION MEASURING SYSTEMS (BASIC TYPE)

INSPECTION CERTIFICATE

VIDEO




probe (**optional**), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10µm



lens with coaxial light (**optional**, must be installed in factory)



**computer is included**

**ISD-Y320**

To be continued



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Continued from previous page

## SPECIFICATION

| Code | | | | | |
|---|---|---|---|---|---|
| | Motorized focus | ISD-Y210D | ISD-Y320D | ISD-Y430D | ISD-Y530D |
| | Manual focus | ISD-Y210 | ISD-Y320 | ISD-Y430 | ISD-Y530 |
| Measuring range (X×Y×Z) | | 200×100×200mm | 300×200×200mm | 400×300×200mm | 500×300×200mm |
| Stage size | | 404×228mm | 500×330mm | 606×466mm | 706×466mm |
| Glass stage size | | 260×160mm | 350×280mm | 450×350mm | 550×350mm |
| Resolution of X/Y/Z axis | | 1μm | | | |
| Accuracy of X/Y axis | | ≤(3+L/200)μm (L is the measuring length in mm) | | | |
| Repeatability of X/Y axis | | 2μm | | | |
| Objective | | 0.7X~4.5X (zoom) | | | |
| View field (diagonal length) | | 1.0~6.6mm | | | |
| Working distance | | 92mm | | | |
| Magnification | | 37.2X~236.0X (on 21.5" monitor) | | | |
| Camera | | 1/2" color CCD, 1.3M pixel | | | |
| Illumination | | surface and contour with adjustable LED | | | |
| Max. height of workpiece | | 200mm | | | |
| Max. weight of workpiece | | 20kg | | | |
| Operation system | | Windows 10/11 | | | |
| Drive method | | manual | | | |
| Power supply | | 220V, 50Hz | | | |
| Dimension (L×W×H) | | 556×540×860mm | 670×660×950mm | 720×950×1020mm | 800×1040×1020mm |
| Weight | | 180kg | 260kg | 315kg | 500kg |

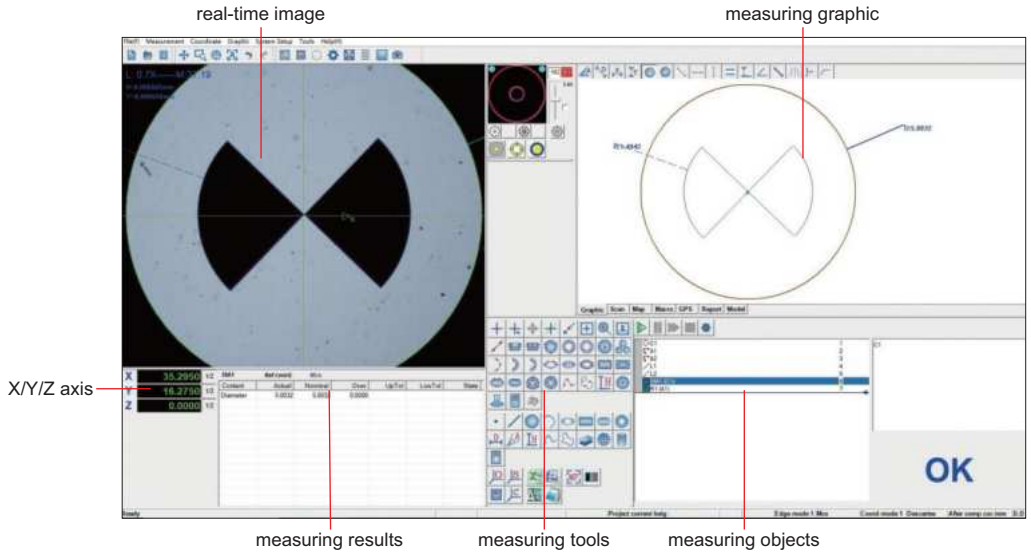
## OPTIONAL ACCESSORY

| | |
|---|---|
| 0.5X auxiliary objective | code: **ISD-Y-OB05X** working distance: 175mm<br>magnification: 18.6~118.0X (on 21.5" monitor) |
| 2X auxiliary objective | code: **ISD-Y-OB2X** working distance: 36mm<br>magnification: 74.5~472.0X (on 21.5" monitor) |
| Probe | code: **ISD-Y-PROBE**<br>includes Ø2mm and Ø3mm styli, Ø25mm calibration ball |
| Vision measuring system with coaxial light lens | code: **ISD-Y210CL** (manual focus), **ISD-Y210DCL** (motorized focus)<br>**ISD-Y320CL** (manual focus), **ISD-Y320DCL** (motorized focus)<br>**ISD-Y430CL** (manual focus), **ISD-Y430DCL** (motorized focus)<br>**ISD-Y530CL** (manual focus), **ISD-Y530DCL** (motorized focus) |
| Office software | code: **7313-OFFICE** |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Computer | 1 pc |
| Calibration glass chart | 1 pc |
| Clay | 1 pc |
| Anti-dust cover | 1 pc |

## SOFTWARE (INCLUDED)



# CNC VISION MEASURING SYSTEMS

VIDEO




ISD-V500N

- Automatic edge-detection, focus, measuring, contour scanning, calibration, etc.
- Servo motors for X, Y, Z axis
- SPC function for large quantity measurement

**SPECIFICATION**

| Code | | ISD-V500N | ISD-V501N | ISD-V500HN | ISD-V501HN |
|---|---|---|---|---|---|
| Measuring range (X×Y×Z) | | 470×370×200mm | 500×400×200mm | 470×370×400mm | 500×400×400mm |
| Stage size | | 786×636mm | 846×696mm | 786×636mm | 846×696mm |
| Glass stage size | | 570×470mm | | | |
| Resolution of X/Y/Z axis | | 0.5μm | | | |
| Accuracy of X/Y axis | | ≤(2.5+L/200)μm (L is measuring length in mm) | | | |
| Repeatability of X/Y axis | | 2μm | | | |
| Objective | | 0.7X~4.5X (zoom) | | | |
| Working distance | | 92mm | | | |
| View field (diagonal length) | | 1.5~10.8mm | | | |
| Magnification | | 33.0X~208.6X (on 24" monitor) | | | |
| Camera | | giga-bit network camera | | | |
| Illumination | surface | coaxial light, programmable segmented ring light | | | |
| | contour | adjustable LED light | | | |
| Max. height of workpieces | | 200mm | | 400mm | |
| Max. weight of workpieces | | 30kg | | | |
| Operation system | | Windows 7/10 | | | |
| Drive method | | automatic | | | |
| Power supply | | 220V, 50/60Hz | | | |
| Dimension (L×W×H) | | 1270×1200×1870mm | 1405×1260×1870mm | 1270×1200×2070mm | 1405×1260×2070mm |
| Weight | | 870kg | 1000kg | 900kg | 1030kg |

To be continued

Continued from previous page

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Video card with dongle** | 1 pc |
| **Software disc** | 1 pc |
| **Lens with coaxial light** | 1 pc |
| **Controller** | 1 pc |
| **Computer** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Laser positioner** | 1 pc |
| **Clay** | 1 pc |
| **Anti-dust cover** | 1 pc |



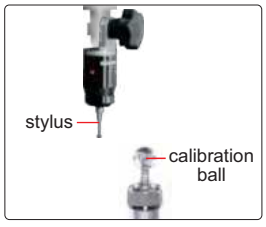
lens with coaxial light (included)



programmable segmented ring light (included)

## OPTIONAL ACCESSORY

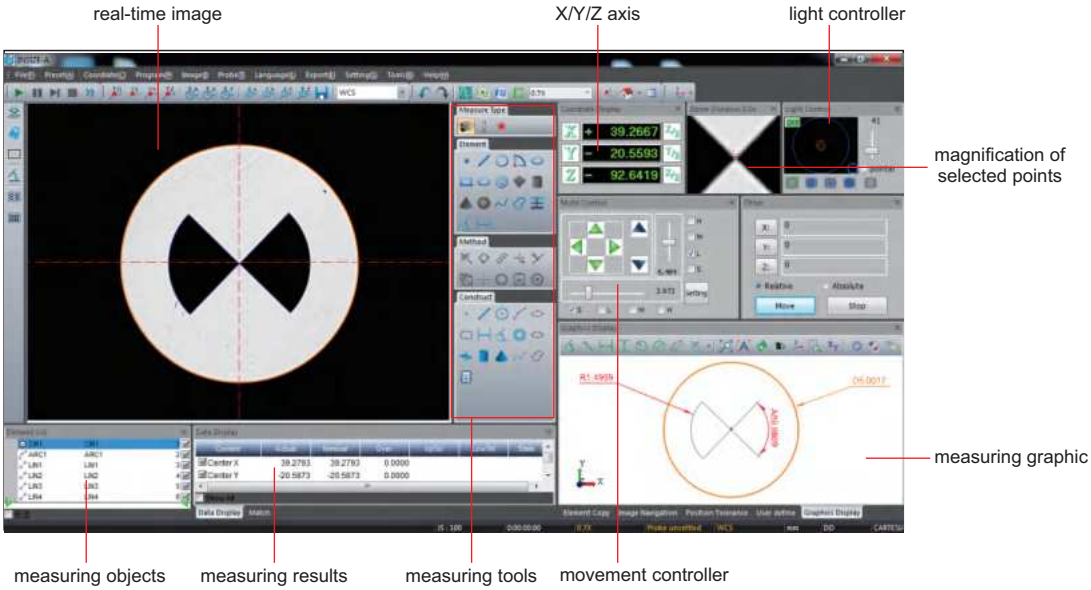
| | |
|---|---|
| **0.5X auxiliary objective** | code: **ISD-V-OB05X**<br>working distance: 175mm<br>magnification: 16.5~104.3X (on 24" monitor) |
| **2X auxiliary objective** | code: **ISD-V-OB2X**<br>working distance: 36mm<br>magnification: 66~417.2X (on 24" monitor) |
| **Probe** | code: **ISD-V-PROBE**<br>includes Ø2mm and Ø3mm styli, Ø25mm calibration ball |
| **Office software** | code: **7313-OFFICE** |




probe (**optional**), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10μm

## SOFTWARE (INCLUDED)

- Refer to page 671~672 for details



# CNC VISION MEASURING SYSTEMS

MOTORIZED ZOOM OBJECTIVE IS OPTIONAL

VIDEO



**VMM-L1001CN**

- Automatic edge-detection, focus, measuring, contour scanning, calibration, etc.
- Servo motors for X, Y, Z axis, X, Y axis adopt linear guide rail structure, without air supply
- Fixed glass table and granite platform base, good stability
- SPC function for large quantity measurement
- Measuring software is included (page 671~672)

**SPECIFICATION**

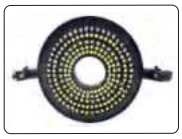
| Code | | VMM-L600CN | VMM-L601CN | VMM-L800CN |
|---|---|---|---|---|
| Measuring range (X×Y×Z) | | 600×600×200mm | 600×900×200mm | 800×1000×200mm |
| Glass stage size | | 765×1238mm | 702×1543mm | 902×1643mm |
| Resolution of X/Y/Z axis | | 0.5μm | | |
| Accuracy of X/Y axis | | ≤(3.5+L/200)μm (L is measuring length in mm) | | |
| Repeatability of X/Y axis | | 2μm | | |
| Objective (manual zoom) | | 0.7X~4.5X (zoom) | | |
| Working distance | | 92mm | | |
| View field (diagonal length) | | 1.7~11.1mm | | |
| Magnification | | 33.0X~208.6X (on 24" monitor) | | |
| Camera | | giga-bit network camera | | |
| Illumination | surface | coaxial light, programmable segmented ring light | | |
| | contour | adjustable LED light | | |
| Max. height of workpiece | | 200mm | | |
| Max. weight of workpiece | | 35kg | | |
| Operation system | | Windows 7/8/10 | | |
| Drive method | | automatic | | |
| Power supply | | AC 220V, 50/60Hz | | |
| Dimension (L×W×H) | | 1445×1185×1560mm | 1745×1220×1720mm | 1850×1420×1720mm |
| Weight | | 1000kg | 1400kg | 2200kg |

To be continued

Continued from previous page

## SPECIFICATION

| Code | | VMM-L1000CN | VMM-L1001CN | VMM-L1200CN |
|---|---|---|---|---|
| Measuring range (X×Y×Z) | | 1000×1200×200mm | 1000×1500×200mm | 1200×1500×200mm |
| Glass stage size | | 1100×1831mm | 1100×2113mm | 1300×2113mm |
| Resolution of X/Y/Z axis | | 0.5μm | | |
| Accuracy of X/Y axis | | ≤(3.5+L/200)μm (L is measuring length in mm) | | |
| Repeatability of X/Y axis | | 2μm | | |
| Objective(manual zoom) | | 0.7X~4.5X (zoom) | | |
| Working distance | | 92mm | | |
| View field (diagonal length) | | 1.7~11.1mm | | |
| Magnification | | 33.0X~208.6X (on 24" monitor) | | |
| Camera | | giga-bit network camera | | |
| Illumination | surface | coaxial light, programmable segmented ring light | | |
| | contour | adjustable LED light | | |
| Max. height of workpiece | | 200mm | | |
| Max. weight of workpiece | | 30kg | | |
| Operation system | | Windows 7/8/10 | | |
| Drive method | | automatic | | |
| Power supply | | AC 220V, 50/60Hz | | |
| Dimension (L×W×H) | | 2035×1590×1720mm | 2315×1590×1720mm | 2315×1790×1720mm |
| Weight | | 2900kg | 3200kg | 4000kg |



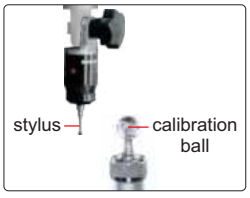
programmable segmented ring light (included)



lens with coaxial light (included)

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Dongle | 1 pc |
| Computer | 1 pc |
| Software | 1 pc |
| Dispaly | 1 pc |
| Lens with coaxial light | 1 pc |
| Controller | 1 pc |
| Calibration glass chart | 1 pc |
| Laser positioner | 1 pc |
| Clay | 1 pc |
| Anti-dust cover | 1 pc |




probe (**optional**), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10μm



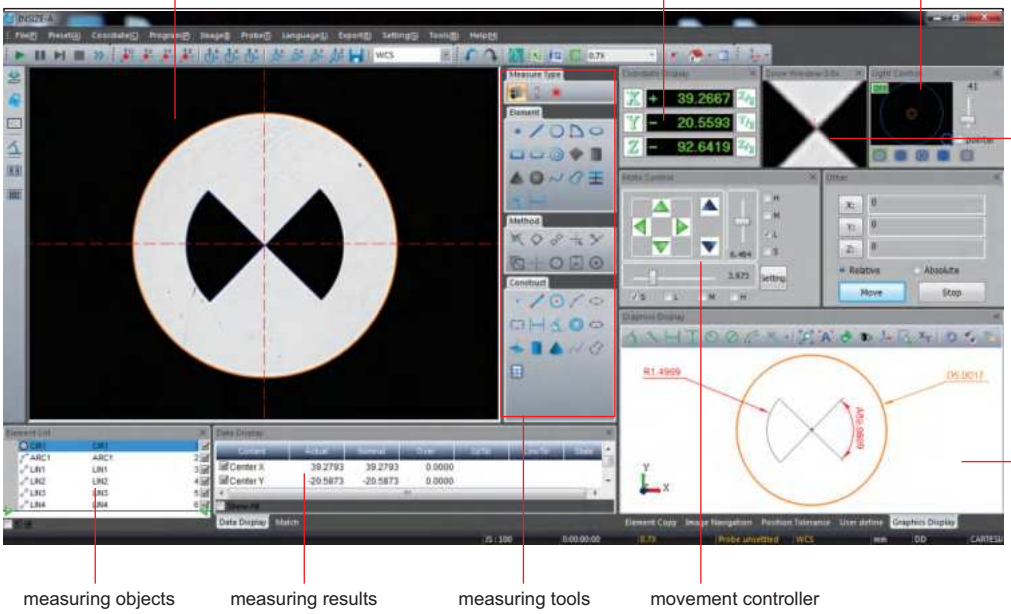
laser probe (**optional**) measuring accuracy is 5μm

## OPTIONAL ACCESSORY

| | |
|---|---|
| 0.5X auxiliary objective | code: **ISD-V-OB05X**<br>working distance: 175mm<br>magnification: 16.5~104.3X (on 24" monitor) |
| 2X auxiliary objective | code: **ISD-V-OB2X**<br>working distance: 36mm<br>magnification: 66~417.2X (on 24" monitor) |
| Probe | code: **ISD-V-PROBE**<br>includes Ø2mm and Ø3mm styli, Ø25mm calibration ball |
| Laser probe | code: **ISD-V-LASER** |
| Office software | code: **7313-OFFICE** |

# VISION MEASURING SOFTWARE

**SOFTWARE FOR VISION MEASURING SYSTEMS ISD-V SERIES, ISD-H SERIES, ISD-VMM SERIES, ISD-E SERIES AND VMM-L SERIES**




- Operation system: Windows 7/10
- Language: English
- Control features: assistant focus (manual machines), auto focus (CNC machines), auxiliary light control, motion controlled by mouse (CNC machines), auto zoom lens (CNC machines)
- Image measuring methods: intelligent automatic edge detect, select points of an area, select points from multiple parts, select points via mouse, select adjacent points, select points via cross line, magnify to select points, comparatively select points, select points via probe, edge point, contour point
- Constructable elements: point, line, circle, arc, ellipse, rectangle, distance, angle, ring, slot, plane, cone, open curve, closed curve
- Support fixture (CNC machines), scanning, image navigation, user define, pixel calibration
- Measuring by image and probe, image and probe can be synchronized
- Measuring data can be sent to Excel, Word, SPC, measuring elements can be sent to dxf

- Dimension measuring tools:

point, line, circle, arc, ring, ellipse, rectangle, open curve, closed curve, distance, angle, focus plane (image), slot, plane (probe), sphere (probe), cone (probe), cylinder (probe)

- Geometric measuring tools:

position, parallelism, squareness, angularity, symmetry, concentricity, coaxiality (probe)

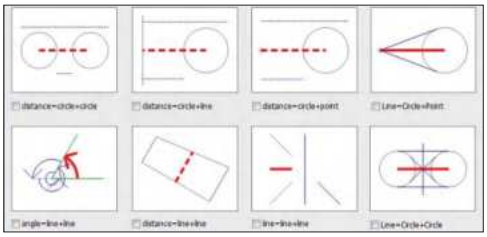
To be continued



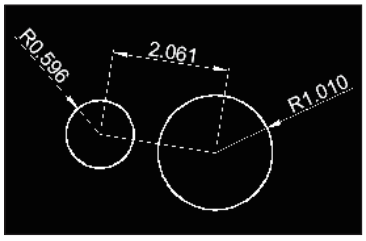
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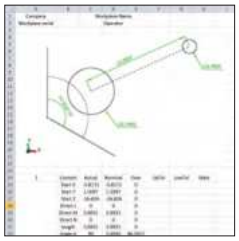
- Measuring and element construct methods:



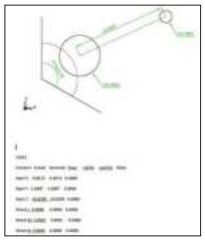
- Sent to CAD, EXCEL, WORD




CAD



EXCEL



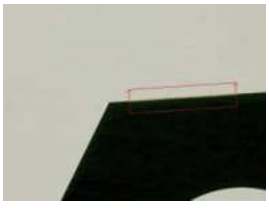
WORD

- Edge-detection:

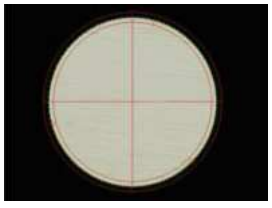
point tool



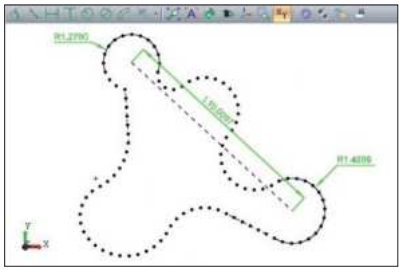
box tool



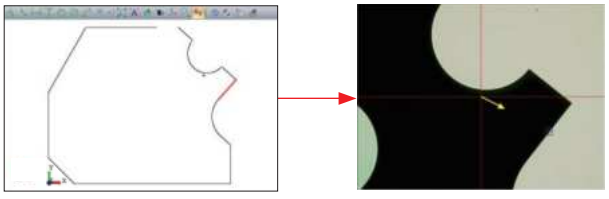
circle tool



- Contour scanning:

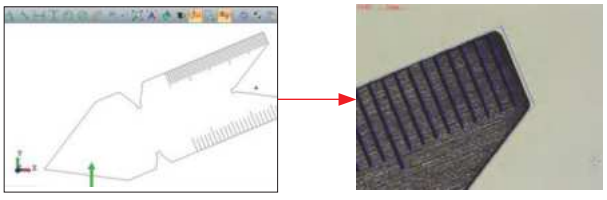


- CAD measuring:



import CAD drawing, set the datum, establish coordinate system, then the software will automatically measure

- CAD comparison:

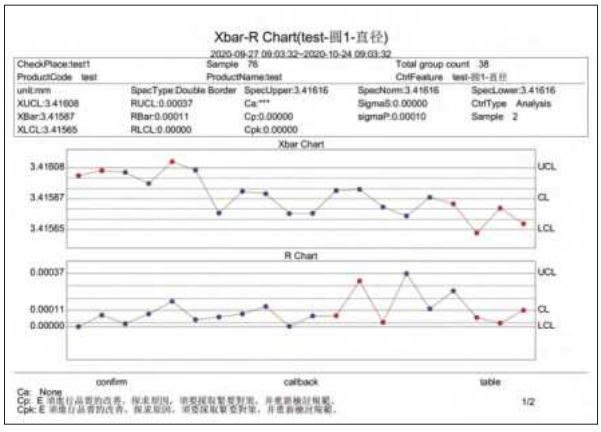


import CAD drawing, then compare with real-time image

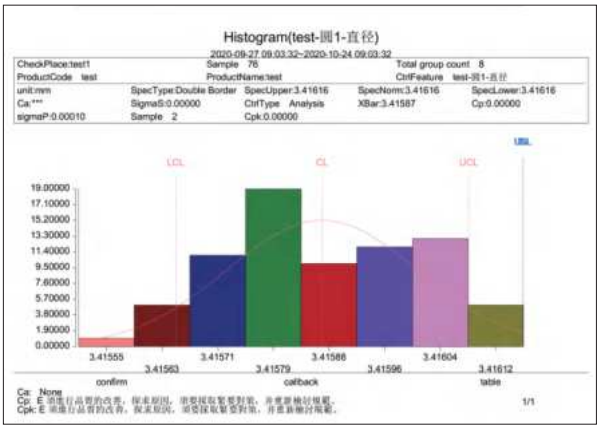
- Profile scanning:



- SPC analysis, import the measuring data to SPC module, generate Xbar-R chart, Xbar-S chart, Mid-R chart, X-Rs chart, Histogram, Sigma A and Sigma S chart, Cpk process chart, Process state analyse chart, Single proscess advice analyse chart

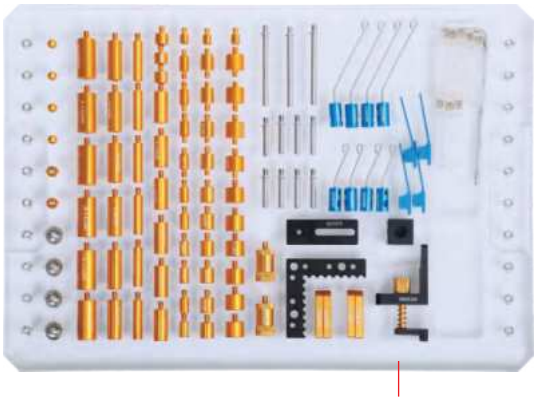



Xbar-R chart

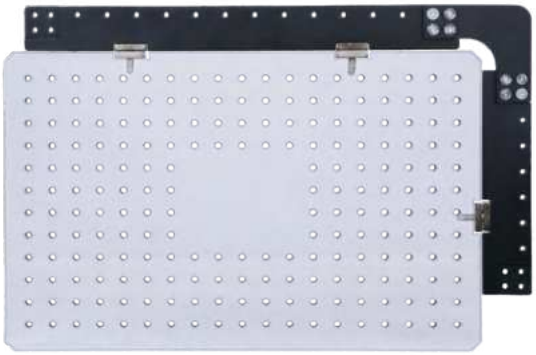



Histogram

# 113-PIECE JIG SET FOR VISION MEASURING SYSTEMS
# CODE ISY-700

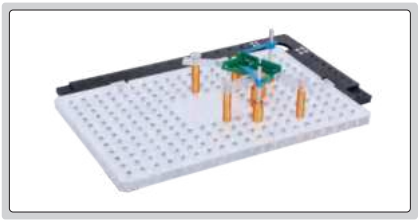


acrylic tray (included)



**ISY-700**

application example



| Product | Code | Size (mm) | Quantity |
|---|---|---|---|
| clip | ISY-700-90001 | 7×34 | 4 |
| clip | ISY-700-90002 | Ø1.5×24 | 4 |
| | ISY-700-90003 | Ø1.5×50 | 4 |
| clip stand | ISY-700-90004 | Ø4×20 | 8 |
| | ISY-700-90005 | Ø4×46 | 3 |
| spherical support head | ISY-700-90006 | — | 4 |
| stand | ISY-700-90007 | Ø6×10 | 6 |
| | ISY-700-90008 | Ø6×25 | 6 |
| | ISY-700-90019 | Ø6×5 | 3 |
| stand | ISY-700-90009 | Ø9×7 | 3 |
| | ISY-700-90010 | Ø9×10 | 6 |
| | ISY-700-90011 | Ø9×20 | 6 |
| | ISY-700-90012 | Ø9×25 | 6 |
| stand | ISY-700-90013 | Ø12×10 | 6 |
| | ISY-700-90014 | Ø12×25 | 6 |
| stand for slice parts | ISY-700-90015 | Ø6×10 | 4 |
| | ISY-700-90016 | Ø9×10 | 4 |
| | ISY-700-90017 | Ø12×10 | 4 |
| stand with fine adjustment | ISY-700-90018 | Ø12×20~25 | 2 |

| Product | Code | Size (mm) | Quantity |
|---|---|---|---|
| adapter for square support | ISY-700-90020 | — | 2 |
| clamping screw | ISY-700-90021 | — | 4 |
| L-shaped positioning plate | ISY-700-90022 | 50×50×6 | 1 |
| sliding support plate | ISY-700-90023 | 30×12×5 | 4 |
| square support | ISY-700-90024 | 20×16×16 | 1 |
| base for square support | ISY-700-90025 | 45×16×6 | 1 |
| spring stand | ISY-700-90026 | — | 1 |
| acrylic sliding support plate | ISY-700-90028 | 45×12×5 | 8 |
| wrench | ISY-700-90029 | M3 | 1 |
| acrylic base plate | ISY-700-90030 | 300×200×12 Hole size: M4X0.7 | 1 |



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# STANDARD GLASS SCALES



ISD-CL300A

- To calibrate optical measuring instruments, also can be used as optical positioning elements in precision machine tools

**STANDARD TYPE**

| Code | Measuring range | Graduation | Length | Width | Thickness | Accuracy |
|---|---|---|---|---|---|---|
| **ISD-CL100A** | 100mm | 1mm | 130mm | 30mm | 5mm | 1μm |
| **ISD-CL200A** | 200mm | 1mm | 230mm | 30mm | 5mm | 1μm |
| **ISD-CL300A** | 300mm | 1mm | 330mm | 30mm | 5mm | 1μm |
| **ISD-CL400A** | 400mm | 1mm | 430mm | 30mm | 5mm | 1μm |
| **ISD-CL500A** | 500mm | 1mm | 530mm | 30mm | 5mm | 2μm |

**ECONOMIC TYPE**

| Code | Measuring range | Graduation | Length | Width | Thickness | Accuracy |
|---|---|---|---|---|---|---|
| **ISD-CL100B** | 100mm | 1mm | 130mm | 30mm | 5mm | 3μm |
| **ISD-CL200B** | 200mm | 1mm | 230mm | 30mm | 5mm | 3μm |
| **ISD-CL300B** | 300mm | 1mm | 330mm | 30mm | 5mm | 3μm |
| **ISD-CL400B** | 400mm | 1mm | 430mm | 30mm | 5mm | 3μm |
| **ISD-CL500B** | 500mm | 1mm | 530mm | 30mm | 5mm | 3μm |

**ADVANCED TYPE (The scale is between two layers of glass and will not be worn off)**

| Code | Measuring range | Graduation | Length | Width | Thickness | Accuracy |
|---|---|---|---|---|---|---|
| **ISD-CL100S** | 100mm | 1mm | 130mm | 30mm | 10mm | 1μm |
| **ISD-CL200S** | 200mm | 1mm | 230mm | 30mm | 10mm | 1.5μm |
| **ISD-CL300S** | 300mm | 1mm | 330mm | 30mm | 15mm | 2.5μm |
| **ISD-CL400S** | 400mm | 1mm | 430mm | 30mm | 15mm | 3μm |
| **ISD-CL500S** | 500mm | 1mm | 530mm | 30mm | 15-25mm | 3.5μm |

# 23 CUTTING TOOLS INSPECTION



**Tool Presetters**
**Page 676-683**



**Cutting Tools Microscopes**
**Page 684**



**Cutting Tools Vision Measuring Systems**
**Page 685-686**



**Shank Runout Testers**
**Page 687**



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VIDEO

CHECK, PRESET AND MEASURE CUTTING TOOLS

AUTOMATIC RECOGNITION OF CUTTING EDGE SHAPES

DATA OUTPUT

# TOOL PRESETTER CODE ISP-A350

INSIZE PLUS
MADE IN EUROPE






attach the printed label on the tool

- Check, preset and measure cutting tools
- Telecentric lens CCD camera system
- Use Bosch or Festo pneumatic components, THK guide ways and HEIDENHAIN scales
- Built-in 104 cutting edge shapes, automatic recognition
- Measuring modes: absolute, relative and incremental measurement
- Measuring radius, angle, concentricity, axial runout, etc.
- Storage of 1000 tool parameters
- View, print and export measurement results



ISO/SK/BT50 to HSK63 A/C/E, HSK80 B/D/F converter (**optional**)



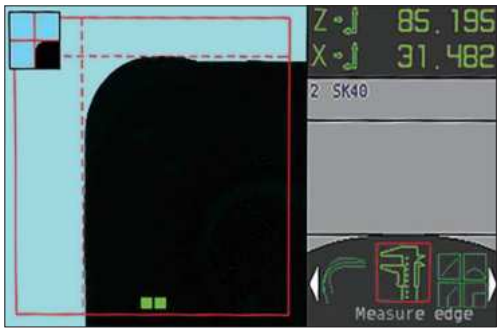
ISO/SK/BT50 to ISO/SK/BT40 converter (**optional**)

**STANDARD DELIVERY**

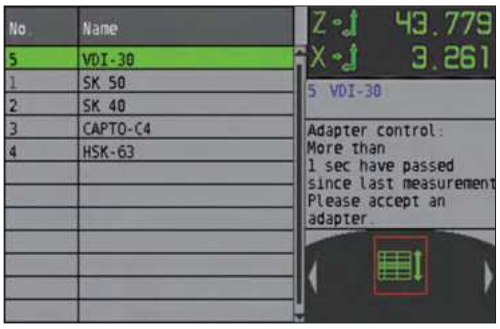
| | |
|---|---|
| **Main unit** | 1 pc |
| **Controller** | 1 pc |
| **ISO/SK/BT50 spindle (including 360° clamping and 4×90° clamping** | 1 pc |
| **Printer** | 1 pc |
| **Printer label paper** | 1 pc |

To be continued

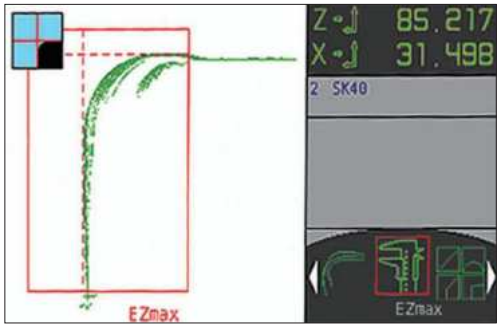
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automatic recognition of cutting edge shapes




can store 99 sets of converter parameters and automatically prompt to check the zero position at fixed time




scan and measure the maximum profile of the cutting tool




check cutting edge wear

**SPECIFICATION**

| | | |
|---|---|---|
| **Maximum tool diameter (X axis)** | | 320mm |
| **Maximum tool height (Z axis)** | | 350mm |
| **Repeatability** | **X axis** | 2μm |
| | **Z axis** | 2μm |
| **X/Z axis resolution** | | 1μm |
| **Camera** | | color CCD |
| **Image processing accuracy** | | 1μm |
| **Magnification** | | 12X |
| **View field** | | 7×7mm |
| **Illumination** | | adjustable LED light |
| **Spindle** | | ISO/SK/BT50 (concentricity 2μm) |
| **Data output** | | USB, RS232 |
| **Working air pressure** | | 0.6~0.8MPa |
| **Environmental requirement** | | temperature: 5~35°C |
| | | relative humidity: 10%~95% |
| **Power supply** | | 100~240V, 50/60Hz |
| **Dimension (L×W×H)** | | 1200×400×870mm |
| **Weight** | | 80kg |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **ISO/SK/BT50 to ISO/SK/BT40 converter** | **ISP-A350-C1** |
| **ISO/SK/BT50 to ISO/SK/BT30 converter** | **ISP-A350-C5** |
| **ISO/SK/BT50 to HSK63 A/C/E, HSK80 B/D/F converter** | **ISP-A350-C2** |
| **ISO/SK/BT50 to HSK50 A/C/E, HSK63 B/D/F converter** | **ISP-A350-C3** |
| **ISO/SK/BT50 to HSK40 A/C/E, HSK50 B/D/F converter** | **ISP-A350-C4** |
| **ISO/SK/BT50 to HSK32 A/C/E, HSK40 B/D/F converter** | **ISP-A350-C6** |
| **Spindle vacuum clamping** | **ISP-A350-VC** |
| **Printer label paper** | **ISP-A350-TAB** |

CHECK, PRESET AND MEASURE CUTTING TOOLS

AUTOMATIC RECOGNITION OF CUTTING EDGE SHAPES

DATA OUTPUT

VIDEO

# TOOL PRESETTER
# CODE ISP-B420

INSIZE PLUS
MADE IN EUROPE




- Windows 10 operation system
- Check, preset and measure cutting tools
- Telecentric lens CCD camera system
- Use Bosch or Festo pneumatic components, THK guideways and HEIDENHAIN scales
- Built-in 113 cutting edge shapes, automatic recognition
- Measuring modes: absolute, relative and incremental measurement
- Measuring radius, angle, concentricity, axial runout, etc.
- Storage of 3000 tool parameters
- View, print and export measurement results



attach the printed label on the tool

To be continued

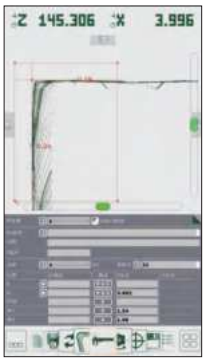
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fast measurement, automatic recognition of cutting edge shapes



can store 99 sets of converter parameters and automatically prompt to check the zero position at fixed time




scan and measure the maximum profile of the tool




check cutting edge wear

## SPECIFICATION

| | | |
|---|---|---|
| **Maximum tool diameter (X axis)** | | 420mm |
| **Maximum tool height (Z axis)** | | 420mm |
| **Range of snap gauge (X axis)** | | 100mm |
| **Repeatability** | **X axis** | 2μm |
| | **Z axis** | 2μm |
| **X/Z axis resolution** | | 1μm |
| **Camera** | | color CCD |
| **Image processing accuracy** | | 1μm |
| **Magnification** | | 20X |
| **View field** | | 7×7mm |
| **Illumination** | | adjustable LED light |
| **Spindle** | | ISO/SK/BT50 (concentricity 2μm) |
| **Data output** | | USB, RS232 |
| **Working air pressure** | | 0.6~0.8MPa |
| **Environmental requirement** | | temperature: 5~35°C |
| | | relative humidity:10%~95% |
| **Power supply** | | 110/220V, 50/60Hz |
| **Dimension (L×W×H)** | | 1900×750×1750mm |
| **Weight** | | 274kg |



ISO/SK/BT50 to HSK63 A/C/E, HSK80 B/D/F converter (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Controller** | 1 pc |
| **Bracket for tools and converters** | 1 pc |
| **ISO/SK/BT50 spindle (including 360° clamping and 4×90° clamping** | 1 pc |
| **Printer** | 1 pc |
| **Printer label paper** | 1 pc |



ISO/SK/BT50 to ISO/SK/BT40 converter (**optional**)

## OPTIONAL ACCESSORY

| | |
|---|---|
| **ISO/SK/BT50 to ISO/SK/BT40 converter** | **ISP-A350-C1** |
| **ISO/SK/BT50 to ISO/SK/BT30 converter** | **ISP-A350-C5** |
| **ISO/SK/BT50 to HSK63 A/C/E, HSK80 B/D/F converter** | **ISP-A350-C2** |
| **ISO/SK/BT50 to HSK50 A/C/E, HSK63 B/D/F converter** | **ISP-A350-C3** |
| **ISO/SK/BT50 to HSK40 A/C/E, HSK50 B/D/F converter** | **ISP-A350-C4** |
| **ISO/SK/BT50 to HSK32 A/C/E, HSK40 B/D/F converter** | **ISP-A350-C6** |
| **Spindle vacuum clamping** | **ISP-A350-VC** |
| **Printer label paper** | **ISP-A350-TAB** |

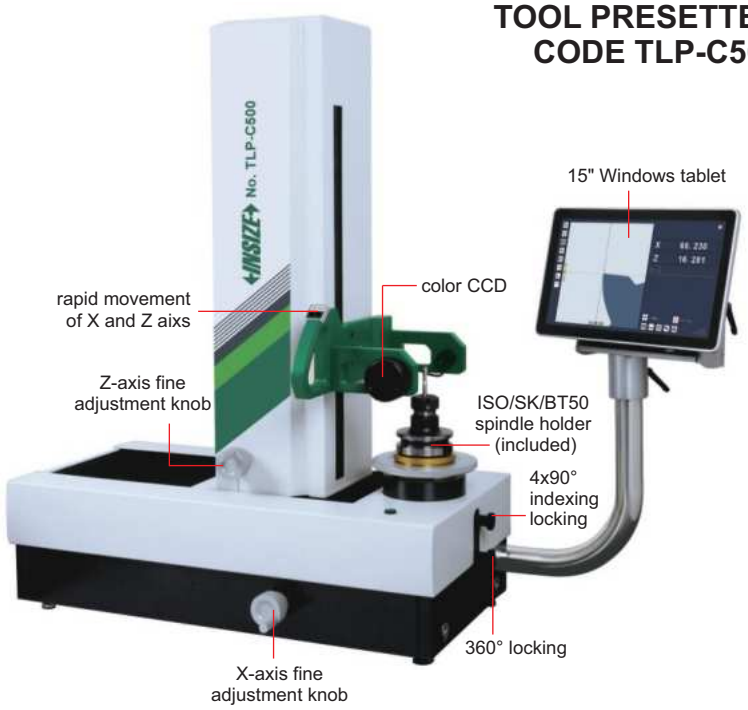
CHECK, PRESET AND MEASURE CUTTING TOOLS

ASSISTED BLADE ALIGNMENT

DATA OUTPUT

VIDEO

# TOOL PRESETTER
# CODE TLP-C500




- Check, preset and measure cutting tools
- CCD camera system with telecentric lens
- Touch screen, shortcut icons for easy operation
- Granite platform, more stable
- Measuring lines, arcs, angles and other elements quickly
- Pictures can be saved
- Measuring modes: absolute, relative and incremental measurement
- Measuring reports can be printed
- Supporting system scanning for direct retrieval and communication with tools machine
- Automatic cutting tools recognition by scanner

## SPECIFICATION

| | | |
|---|---|---|
| Maximum tool diameter (X axis) | | 400mm |
| Maximum tool height (Z axis) | | 500mm |
| Repeatability | X axis | 2μm |
| | Z axis | 2μm |
| Resolution of X/Z axis | | 1μm |
| Radial runout of spindle | | ≤2μm at 100mm, ≤5μm at 300mm |
| Camera | | color CCD, 1.3M pixel |
| Magnification | | 26X |
| View field | | 6.5x6.5mm |
| Illumination | | LED transmitted light source |
| Spindle | | ISO/SK/BT50 |
| Output | | USB |
| Air pressure | | 0.4~0.6MPa |
| Environment requirement | | temperature:10~45°C,relative humidity: 30%~75% |
| Power supply | | 220V |
| Dimension (L×W×H) | | 860×590×1060mm |
| Weight | | 120kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Tablet computer | 1 pc |
| ISO/SK/BT50 spindle (including 4×90° indexing and 360°locking) | 1 pc |
| Anti-dust cover | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| ISO/SK/BT50 to ISO/SK/BT30 converter | TLP-C500-C1 |
| ISO/SK/BT50 to ISO/SK/BT40 converter | TLP-C500-C2 |
| ISO/SK/BT50 to HSK32 A/C/E, HSK40 B/D/F converter | TLP-C500-C3 |
| ISO/SK/BT50 to HSK40 A/C/E, HSK50 B/D/F converter | TLP-C500-C4 |
| ISO/SK/BT50 to HSK50 A/C/E, HSK63 B/D/F converter | TLP-C500-C5 |
| ISO/SK/BT50 to HSK63 A/C/E, HSK80 B/D/F converter | TLP-C500-C6 |
| Spindle vacuum clamping function | TLP-C500-VB |
| Printer | TLP-C500-PRINTER |
| Standard rod | TLP-C500-ROD |
| Scanner | TLP-C500-SCANNER |
| Tool table | TLP-C500-TABLE |
| Ring LED light | TLP-C500-LED |



checking blade geometry quickly



multiple measurement methods can be choosed



scanning the maximum profile of cutting tools



dynamic crosshair automatically adjusting as X and Z aixs move, and the cutting tools can be quickly measured through the dynamic crosshair

# TOOL PRESETTER (PROJECTOR TYPE)
# CODE TLP-P340B

VIDEO





standard rod (included)


BT50/BT40 converter (**optional**)


BT50/BT30 converter (**optional**)

## SPECIFICATION

| | | |
|---|---|---|
| **Maximum tool diameter (X axis)** | | Ø300mm |
| **Height measuring range (Z axis)** | | 45~450mm |
| **Accuracy** | **X axis** | ±6μm |
| | **Z axis** | ±13μm |
| **Resolution** | | 0.5μm |
| **Diameter of projection screen** | | Ø120mm |
| **Lens** | **magnification** | 20X |
| | **view filed** | Ø6mm |
| **Illumination** | | 3W LED |
| **Spindle holder** | | BT50 |
| **Working air pressure** | | 0.6MPa |
| **Power supply** | | 110/220V, 50/60Hz |
| **Dimension (L×W×H)** | | 690×620×922mm |
| **Weight** | | 160kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **BT50 spindle holder** | 1 pc |
| **Standard rod** | 1 pc |
| **Foot-switch** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **BT50/BT30 converter** | **TLP-P340B-C1** |
| **BT30 rod** | **TLP-P340B-R1** |
| **BT50/BT40 converter** | **TLP-P340B-C2** |
| **BT40 rod** | **TLP-P340B-R2** |
| **Printer** | **TLP-P340B-PRINTER** |

VIDEO




rotate the handwheel to rotate tools




**TLP-400E**



standard rod (included)



BT50/BT40 converter (**optional**)



BT50/BT30 converter (**optional**)

- Absolute linear scales, zero setting is not needed after power on and off

**SPECIFICATION**

| Code | TLP-400E | TLP-400EP |
|---|---|---|
| Printer | not included | included |
| Maximum tool diameter (X axis) | Ø300mm | |
| Height measuring range | 60~400mm | |
| Repeatability | 0.005mm | |
| Measuring accuracy | 0.01mm | |
| Linear scale resolution | 0.001mm | |
| Dial indicator graduation | 0.001mm | |
| Spindle holder | BT50 | |
| Power supply | 110/220V, 50/60Hz | |
| Dimension (L×W×H) | 720×480×930mm | |
| Weight | 150kg | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| BT50 spindle holder | 1 pc |
| Standard rod | 1 pc |
| Dial indicator | 2 pcs |
| Wrench | 1 set |
| Anti-dust cover | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| BT50/BT30 converter | TLP-300H-C1 |
| BT50/BT40 converter | TLP-300H-C2 |

# TOOL PRESETTERS (BASIC TYPE)

VIDEO




TLP-300H






standard rod (included)



BT50/BT40 converter (**optional**)



BT50/BT30 converter (**optional**)

- Absolute linear scales, zero setting is not needed after power on and off

**SPECIFICATION**

| Code | TLP-300H | TLP-300HP |
|---|---|---|
| Printer | not included | included |
| Maximum tool diameter (X axis) | Ø300mm | |
| Height measuring range | 60~300mm | |
| Repeatability | 0.005mm | |
| Measuring accuracy | 0.02mm | |
| Linear scale resolution | 0.005mm | |
| Dial indicator graduation | 0.01mm | |
| Spindle holder | BT50 | |
| Power supply | 110/220V, 50/60Hz | |
| Dimension (L×W×H) | 600×365×690mm | |
| Weight | 68kg | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| BT50 spindle holder | 1 pc |
| Standard rod | 1 pc |
| Dial indicator | 2 pcs |
| Wrench | 1 set |
| Anti-dust cover | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| BT50/BT30 converter | TLP-300H-C1 |
| BT50/BT40 converter | TLP-300H-C2 |



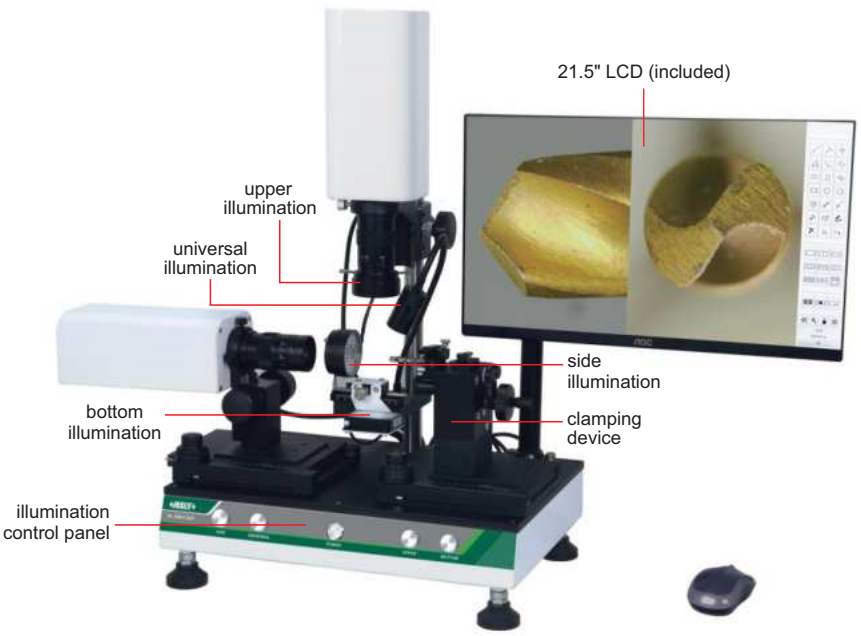


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TAKE PICTURES AND VIDEOS | BUILT-IN SOFTWARE WITHOUT COMPUTER | SPLIT SCREEN DESIGN

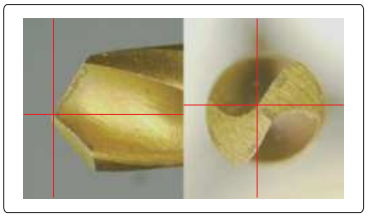
# CUTTING TOOLS MICROSCOPE
# CODE ISM-CT820

VIDEO



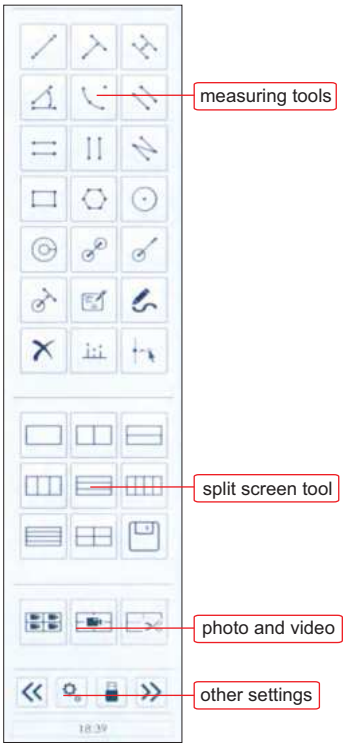


glass calibration plate (included)


display cross hairs separately (movable)

- Split screen design, zoom in and out independently
- One mouse can operate two cameras
- Display cross hairs
- Brightness, contrast ratio, white balance are adjustable
- Basic measuring tools including point to point, point to line, line to line, angle, three-point circle, etc.

## SOFTWARE (INCLUDED)




**screen display**


single screen display


single screen display


split screen display

## SPECIFICATION

| | |
|---|---|
| Cutting tools range | Ø4~12mm, length 30-75mm |
| Lens | step-zoom lens |
| Output | HDMI |
| Resolution | 1920×1080 |
| Frame rate | 60fps |
| Focus distance | 85mm |
| View field | 2×3.5~13.2×23.9mm |
| Magnification | 20-132X |
| Power supply | AC 100-240V |
| Dimension (L×W×H) | 450×300×700mm |
| Weight | 20kg |

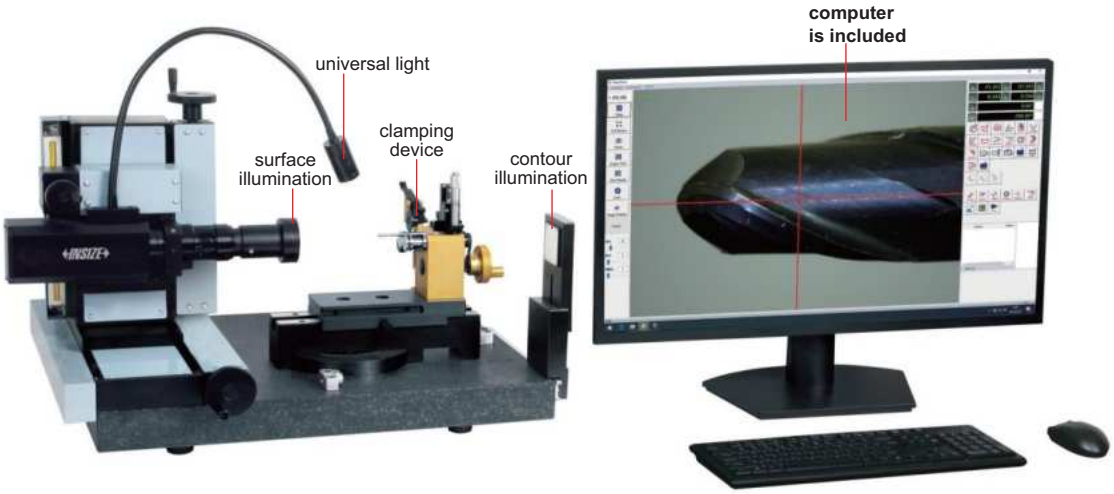
## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Display | 1 pc |
| 32G USB flash disk | 1 pc |
| Mouse | 1 pc |
| HDMI cable | 1 pc |
| Glass calibration plate | 1 pc |
| Anti-dust cover | 1 pc |

# CUTTING TOOLS VISION MEASURING SYSTEM
# CODE TLP-D150

CAD COMPARISON | SCAN MAXIMUM PROFILE | CUTTING TOOLS MEASUREMENT

VIDEO




measurement items

**Drill bit:**
helical angle bandwidth, back of blade, angle of main cutting edge in front, in back, back angle, top angle, cross angle, cross width, feed angle of internal edgeretreat angle height difference, cross-edge runout, rear blade width, B value, C value, tip chamfer angle, tip width, feed radius, chipformer parameters, overall comparison of dxf on end face.
**Milling cutter:**
groove front angle, back angle, groove depth, core thickness, spiral angle, belt width, blade width, end edge 1st 2nd back angle, front angle of the end blade, long tooth overcenter, parameters of the end tooth chipformer, taper, radius, chamfer size, etc.
**Tap:**
measurement of chamfer, groove shape, leading and trailing angles, tooth angle, pitch, pitch diameter.
**Blade:**
using V-shaped fixtures for cross clamping or install on cylindrical tool holders to measure chamfers, back angles, and fillet sizes.
**Reamer:**
anterior angle, helix angle, core thickness, groove depth, belt width, chamfer, etc.
**Gun drill inspection**
**Cutting edge wear inspection**
**Step length**
**Cutting edge end runout and trail runout**
**Tool profile comparison**



concentric clamp (included)



V-clamp (included)



V-concentric clamp (**optional**)

- Measurement and inspection of milling cutters, drill bits, non-standard molding tools under surface light
- Profile measurement, automatic profile capture for straight and helical fluted tools
- Import and export CAD file
- High magnification for clear observation of tool chipping and grinding wheel pattern on the back face
- Granite platform, more stable
- Ergonomically designed structure, easy and quick to operate
- The crosshairs of the cutting edge can be automatically recognized and captured
- Automatic and manual measurements
- Data storage, analysis, management, photography, image storage and management

To be continued



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Continued from previous page

## SPECIFICATION

| | |
|---|---|
| **Measuring range (X×Y)** | 150×60mm |
| **Applicable range** | 0~40mm |
| **Resolution of X/Y axis** | 1μm |
| **Accuracy of X/Y axis** | 5μm |
| **Repeatability of X/Y axis** | 2μm |
| **Objective** | 0.58X~8X (zoom) |
| **View field (diagonal length)** | 2.0~29mm |
| **Working distance** | 68mm |
| **Magnification** | 20X~240X (on 27" monitor) |
| **Camera** | color CCD, 0.3M pixel |
| **Illumination** | surface and contour with adjustable LED, with universal light |
| **Operation system** | Windows 10 |
| **Drive method** | manual |
| **Power supply** | 110~220V, 50/60Hz |
| **Dimension (L×W×H)** | 600×450×500mm |
| **Weight** | 60kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Dongle** | 1 pc |
| **Concentric clamp** | 1 pc |
| **V-clamp** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Cutter handle clamp** | **TLP-D150-C1** |
| **V-concentric clamp** | **TLP-D150-C2** |

## SOFTWARE (INCLUDED)





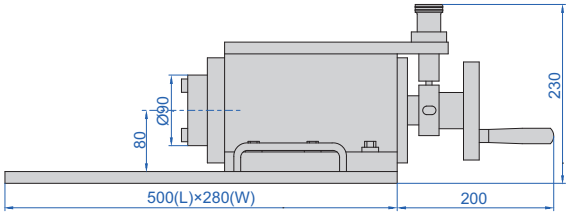

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# SHANK RUNOUT TESTERS



4771-30

Unit: mm



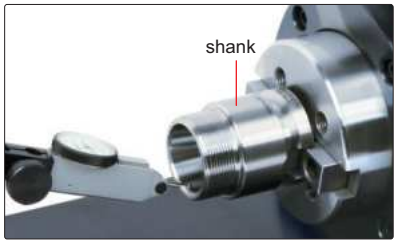

- Measure the radial runout of shanks, collets and cutting tools
- Optional accessory: dial test indicator, magnetic stand

standard shank (included)

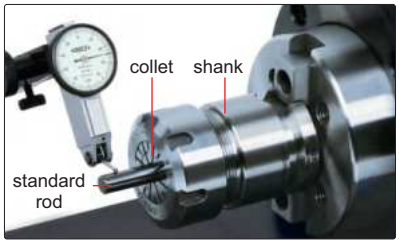


| Code | Taper | Accuracy |
|---|---|---|
| **4771-30** | BT30 | 1μm |
| **4771-40** | BT40 | 1μm |
| **4771-50** | BT50 | 1μm |

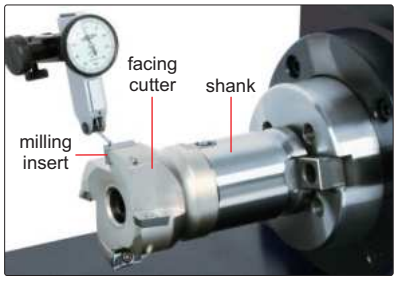
measure radial runout of shank



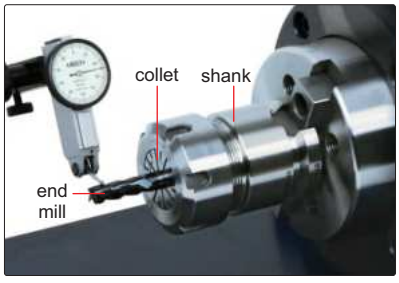

measure radial runout of collet




measure radial runout of cutter




measure radial runout of end mill






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# MICROSCOPES, MAGNIFIERS 24



Large Depth Of Field 3D Measuring Microscopes
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Toolmaker Microscopes
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Digital Microscopes
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Metallurgical Microscopes
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Industrial Microscopes
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Zoom Stereo Microscopes
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Polarizing Microscopes
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Digital Cameras For Microscopes
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Metallurgical Analysis Softwares
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Portable Measuring Microscopes
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Table Magnifiers With Illumination
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Digital Magnifiers
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Magnifiers
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Telescoping Inspection Mirrors
Page 771



Telescoping Pick-up
Page 772

# LARGE DEPTH OF FIELD 3D MEASURING MICROSCOPE (ADVANCED TYPE) CODE ISM-H5000

STEREOSCOPIC 3D IMAGING | IMAGE STITCHING | MOTORIZED XYZ AXIS | 2D/3D MEASUREMENT | MAGNIFICATION 30~6000X | MOTORIZED ZOOM LENS | MAP NAVIGATION

VIDEO

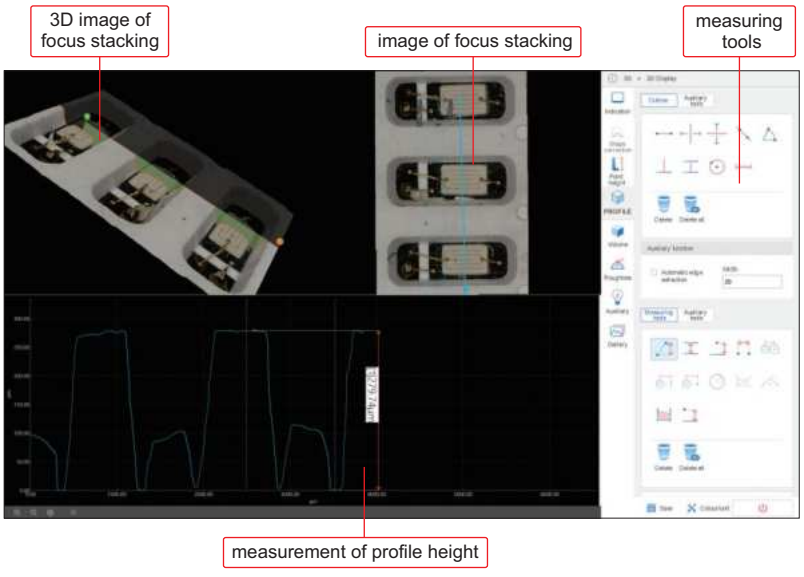



- High definition telecentric imaging lens
- Auto focus
- 4 motorized switching objectives
- Split-screen display
- Rotatable stage
- Take picture and video
- Multiple illumination options for different products and scenarios
- Elimination of reflections and dark field halos, HDR, optical shadows
- Automatic stitching for large field view and measurement after stitching
- Measurements can be saved in reports and exported

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Computer | 1 pc |
| Glass calibration plate | 1 pc |
| Anti-dust cover | 1 pc |
| 16G USB flash disk | 1 pc |

**COMPUTER SOFTWARE (INCLUDED)**




tiltable observation



To be continued



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Continued from previous page

**SPECIFICATION**

| | | |
|---|---|---|
| **Magnification** | | 30X~6000X<br>(30X, 40X, 50X, 80X, 100X, 150X, 200X, 300X, 300X, 400X, 500X, 700X, 1000X, 1500X, 2000X, 2500X, 4000X, 5000X, 6000X)<br>5000X and 6000X are digital magnification |
| **Objective** | | 1.5X, 5X, 20X, 50X |
| **Horizontal resolution** | | 0.42μm |
| **Maximum depth of field** | | 30mm |
| **Working distance** | | 2~30mm |
| **Max. height of workpieces** | | 90mm |
| **View field** | | 50.60×38.00μm~9977.30×7483.00μm |
| **Accuracy** | | ±(0.5+0.005L)um(L is measuring length or height in mm) |
| **Illumination** | | bright field (full/zoned), dark field (full/zoned), hybrid lighting, projected lighting |
| **Light source life** | | LED, lifespan about 40,000 hours |
| **Maximum viewable pixel size** | | 2D: 5 billion pixels, 3D: 2.5 billion pixels |
| **Tilting angle range** | | -89°~+89° |
| **Camera** | **sensor** | 1/1.7"CMOS |
| | **pixel** | 12.22M (4168×3062) |
| | **frame rate** | 30fps |
| | **resolution** | quick: 2048×1536, standard: 2880×2160,<br>high resolution: 4000×3000, high definition: 8000×6000/12000×9000 |
| **Display** | **size** | 27" |
| | **screen size** | 596.736×335.664mm |
| | **pixel pitching** | 0.1554×0.1554mm |
| | **resolution** | 3840×2160 |
| **Motorized stage** | **movement axis** | X/Y/θ axis |
| | **range** | 40mm×40mm |
| | **size** | 228mm×204mm |
| | **moving speed** | 10mm/s |
| | **resolution** | 1μm |
| | **θ angle of rotation** | -90°~+90 |
| | **max. weight of workpiece** | 5kg |
| **Upper Z-axis** | **control mode** | motorized |
| | **moving speed** | 16.5mm/s |
| | **resolution** | 0.1μm |
| | **range** | 50mm |
| **Lower Z-axis** | **control mode** | motorized |
| | **resolution** | 1μm |
| | **moving speed** | 6mm/s |
| | **range** | 50mm |
| **Power supply** | | 220V |
| **Dimension (L×W×H)** | | 600×320×710mm |
| **Weight** | | 70kg |

**SOFTWARE FUNCTION**

| | |
|---|---|
| **Imaging** | 2D imaging, 3D imaging |
| | adjustable elimination of reflection |
| | adjustable elimination of ring halos |
| | HDR, adjustable brightness/contrast/color difference |
| | optical shadow |
| | jitter correction |
| | 2D stitching, 3D stitching |
| | fast 3D synthesis, high precision 3D synthesis |
| | chromatogram height |
| **Measuring** | stitching measurement |
| | plane measurement (distance/angle/radius/area, automatic edge detection, scale display) |
| | 3D measurement (point height/profile etc.) |
| **File** | take and save pictures, videos |
| | export report to Excel |

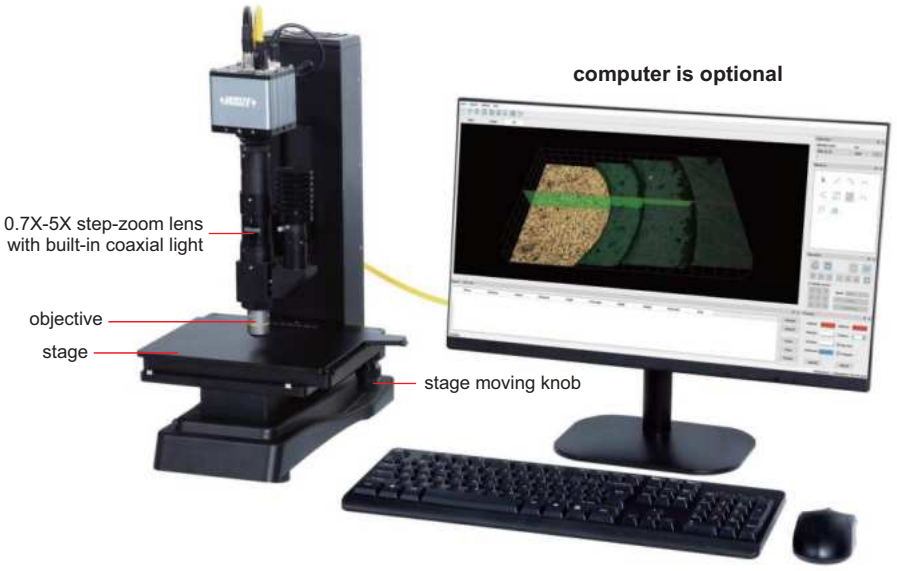
# LARGE DEPTH OF FIELD 3D MEASURING MICROSCOPE
# CODE 5323-D215

STEREOSCOPIC 3D IMAGING

ROTATABLE OBSERVATION

PROFILE HEIGHT MEASUREMENT

VIDEO




- The Z-axis is driven by high precision stepping motor
- Can be connected to display and computer at the same time
- Fast generation of large depth of field images
- Plane measurement and profile height measurement

## SPECIFICATION

| | |
|---|---|
| **Sensor** | 1/1.2" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Magnification (10X objective)** | 142~970X (on 21.5" monitor) |
| **Z-axis measurement range** | 30μm~6mm |
| **View field (10X objective)** | 0.29×0.16~2.0×1.2mm |
| **Working distance** | 11mm |
| **Frame rate** | 30fps |
| **Stage** | size: 200×180mm |
| | travel: 200×180mm |
| **Plane measuring accuracy** | ±5μm |
| **Profile measuring accuracy*** | ±10μm |
| **Output** | HDMI/LAN |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 230×330×500mm |
| **Weight** | 12.7kg |

* During 3D synthesis, the number of photos should be not less than 150pcs in order to achieve this accuracy

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **10X objective** | 1 pc |
| **1X objective** | 1 pc |
| **Power adapter** | 1 pc |
| **Calibration plate** | 1 pc |
| **16G USB flash disk** | 1 pc |

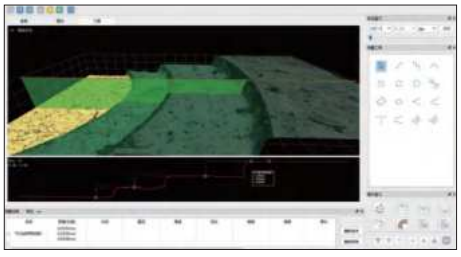
## COMPUTER

| | |
|---|---|
| **Operation system** | Win 10/11 (64 bits) |
| **CPU** | Intel Core 2 2.8GHz |
| **Memory** | 16GB |
| **LAN port** | Gigabit Ethernet port |

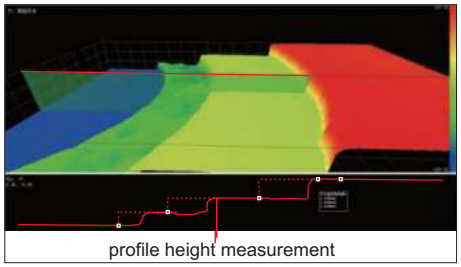
## OPTIONAL ACCESSORY

| | |
|---|---|
| **5X objective** | **5323-D215-5X** (working distance: 15mm) |
| **20X objective** | **5323-D215-20X** (working distance: 12mm) |
| **50X objective** | **5323-D215-50X** (working distance: 4mm) |

## SOFTWARE FOR COMPUTER (INCLUDED)

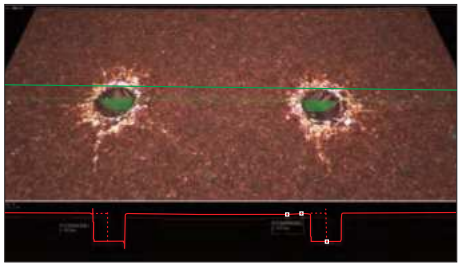


constructing stereoscopic 3D imaging that can be dragged and rotated for viewing, the cutting line can be dragged at any angle



profile height measurement

the chromatogram height clearly shows the difference in three-dimensional height



fast generation of large depth of field images

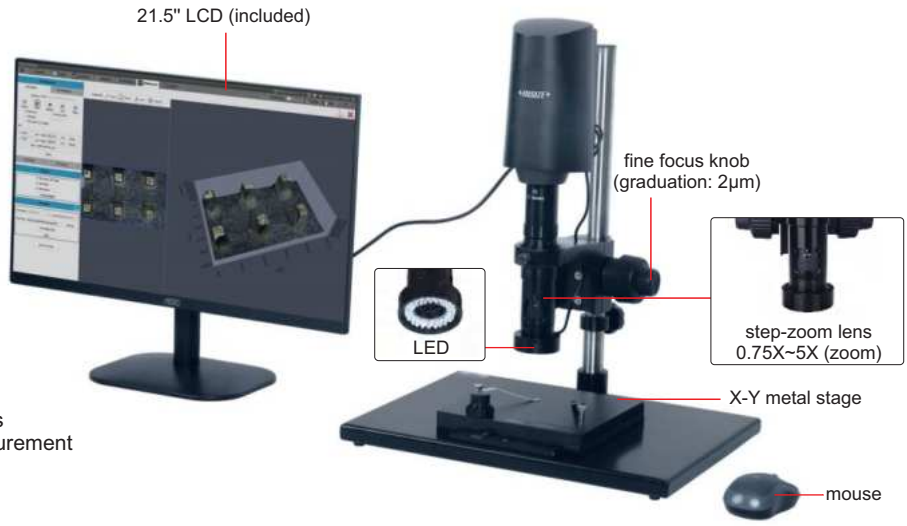


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# LARGE DEPTH OF FIELD 3D MEASURING MICROSCOPE
# CODE 5324-K210

AUTO FOCUS | BUILT-IN SOFTWARE WITHOUT COMPUTER | STEREOSCOPIC 3D IMAGING | ROTATABLE OBSERVATION | PLANE MEASUREMENT AND PROFILE HEIGHT MEASUREMENT

VIDEO




- Auto focus camera
- Built-in motor, automatic focus stacking
- PDF report can be exported
- Fast generation of large depth of field images
- Plane measurement and profile height measurement

## SPECIFICATION

| | |
|---|---|
| **Sensor** | 1/2" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920x1080 |
| **Magnification** | 100~750X |
| **Z-axis measurement range** | 2mm |
| **View field** | 0.6x0.32~4.5x2.5mm |
| **Working distance** | 30~40mm |
| **Frame rate** | 60fps |
| **Plane measuring accuracy** | ±8μm |
| **Output** | HDMI/LAN |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 570×300×430mm |
| **Weight** | 10kg |

## STANDARD DELIVERY

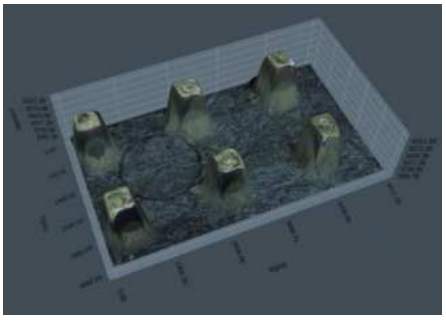
| | |
|---|---|
| **Main unit** | 1 pc |
| **X-Y metal stage** | 1 pc |
| **Mouse** | 1 pc |
| **Keyboard** | 1 pc |
| **Power adapter** | 3 pcs |
| **Glass calibration ruler** | 1 pc |
| **Calibration block** | 1 set |
| **16G USB flash disk** | 1 pc |

## PROFILE HEIGHT MEASUREMENT ACCURACY

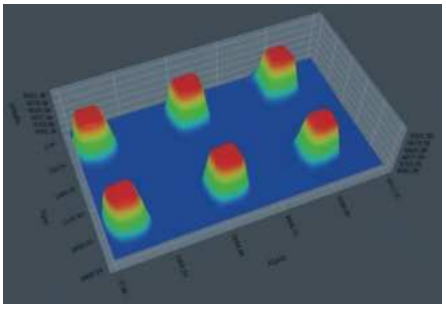
| Objective magnification | Measuring range | Measuring accuracy |
|---|---|---|
| 1.5X | 2000μm | ±20μm |
| 2X | 1200μm | ±10μm |
| 2.5X | 800μm | ±10μm |
| 3X | 600μm | ±6μm |
| 3.5X | 400μm | ±5μm |
| 4X | 320μm | ±5μm |
| 4.5X | 250μm | ±5μm |
| 5X | 200μm | ±3μm |

* Measurement of profile height at 0.75X and 1X is not recommended

## SOFTWARE (INCLUDED)



constructing stereoscopic 3D imaging that can be dragged and rotated for viewing



the chromatogram height clearly shows the difference in three-dimensional height

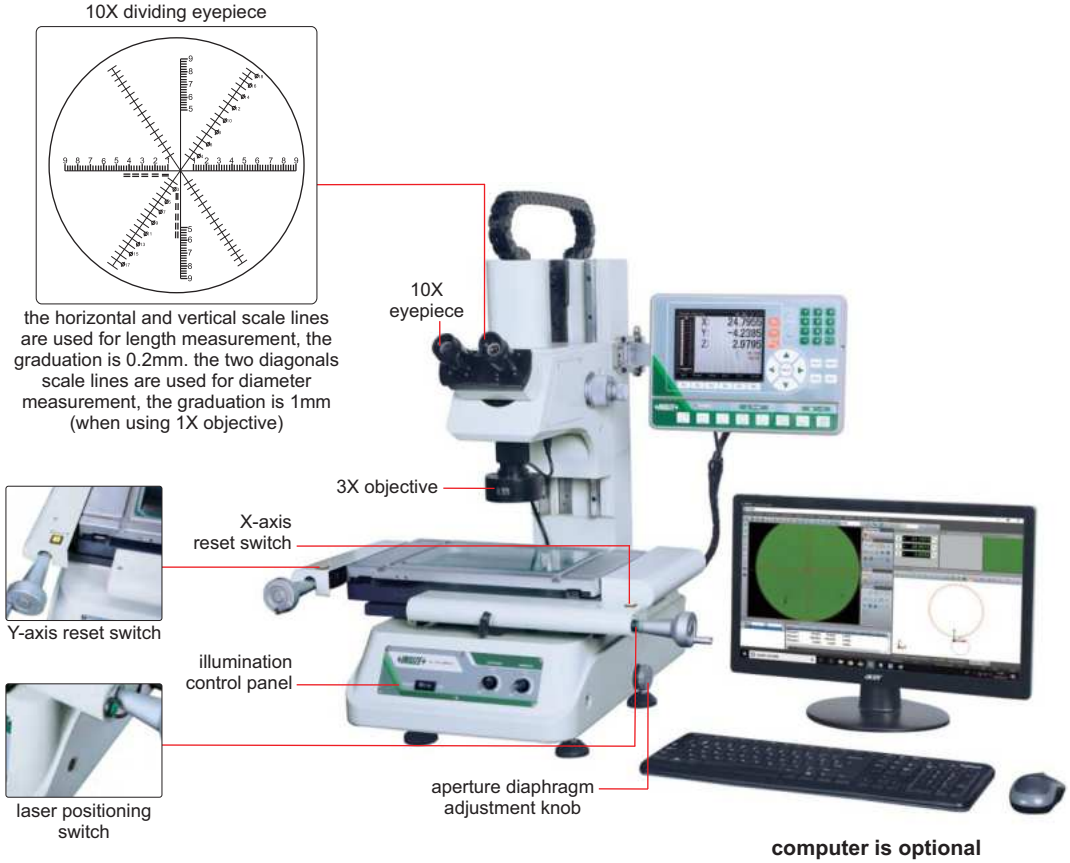


fast measurement of profile height difference

# TOOLMAKER MICROSCOPES

INSPECTION CERTIFICATE

VIDEO




**ISD-VMM215**

## SPECIFICATION

| Code | binocular | ISD-VMM205 | ISD-VMM215 | ISD-VMM225 | ISD-VMM235 |
|---|---|---|---|---|---|
| | monocular | ISD-VMM205D | ISD-VMM215D | ISD-VMM225D | ISD-VMM235D |
| X/Y axis travel | | 150×100mm | 200×100mm | 250×150mm | 300×200mm |
| Z axis travel | | 150mm | 150mm | 200mm | 200mm |
| Metal stage size | | 354×228mm | 404×228mm | 450×280mm | 500×330mm |
| Glass stage size | | 210×160mm | 260×160mm | 306×196mm | 350×250mm |
| Resolution of X/Y/Z axis | | 0.5μm | | | |
| Accuracy of X/Y axis | | ≤(3.5+L/100)μm (L is the measuring length in mm) | | | |
| Repeatability | | 2μm | | | |
| Camera | | 1/3" color CCD, 0.3M pixel | | | |
| Optical magnification | | 30X (with 3X objective) | | | |
| Image magnification | | 114X (on 19" monitor) | | | |
| Illumination | | surface and contour with adjustable LED | | | |
| Max. weight of workpiece | | 25kg | | | |
| Power supply | | 100V~240V, 50/60Hz | | | |
| Operation system | | Windows 7/8/10 | | | |
| Drive method | | manual | | | |
| Dimension (L×W×H) | | 540×667×850mm | 540×667×850mm | 800×675×920mm | 800×675×920mm |
| Weight | | 100kg | 110kg | 135kg | 140kg |

To be continued

Continued from previous page

### DATA PROCESSING UNIT

| | |
|---|---|
| **Output** | RS232 |
| **Function** | simple measuring tools<br>measure coordinate of points<br>measure lines<br>measure center coordinate, radius of circle with three points<br>measure distances betwen two objects<br>measure angles<br>set origin of coordinate<br>skew and calibrate the workpiece<br>measure rectangle (including length, width, perimeter and center coordinate)<br>measure thread (including thread diameter, screw pitch, screw angle)<br>measure slot (including center coordinate, length, width) |

### STANDARD DELIVERY

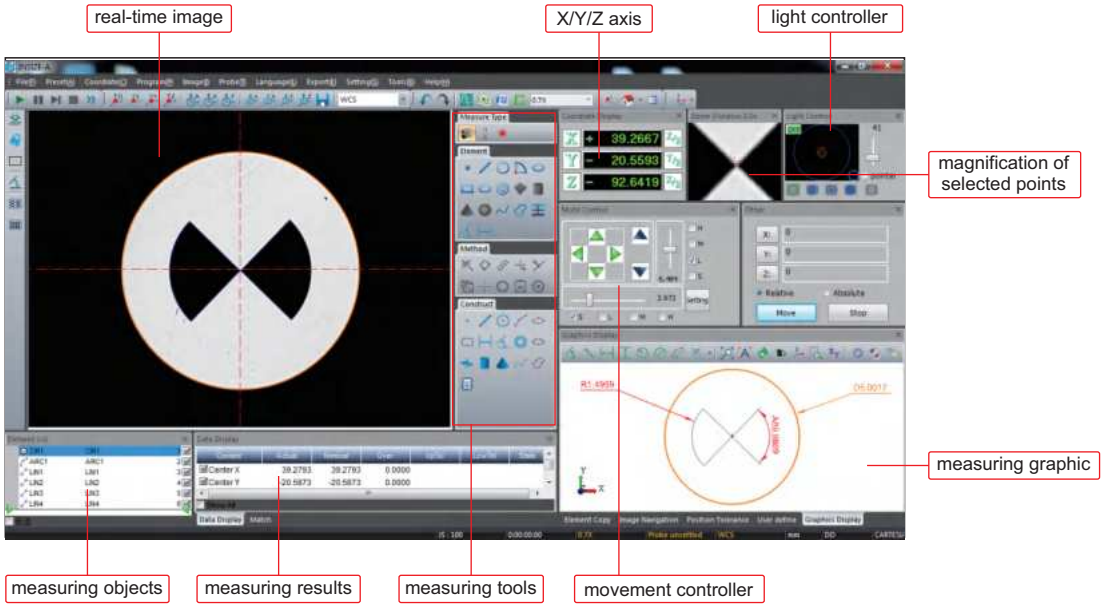
| | |
|---|---|
| **Main unit** | 1 pc |
| **Video card with dongle** | 1 pc |
| **Software disc** | 1 pc |
| **Calibration glass chart** | 1 pc |
| **Demo sample** | 1 pc |
| **Foot switch** | 1 pc |
| **3X objective** | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| **1X objective** | **ISD-VMM-LENS1X** |
| **5X objective** | **ISD-VMM-LENS5X** |
| **10X objective** | **ISD-VMM-LENS10X** |
| **Toolmaker microscopes (with computer)** | code: **ISD-VMM205A** (binocular)<br>**ISD-VMM215A** (binocular)<br>**ISD-VMM225A** (binocular)<br>**ISD-VMM235A** (binocular)<br>code: **ISD-VMM205DA** (monocular)<br>**ISD-VMM215DA** (monocular)<br>**ISD-VMM225DA** (monocular)<br>**ISD-VMM235DA** (monocular) |

### SOFTWARE (INCLUDED)

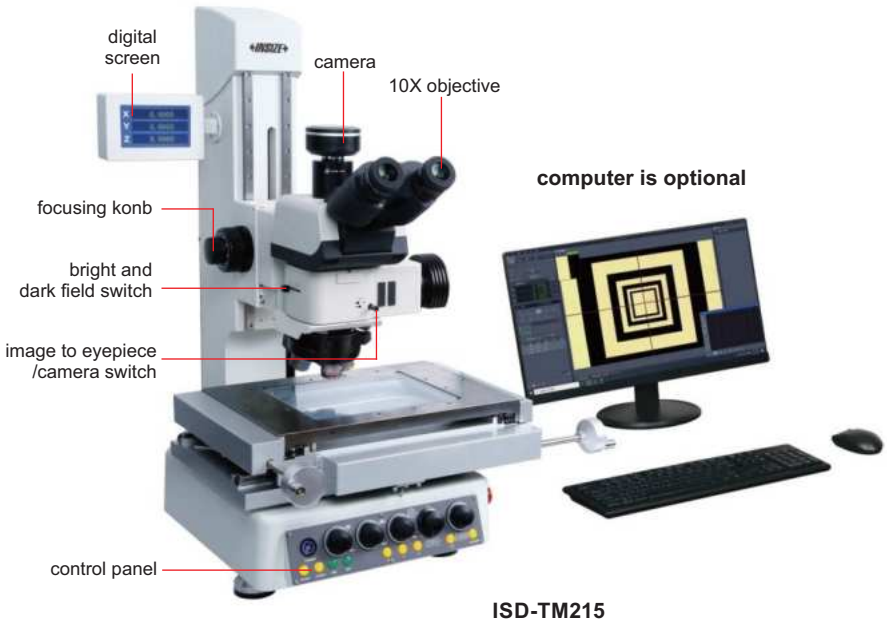
- Refer to page 671~672 for details



# HIGH MAGNIFICATION TOOLMAKER MEASURING MICROSCOPES (ADVANCED TYPE)

INSPECTION CERTIFICATE

VIDEO




**ISD-TM215**

- For precision measurement and observation of industrial devices
- ECGO infinite chromatic aberration correction optical system
- High-density super power white LED chip array, high color rendering index, long life
- High precision linear scales
- Adopting motorized objective lens switching and supporting light intensity management
- Motorized Z-axis and focusing assist are included
- Measuring software is included, in-field image direct measurement, quick reading, out of image measurement for large workpieces, accurate measurement through image point selection, vectorlayer construction

**SPECIFICATION**

| Code | ISD-TM215 | ISD-TM320 | ISD-TM330 | ISD-TM430 |
|---|---|---|---|---|
| X/Y axis travel | 200×150mm | 300×200mm | 300×300mm | 400×300mm |
| Metal stage size | 400×280mm | 500×350mm | 500×450mm | 600×450mm |
| Glass stage size | 245×192mm | 350×250mm | 350×300mm | 450×300mm |
| Z axis travel | 210mm | | | |
| Z axis drive method | manual coarse and fine adjustment, motorized coarse and fine adjustment | | | |
| Resolution of X/Y/Z axis | 0.1μm | | | |
| Accuracy of X/Y axis | ≤(2.5+L/50)μm (L is the measuring length in mm) | | | |
| Repeatability of X/Y axis | 2μm | | | |
| Optical magnification | 50X~500X (up to 1000X with optional 100X objective) | | | |
| Digital magnification | 150X~1500X (on 23.8" monitor), up to 3000X with optional 100X objective | | | |
| Eyepiece | large field SWH10X-H (view field: 25mm, adjustable visibility), with crossline | | | |
| Illumination | critical/kohler Illumination, supporting bright field, polarized light, dark field and other lighting methods | | | |
| Observation tube | 15~45° adjustable, inverse image, distance adjustable: 45~78mm, 0/100, 100/0 binocular | | | |
| Diopter adjustment | ±5 diopter (two eyepieces) | | | |
| Max. weight of workpiece | 30kg | | | |
| Power supply | 110~220V, 50/60Hz | | | |
| Dimension (L×W×H) | 675×645×785mm | 680×645×785mm | 680×645×785mm | 780×750×820mm |
| Weight | 125kg | 150kg | 185kg | 215kg |

To be continued

Continued from previous page

## OBJECTIVES SPECIFICATION

| Objective(flat field semi apochromatic) | 5X (included) | 10X (included) | 20X (included) | 50X (included) | 100X (**optional**) |
|---|---|---|---|---|---|
| Illumination | coaxial vertical light, bright and dark field | | | | |
| Working distance | 15.0mm | 8.5mm | 11.9mm | 8mm | 3.0mm |
| Depth of field range | 12.27μm | 3.06μm | 1.72μm | 1.00μm | 0.43μm |
| Visible range | 5.3mm | 2.65mm | 132mm | 0.53mm | 0.26mm |
| Numerical aperture | 0.15 | 0.3 | 0.4 | 0.55 | 0.8 |

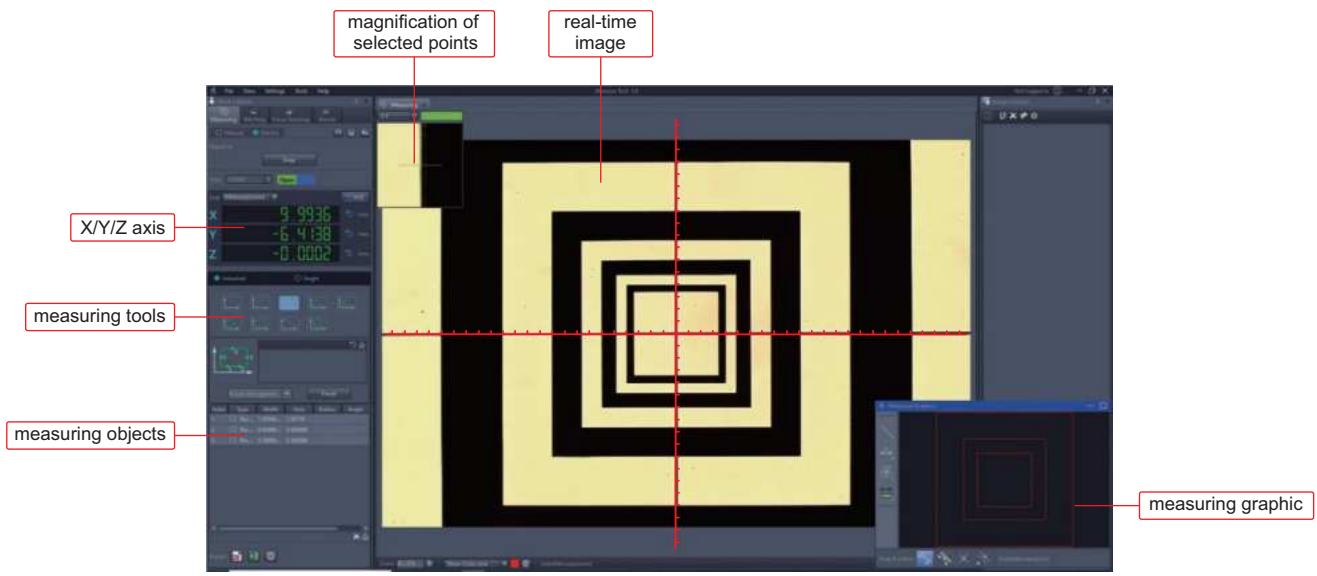
## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Anti-dust cover | 1 pc |
| 0.63X camera adapter (adjustable focus) | 1 pc |
| Camera (20M pixels) | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Glass calibration ruler | ISM-MAS-SCALE |
| 100X objective | ISD-TM-100X |
| Polarizer | ISD-TM-PO |
| Analyzer | ISD-TM-AN |
| Differential interference module (DIC) | ISD-TM-DIC |
| Computer | ISD-TM-COMPUTER-E |

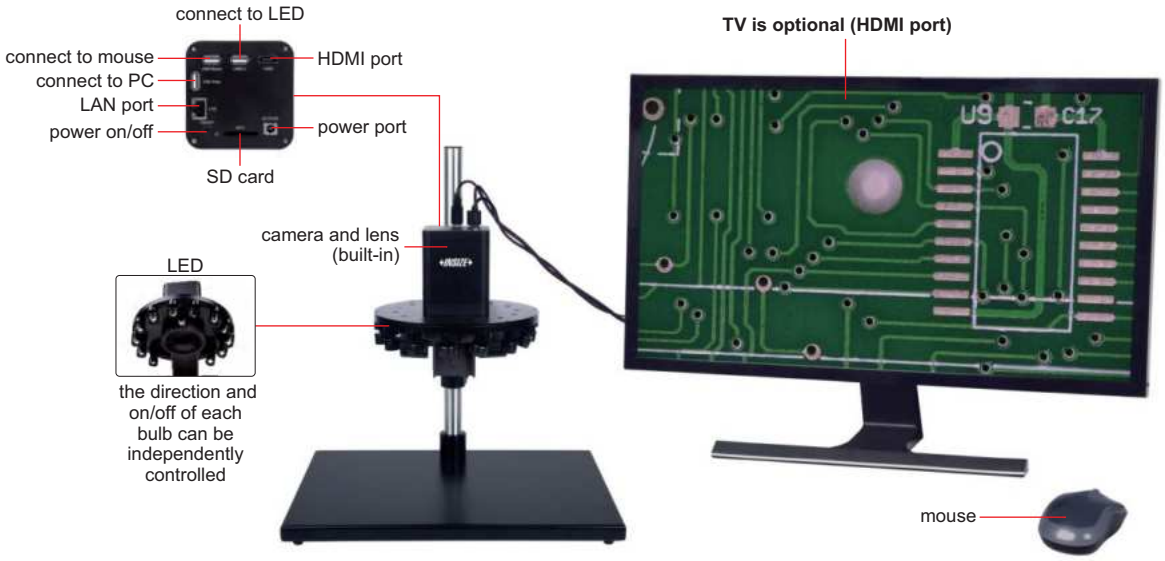
## MEASURING SOFTWARE (INCLUDED)



# HIGH-DEFINITION AUTO FOCUS DIGITAL MICROSCOPE (LARGE VIEW FIELD) CODE 5320-AF410

VIDEO

AUTO FOCUS | MEASUREMENT | TAKE PICTURES AND VIDEOS | LED INDEPENDENT ADJUSTMENT | CAN BE CONNECTED TO PC AND TV AT THE SAME TIME




- Auto focus camera
- Take pictures and videos
- Built-in measuring software
- Automatic exposure, sharpening, denoising and white balance
- 4K/1080P automatically switched by display resolution
- Display actual magnification
- Digital magnification
- Motorized light control
- Display cross hair and gridline




can be connected to PC and TV at the same time

## SPECIFICATION

| | |
|---|---|
| Magnification (on 28" TV) | 2.4X~43.7X |
| View field | 14.2×8~255×145mm |
| Auto focus distance | 200~255mm |
| Sensor | 1/2.8" CMOS |
| Pixel | 8M |
| Resolution | 3840×2160 |
| Frame rate | 30fps |
| Output | HDMI/USB/LAN |
| Power supply | power adapter |
| Dimension (L×W×H) | 400×300×450mm |
| Weight | 5.8kg |

## MEASURING ACCURACY (ON 28" TV)

| Optical magnification | Measuring accuracy |
|---|---|
| 2X | ±0.1mm |
| 4X | ±0.1mm |
| 6X | ±0.04mm |
| 10X | ±0.02mm |
| 14X | ±0.02mm |
| 18X | ±0.01mm |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit (with stand) | 1 pc |
| LED illumination | 1 pc |
| 32G memory card and holder | 1 pc |
| Mouse | 1 pc |
| HDMI cable | 1 pc |
| USB 2.0 cable | 1 pc |
| Power adapter | 1 pc |

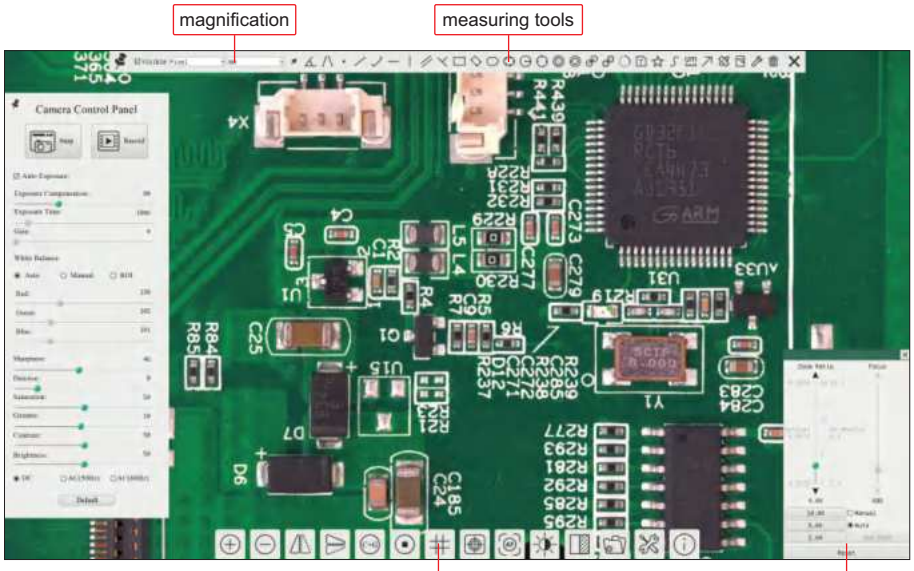
To be continued



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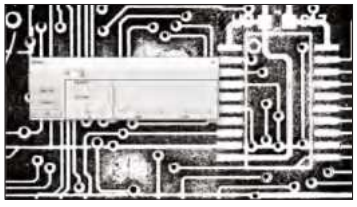
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## SOFTWARE FOR TV (INCLUDED)



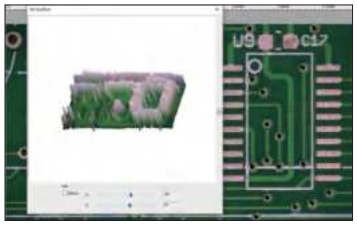

## PROFESSIONAL SOFTWARE (INCLUDED, FOR COMPUTER)

binary

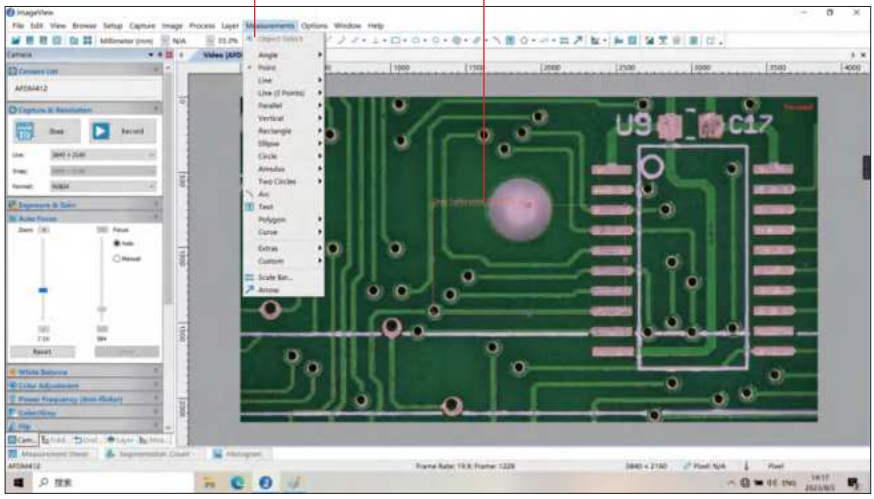


separate target and background

3D plot



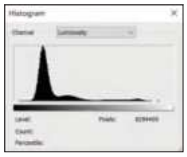
visualize the distribution of image brightness and color




selectable resolution



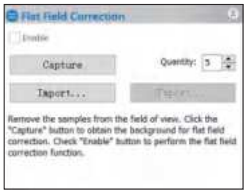
histogram (quantify the distribution of color and brightness)



white balance (reduce color difference)



flat field balance (reduce brightness difference)



dark field balance (reduce thermal noise)



the software can control image completely, including measurement, image stitching, image gray processing, RGB histogram observation, image color sampling, 3D plot (3D representation of image intensity), image exposure, white balance, image bit depth, flat field correction and dark field correction, etc.

# AUTO FOCUS DIGITAL MICROSCOPES (LARGE VIEW FIELD)

TAKE PICTURES AND VIDEOS | MEASUREMENT | CAN BE CONNECTED TO PC AND TV AT THE SAME TIME

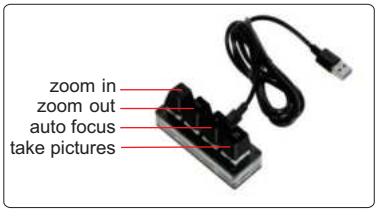
AUTO FOCUS

VIDEO

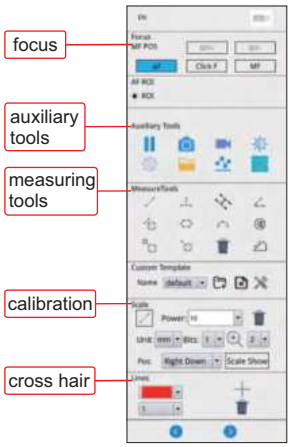



- Auto focus camera
- Take pictures and videos
- Can be connected to TV (HDMI port) and computer (RJ45 port) at the same time
- Built-in measuring software for TV
- Measuring software for computers is included
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red /yellow/black/brown colors)

controller (**optional**, for TV)




## TV SOFTWARE (INCLUDED)




## SPECIFICATION

| Code | 5302-AF105 (standard type) | 5302-AF108 (high-definition type) |
|---|---|---|
| Pixel | 2M | 8M |
| Resolution | 1920×1080 | 3840×2160 |
| Magnification | 1.4X~25.8X (on 28" TV) | 1.4X~51.6X (on 28" TV) |
| Sensor | 1/2.8" CMOS | |
| Auto focus distance | 100mm~∞ | |
| Output | HDMI, RJ45 | |
| Frame rate | HDMI: 60fps, RJ45: 50fps | |
| Power supply | power adapter | |
| Dimension (L×W×H) | 500×280×410mm | |
| Weight | 17kg | |

## VIEW FIELD

| Focus distance | Adjustable magnification (on 28" TV) | View field |
|---|---|---|
| 100mm | 3.9~25.8X | 24×14~168×91mm |
| 150mm | 2.6~20X | 30×17~240×128mm |
| 200mm | 2.1~17X | 37×20~315×170mm |
| 250mm | 1.7~14.7X | 42×24~385×210mm |
| 270mm | 1.4~14X | 43×25~415×225mm |

## MEASURING ACCURACY

| Optical magnification (5302-AF105) | Optical magnification (5302-AF108) | Measuring accuracy |
|---|---|---|
| 2X | 2X | ±0.1mm |
| 4X | 4X | ±0.1mm |
| 6X | 6X | ±0.04mm |
| 8X | 8X | ±0.02mm |
| 14X | 14X | ±0.02mm |
| / | 28X | ±0.02mm |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit (with stand) | 1 pc |
| LED illumination | 1 pc |
| 16G USB flash disk | 1 pc |
| Mouse | 1 pc |
| HDMI cable (for TV) | 1 pc |
| Network cable (for computer) | 1 pc |
| Switch | 1 pc |
| Software for computer | 1 pc |
| Power adapter | 2 pcs |

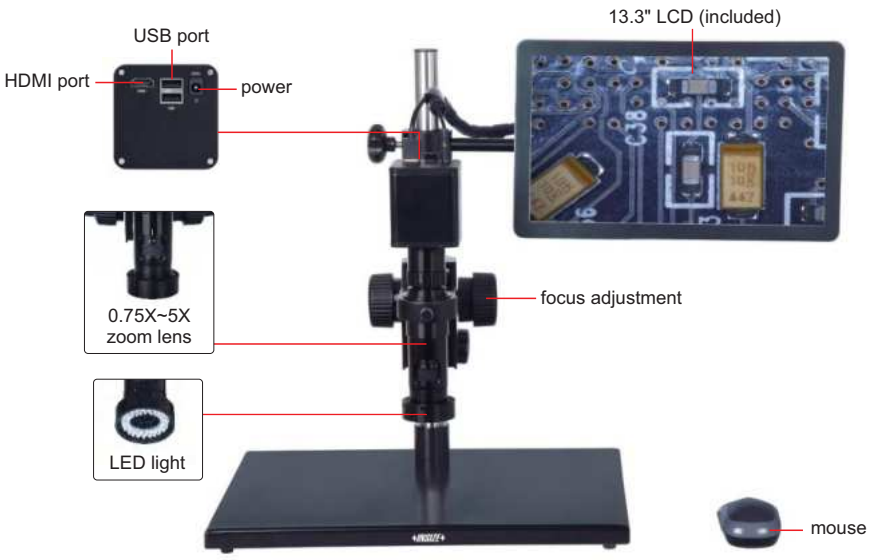
## OPTIONAL ACCESSORY

| | |
|---|---|
| 28" 4K TV | 5302-AF-TV28 |
| 32" 4K TV | 5302-AF-TV32 |
| Computer | 5302-AF-COMPUTER |
| Controller | 5302-AF-CONTROLLER |

AUTO FOCUS | TAKE PICTURES AND VIDEOS | MEASUREMENT

# AUTO FOCUS DIGITAL MICROSCOPE
# CODE 5303-AF103

VIDEO





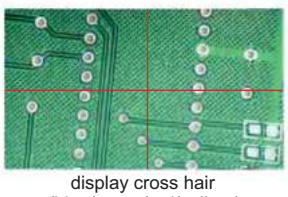
16G USB flash disk (included)


0.5X camera adapter (included)



1X auxiliary objective (included)

- 1080P high-definition image
- Auto focus camera
- Take pictures and videos, saved to USB flash disk
- Picture review, picture compare
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red/yellow/black/ brown colors)
- Built-in software without computer, operation by mouse


display cross hair (blue/green/red/yellow/ black/brown colors)


1X camera adapter (**optional**)


2X auxiliary objective (**optional**)


X-Y glass stage (**optional**) (X-Y travel: 100×86mm)

## SPECIFICATION

| | |
|---|---|
| **Magnification** | 20X~123X |
| **Sensor** | 1/2.8" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Frame rate** | 60fps |
| **Output** | HDMI |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 570×300×430mm |
| **Weight** | 6.5kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **0.5X camera adapter** | 1 pc |
| **1X auxiliary objective** | 1 pc |
| **Calibration plate** | 1 pc |
| **16G USB flash disk** | 1 pc |
| **White/black plate** | 1 pc |
| **Mouse** | 1 pc |
| **HDMI cable** | 1 pc |
| **Power adapter** | 2 pcs |

## MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

| Auxiliary objective | Specification | Camera adapter | |
|---|---|---|---|
| | | 0.5X (included) | 1X (optional) |
| 1X (included) | magnification | 20~123X | 40~246X |
| | focus distance | 48~84mm | 48~84mm |
| | view field | 13×7~2.2×1mm | 6.3×3.5~1.1×0.5mm |
| | measuring accuracy | ±0.02mm | ±0.02mm |
| 2X (optional) | magnification | 40~246X | 80~492X |
| | focus distance | 24~42mm | 24~42mm |
| | view field | 6.5×3.5~1.1×0.5mm | 3.3×1.8~0.6×0.3mm |
| | measuring accuracy | ±0.02mm | ±0.02mm |

## AUTO FOCUS DISTANCE

| Zoom objective scale | 0.75X | 1X | 1.5X | 2X | 2.5X |
|---|---|---|---|---|---|
| Auto focus distance (mm) | 48~84 | 50~78 | 55~73 | 62~71 | 65~70 |

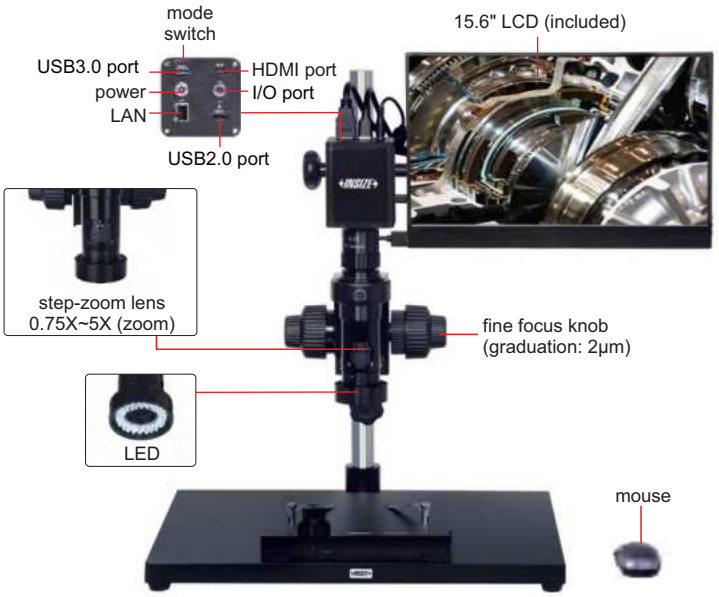
| Zoom objective scale | 3X | 3.5X | 4X | 4.5X | 5X |
|---|---|---|---|---|---|
| Auto focus distance (mm) | 66~70 | 67~70 | 68~70 | 68~70 | 68~70 |

## OPTIONAL ACCESSORY

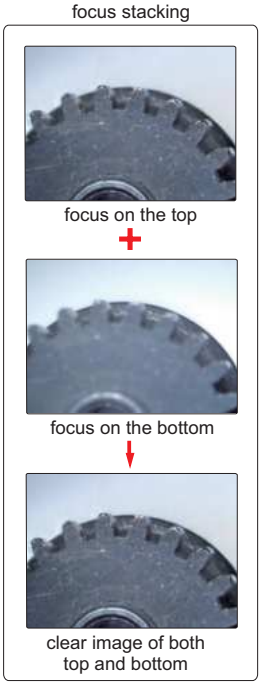
| | |
|---|---|
| **1X camera adapter** | **ISM-DL-CA1X** |
| **2X auxiliary objective** | **ISM-DL-OB2X** |
| **X-Y glass stage (travel: 100×86mm)** | **ISM-DL-STAGE** |
| **X-Y metal stage** | **ISM-DL-STAGE1** |
| **LED light** | page 728~729 |
| **Auxiliary objective** | page 730 |

# 4K AUTO FOCUS MEASURING MICROSCOPE
# CODE 5315-S710

IMAGE STITCHING | DUAL SCREEN OPERATION | FOCUS STACKING | VIDEO




focus stacking

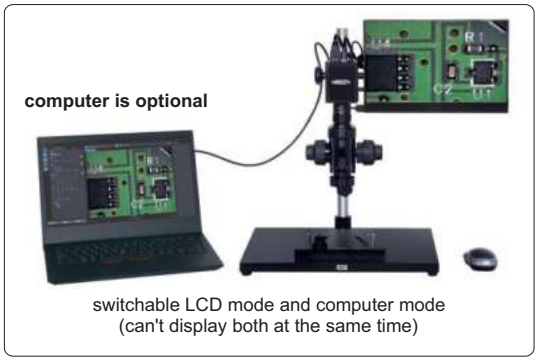



- 4K high-definition image
- Switchable LCD mode and computer mode
- Take pictures or videos, save to memory card
- Measurement results can be sent to Excel
- Auto focus
- Automatic white balance and exposure


calibration plate
(included)


1X camera adapter
(**optional**)


2X auxiliary objective
(**optional**)

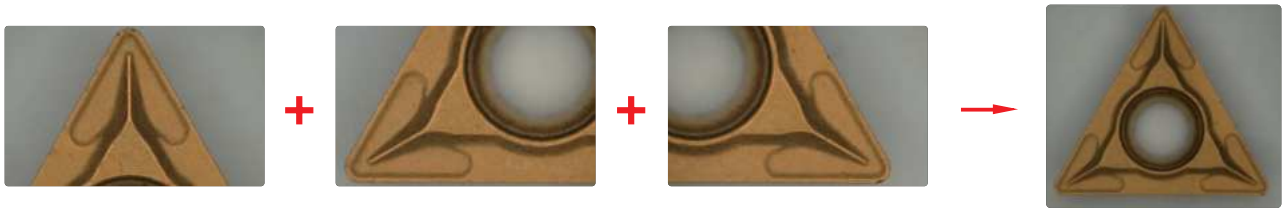


switchable LCD mode and computer mode
(can't display both at the same time)



X-Y metal stage
(included)
(X-Y travel: 100×86mm)

image stitching


adjust the X-Y metal stage to move the workpiece slowly to generate a stitched image automatically

To be continued



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Continued from previous page

## SPECIFICATION

| | |
|---|---|
| **Magnification** | 17.5X~109X (on 15.6" LCD) |
| **Sensor** | 1/1.7" CMOS |
| **Pixel** | 12M |
| **Resolution** | 4000×3000 |
| **Frame rate** | 30fps |
| **Output** | HDMI/USB/LAN |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 570×300×430mm |
| **Weight** | 15kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **0.5X camera adapter** | 1 pc |
| **1X auxiliary objective** | 1 pc |
| **Calibration plate** | 1 pc |
| **16G USB flash drive** | 1 pc |
| **Mouse** | 1 pc |
| **X-Y metal stage** | 1 pc |

## MAGNIFICATION AND MEASURING ACCURACY (on 15.6" LCD)

| Objective magnification | Image magnification | Measuring accuracy |
|---|---|---|
| 0.75X | 17.5X | ±20μm |
| 1X | 23X | ±20μm |
| 1.5X | 33X | ±20μm |
| 2X | 45X | ±20μm |
| 2.5X | 55X | ±20μm |
| 3X | 65X | ±20μm |
| 3.5X | 75X | ±20μm |
| 4X | 85X | ±10μm |
| 4.5X | 100X | ±10μm |
| 5X | 109X | ±10μm |

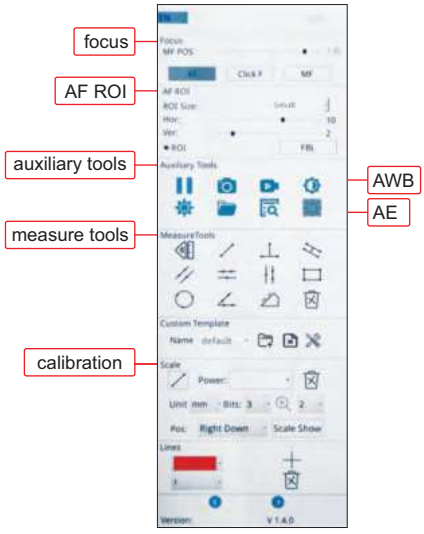
## MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (on 15.6" LCD)

| Specification | Camera adapter | |
|---|---|---|
| | **0.5X (included)** | **1X (optional)** |
| **Magnification** | 17.5~109X | 35~218X |
| **Focus distance** | 73±2mm | 73±2mm |
| **View filed** | 19.2×11.0~3.2×1.9mm | 9.6×5.5~1.6×0.9mm |

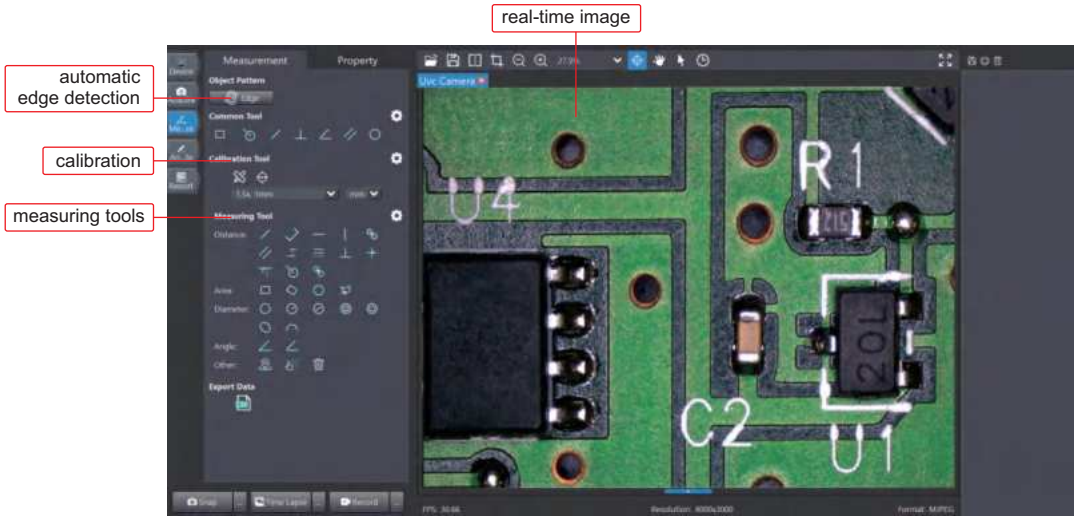
## OPTIONAL ACCESSORY

| | |
|---|---|
| **1X camera adapter** | **ISM-DL-CA1X** |
| **2X auxiliary objective** | **ISM-DL-OB2X** |
| **Computer** | **ISM-DL-COMPUTER** |
| **LED light** | page 728~729 |
| **Auxiliary objective** | page 730 |

## SOFTWARE FOR LCD (INCLUDED)




## SOFTWARE FOR COMPUTER (INCLUDED)

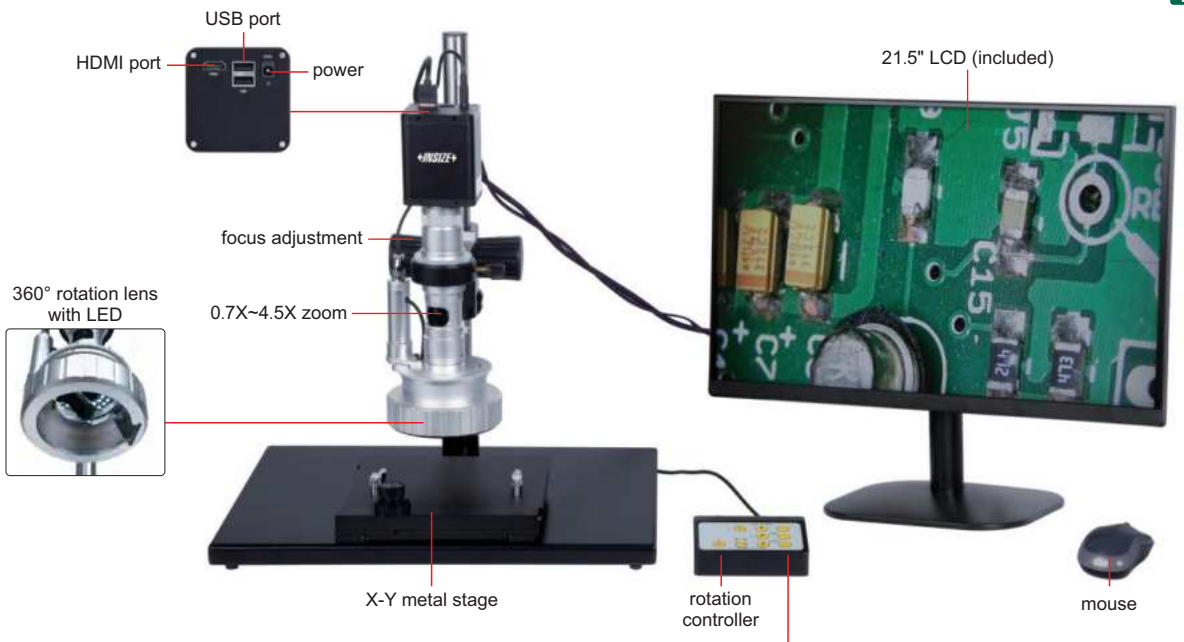


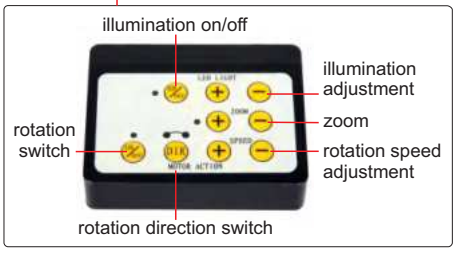
# MOTORIZED 3D ROTATION MICROSCOPE
# CODE 5301-D400

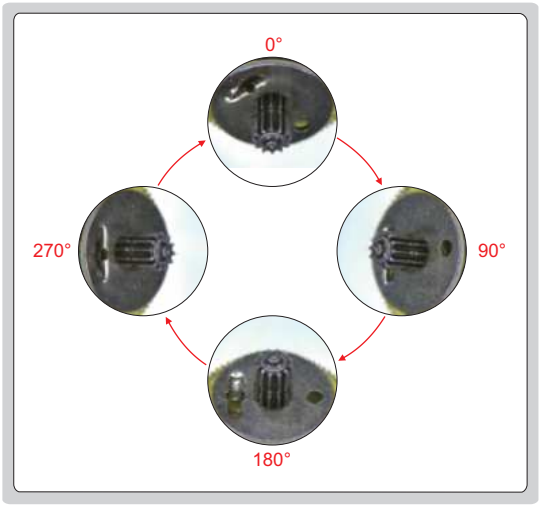
TAKE PICTURES AND VIDEOS

SUITABLE TO CHECK CONVEX OBJECTS AND WALL OF HOLE

VIDEO

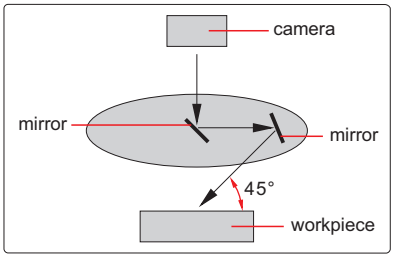



360° rotation observation

working principle




## SPECIFICATION

| | |
|---|---|
| Magnification | 15X~100X |
| View field | 4.2×2.7mm~28×18mm |
| Focus distance | 40mm |
| View angle | 45° |
| Sensor | 1/2.8" CMOS |
| Pixel | 2M |
| Resolution | 1920×1080 |
| Frame rate | 60fps |
| Output | HDMI |
| Rotation speed | 2~4RPM |
| Power supply | 110/220V, 50/60Hz |
| Dimension (L×W×H) | 570×300×430mm |
| Weight | 10kg |

- 1080P high-definition 3D image
- Take pictures and videos, save to USB flash disk
- Automatic white balance and exposure
- Brightness, contrast ratio and gain are adjustable

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Rotation controller | 1 pc |
| X-Y metal stage | 1 pc |
| 16G USB flash disk | 1 pc |
| White/black plate | 1 pc |
| Mouse | 1 pc |
| Power adapter | 2 pcs |



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TAKE PICTURES AND VIDEOS

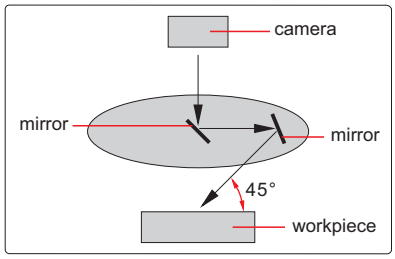
SUITABLE TO CHECK CONVEX OBJECTS AND WALL OF HOLES

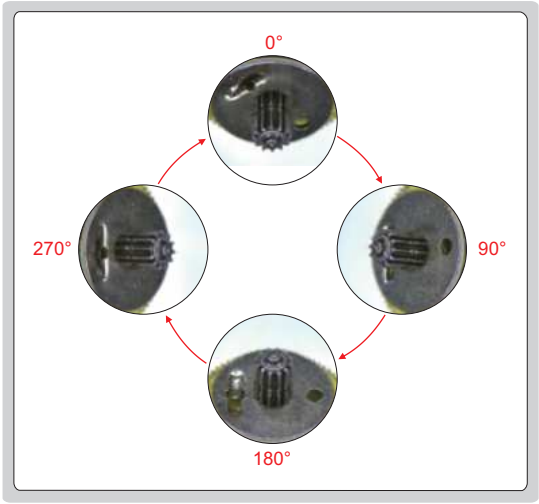
# MANUAL 3D ROTATION MICROSCOPE
# CODE 5313-S407

VIDEO




working principle




360° rotation observation

## SPECIFICATION

| | |
|---|---|
| Magnification | 18X~120X |
| View field | 2.4×1.5mm~16×9mm |
| Focus distance | 20mm |
| View angle | 45° |
| Sensor | 1/2.8" CMOS |
| Pixel | 2M |
| Resolution | 1920×1080 |
| Frame rate | 60fps |
| Output | HDMI |
| Power supply | 220V, 50/60Hz |
| Dimension (L×W×H) | 570×300×430mm |
| Weight | 10kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| X-Y metal stage | 1 pc |
| 16G USB flash disk | 1 pc |
| White/black plate | 1 pc |
| Mouse | 1 pc |
| Power adapter | 2 pcs |

# DIGITAL MEASURING MICROSCOPES

BUILT-IN SOFTWARE WITHOUT COMPUTER | MEASUREMENT | TAKE PICTURES | VIDEO


0.5X camera adapter (included)



1X auxiliary objective (included)

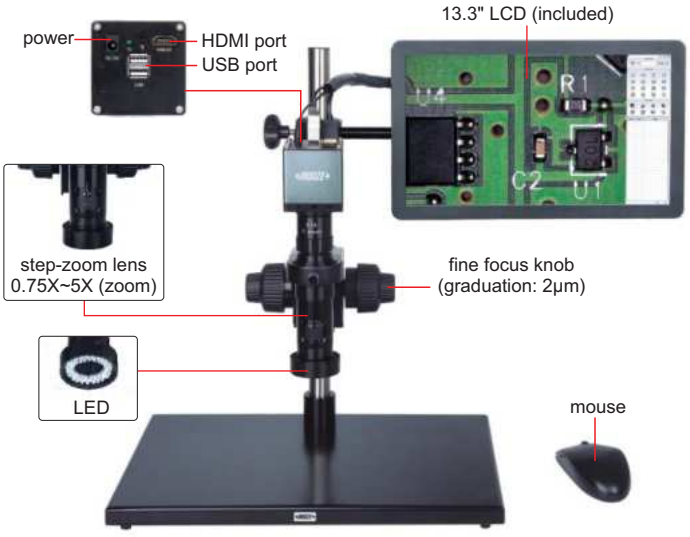

calibration plate (included)


16G USB flash disk (included)

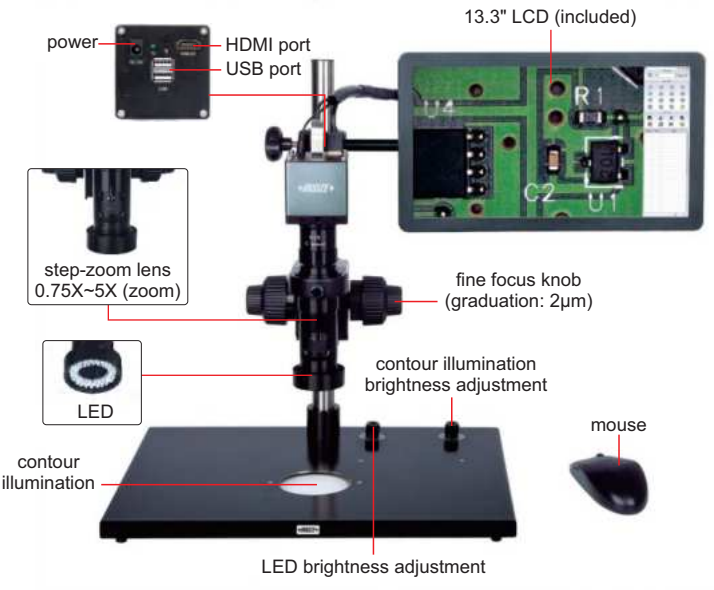

1X camera adapter (**optional**)



2X auxiliary objective (**optional**)



**ISM-DL300 (without contour illumination)**



**ISM-DL301 (with contour illumination)**

- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable



## SPECIFICATION

| Code | ISM-DL300 (without contour illumination) | ISM-DL301 (with contour illumination) |
|---|---|---|
| Magnification | 15X~100X | |
| Sensor | 1/2" CMOS | |
| Pixel | 2M | |
| Resolution | 1920×1080 | |
| Frame rate | 60fps | |
| Output | HDMI | |
| Power supply | power adapter | |
| Dimension (L×W×H) | 570×300×430mm | |
| Weight | 6.5kg | |

To be continued



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Continued from previous page

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 0.5X camera adapter | 1 pc |
| 1X auxiliary objective | 1 pc |
| Calibration plate | 1 pc |
| 16G USB flash disk | 1 pc |
| White/black plate | 1 pc |
| Mouse | 1 pc |
| HDMI cable | 1 pc |
| Power adapter | 2 pcs |

### OPTIONAL ACCESSORY

| | |
|---|---|
| 1X camera adapter | ISM-DL-CA1X |
| 2X auxiliary objective | ISM-DL-OB2X |
| X-Y glass stage (travel: 100×86mm) | ISM-DL-STAGE |
| X-Y metal stage | ISM-DL-STAGE1 |
| LED light | page 728~729 |
| Auxiliary objective | page 730 |

### MAGNIFICATION AND MEASURING ACCURACY

| Objective magnification | Image magnification | Measuring accuracy* |
|---|---|---|
| 0.75X | 15X | ±8μm |
| 1X | 20X | ±7μm |
| 1.5X | 30X | ±6μm |
| 2X | 40X | ±6μm |
| 2.5X | 50X | ±6μm |
| 3X | 60X | ±5μm |
| 3.5X | 70X | ±5μm |
| 4X | 80X | ±4μm |
| 4.5X | 90X | ±4μm |
| 5X | 100X | ±4μm |

* When measuring the contour of workpieces, please use **ISM-DL301** to ensure accuracy.



X-Y glass stage
(**optional**)
(X-Y travel: 100×86mm)

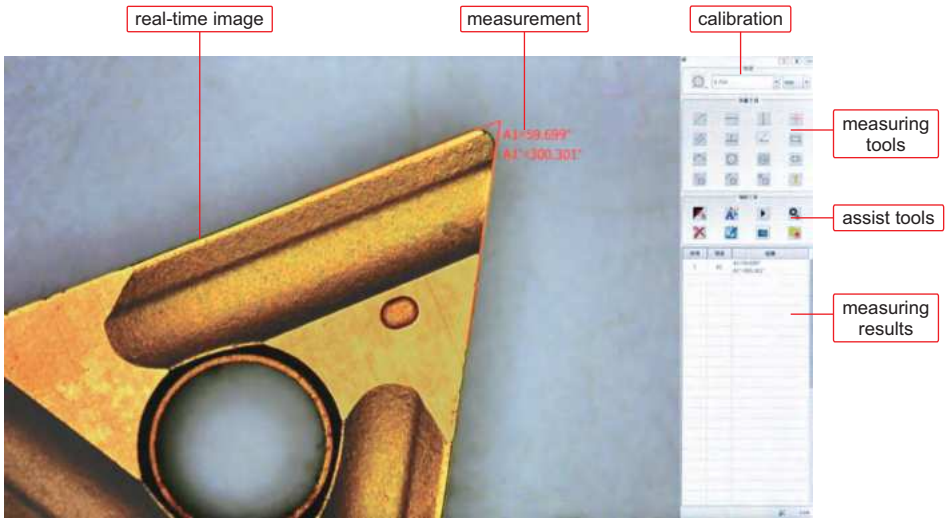


### MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

| Auxiliary objective | Specification | Camera adapter | |
|---|---|---|---|
| | | 0.5X (included) | 1X (optional) |
| 1X (included) | magnification | 15~100X | 30~200X |
| | focus distance | 70±2mm | 70±2mm |
| | view filed | 16×11~2.5×1.6mm | 7.8×5.3~1.2×0.8mm |
| 2X (optional) | magnification | 30~200X | 60~400X |
| | focus distance | 29±2mm | 29±2mm |
| | view filed | 7.8×5.3~1.2×0.8mm | 3.8×2.7~0.6×0.4mm |

### SOFTWARE (INCLUDED)

- Refer to page 727 for details



# DIGITAL MEASURING MICROSCOPE (BASIC TYPE)

VIDEO

MEASUREMENT | TAKE PICTURES

BUILT-IN SOFTWARE WITHOUT COMPUTER

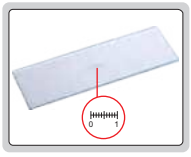
POPULAR MODEL



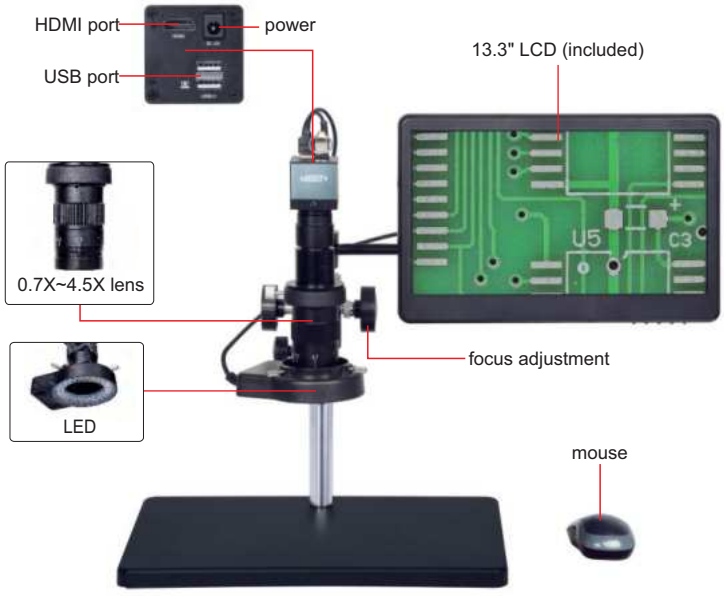
16G USB flash disk (included)



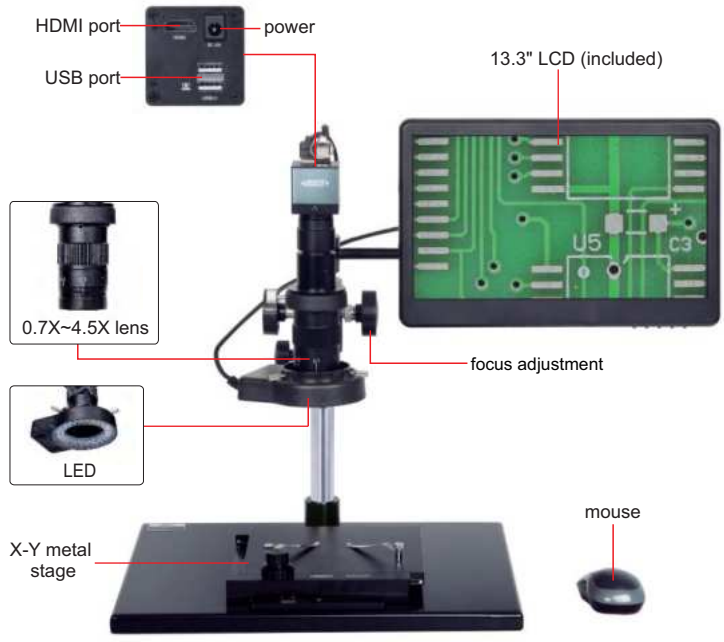
white/black plate (included)



glass calibration ruler (graduation 0.1mm, included )




**5318-MD60 (without stage)**




**5318-MD60-XY (with stage)**

- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Brightness, contrast ratio, gain are adjustable

To be continued



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Continued from previous page

## SPECIFICATION

| Code | **5318-MD60** (without stage) | **5318-MD60-XY** (with stage) |
|---|---|---|
| Magnification | 12.5X~80X | 12.5X~80X |
| Sensor | 1/2.8" CMOS | 1/2.8" CMOS |
| Pixel | 2M | 2M |
| Resolution | 1920×1080 | 1920×1080 |
| Frame rate | 60fps | 60fps |
| Measuring accuracy | ±0.02mm | ±0.02mm |
| Lines | cross lines, scale lines (number, color and position of lines are adjustable) | cross lines, scale lines (number, color and position of lines are adjustable) |
| Output | HDMI | HDMI |
| Power supply | power adapter | power adapter |
| Dimension (L×W×H) | 380×260×350mm | 570×300×430mm |
| Weight | 4.5kg | 10kg |

## STANDARD DELIVERY

| Code | **5318-MD60** (without stage) | **5318-MD60-XY** (with stage) |
|---|---|---|
| Main unit | 1 pc | 1 pc |
| 0.5X camera adapter | 1 pc | 1 pc |
| 1X auxiliary objective | 1 pc | 1 pc |
| White/black plate | 1 pc | 1 pc |
| Glass calibration ruler | 1 pc | 1 pc |
| 16G USB flash disk | 1 pc | 1 pc |
| Mouse | 1 pc | 1 pc |
| HDMI cable | 1 pc | 1 pc |
| Power adapter | 3 pcs | 3 pcs |
| X-Y metal stage | / | 1 pc |

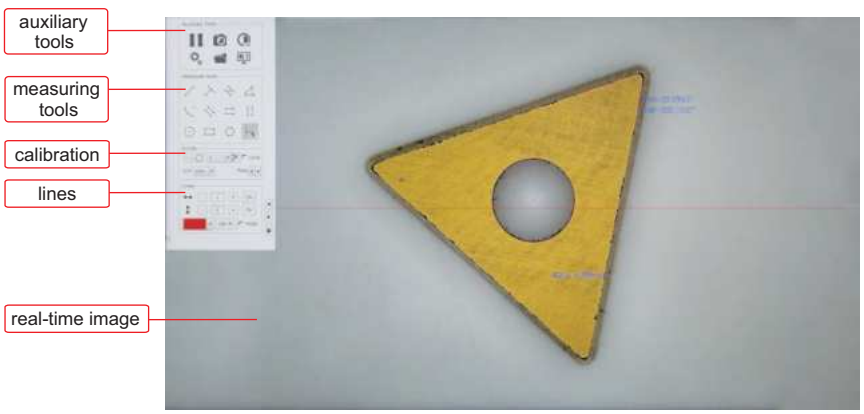
## MAGNIFICATION AND VIEW FIELD

| Auxiliary objective | Specification | Camera adapter |
|---|---|---|
| | | 0.5X (included) |
| 0.5X (optional) | magnification | 6.2~40X |
| | view field | 47×26~7.4×4mm |
| 1X (included) | magnification | 12.5~80X |
| | view field | 23.5×13~3.7×2mm |
| 2X (optional) | magnification | 25~160X |
| | view field | 11.8×6.5~1.8×1mm |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 0.5X auxiliary objective | 5318-OB05X |
| 2X auxiliary objective | 5318-OB2X |

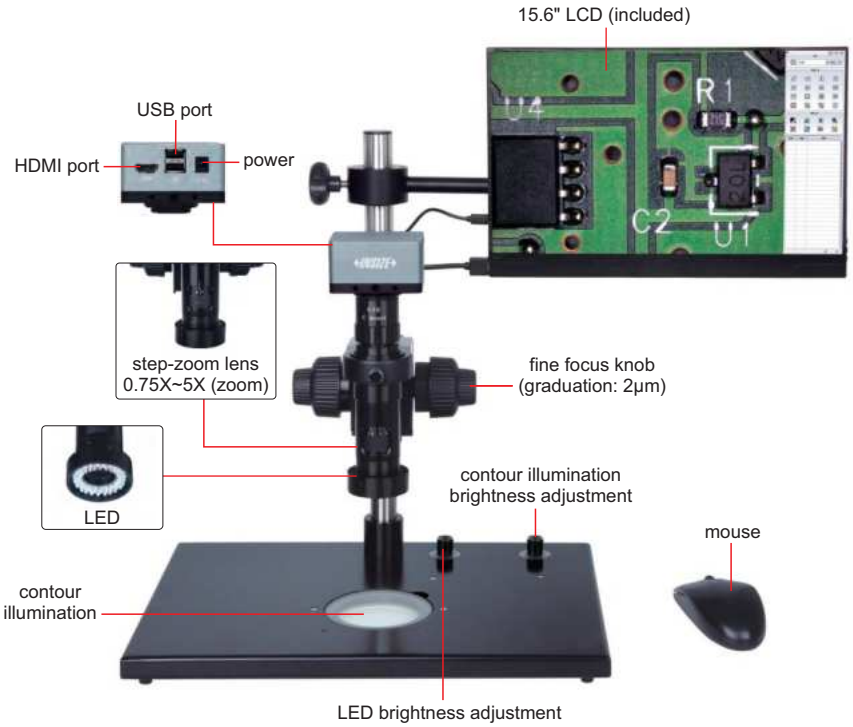
## MEASURING SOFTWARE (INCLUDED)



# 4K DIGITAL MEASURING MICROSCOPE
# CODE 5310-DL401

BUILT-IN SOFTWARE WITHOUT COMPUTER | TAKE PICTURES | MEASUREMENT

VIDEO






X-Y glass stage
(**optional**)
(X-Y travel: 100×86mm)



X-Y metal stage
(**optional**)
(X-Y travel: 100×86mm)



calibration plate
(included)



16G USB flash disk
(included)

- 4K high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable



0.5X camera adapter
(included)




1X auxiliary objective
(included)



1X camera adapter
(**optional**)



2X auxiliary objective
(**optional**)

**SPECIFICATION**

| | |
|---|---|
| **Magnification** | 17.6X~120X |
| **Sensor** | 1/2.3" CMOS |
| **Pixel** | 8M |
| **Resolution** | 3840×2160 |
| **Frame rate** | 4K: 30fps, 1080P: 60fps |
| **Output** | HDMI |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 570×300×430mm |
| **Weight** | 6.5kg |

To be continued



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Continued from previous page

**MAGNIFICATION, VIEW FIELD AND MEASURING ACCURACY**

| Objective magnification | Image magnification | View field | Measuring accuracy |
|---|---|---|---|
| 0.75X | 17.6X | 19.5×11.5mm | ±5μm |
| 1X | 23.7X | 14.0×8.0mm | ±5μm |
| 1.5X | 36.6X | 9.0×5.0mm | ±5μm |
| 2X | 49X | 7.0×4.0mm | ±5μm |
| 2.5X | 62X | 5.5×3.0mm | ±4μm |
| 3X | 73X | 4.5×2.5mm | ±4μm |
| 3.5X | 85X | 4.0×2.2mm | ±4μm |
| 4X | 97X | 3.5×2.0mm | ±3μm |
| 4.5X | 109X | 3.0×1.8mm | ±3μm |
| 5X | 120X | 2.7×1.5mm | ±3μm |

**STANDARD DELIVERY**

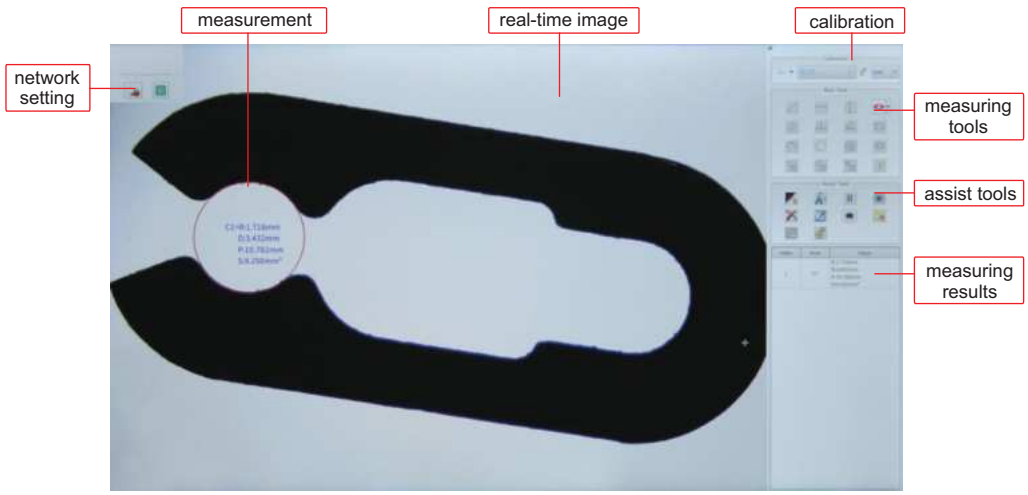
| | |
|---|---|
| **Main unit** | 1 pc |
| **0.5X camera adapter** | 1 pc |
| **1X auxiliary objective** | 1 pc |
| **Calibration plate** | 1 pc |
| **16G USB flash disk** | 1 pc |
| **White/black plate** | 1 pc |
| **Mouse** | 1 pc |
| **HDMI cable** | 1 pc |
| **Power adapter** | 3 pcs |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **1X camera adapter** | **ISM-DL-CA1X** |
| **2X auxiliary objective** | **ISM-DL-OB2X** |
| **X-Y glass stage (travel: 100×86mm)** | **ISM-DL-STAGE** |
| **X-Y metal stage (travel: 100×86mm)** | **ISM-DL-STAGE1** |
| **LED light** | page 728~729 |
| **Auxiliary objective** | page 730 |

**SOFTWARE (INCLUDED)**

- Refer to page 727 for details

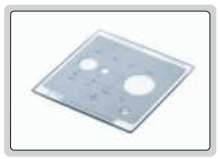


# HIGH MAGNIFICATION MEASURING MICROSCOPE
# CODE ISM-DL302

VIDEO

SOFTWARE IS INCLUDED, REFER TO PAGE 727 FOR DETAILS

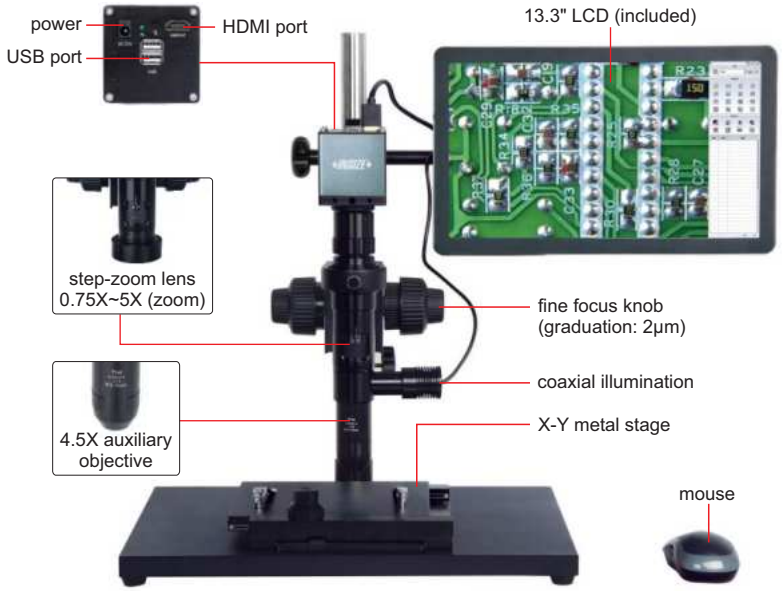
OBSERVATION AND MEASUREMENT AT HIGH MAGNIFICATION



calibration plate (included)



16G USB flash disk (included)






0.5X camera adapter (included)



1X camera adapter (**optional**)

- 1080P high-definition image
- Maximum 1000X optical magnification (using camera adapter 1X, optional)
- Built-in software without computer, operated by mouse
- Solid base and column to avoid lens shaking during focusing
- Software is included, refer to page 727 for details

## SPECIFICATION

| | |
|---|---|
| **Magnification** | 78X~504X |
| **Sensor** | 1/2" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Frame rate** | 60fps |
| **Output** | HDMI |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 570×300×430mm |
| **Weight** | 15kg |

## SATNDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **0.5X camera adapter** | 1 pc |
| **4.5X auxiliary objective** | 1 pc |
| **Calibration plate** | 1 pc |
| **16G USB flash disk** | 1 pc |
| **Mouse** | 1 pc |
| **HDMI cable** | 1 pc |
| **X-Y metal stage** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **1X camera adapter** | **ISM-DL-CA1X** |
| **LED light** | page 728~729 |

## MAGNIFICATION AND MEASURING ACCURACY

| Objective magnification | Image magnification | Measuring accuracy |
|---|---|---|
| 0.75X | 78X | ±5μm |
| 1X | 102X | ±4μm |
| 1.5X | 153X | ±4μm |
| 2X | 204X | ±4μm |
| 2.5X | 255X | ±4μm |
| 3X | 305X | ±4μm |
| 3.5X | 356X | ±4μm |
| 4X | 408X | ±4μm |
| 4.5X | 458X | ±4μm |
| 5X | 504X | ±4μm |

## MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

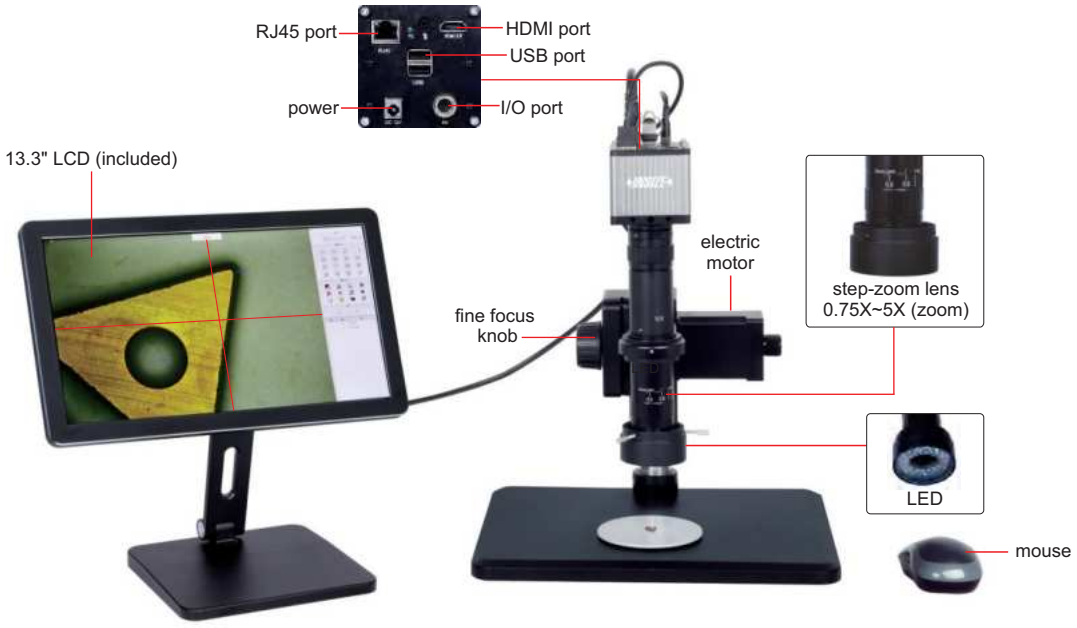
| | | |
|---|---|---|
| **Camera adapter** | 0.5X (included) | 1X (**optional**) |
| **Magnification** | 78~504X | 156~1008X |
| **Focus distance** | 14±2mm | 14±2mm |
| **View field** | 2.8×1.7~0.5×0.3mm | 1.4×0.9~0.3×0.2mm |

MOTORIZED FOCUS STACKING

BUILT-IN SOFTWARE WITHOUT COMPUTER

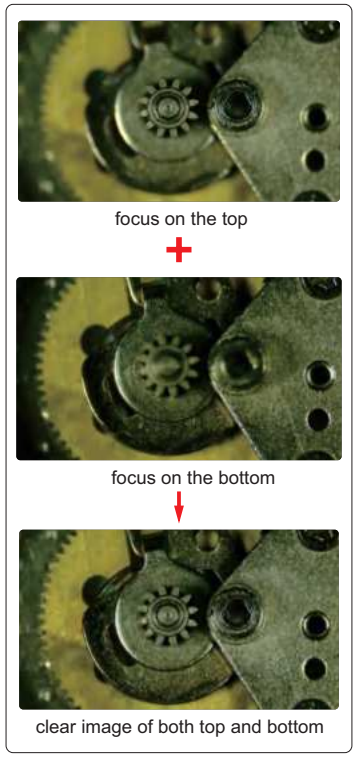
# MOTORIZED FOCUS STACKING MICROSCOPE (LARGE DEPTH OF VIEW) CODE ISM-DL520

VIDEO




- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Automatic white balance and exposure
- Motorized focus stacking
- Send photos and measurement data via ethernet (TCP/IP)
- Name photos and measurement data files with serial number of workpieces read by scanner

focus stacking




**SPECIFICATION**

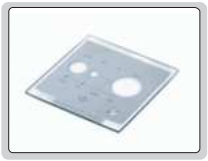
| | |
|---|---|
| **Magnification** | 24.5X~204.5X |
| **View field** | 2.8×1.6~18×10mm |
| **Focus distance** | 65mm |
| **Sensor** | 1/1.2" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Frame rate** | 30fps |
| **Output** | RJ45 |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 320×260×500mm |
| **Weight** | 7kg |

To be continued

Continued from previous page




send measurement data and photos to computer



calibration plate
(included)



16G USB flash disk
(included)

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 1X camera adapter | 1 pc |
| 1X auxiliary objective | 1 pc |
| Calibration plate | 1 pc |
| 16G USB flash disk | 1 pc |
| Mouse | 1 pc |
| LED ring light | 1 pc |
| White/black plate | 1 pc |
| Power adapter | 3 pcs |

## MAGNIFICATION AND MEASURING ACCURACY

| Objective magnification | Image magnification | Measuring accuracy |
|---|---|---|
| 0.6X | 24.5X | ±8μm |
| 0.8X | 32.7X | ±7μm |
| 1X | 40.9X | ±6μm |
| 1.5X | 61.3X | ±6μm |
| 2X | 81.8X | ±6μm |
| 2.5X | 102.2X | ±5μm |
| 3X | 122.7X | ±5μm |
| 3.5X | 143.1X | ±4μm |
| 4X | 163.6X | ±4μm |
| 4.5X | 184.0X | ±4μm |
| 5X | 204.5X | ±4μm |



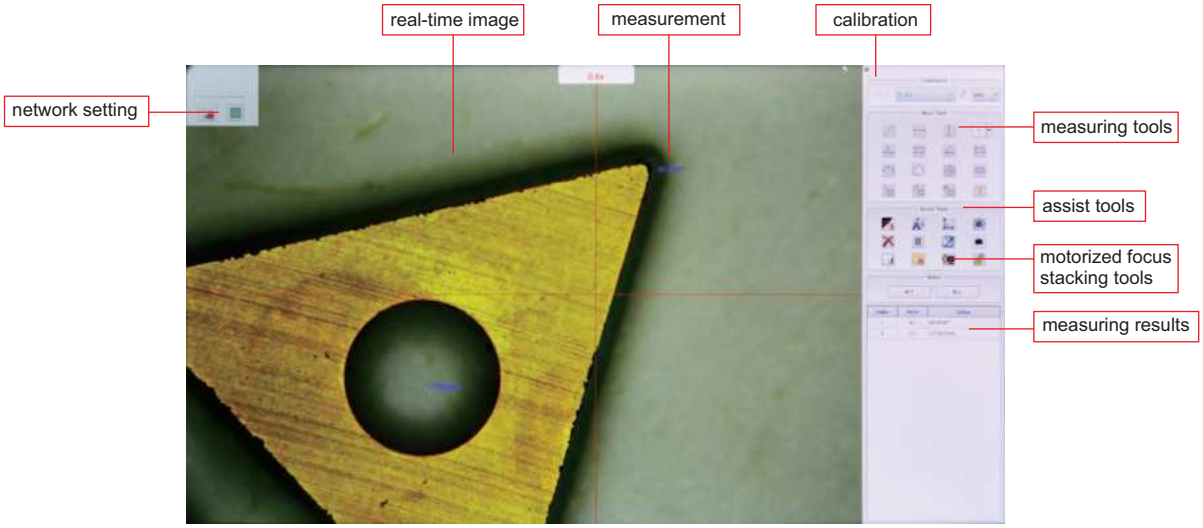
X-Y metal stage
(**optional**)
(X-Y travel: 100×86mm)

## OPTIONAL ACCESSORY

| | |
|---|---|
| X-Y metal stage (travel: 100×86mm) | ISM-DL-STAGE1 |

## SOFTWARE (INCLUDED)

- Refer to page 727 for details






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BUILT-IN SOFTWARE WITHOUT COMPUTER

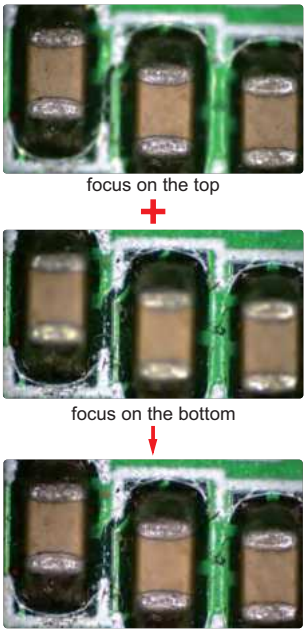
FOCUS STACKING

# MANUAL FOCUS STACKING MICROSCOPE (LARGE DEPTH OF VIEW)
# CODE ISM-DL510

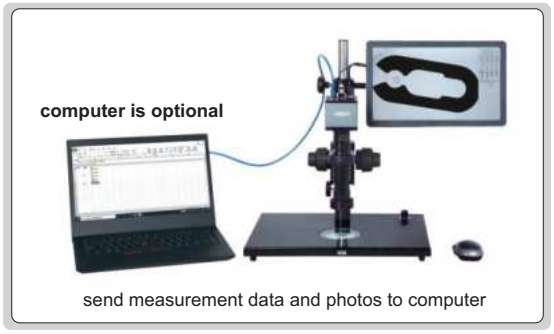
VIDEO




focus stacking




- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Automatic white balance and exposure
- Focus stacking
- Send photos and measurement data via ethernet (TCP/IP)
- Name photos and measurement data files with serial number of workpieces read by scanner







1X auxiliary objective (included)



2X auxiliary objective (**optional**)



0.5X camera adapter (included)



1X camera adapter (**optional**)

**SPECIFICATION**

| | |
|---|---|
| **Magnification** | 15X~100X |
| **Sensor** | 1/2" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Frame rate** | 60fps |
| **Output** | HDMI |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 570×300×430mm |
| **Weight** | 6.5kg |

To be continued

Continued from previous page

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 0.5X camera adapter | 1 pc |
| 1X auxiliary objective | 1 pc |
| Calibration plate | 1 pc |
| 16G USB flash disk | 1 pc |
| White/black plate | 1 pc |
| Mouse | 1 pc |
| Power adapter | 3 pcs |

### OPTIONAL ACCESSORY

| | |
|---|---|
| 1X camera adapter | ISM-DL-CA1X |
| 2X auxiliary objective | ISM-DL-OB2X |
| X-Y glass stage (travel: 100×86mm) | ISM-DL-STAGE |
| Scanner and hub | 7328-SCAN |
| LED light | page 728~729 |
| Auxiliary objective | page 730 |

### MAGNIFICATION AND MEASURING ACCURACY

| Objective magnification | Image magnification | Measuring accuracy |
|---|---|---|
| 0.75X | 15X | ±8μm |
| 1X | 20X | ±7μm |
| 1.5X | 30X | ±6μm |
| 2X | 40X | ±6μm |
| 2.5X | 50X | ±6μm |
| 3X | 60X | ±5μm |
| 3.5X | 70X | ±5μm |
| 4X | 80X | ±4μm |
| 4.5X | 90X | ±4μm |
| 5X | 100X | ±4μm |



X-Y glass stage
(**optional**)
(X-Y travel: 100×86mm)

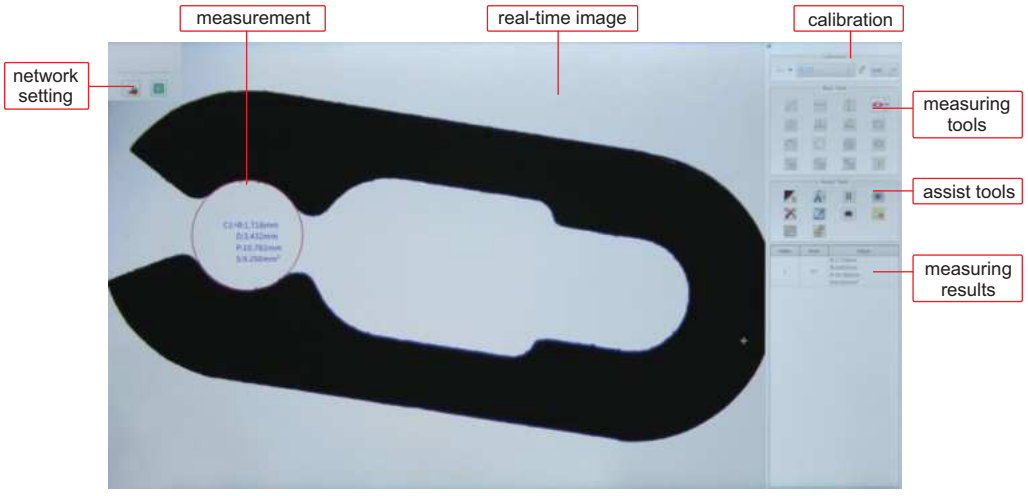


### MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

| Auxiliary objective | Specification | Camera adapter | |
|---|---|---|---|
| | | 0.5X (included) | 1X (optional) |
| 1X (included) | magnification | 15~100X | 30~200X |
| | focus distance | 70±2mm | 70±2mm |
| | view filed | 16×11~2.5×1.6mm | 7.8×5.3~1.2×0.8mm |
| 2X (optional) | magnification | 30~200X | 60~400X |
| | focus distance | 29±2mm | 29±2mm |
| | view filed | 7.8×5.3~1.2×0.8mm | 3.8×2.7~0.6×0.4mm |

### SOFTWARE (INCLUDED)

- Refer to page 727 for details






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VIDEO

BUILT-IN SOFTWARE WITHOUT COMPUTER

TAKE PICTURES

# HORIZONTAL MICROSCOPE
# CODE 5316-HM810




- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red/yellow/black/brown colors)



plastic calibration ruler (included, graduation 1mm)



16G USB flash disk (included)

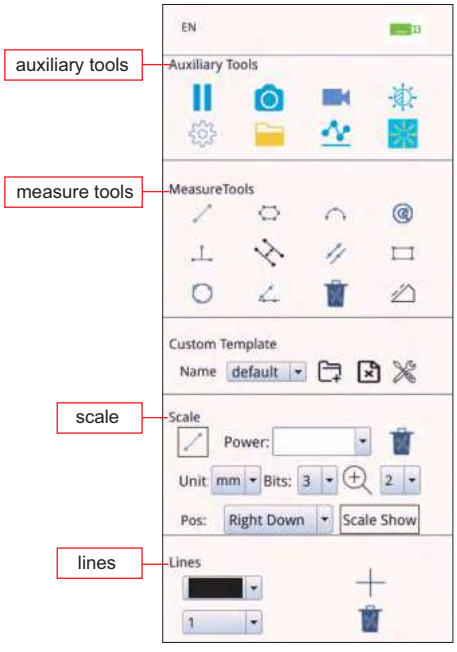
## SPECIFICATION

| | |
|---|---|
| **Magnification** | 10.5X~62.5X |
| **View field** | 4.5×2.5~28×12.3mm |
| **Focus distance** | 115mm |
| **Measuring accuracy** | ±0.02mm |
| **Sensor** | 1/2.8" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Frame rate** | 1080P: 60fps/50fps |
| **Output** | HDMI |
| **Power supply** | 110/220V, 50/60Hz |
| **Dimension (L×W×H)** | 500×200×200mm |
| **Weight** | 7kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **1X camera adapter** | 1 pc |
| **1X auxiliary adapter** | 1 pc |
| **Plastic calibration ruler** | 1 pc |
| **16G USB flash disk** | 1 pc |
| **Mouse** | 1 pc |
| **LED ring light** | 1 pc |

## SOFTWARE (INCLUDED)



# FLEXIBLE ARM AUTO FOCUS DIGITAL MICROSCOPES

AUTO FOCUS

TAKE PICTURES AND VIDEOS

MEASUREMENT

VIDEO

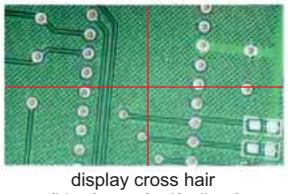



**5317-AF109**




**5317-AF110**

- 1080P high-definition image
- Auto focus camera
- Take pictures and videos, saved to USB flash disk
- Picture review, picture compare
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red/yellow/black/ brown colors)
- Built-in software without computer, operation by mouse
- Flexible arm



display cross hair
(blue/green/red/yellow/
black/brown colors)

To be continued



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Continued from previous page

## SPECIFICATION

| Code | 5317-AF109 (with magnetic stand) | 5317-AF110 (with desktop clamp) |
|---|---|---|
| Magnification | 20X~123X | |
| Sensor | 1/2.8" CMOS | |
| Pixel | 2M | |
| Resolution | 1920×1080 | |
| Frame rate | 60fps | |
| Power supply | power adapter | |
| Dimension (height) | 480mm | 600mm |
| Weight | 5.6kg | 8.5kg |


calibration plate (included)


16G USB flash disk (included)


0.5X camera adapter (included)



1X auxiliary objective (included)

## MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

| Auxiliary objective | Specification | Camera adapter | |
|---|---|---|---|
| | | 0.5X (included) | 1X (optional) |
| 1X (included) | magnification | 20~123X | 40~246X |
| | focus distance | 48~84mm | 48~84mm |
| | view field | 13×7~2.2×1mm | 6.3×3.5~1.1×0.5mm |
| | measuring accuracy | ±0.02mm | ±0.02mm |
| 2X (optional) | magnification | 40~246X | 80~492X |
| | focus distance | 24~42mm | 24~42mm |
| | view field | 6.5×3.5~1.1×0.5mm | 3.3×1.8~0.6×0.3mm |
| | measuring accuracy | ±0.02mm | ±0.02mm |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 0.5X camera adapter | 1 pc |
| 1X auxiliary objective | 1 pc |
| Calibration plate | 1 pc |
| 16G USB flash disk | 1 pc |
| White/black plate | 1 pc |
| Mouse | 1 pc |
| HDMI cable | 1 pc |
| Power adapter | 2 pcs |

## AUTO FOCUS DISTANCE

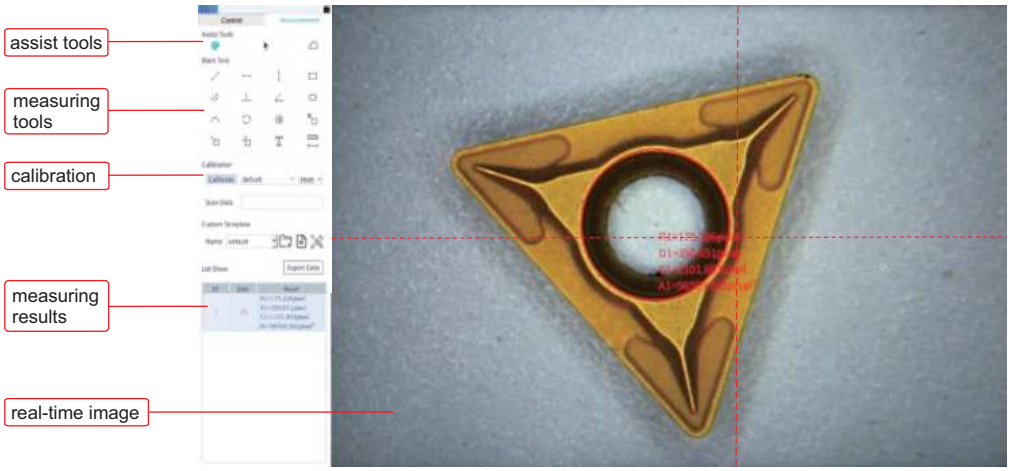
| Zoom objective scale | 0.75X | 1X | 1.5X | 2X | 2.5X |
|---|---|---|---|---|---|
| Auto focus distance | 48~84mm | 50~78mm | 55~73mm | 62~71mm | 65~70mm |

| Zoom objective scale | 3X | 3.5X | 4X | 4.5X | 5X |
|---|---|---|---|---|---|
| Auto focus distance | 66~70mm | 67~70mm | 68~70mm | 68~70mm | 68~70mm |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 1X camera adapter | ISM-DL-CA1X |
| 2X auxiliary objective | ISM-DL-OB2X |
| Auxiliary objective | page 730 |

## MEASURING SOFTWARE (INCLUDED)



# MOTORIZED ZOOM MICROSCOPE (BASIC TYPE)
# CODE 5325-VM100

PROGRAMMABLE SEGMENTED RING LIGHT

DISPLAY ACTUAL MAGNIFICATION

POPULAR MODEL

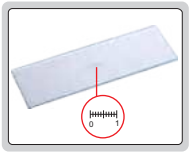
VIDEO




- Built-in software without computer
- Can be connected to display and computer at the same time
- Motorized zoom objective
- Display actual magnification
- Programmable segmented ring light
- Take pictures and videos

## SPECIFICATION

| | |
|---|---|
| **Sensor** | 1/2" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Magnification** | 10~68.5X |
| **Measuring accuracy** | ±0.02mm |
| **Max. workpiece height** | 135mm |
| **Frame rate** | 60fps |
| **Output** | USB/LAN/HDMI |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 261×320×480mm |
| **Weight** | 5.1kg |



glass calibration ruler (graduation 0.1mm, included )

## MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (on 11.6" LCD)

| Specification | Objective | |
|---|---|---|
| | **0.5X (optional)** | **1X (included)** |
| **Magnification** | 5~34.2X | 10~68.5X |
| **Focus distance** | 180mm | 87mm |
| **View filed** | 7.4×4.2~53×31.2mm | 3.7×2.1~26.5×15.6mm |



white/black plate (included)



## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Glass calibration ruler** | 1 pc |
| **Power adapter** | 1 pc |
| **Mouse** | 1 pc |
| **16G USB flash disk** | 1 pc |
| **White/black plate** | 1 pc |
| **Network cable** | 1 pc |
| **Shortcut keyboard** | 1 pc |



16G USB flash disk (included)

## OPTIONAL ACCESSORY

| | |
|---|---|
| **0.5X auxiliary objective *** | **5325-VM100-OB05X** |

* Measurement is not recommended with 0.5X auxiliary objective

To be continued



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Continued from previous page



shortcut keyboard
(included)

**Shortcut Keyboard Fuction**

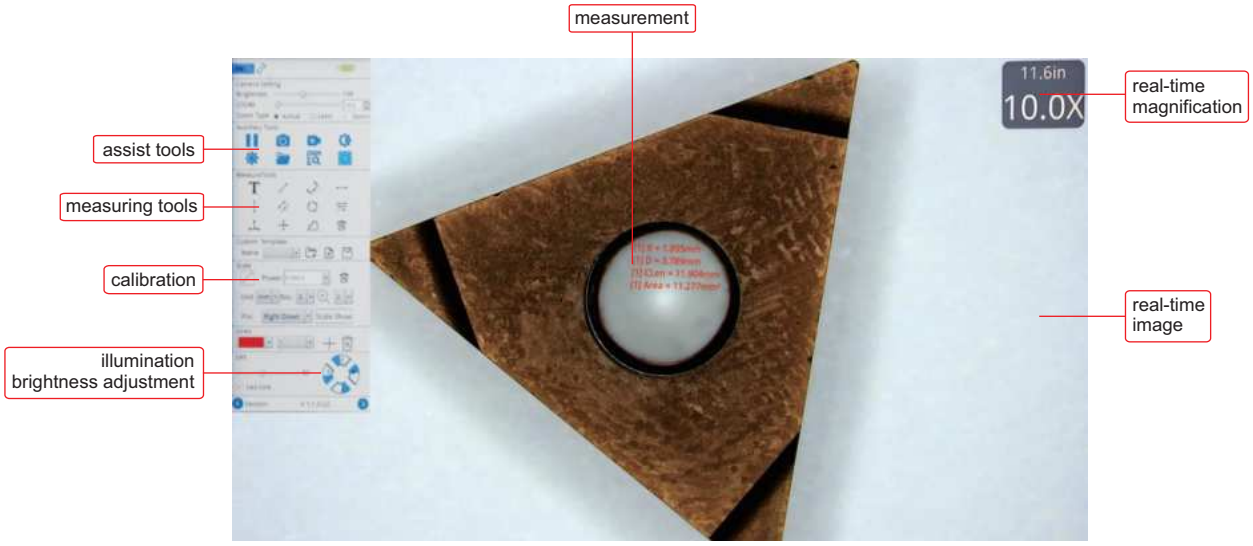
- Take picture: take a picture and save it
- Video: record a video
- Freeze: the image can be frozen
- Zoom+: increase the magnification
- Zoom-: reduce the magnification
- Mirror: image horizontal flip over
- Flip: image vertical flip over
- Zoom 1, 2, 3, 4: save the current magnification
- Brightness+: increase the brightness of the light
- Brightness-: reduce the brightness of the light



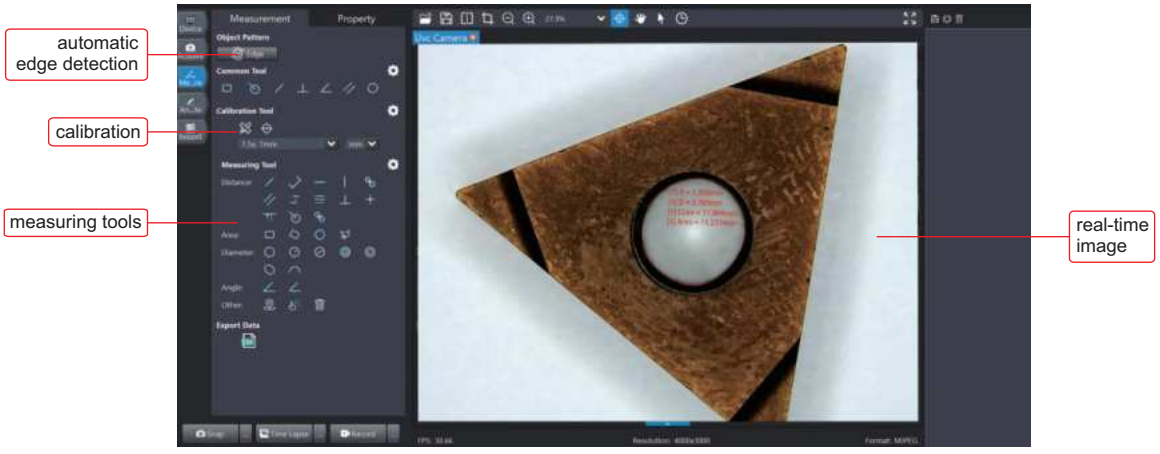
**computer is optional**

can be connected to display and
computer at the same time

## SOFTWARE FOR LCD (INCLUDED)




## SOFTWARE FOR COMPUTER (INCLUDED)



# LARGE DEPTH OF VIEW DIGITAL MEASURING MICROSCOPE (ADVANCED TYPE)
# CODE 5322-ID250A

FOCUS STACKING

ELECTRONIC MAGNIFICATION FEEDBACK LENS

PROGRAMMABLE SEGMENTED RING LIGHT

VIDEO




- Electronic magnification feedback lens: when the objective lens magnification is changed manually, the software automatically selects the corresponding pre-calibration data and calibration is not needed
- Send photos and measurement data via ethernet (TCP/IP)
- Digital magnification
- Can be connected to display and computer at the same time
- Take pictures, save to USB flash disk
- Measuring results can be sent to Excel


16G USB flash disk (included)


calibration plate (included)

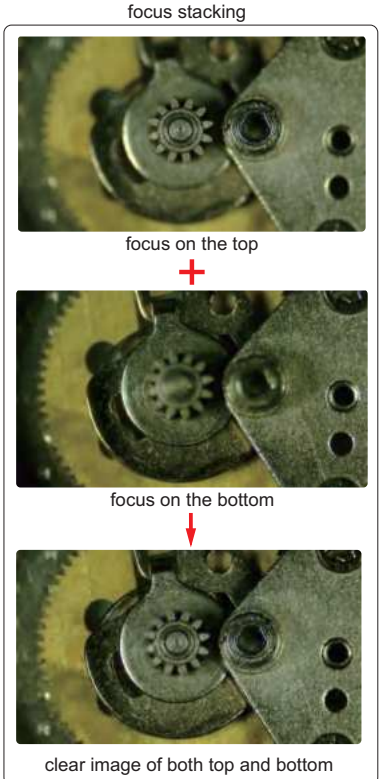
## SPECIFICATION

| | |
|---|---|
| **Sensor** | 1/2" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Magnification** | 12~77X |
| **Focus distance** | 60mm |
| **View field** | 3.2×1.8~20.9×11.7mm |
| **Max. workpiece height** | 53mm |
| **Frame rate** | 60fps |
| **Output** | USB/HDMI/LAN |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 260×320×500mm |
| **Weight** | 5.2kg |

## MAGNIFICATION AND MEASURING ACCURACY

| Objective magnification | Magnification | Measuring accuracy |
|---|---|---|
| 0.7X | 12X | ±9μm |
| 1X | 17X | ±9μm |
| 1.5X | 26X | ±8μm |
| 2X | 35X | ±7μm |
| 2.5X | 43X | ±7μm |
| 3X | 51X | ±7μm |
| 3.5X | 60X | ±6μm |
| 4X | 68X | ±6μm |
| 4.5X | 77X | ±5μm |

focus stacking




To be continued



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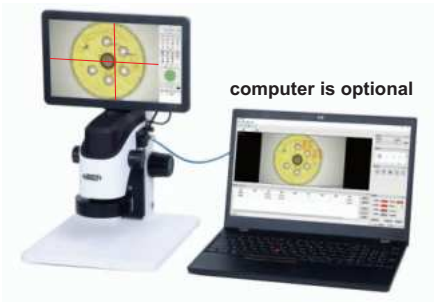
Continued from previous page

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Calibration plate | 1 pc |
| Power adapter | 1 pc |
| Mouse | 1 pc |
| 16G USB flash disk | 1 pc |

**OPTIONAL ACCESSORY**

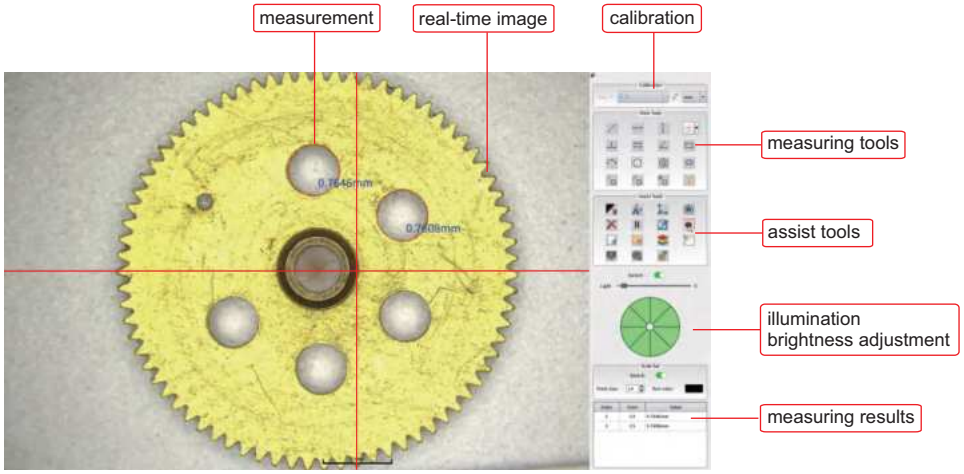
| | |
|---|---|
| 0.5X auxiliary objective | 5307-ID100A-OB05X |
| 0.75X auxiliary objective | 5307-ID100A-OB075X |
| 2X auxiliary objective | 5307-ID100A-OB2X |



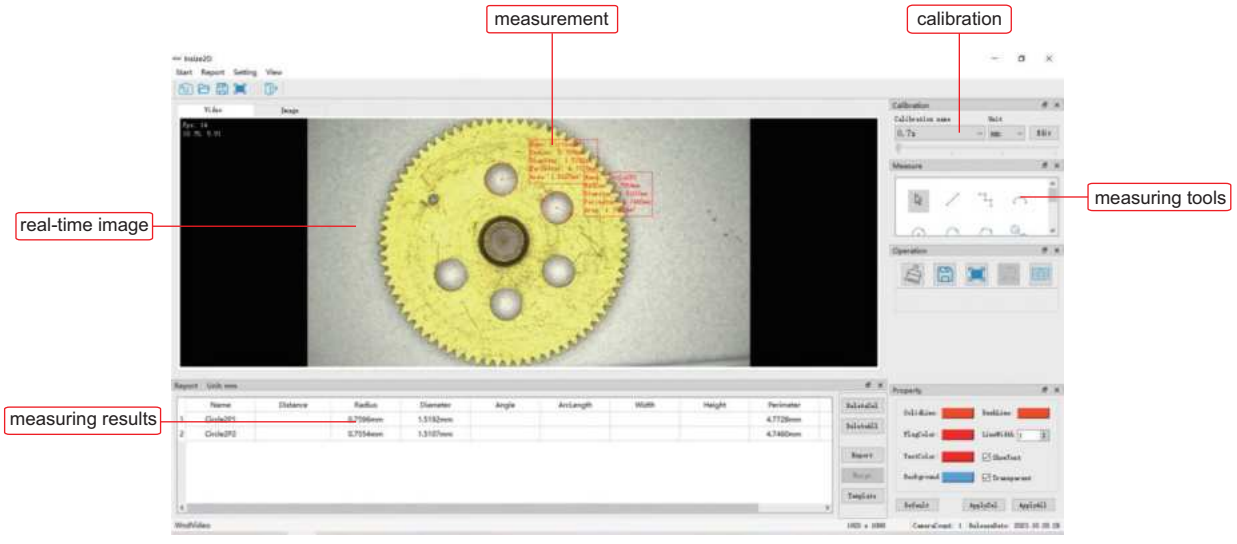

send measurement data and photos to computer, and also take photos, make measurement via computer software

**SOFTWARE FOR LCD (INCLUDED)**

■ Refer to page 727 for details




**SOFTWARE FOR COMPUTER (INCLUDED)**



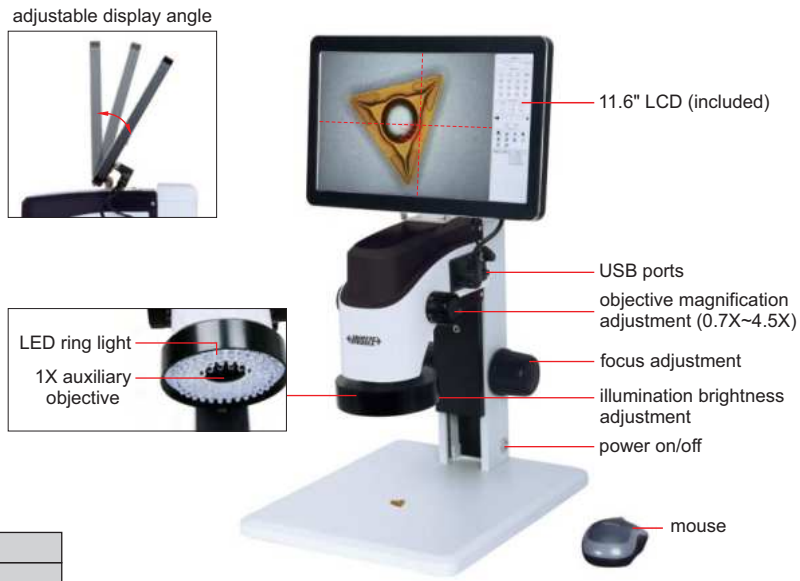
# DIGITAL MEASURING MICROSCOPE (STANDARD TYPE) CODE 5307-ID100A

ELECTRONIC MAGNIFICATION FEEDBACK LENS

BUILT-IN SOFTWARE WITHOUT COMPUTER

VIDEO

- Electronic magnification feedback lens: when the objective lens magnification is changed manually, the software automatically selects the corresponding pre-calibration data and calibration is not needed
- Two methods of LED brightness adjustment, knob adjustment and software adjustment
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measuring results can be sent to Excel




## SPECIFICATION

| | |
|---|---|
| Sensor | 1/2" CMOS |
| Pixel | 2M |
| Resolution | 1920×1080 |
| Magnification | 12~77X |
| Focus distance | 65mm |
| View field | 3.2×1.8~20.9×11.7mm |
| Max. workpiece height | 60mm |
| Frame rate | 60fps |
| Output | USB/HDMI |
| Power supply | power adapter |
| Dimension (L×W×H) | 260×320×500mm |
| Weight | 5.2kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Calibration plate | 1 pc |
| Power adapter | 1 pc |
| Mouse | 1 pc |
| 16G USB flash disk | 1 pc |

## MAGNIFICATION AND MEASURING ACCURACY

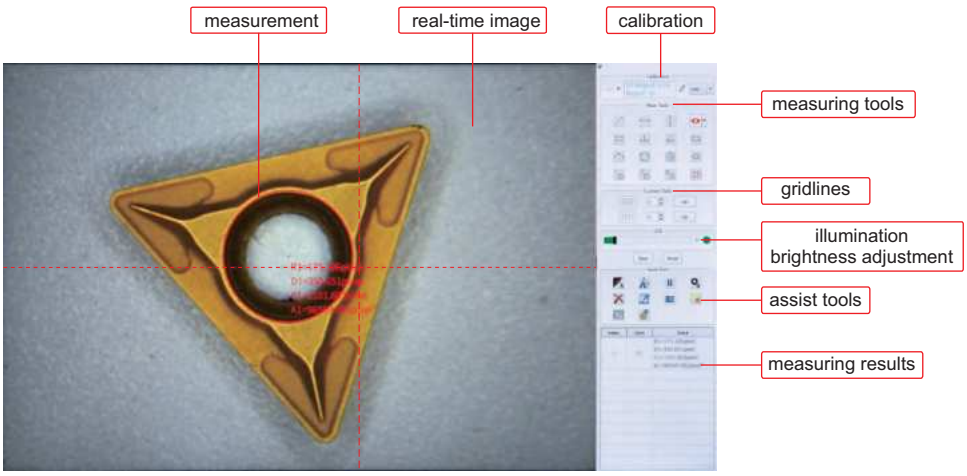
| Objective magnification | Magnification | Measuring accuracy |
|---|---|---|
| 0.7X | 12X | ±9μm |
| 1X | 17X | ±9μm |
| 1.5X | 26X | ±8μm |
| 2X | 35X | ±7μm |
| 2.5X | 43X | ±7μm |
| 3X | 51X | ±7μm |
| 3.5X | 60X | ±6μm |
| 4X | 68X | ±6μm |
| 4.5X | 77X | ±5μm |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 0.5X auxiliary objective | 5307-ID100A-OB05X |
| 0.75X auxiliary objective | 5307-ID100A-OB075X |
| 2X auxiliary objective | 5307-ID100A-OB2X |

## SOFTWARE (INCLUDED)

- Refer to page 727 for details






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NO CALIBRATION AFTER ZOOM | TAKE PICTURES AND VIDEOS | MEASUREMENT | MOTORIZED ZOOM

MOTORIZED LIGHT CONTROL | AUTO FOCUS

VIDEO

# AUTO FOCUS DIGITAL MICROSCOPE (ADVANCED TYPE) CODE 5319-AF290

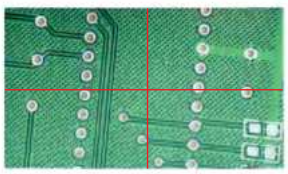





16G USB flash disk (included)



calibration plate (included)



display cross hair and gridline (blue/green/red/yellow/ black/white colors)

- Auto focus camera
- Take pictures and videos
- Built-in measuring software
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display actual magnification
- Digital magnification
- Shortcut keyboard operation
- Display cross hair and gridline (blue/green/red/ yellow/black/white colors)



shortcut keyboard (included)

**Shortcut keyboard fuction**

- Take picture: take a picture and save it
- Video: record a video
- Freeze: the image can be frozen
- Manual focus-: reduce the manual focus value
- Manual focus+: increase the manual focus value
- Zoom+: increase the magnification
- Zoom-: reduce the magnification
- AF/MF: switch to auto focus or manual focus
- FBL: center the camera motor
- Mirror: image horizontal flipover
- Flip: image vertical flipover
- Focus: achieve one-key focus
- Zoom 1, 2, 3, 4: save the current magnification
- Brightness+: increase the brightness of the light
- Brightness-: reduce the brightness of the light

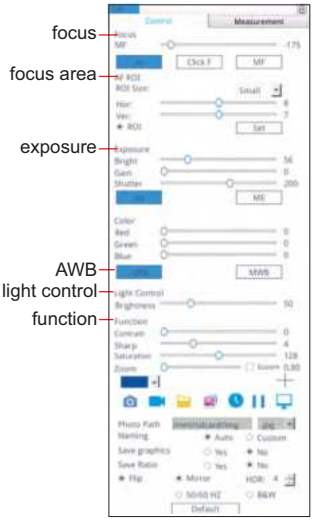
## SPECIFICATION

| | |
|---|---|
| Magnification | 27.4X~163X |
| Sensor | 1/2.8" CMOS |
| Pixel | 2M |
| Measuring accuracy | ±0.02mm |
| Resolution | 1920×1080 |
| Frame rate | 50/60fps |
| Output | HDMI |
| Power supply | power adapter |
| Dimension (L×W×H) | 600×280×390mm |
| Weight | 6.5kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit (with stand) | 1 pc |
| 21.5" LCD | 1 pc |
| 16G USB flash disk | 1 pc |
| Mouse | 1 pc |
| HDMI cable | 1 pc |
| Calibration plate | 1 pc |
| White/black plate | 1 pc |
| Shortcut keyboard | 1 pc |
| Power adapter | 2 pcs |

## SOFTWARE (INCLUDED)







## FOCUS DISTANCE AND VIEW FIELD

| Optical magnification* | 0.8X | 1X | 2X | 3X | 4X | 4.76X |
|---|---|---|---|---|---|---|
| Focus distance | 88~133mm | 88~133mm | 98~123mm | 103~115mm | 108~111mm | 108~111mm |
| View field (mm) | 19.4×11~15.8×8.8 | 15×8.3~12.7×7.2 | 7.1×4~6.7×3.8 | 4.8×2.7~4.5×2.5 | 3.6×2~3.3×1.8 | 3×1.7~2.8×1.6 |

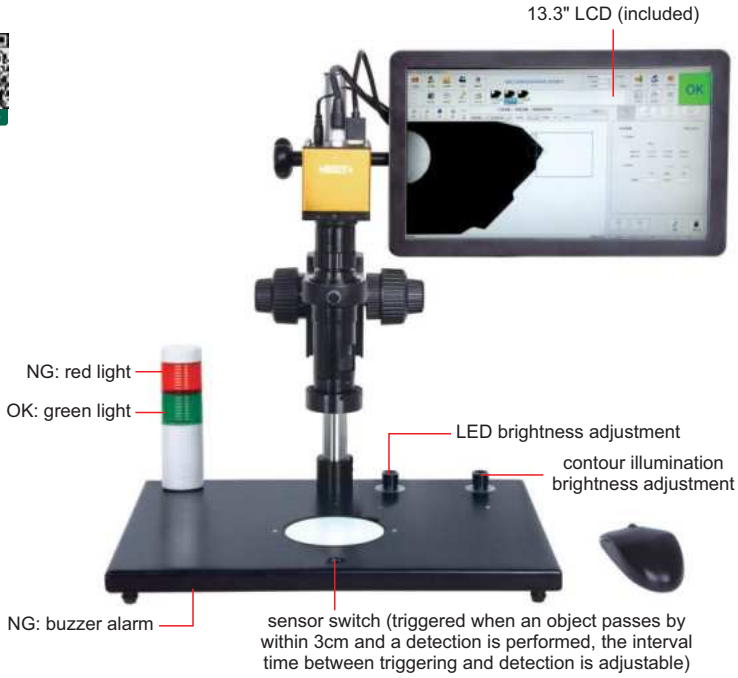
* The optical zoom lens can be arbitrarily zoomed between 0.8X and 4.76X

# SMART MICROSCOPE
# CODE ISM-DL400

AUTOMATICALLY LOCATE WORKPIECES REGARDLESS OF POSITION AND DIRECTION

BUILT-IN SOFTWARE WITHOUT COMPUTER

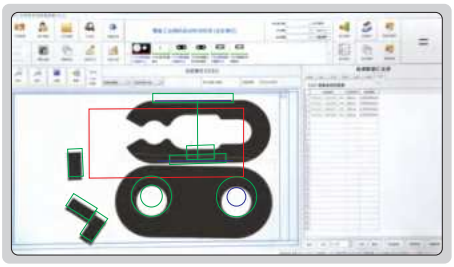
VIDEO




camera function

- surface defect detection
- dimension measurement
- read barcode
- burr detection
- contour matching
- character recognition
- color detection
- read QR code
- object counting
- thread measurement

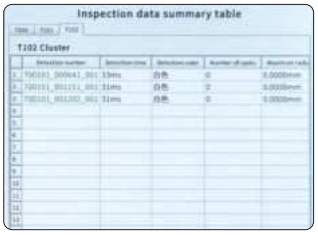
detect different workpieces at one time



- Automatically identify different workpieces
- Automatically locate workpieces regardless of position and direction
- Built-in software, PLC control input and output interface
- Including multiple detection tools
- Automatically calculate, store the test results and sent to Excel



report showing the perform times of each tool, quantity of OK and NG, the report can be saved




report of each detection is automatically created and saved

## SPECIFICATION

| | |
|---|---|
| Magnification | 15X~100X |
| Resolution | 1920×1080 |
| Pixel | 2M |
| Single pixel size | 3.75×3.75μm |
| Frame rate | 60fps |
| Sensor | 1/2" CMOS |
| Chip structure | FPGA+ARM |
| Operation system | Linux 3.10 |
| Power supply | power adapter |
| Dimension (L×W×H) | 570×300×430mm |
| Weight | 6.5kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 0.5X camera adapter | 1 pc |
| 1X auxiliary objective | 1 pc |
| Calibration plate | 1 pc |
| 16G USB flash disk | 1 pc |
| White/black plate | 1 pc |
| HDMI cable | 1 pc |
| Power adapter | 3 pcs |

## MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

| Auxiliary objective | Specification | Camera adapter | |
|---|---|---|---|
| | | 0.5X (included) | 1X (optional) |
| 1X (included) | magnification | 15~100X | 30~200X |
| | focus distance | 70±2mm | 70±2mm |
| | view filed | 16×11~2.5×1.6mm | 7.8×5.3~1.2×0.8mm |
| 2X (optional) | magnification | 30~200X | 60~400X |
| | focus distance | 29±2mm | 29±2mm |
| | view filed | 7.8×5.3~1.2×0.8mm | 3.8×2.7~0.6×0.4mm |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 1X camera adapter | ISM-DL-CA1X |
| 2X auxiliary objective | ISM-DL-OB2X |
| LED light | page 728~729 |
| Auxiliary objective | page 730 |

To be continued



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Continued from previous page

## ▪ APPLICATION EXAMPLES:

dimension measurement

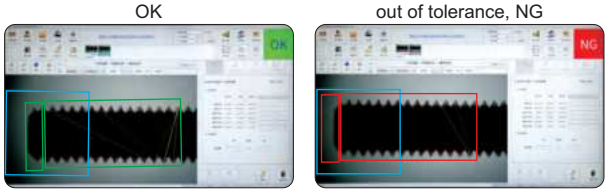
OK | out of tolerance, NG



automatically locate and measure, and judge OK or NG

thread measurement

OK | out of tolerance, NG



automatically measure major diameter, minor diameter, thread angle, pitch of thread, and judge OK or NG

cutting tools measurement

OK | length is too short, NG



measure length and angle

counting

15 pcs holes, OK | 12 pcs holes, NG



automatically locate and count, and judge OK or NG

existence or absence

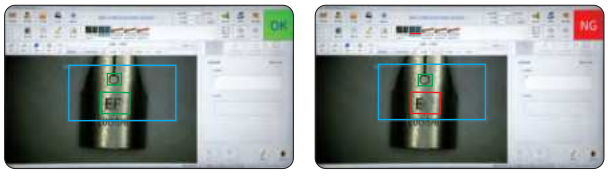
existence, OK | absence, NG



automatically detect the existence or absence of the target

character recognition

character is “EF”, OK | character is “E”, NG



automatically detect letters or numbers in the area, and judge OK or NG

color detection

OK | sequence error, NG



automatically detect colors, and judge OK or NG

location detection

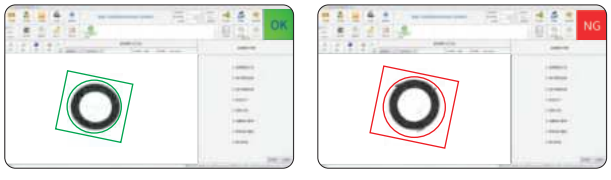
center line aligned, OK | center line misaligned, NG



automatically detect whether the center line is aligned or not

surface defect detection

no defect, OK | defect, NG



detect missing and burr on the edge of circle, and judge OK or NG

glue detection

complete, OK | broken, NG



automatically detect if there is break of glue, measure width, and judge OK or NG

# MEASURING SOFTWARE OF DIGITAL MICROSCOPES

SOFTWARE CAN BE CUSTOMIZED

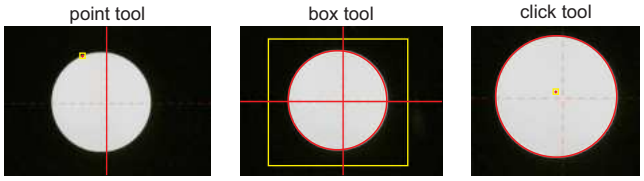



- **Included in digital microscopes (ISM-DL300, ISM-DL301, 5310-DL401, ISM-DL302, ISM-DL510, ISM-DL520, 5307-ID100A, 5322-ID250A)**
- **Language:** Simplified Chinese, Traditional Chinese, English, Korean
- **Calibration:**




circle calibration — unit selection

- **Edge-detection:**




- **Measurement tools:**

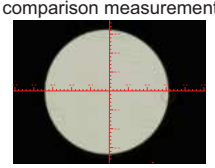
| | | |
|---|---|---|
| measure length of line or distance between two points | measure length of line or distance between two points in horizontal direction | measure length of line or distance between two points in vertical direction |
| measure angle from horizontal line | measure angle from vertical line | measure angle of two lines |
| measure distance between two parallel lines | measure distance between two parallel lines | measure distance between multiple parallel lines |
| measure distance between point and line | measure radius, length and angle of arc | measure girth and area of polygon |
| measure radius, diameter, girth and area of circle with three points | measure radius, diameter, girth and area concentric of circles | measure length, width, girth and area of rectangle |
| measure minimum distance between point and circle | measure distance between point and center of circle | measure maximum distance between point and circle |
| measure minimum distance between line and circle | measure distance between line and center of circle | measure maximum distance between line and circle |
| measure minimum distance between two circles | measure center distance between two circles | measure maximum distance between two circles |
| add text | measure radius, diameter, girth and area of circle with two points | cross hair and graduated cross hair |

- **Assist tools:**

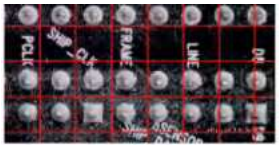
| | |
|---|---|
| manual/automatic point selection | delete images |
| line width and color settings | export measurement data to U disk |
| freeze screen | take pictures and save |
| camera parameter settings | review pictures |
| layout settings of measurement items | system settings |

- **Cross hair:**

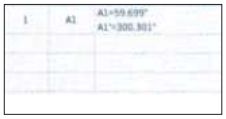

cross hair


graduated cross hair for comparison measurement

- **Grid comparison measurement:**


full-screen grid for comparison measurement, adjustable grid number

- **Output to Excel:**



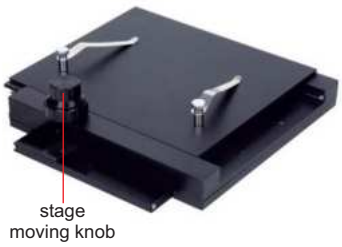
- **Comparison:**
  set the standard workpiece as the background image, superimpose the measured workpieces on the image for quick comparison



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## X-Y METAL STAGE
## CODE ISM-DL-STAGE1

- Suitable for digital microscopes **5301-D400, 5303-AF103, 5310-DL401, 5313-S407, 5315-S710, 5318-MD60-XY 5324-K210, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL520**






**SPECIFICATION**

| | |
|---|---|
| **X-Y travel range** | 100×86mm |
| **Dimension (L×W×H)** | 180×180×50mm |
| **Weight** | 2.3kg |

**RED, GREEN, BLUE, INFRARED AND UV LIGHT CAN BE CUSTOMIZED**

**ATTENSION: MUST BE USED WITH LIGHT BRACKET AND LIGHT CONTROLLER**

## LED RING LIGHT
## CODE ISM-LED-9245R

- Diffuser plate is included to reduce the reflective effect on workpieces
- Suitable for digital microscopes **5303-AF103, 5310-DL401, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL400, ISM-DL510**, **5315-S710**




**SPECIFICATION**

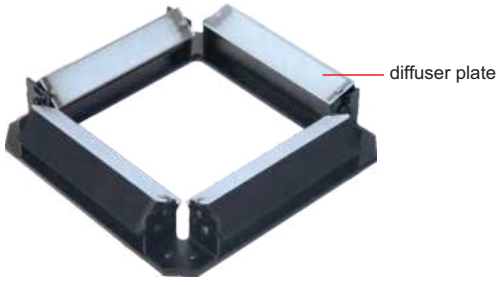
| | |
|---|---|
| **Light color** | white |
| **Power supply** | 24V |
| **Power** | 5.5W |
| **Angle** | 45° |
| **Outside/inside diameter** | 92/52mm |

**RED, GREEN, BLUE, INFRARED AND UV LIGHT CAN BE CUSTOMIZED**

**ATTENSION: MUST BE USED WITH LIGHT BRACKET AND LIGHT CONTROLLER**

## LED SQUARE LIGHT
## CODE ISM-LED-100L4

- Diffuser plate is included to reduce the reflective effect on workpieces
- Angle and brightness can be adjusted independently
- Suitable for digital microscopes **5303-AF103, 5310-DL401, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL400, ISM-DL510**, **5315-S710**



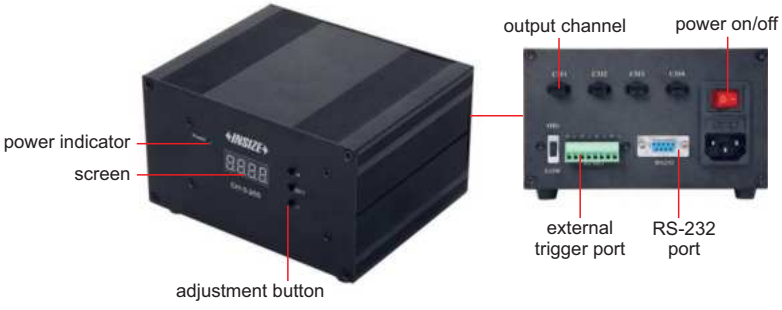

**SPECIFICATION**

| | |
|---|---|
| **Light color** | white |
| **Power supply** | 24V |
| **Power** | 10.36W |
| **Angle** | 0~90° |
| **Dimension (L×W×H)** | 154×154×30mm |



## DIGITAL LIGHT CONTROLLER
## CODE ISM-LED-CTRL

- 256 (0-255) steps of brightness adjustment
- With power off memory function and short circuit protection function
- Suitable for **ISM-LED-100L4, ISM-LED-9245R**




**SPECIFICATION**

| | |
|---|---|
| **Power supply** | 100~240V, 50/60HZ |
| **Output power (rated)** | 60W |
| **Output voltage (rated)** | 24V |
| **Dimension (L×W×H)** | 145×118×83mm |

## BRACKET FOR LIGHTS
## CODE ISM-LED-BRACKET




application



- 4 pcs L-shape bars are included, multiple combinations can be realized
- Suitable for **ISM-LED-100L4, ISM-LED-9245R**

**SPECIFICATION**

| | |
|---|---|
| **Size (L×W×H)** | 260×300×20mm |
| **Weight** | 0.7kg |

## DUAL HEAD LED LIGHT
## CODE ISM-ZS-LED

- Adjustable illumination
- For digital and stereo microscopes



application



**SPECIFICATION**

| | |
|---|---|
| **Power** | 3W |
| **Power supply** | 100~240V |
| **Working** | 10000h |
| **Illumination** | 10000lux |

## LED AUXILIARY LIGHT
## CODE ISM-DL-LED

- Suitable for digital microscopes **5303-AF103, 5310-DL401, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL400, ISM-DL510, 5315-S710**






illumination direction and brightness are adjustable

**SPECIFICATION**

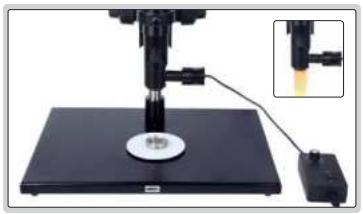
| | |
|---|---|
| **Power** | 8W |
| **Diameter of mounting hole** | Ø25mm |
| **Power supply** | 10~12V, 0~300mA |



## COAXIAL LIGHT
## CODE ISM-DL-COAXIAL

- Suitable for digital microscopes **5303-AF103, 5310-DL401, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL400, ISM-DL510, 5315-S710**



for smooth surfaces and small holes, brightness is adjustable

**SPECIFICATION**

| | |
|---|---|
| **Power** | 1W |
| **Power supply** | 0~3.4V, 0~400mA |



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# AUXILIARY OBJECTIVES




**0.3X auxiliary objective*
ISM-DL-OB03X**




**0.5X auxiliary objective*
ISM-DL-OB05X**




**0.75X auxiliary objective*
ISM-DL-OB075X**




**1X auxiliary objective
ISM-DL-OB1X**




**1.5X auxiliary objective
ISM-DL-OB1D5X**




**2X auxiliary objective
ISM-DL-OB2X**

- Suitable for digital microscopes **5303-AF103, 5310-DL401, ISM-DL300, ISM-DL301, ISM-DL400, ISM-DL510, 5315-S710, 5317-AF109, 5317-AF110**

**MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (5303-AF103)**

| Auxiliary objective | Specification | Camera adapter | |
|---|---|---|---|
| | | 0.5X (included) | 1X (optional) |
| 0.3X (optional) | magnification | 6~37X | 12~74X |
| | focus distance | 120~310mm | 120~310mm |
| | view field | 52×30~8×5mm | 26×15~4×2.5mm |
| 0.5X (optional) | magnification | 10~61X | 20~123X |
| | focus distance | 78~230mm | 78~230mm |
| | view field | 37×20~5×3mm | 18×10~2.5×1.5mm |
| 0.75X (optional) | magnification | 15~92X | 30~184X |
| | focus distance | 60~125mm | 60~125mm |
| | view field | 21×13~3.4×2mm | 10×6.5~1.7×1mm |
| 1X (included) | magnification | 20~123X | 40~246X |
| | focus distance | 48~84mm | 48~84mm |
| | view field | 15×8~2.5×1.5mm | 7.5×4~1.3×0.7mm |
| 1.5X (optional) | magnification | 30~184X | 60~368X |
| | focus distance | 36~63mm | 36~63mm |
| | view field | 10×6~1.7×1mm | 5×3~0.9×0.5mm |
| 2X (optional) | magnification | 40~246X | 80~492X |
| | focus distance | 24~42mm | 24~42mm |
| | view field | 7.5×4~1.3×0.7mm | 3.8×2~0.7×0.4mm |

**MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (ISM-DL300, ISM-DL301, ISM-DL510)**

| Auxiliary objective | Specification | Camera adapter | |
|---|---|---|---|
| | | 0.5X (included) | 1X (optional) |
| 0.3X (optional) | magnification | 5~34X | 10~68X |
| | focus distance | 287±2mm | 287±2mm |
| | view field | 42×26~6.5×4.5mm | 21×13~3.3×2.3mm |
| 0.5X (optional) | magnification | 9~56X | 18~112X |
| | focus distance | 166±2mm | 166±2mm |
| | view field | 25.6×16.8~5×3.5mm | 12.8×8.4~2×1.3mm |
| 0.75X (optional) | magnification | 13~84X | 26~168X |
| | focus distance | 105±2mm | 105±2mm |
| | view field | 17×10.5~2.6×1.7mm | 8.5×5.3~1.3×0.9mm |
| 1X (included) | magnification | 15~100X | 30~200X |
| | focus distance | 70±2mm | 70±2mm |
| | view field | 16×11~2.5×1.6mm | 7.8×5.3~1.2×0.8mm |
| 1.5X (optional) | magnification | 26~168X | 52~336X |
| | focus distance | 42±2mm | 42±2mm |
| | view field | 8.5×5.2~1.3×0.9mm | 4.3×2.6~0.7×0.5mm |
| 2X (optional) | magnification | 30~200X | 60~400X |
| | focus distance | 29±2mm | 29±2mm |
| | view field | 7.8×5.3~1.2×0.8mm | 3.8×2.7~0.6×0.4mm |

*For auxiliary objectives 0.3X, 0.5X, 0.75X, use contour illumination of **ISM-DL301, ISM-DL400, ISM-DL510, 5310-DL401** or LED light

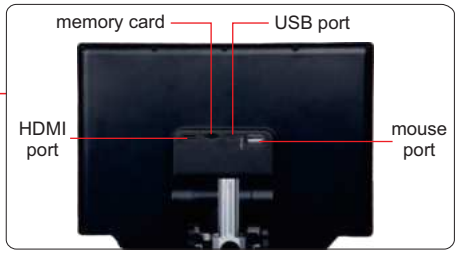
# MINI DIGITAL MICROSCOPE (ECONOMIC TYPE)
# CODE 5311-M710

TAKE PICTURES AND VIDEOS

BUILT-IN LITHIUM BATTERY

VIDEO






32G memory card and holder (included)



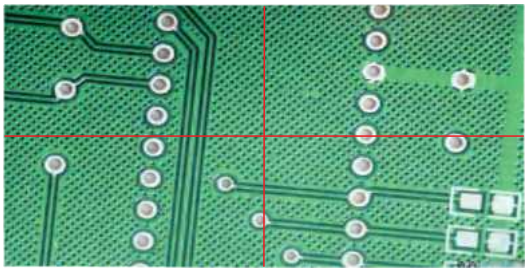
infrared ray remote controller (included)

**computer is optional**

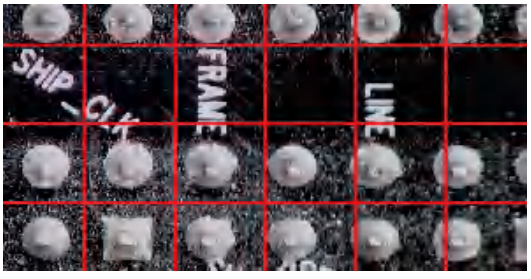


connect to computer with USB cable, take pictures and videos, make measurement

cross hair



grid (color, line width and positions are adjustable)




## SPECIFICATION

| | |
|---|---|
| **Display resolution** | 1280×800 |
| **Sensor** | 1/3" CMOS |
| **Pixel** | 13M |
| **Single pixel size** | 1.12μm×1.12μm |
| **Frame rate** | 60fps/30fps |
| **Magnification** | 6.5X~60X |
| **View field** | 3.6×2~33×18.5mm |
| **White balance** | auto/manual (10 levels RGB)/calibration |
| **Exposure control** | AE lock/exposure compensation (10 levels) |
| **Image control** | contrast/saturation/sharpness (10 levels) |
| **Record media** | memory card (128G Max) |
| **Output** | HDMI |
| **Power supply** | power adapter |
| **Dimension (LxWxH)** | 180×200×360mm |
| **Weight** | 1.3kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **USB cable** | 1 pc |
| **HDMI cable** | 1 pc |
| **IR remote controller** | 1 pc |
| **32G memory card and holder** | 1 pc |
| **Plastic calibration ruler** | 1 pc |
| **Power adapter** | 1 pc |

To be continued

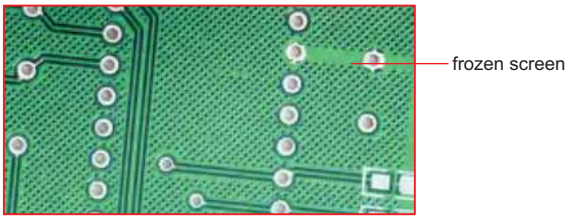


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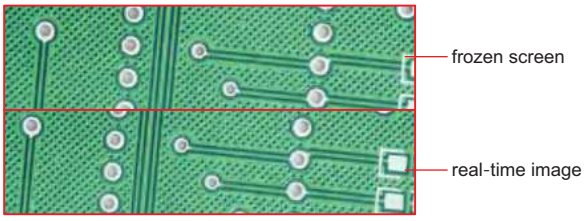
Continued from previous page

- **Screen freezing:**

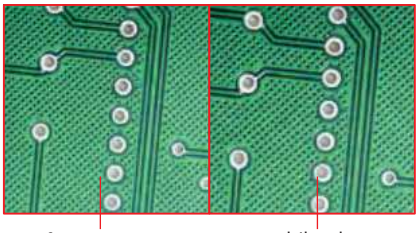
full screen



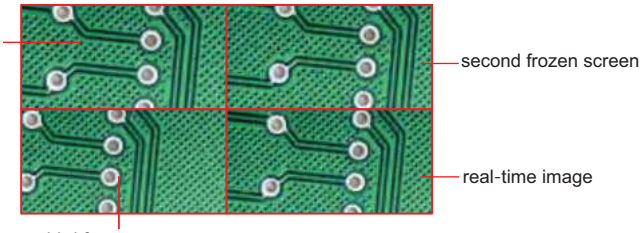

up-down split screen




left-right split screen



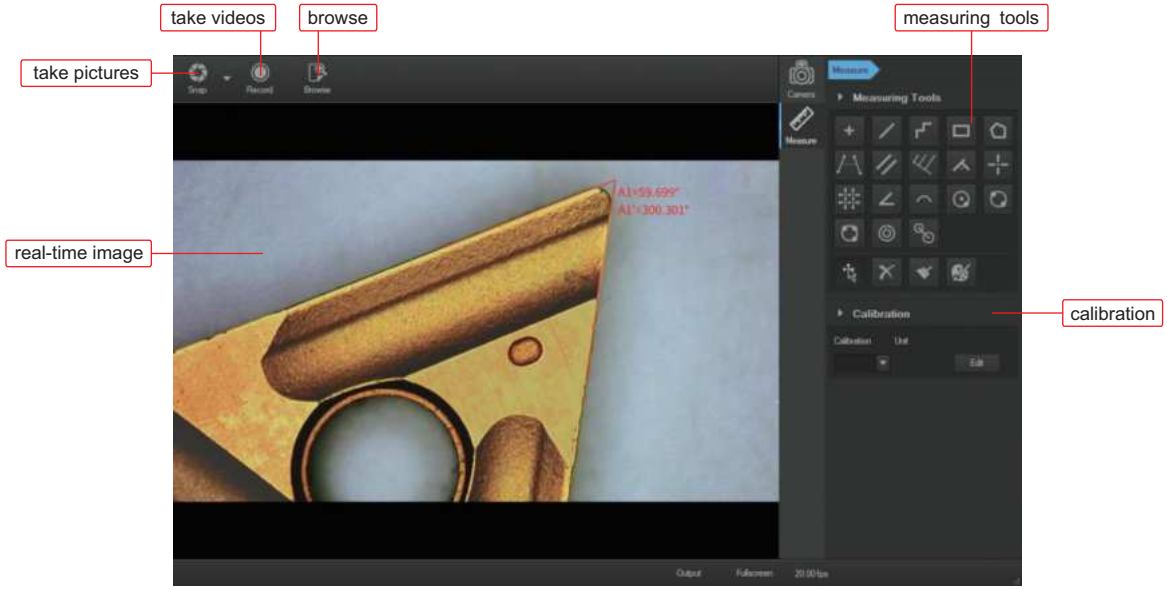

1/4 split screen




## SOFTWARE FOR COMPUTER (INCLUDED)

- **Language**: Chinese (Simplified), English
- **Operation system**: Windows 7/8/8.1/10 (64bit)
- **Port**: USB2.0 or above
- **Measuring accuracy**: 0.02mm

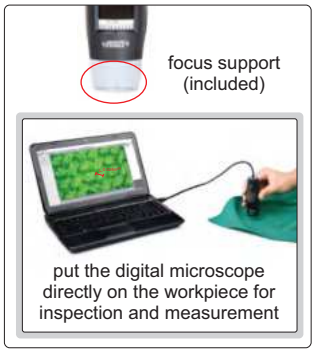
| | | | |
|---|---|---|---|
| point counting | straight line length | continuous line length | area of a rectangle |
| area of a polygon | distance between 2 lines | distance between parallel lines | distance between line and first parallel line |
| point-line distance | cross line | double cross line | angle |
| arc | radius of a circle | radius of a 2-point circle | radius of a 3-point circle |
| center distance of 2 circles | center distance of concentric circle | | |

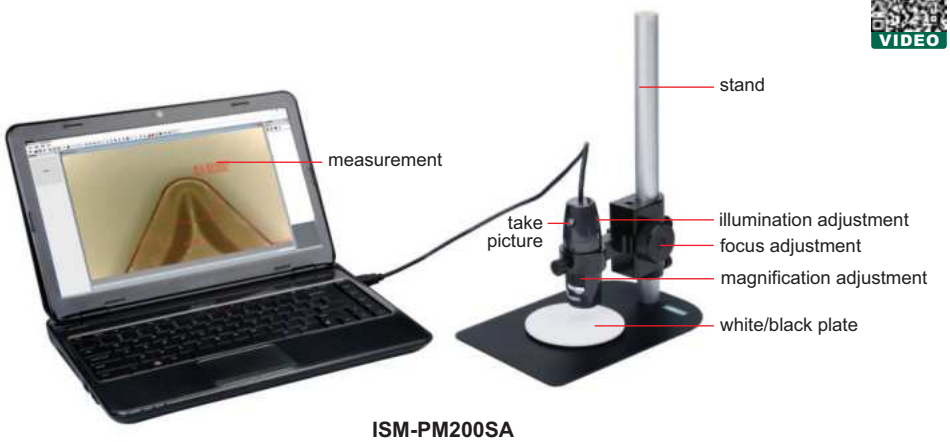





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# DIGITAL MEASURING MICROSCOPES (ECONOMIC TYPE)




**ISM-PM200SA**
**computer is optional**

- Can take pictures and videos
- Supplied with software
- Calibration rulers
  (graduation 0.1 and 1mm) are included
- With focus support

software flash disk
(included)



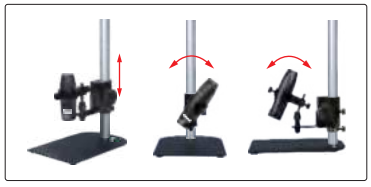
filter (**optional**)



## SPECIFICATION

| Code | ISM-PM200SA | ISM-PM200SB |
|---|---|---|
| Magnification | 10X~200X | 10X~200X |
| Stand | standard | universal |
| Pixel | 2M (resolution: 1920×1080) | |
| Illumination | built-in adjustable LED | |
| Power supply | USB 2.0 cable (voltage required: 5±0.1V) | |

universal stand (included in **ISM-PM200SB**)



## MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

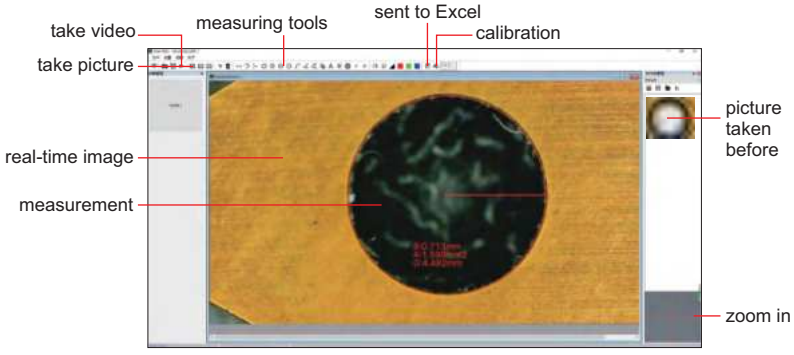
| Magnification | Focus distance | View field | Accuracy |
|---|---|---|---|
| 50X | 22mm | 9.6×7.1mm | 30μm |
| 100X | 14mm | 4.8×3.6mm | 15μm |
| 150X | 14mm | 3.3×2.5mm | 10μm |
| 200X | 19mm | 2.3×1.8mm | 8μm |

## STANDAER DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| USB flash disk | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Green filter | ISM-PM-GREEN |
| Yellow filter | ISM-PM-YELLOW |
| Blue filter | ISM-PM-BLUE |

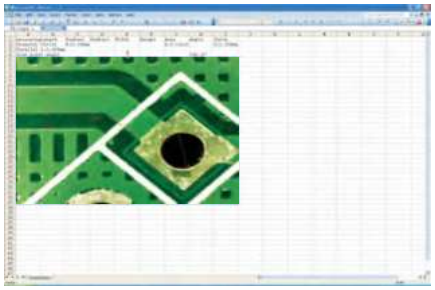



## SOFTWARE

- **Language:** English, Japanese, Ukrainian, German, French, Italian, Spanish, Chinese
- **Operation system:** Windows 7/8/XP/Vista
- **Measuring tools:**

measure radius, diameter, girth and area of circle with two points
measure area of polygon
measure distance between two circles
measure distance between two parallel lines
measure angle with two lines
measure distance between point and line
measure radius of arc
measure radius of circle
measure length of continuous line
measure angle with three points
measure radius, girth and area of circle
add text

- **Data is sent to Excel:**





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# WIFI DIGITAL MEASURING MICROSCOPE (ECONOMIC TYPE)
# CODE ISM-WF200

VIDEO

- Maximum working distance is 5m under WIFI mode
- Can be connected to multiple iPads, Android devices or computers together under WIFI mode
- Take pictures and videos
- Supplied with software



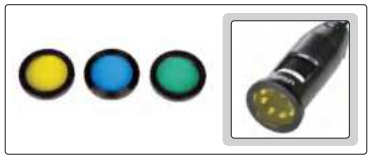

stand (code **ISM-PM-STAND**, **optional**)





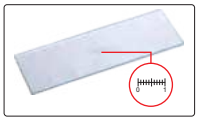
software flash disk (included)

filter (**optional**)





plastic calibration ruler (graduation 1mm, included)



glass calibration ruler (graduation 0.1mm, included)

## SPECIFICATION

| | |
|---|---|
| **Magnification** | 10X~200X |
| **Pixel** | 1.3M (resolution: 1280×1024) |
| **Illumination** | built-in adjustable LED |
| **Power supply** | built-in rechargeable battery |



connected to iPad by WIFI



connected to Android device by WIFI

## STANDARD DELIVERY

| | |
|---|---|
| **Microscope** | 1 pc |
| **Focus support ring for 80X/150X** | 1 pc |
| **Focus support ring for 60X/200X** | 1 pc |
| **Glass calibration ruler (graduation 0.1mm)** | 1 pc |
| **Plastic calibration ruler (graduation 1mm)** | 1 pc |
| **Software and USB cable** | 1 pc |
| **AC/DC adapter** | 1 pc |



connected to computer by WIFI



connected to computer by USB cable

## OPTIONAL ACCESSORY

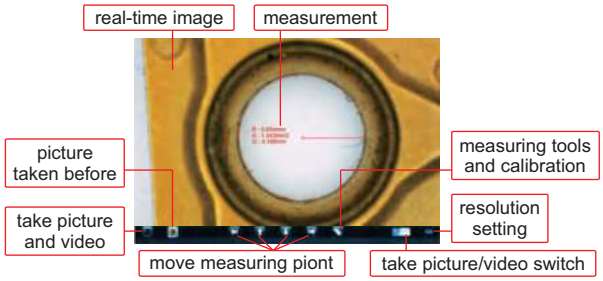
| | |
|---|---|
| **Stand** | **ISM-PM-STAND** |
| **Green filter** | **ISM-PM-GREEN** |
| **Yellow filter** | **ISM-PM-YELLOW** |
| **Blue filter** | **ISM-PM-BLUE** |

## MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

| Magnification | Focus distance | View field | Accuracy |
|---|---|---|---|
| 50X | 21mm | 8.1×6.4mm | 30μm |
| 100X | 13mm | 3.9×3.1mm | 15μm |
| 150X | 16mm | 2.6×2.1mm | 10μm |
| 200X | 19mm | 1.8×1.5mm | 8μm |

## ❶ Software ISM-WF200 (for iPad by WIFI)

- measure length of line or distance between two points
- measure radius, girth and area of circle with three points
- measure angle




To be continued

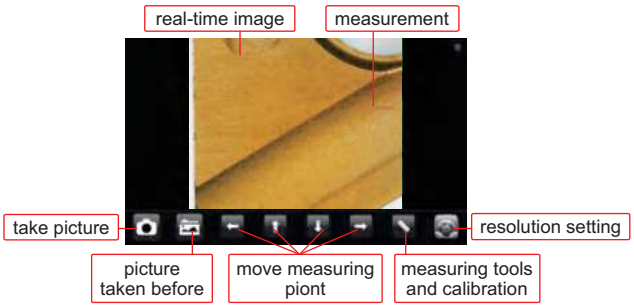


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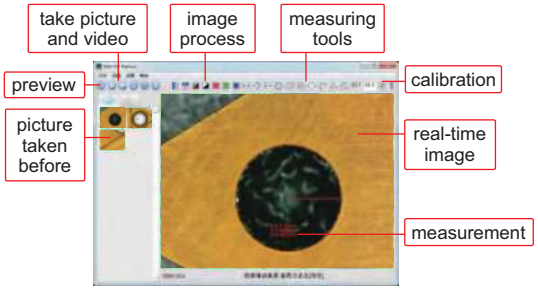
## ❷ Software ISM-APK (for Android devices by WIFI)

- measure length of line or distance between two points
- measure radius, girth and area of circle with three points
- measure angle



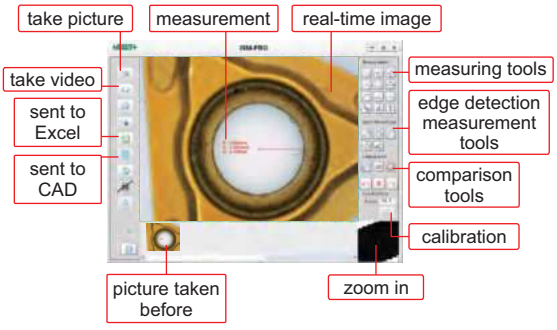

## ❸ Software ISM-WF Partner (for computer by WIFI)

- measure length of line or distance between two points
- measure area of polygon
- measure angle with three points
- measure radius, girth and area of circle with center point
- measure length of continuous line
- measure radius, girth and area of circle with three points
- measure angle with two lines
- measure radius, girth and area of circle with two points
- measure distance between point and line
- measure radius, length and angle of arc
- measure area of rectangle




## ❹ Software ISM-PRO (for computer by USB cable)

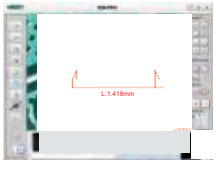
- **Measuring tools:**
  - measure length of line or distance between two points
  - measure length of continuous line
  - measure radius, length and angle of arc
  - measure distance between two circles
  - measure distance between two parallel lines
  - measure radius, girth and area of circle
  - measure distance between point and line
  - measure area of rectangle
  - measure angle with two lines
  - add number with circle
  - measure angle with three points
  - add text



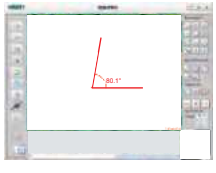

- **Edge detection measurement tools:**
  - detect line automatically, and calculate length
  - detect arc automatically, and calculate radius, angle and arc length
  - detect circle automatically, and calculate radius, girth and area
  - detect two lines automatically, and calculate angle
  - detect two parallel lines automatically and calculate distance

- **Comparison tools:**
  Create line, angle or circle with desired size, to compare with workpieces

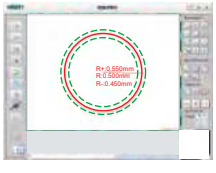
create line



create angle



create circle with tolerance



- **Data is sent to CAD or Excel:**





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# METALLURGICAL MICROSCOPES

VIDEO




**5103-M1000**

- Infinite optical system, polarization observation
- Kohler illumination system provides uniform illumination field
- Objectives 50X, 100X are spring type

## SPECIFICATION

| Code | 5103-M1000 (bright field objectives) | | | | 5103-M1000BD (bright & dark field objectives) | | | |
|---|---|---|---|---|---|---|---|---|
| Illumination | 6V/30W halogen lamp, brightness is adjustable | | | | 12V/50W halogen lamp, brightness is adjustable | | | |
| Objective (infinite plan achromatic) | bright field objectives | | | | bright & dark field objectives | | | |
| | 10X | 20X | 50X | 100X | 5X | 10X | 20X | 50X |
| Working distance | 20.2mm | 8.80mm | 3.68mm | 0.40mm | 9.70mm | 9.30mm | 7.23mm | 2.50mm |
| Numerical aperture | 0.25 | 0.40 | 0.70 | 0.85 | 0.12 | 0.25 | 0.40 | 0.70 |
| Magnification | 100X~1000X | | | | 50X~500X | | | |
| Eyepiece (wide field) | 10X (view field: Ø22mm) | | | | | | | |
| Stage | double layer | | | | | | | |
| | size: 242×200mm | | | | | | | |
| | travel: 30x30mm | | | | | | | |
| Pupil distance | 53~75mm | | | | | | | |
| Diopter adjustment | ±5 diopter (one eyepiece) | | | | | | | |
| Power supply | 220V, 50/60Hz | | | | | | | |
| Dimension (L×W×H) | 614×250×394mm | | | | | | | |
| Weight | 13kg | | | | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Polarizer and analyzer | 1 pc of each |
| Anti-dust cover | 1 pc |

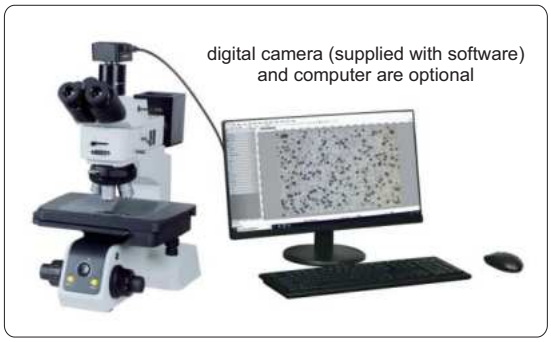
## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| Bright & dark field objective (for 5103-M1000BD) | PL40X | 5101-M-BD40X |
| | PL60X | 5101-M-BD60X |
| | PL80X | 5101-M-BD80X |
| | PL100X | 5101-M-BD100X |
| 10X dividing eyepiece (0.1mm/div.) | | 5103-M-EPD10X |
| Bright field objective (for 5103-M1000) | PL5X | 5101-M-OB5X |
| | PL40X | 5101-M-OB40X |
| | PL60X | 5101-M-OB60X |
| | PL80X | 5101-M-OB80X |
| Digital camera | | ISM-CM63 |
| Camera adapter * | | 5101-M-ADAPTER |

*Digital camera must be used with camera adapter

# METALLURGICAL MICROSCOPES (ADVANCED TYPE)

VIDEO




- Infinite chromatic aberration correction optical system
- Three way observation tube with infinite hinge
- Translucent and reflective frame, front low-hand position coarse and fine coaxial focus adjustment mechanism, with adjustment elastic device to prevent sliding and random upper limit device
- Bright and dark field five-hole converter with DIC slot
- Adopt digital dimming, with light intensity reset and setting function
- With polarizer insert plate and 360° rotating analyzer insert slot




**5108-M3000**

## SPECIFICATION

| Code | 5108-M3000 (standard type) | | | | 5108-M3000H (high-definition type) | | | |
|---|---|---|---|---|---|---|---|---|
| Eyepiece | high eye point large field SWH10X-H (view field: Ø25mm, adjustable visibility) | | | | | | | |
| Objective (infinite long working distance bright and dark field semi achromatic) | 5X | 10X | 20X | 50X | 5X | 10X | 20X | 50X |
| Working distance | 15mm | 8.4mm | 10.3mm | 3.0mm | 20mm | 11mm | 3.0mm | 1.0mm |
| Numerical aperture | 0.15 | 0.30 | 0.40 | 0.75 | 0.15 | 0.30 | 0.45 | 0.80 |
| Optical magnification | 50X~500X (up to 1000X with optional 100X objective) | | | | | | | |
| Digital magnification | 170X~1700X (on 21.5" monitor), up to 3400X with optional 100X objective | | | | | | | |
| Stage | double layer | | | | | | | |
| | size: 310×240mm | | | | | | | |
| | travel: 150×100mm | | | | | | | |
| Condenser | roll-out achromatic condenser (numerical aperture 0.9) | | | | | | | |
| Illumination | 5W LED, transmitted and reflected | | | | | | | |
| Observation tube | inverse image, distance adjustment: 50~76mm, two grade spectral ratio binocular: trinocular=100:0 | | | | | | | |
| Diopter adjustment | ±5 diopter (two eyepieces) | | | | | | | |
| Power supply | AC 100-240V | | | | | | | |
| Dimension (L×W×H) | 310×600×500mm | | | | | | | |
| Weight | 27kg | | | | | | | |

## STANDARD DELIVERY

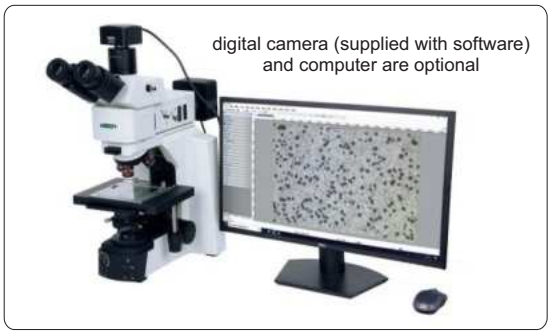
| | |
|---|---|
| Main unit | 1 pc |
| Anti-dust cover | 1 pc |
| 0.65X camera adapter (adjustable focus) | 1 pc |
| Polarizer and analyzer | 1 pc of each |

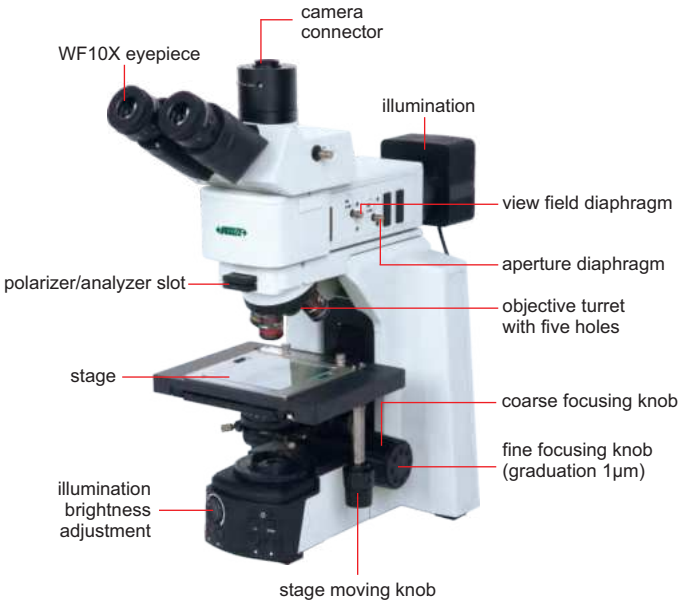
## OPTIONAL ACCESSORY

| | |
|---|---|
| Camera and software | ISM-CM63 |
| Glass calibration ruler | ISM-MAS-SCALE |
| Computer | 5108-M-COMPUTER |
| 2.5X infinite long working distance bright field semi achromatic objective | 5108-M-OB2D5X |
| 100X infinite long working distance bright and dark field semi achromatic objective | 5108-M-BD100X |
| 50X infinite long working distance bright and dark field achromatic objective | 5108-M-APO50X |
| 100X infinite long working distance bright and dark field achromatic objective | 5108-M-APO100X |
| Differential interference module (DIC) | 5108-M-DIC |

# METALLURGICAL MICROSCOPE (STANDARD TYPE)
# CODE 5110-M900

- Infinite chromatic aberration correction optical system
- Three way observation tube with infinite hinge
- Translucent and reflective frame, front low-hand position coarse and fine coaxial focus adjustment mechanism, with adjustment elastic device to prevent sliding and random upper limit device
- With brightness memory function




## SPECIFICATION

| | | | | |
|---|---|---|---|---|
| **Eyepiece** | high eye point large field SWH10X-H (view field: Ø23mm, adjustable visibility) | | | |
| **Objective (infinite long working distance semicomplex achromatic)** | bright field objectives | | | |
| | 5X | 10X | 20X | 50X |
| **Numerical aperture** | 0.15 | 0.30 | 0.45 | 0.70 |
| **Working distance** | 13.5mm | 10.3mm | 3.0mm | 2.5mm |
| **Optical magnification** | 50X~500X (up to 1000X with optional 100X objective) | | | |
| **Digital magnification** | 100X~1000X (on 21.5" monitor), up to 2000X with optional 100X objective | | | |
| **Stage** | double layer | | | |
| | glass workbench size: 101×101mm | | | |
| | travel: 75×50mm | | | |
| **Condenser** | roll-out achromatic condenser (numerical aperture 0.9) | | | |
| **Diopter adjustment** | ±5 diopter (two eyepieces) | | | |
| **Illumination** | 10W adjustable LED, transmitted and reflected | | | |
| **Observation tube** | inverse image, distance adjustment: 50~75mm,<br>two grade spectral ratio binocular: trinocular=100:0 | | | |
| **Power supply** | power adapter | | | |
| **Dimension (L×W×H)** | 255×510×530mm | | | |
| **Weight** | 25kg | | | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Anti-dust cover** | 1 pc |
| **0.5X camera adapter** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Camera and software** | **ISM-CM63, ISM-KM60, ISM-MP8B, ISM-ZS70** |
| **Glass calibration ruler** | **ISM-MAS-SCALE** |
| **Computer** | **5110-M-COMPUTER** |
| **Polarizer and analyzer** | **5110-M-POA** |
| **100X infinite long working distance bright field semi-apochromatic objective** | **5110-M-BD100X** |





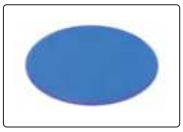
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# METALLURGICAL MICROSCOPES (BASIC TYPE)




**5102-M600**

- Infinite optical system, observation in reflected or transmitted illumination, polarizing observation
- Kohler illumination system provides uniform illumination field
- Objectives 40X, 60X are spring type



blue filter (included)



frosted glass filter (included)

## SPECIFICATION

| Code | 5102-M600 (bright field objectives) | | | | 5102-M600BD (bright & dark field objectives) | | | |
|---|---|---|---|---|---|---|---|---|
| Illumination | 6V/30W (transmitted) 6V/30W (reflected) | | | | 12V/30W (transmitted) 12V/50W (reflected) | | | |
| Objective (infinite plan achromatic) | bright field objectives | | | | bright & dark field objectives | | | |
| | 5X | 10X | 40X | 60X | 5X | 10X | 20X | 40X |
| Working distance | 26.1mm | 20.2mm | 3.98mm | 3.18mm | 9.70mm | 9.30mm | 7.20mm | 3.00mm |
| Numerical aperture | 0.12 | 0.25 | 0.60 | 0.70 | 0.12 | 0.25 | 0.40 | 0.70 |
| Magnification | 50X~600X | | | | 50X~400X | | | |
| Eyepiece (wide field) | 10X (view field: Ø22mm) | | | | | | | |
| Stage | double layer | | | | | | | |
| | size: 210×140mm | | | | | | | |
| | travel: 75x50mm | | | | | | | |
| Pupil distance | 53~75mm | | | | | | | |
| Diopter adjustment | ±5 diopter (one eyepiece) | | | | | | | |
| Power supply | 220V, 50/60Hz | | | | | | | |
| Dimension (L×W×H) | 456×260×498mm | | | | | | | |
| Weight | 11kg | | | | | | | |



## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Anti-dust cover | 1 pc |
| Filter (blue/frosted glass) | 1 pc of each |

## OPTIONAL ACCESSORY

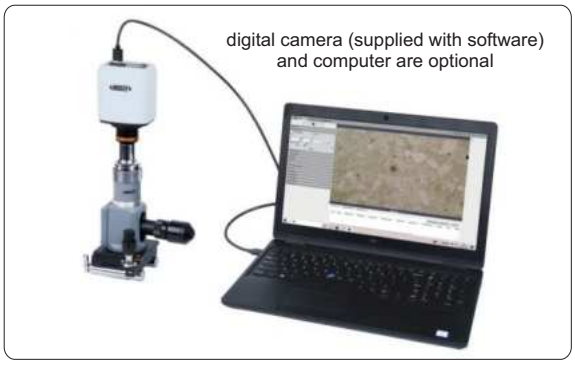
| | | |
|---|---|---|
| Bright & dark field objective (for 5102-M600BD) | PL50X | 5101-M-BD50X |
| | PL60X | 5101-M-BD60X |
| | PL80X | 5101-M-BD80X |
| | PL100X | 5101-M-BD100X |
| 10X dividing eyepiece (0.1mm/div.) | | 5101-M-EPD10X |
| Bright field objective (for 5102-M600) | PL20X | 5101-M-OB20X |
| | PL50X | 5101-M-OB50X |
| | PL80X | 5101-M-OB80X |
| | PL100X | 5101-M-OB100X |
| Digital camera | | ISM-CM20, ISM-CM63, ISM-ZS70-S |
| Camera adapter * | | 5101-M-ADAPTER |

*Digital camera must be used with camera adapter



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# PORTABLE METALLURGICAL MICROSCOPE
# CODE 5109-PM500




connect to digital camera




- Illumination is powered by batteries
- Aperture diaphragm improves image quality and increases depth of field
- Magnetic base with on/off switch can adhere on metal workpieces
- Can be connected to digital cameras

## SPECIFICATION

| | | |
|---|---|---|
| **Magnification** | 100X~500X | |
| **Eyepiece (wide field)** | 10X/12.5X | |
| **Objective (plan achromatic)** | 10X (included) | 40X (included) |
| **Numerical aperture** | 0.25 | 0.64 |
| **Illumination** | 3W LED, built-in batteries | |
| **Stage** | double layer, size: 15×12mm | |
| **Dimension (L×W×H)** | 210×160×95mm | |
| **Weight** | 1.5kg | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Eyepiece** | 2 pcs |
| **Objective** | 2 pcs |
| **Battery (AAA)** | 3 pcs |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Objective** | **5X plan achromatic** | **5109-PM500-OB5X** |
| | **20X plan achromatic** | **5109-PM500-OB20X** |
| | **100X plan achromatic** | **5109-PM500-OB100X** |
| **Eyepiece** | **5X** | **5109-PM500-EP5X** |
| | **15X** | **5109-PM500-EP15X** |
| **Digital camera*** | | **ISM-CM20, ISM-CM63, ISM-ZS70-S** |
| **Camera adapter 0.5X** | | **ISM-MAS-ADAPTER** |

*Digital camera must be used with camera adapter

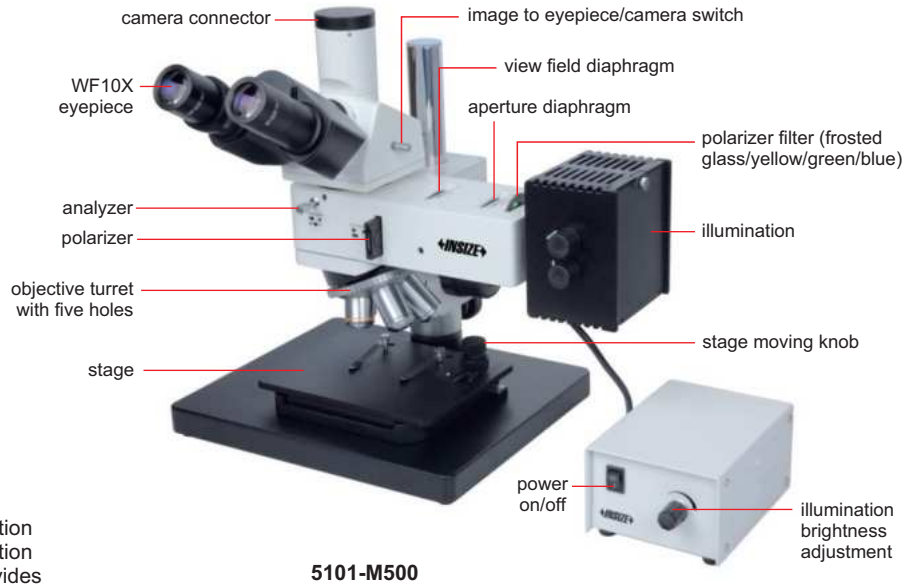




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# INDUSTRIAL MICROSCOPES

VIDEO




5101-M500

- Infinite optical system, polarization observation, dark field observation
- Kohler illumination system provides uniform illumination field
- Objective 50X is spring type

## SPECIFICATION

| Code | 5101-M500 (bright field objectives) | | | | 5101-M500BD (bright & dark field objectives) | | | |
|---|---|---|---|---|---|---|---|---|
| Illumination | 6V/30W halogen lamp, brightness is adjustable | | | | 12V/50W halogen lamp, brightness is adjustable | | | |
| Objective (infinite plan achromatic) | bright field objectives | | | | bright & dark field objectives | | | |
| | 5X | 10X | 20X | 50X | 5X | 10X | 20X | 50X |
| Working distance | 26.1mm | 20.2mm | 8.80mm | 3.68mm | 9.70mm | 9.30mm | 7.23mm | 2.50mm |
| Numerical aperture | 0.12 | 0.25 | 0.40 | 0.70 | 0.12 | 0.25 | 0.40 | 0.70 |
| Magnification | 50X~500X | | | | | | | |
| Eyepiece (wide field) | 10X (view field: Ø22mm) | | | | | | | |
| Stage | double layer | | | | | | | |
| | size: 160×140mm | | | | | | | |
| | travel: 35x30mm | | | | | | | |
| Pupil distance | 53~75mm | | | | | | | |
| Diopter adjustment | ±5 diopter (one eyepiece) | | | | | | | |
| Power supply | 220V, 50/60Hz | | | | | | | |
| Dimension (L×W×H) | 415×345×380mm | | | | | | | |
| Weight | 14kg | | | | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Anti-dust cover | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| Bright & dark field objective (for 5101-M500BD) | PL40X | 5101-M-BD40X |
| | PL60X | 5101-M-BD60X |
| | PL80X | 5101-M-BD80X |
| | PL100X | 5101-M-BD100X |
| 10X dividing eyepiece (0.1mm/div.) | | 5101-M-EPD10X |
| Bright field objective (for 5101-M500) | PL40X | 5101-M-OB40X |
| | PL60X | 5101-M-OB60X |
| | PL80X | 5101-M-OB80X |
| | PL100X | 5101-M-OB100X |
| Digital camera | | ISM-CM20, ISM-CM63, ISM-ZS70-S |
| Camera adapter * | | 5101-M-ADAPTER |

*Digital camera must be used with camera adapter



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# INDUSTRIAL INSPECTION MICROSCOPE (LARGE STAGE)
# CODE 5104-M700




- For observation and inspection of large IC and chip in IT industry

## SPECIFICATION

| | | | | |
|---|---|---|---|---|
| **Magnification** | 40X~400X | | | |
| **Eyepiece (wide field)** | 10X (view field: Ø22mm) | | | |
| **Objective (plan achromatic)** | 4X | 10X | 20X | 40X |
| **Numerical aperture** | 0.10 | 0.25 | 0.40 | 0.60 |
| **Working distance** | 17.8mm | 10mm | 5.8mm | 2.9mm |
| **Stage** | double layer, size: 300×268mm, travel: 250×200mm | | | |
| **Kohler illumination** | 6V/20W halogen lamp, brightness is adjustable built-in green, blue, yellow and frosted glasses | | | |
| **Pupil distance** | 48~75mm | | | |
| **Diopter adjustment** | ±5 diopter (two eyepieces) | | | |
| **Power supply** | 220V, 50/60Hz | | | |
| **Dimension (L×W×H)** | 647×268×376mm | | | |
| **Weight** | 12kg | | | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Camera connector** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Bright field objective** | **5X plan achromatic objective (focus distance: 15.5mm)** | **5104-M700-OB5X** |
| | **50X plan achromatic objective (focus distance: 0.32mm)** | **5104-M700-OB50X** |
| | **100X plan achromatic objective (focus distance: 2mm)** | **5104-M700-OB100X** |
| **Polarizer and analyzer** | | **5104-M700-AP** |
| **Digital camera** | | **ISM-CM20, ISM-CM63, ISM-ZS70-S** |
| **Camera adapter 0.5X*** | | **ISM-MAS-ADAPTER** |

*Digital camera must be used with camera adapter

# ZOOM STEREO MICROSCOPE (ADVANCED TYPE)
# CODE 5107-S70T



LED ring light (**optional**)




- Greenough optical system, clear observation, real color
- High working distance is convenient for operation
- Excellent flat image and large depth of field, make observation comfortable
- 6.7:1 large zoom ratio, allow quick observation adjustment

**SPECIFICATION**

| | |
|---|---|
| **Optical tube** | trinocular |
| **Eyepiece (wide field)** | 10X (view field: Ø22mm) |
| **Objective** | 0.67X~4.5X (zoom) |
| **Observation tube** | 45° trinocular tube inclination angle, built-in 0.5X adapter |
| **Zoom ratio** | 6.7:1 |
| **Pupil distance** | 50~75mm |
| **Diopter adjustment** | -8~+5 diopter (both eyepieces) |
| **Working distance of objective** | 110mm |
| **Max. workpiece height** | 106mm |
| **Illumination** | adjustable LED light |
| **Power supply** | 110/220V, 50/60Hz |
| **Dimension (L×W×H)** | 330×300×368mm |
| **Weight** | 3.5kg |



frosted glass filter
(included)



white/black plate
(included)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **10X eyepiece** | 2 pcs |
| **Ø100mm glass plate** | 1 pc |
| **Ø100mm white/black plate** | 1 pc |
| **Anti-dust cover** | 1 pc |

**OPTIONAL ACCESSORY**

| | | |
|---|---|---|
| **Auxiliary objective** | **0.5X** | **5107-S70T-OB05X** |
| | **1.5X** | **5107-S70T-OB15X** |
| | **2X** | **5107-S70T-OB20X** |
| **Eyepiece** | **15X (view field: Ø16mm)** | **5107-S70T-EP15X** |
| | **20X (view field: Ø12.5mm)** | **5107-S70T-EP20X** |
| **LED ring light** | | **ISM-ZS-RL** |
| **Digital camera** | | **ISM-CM20, ISM-CM63, ISM-ZS70-S** |

PARALLEL LIGHT PATH: REDUCE FATIGUE, ACCESSORIES CAN BE ADDED INTO LIGHT PATH

# PARALLEL LIGHT STEREO MICROSCOPE
# CODE ISM-ZS200

VIDEO

coaxial illumination (**optional**)






optical path splitter (**optional**)



- Infinity parallel optical system and 20° inclined optical tube reduce fatigue
- Coaxial illumination is optional for deep holes which cannot be observed by ring light
- Aperture diaphragm is optional for large depth of field and high quality image

iris diaphragm (**optional**)



## SPECIFICATION

| | |
|---|---|
| **Optical tube** | binocular (20° inclined) |
| **Eyepiece (wide field)** | 10X (view field: Ø22mm) |
| **Objective** | 0.8X~8X (zoom) |
| **Zoom ratio** | 1:10 |
| **Pupil distance** | 55~75mm |
| **Diopter adjustment** | ±5 diopter (both eyepieces) |
| **Working distance of objective** | 78mm |
| **Max. workpiece height** | 72mm |
| **Illumination** | adjustable reflected and transmitted LED light |
| **Power supply** | 110/220V, 50/60Hz |
| **Dimension (L×W×H)** | 240×280×440mm |
| **Weight** | 4.3kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **WF10X eyepiece** | 2 pcs |
| **Ø100mm glass plate** | 1 pc |
| **Ø100mm white/black plate** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Objective** | **0.5X achromatic objective (focus distance: 186mm)** | **ISM-ZS200-OB05X*** |
| | **2X plan achromatic objective (focus distance: 32.5mm)** | **ISM-ZS200-OB2X** |
| | **0.5X plan apochromatic objective (focus distance: 126mm)** | **ISM-ZS200-APO05X*** |
| **Eyepiece** | **WF15X (view field: Ø16mm)** | **ISM-ZS200-EP15X** |
| | **WF20X (view field: Ø12mm)** | **ISM-ZS200-EP20X** |
| | **WF30X (view field: Ø20mm)** | **ISM-ZS200-EP30X** |
| **Sleeve for objective** | | **ISM-ZS200-ADAPTER** |
| **Iris diaphragm** | | **ISM-ZS200-IRD** |
| **Optical path splitter** | | **ISM-ZS200-OBS** |
| **Coaxial illumination** | | **ISM-ZS200-COAXIAL** |
| **Digital camera **** | | **ISM-CM20, ISM-CM63** |

*0.5X auxiliary objective must be used with **ISM-ZS200-ADAPTER**

**Digital camera must be used with optical path splitter





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# ZOOM STEREO MICROSCOPES (ADVANCED TYPE)

LARGE ZOOM RATIO

VIDEO




**ISM-ZS100T**

connect to digital camera (for **ISM-ZS100T**)





LED ring light (**optional**)

## SPECIFICATION

| Code | ISM-ZS100 | ISM-ZS100T |
|---|---|---|
| Optical tube | binocular | trinocular |
| Eyepiece (wide field) | 10X (view field: Ø23mm) | |
| Objective | 0.6X~5X (zoom) | |
| Zoom ratio | 1:8.3 | |
| Pupil distance | 55~75mm | |
| Diopter adjustment | ±5 diopter (two eyepieces) | |
| Working distance of objective | 115mm | |
| Max. workpiece height | 75mm | |
| Illumination | adjustable reflected and transmitted LED light | |
| Power supply | 110/220V, 50/60Hz | |
| Dimension (L×W×H) | 260×310×490mm | |
| Weight | 4.9kg | |



## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Camera connector 0.55X for ISM-ZS100T | 1 pc |
| Digital camera adapter 1X for ISM-ZS100T | 1 pc |
| WF10X eyepiece | 2 pcs |
| Ø100mm glass plate | 1 pc |
| Ø100mm white/black plate | 1 pc |
| Anti-dust cover | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| Auxiliary objective | 0.5X (focus distance: 220mm) | ISM-ZS100-OB05X* |
| | 0.7X (focus distance: 125mm) | ISM-ZS100-OB07X |
| | 2X (focus distance: 45mm) | ISM-ZS100-OB2X |
| Eyepiece | WF15X (view field: Ø16mm) | ISM-ZS100-EP15X |
| | WF20X (view field: Ø12mm) | ISM-ZS100-EP20X |
| | WF30X (view field: Ø8mm) | ISM-ZS100-EP30X |
| Sleeve for auxiliary objective | | ISM-ZS200-ADAPTER |
| LED ring light | | ISM-ZS-RL |
| Digital camera for ISM-ZS100T | | ISM-CM20, ISM-CM63, ISM-ZS70-S |

*0.5X auxiliary objective must be used with **ISM-ZS200-ADAPTER**



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# ZOOM STEREO MICROSCOPES (STANDARD TYPE)

VIDEO



LED ring light (**optional**)




**ISM-ZS50**

## SPECIFICATION

| Code | ISM-ZS50 | ISM-ZS50T |
|---|---|---|
| Optical tube | binocular | trinocular |
| Eyepiece (wide field) | 10X (view field: Ø22mm) | |
| Objective | 0.8X~5X (zoom) | |
| Zoom ratio | 1:6.3 | |
| Pupil distance | 55~75mm (adjustable) | |
| Diopter adjustment | ±5 diopter (two eyepieces) | |
| Working distance of objective | 115mm | |
| Max. workpiece height | 75mm | |
| Illumination | adjustable reflected and transmitted LED light | |
| Power supply | 110/220V, 50/60Hz | |
| Dimension (L×W×H) | 290×260×480mm | |
| Weight | 4.9kg | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| WF 10X eyepiece | 2 pcs |
| Ø100mm glass plate | 1 pc |
| Ø100mm white/black plate | 1 pc |
| Anti-dust cover | 1 pc |

24

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| Auxiliary objective | 0.5X | ISM-ZS50-OB05X* |
| | 2X | ISM-ZS50-OB2X |
| Eyepiece | 10X dividing eyepiece (graduation 0.1mm/div.) | ISM-ZS50-EPD10X |
| | WF15X (view field: Ø16mm) | ISM-ZS50-EP15X |
| | WF20X (view field: Ø12mm) | ISM-ZS50-EP20X |
| LED ring light | | ISM-ZS-RL |
| Sleeve for auxiliary objective | | ISM-ZS200-ADAPTER |
| Digital camera for ISM-ZS50T | | ISM-CM20, ISM-CM63, ISM-ZS70-S, ISM-KM60 |

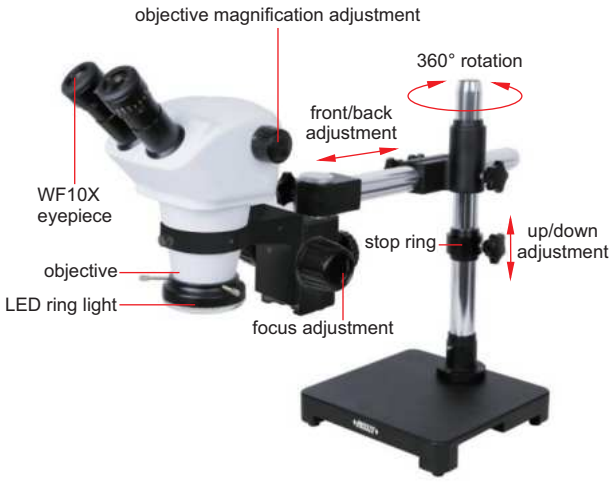
*0.5X auxiliary objective must be used with **ISM-ZS200-ADAPTER**



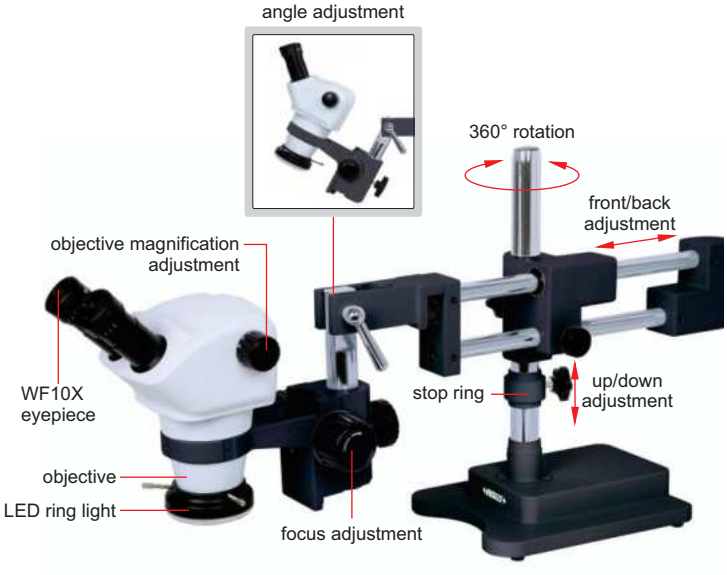
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# ZOOM STEREO MICROSCOPES (WITH UNIVERSAL STAND)

VIDEO




5106-M40 (with stand type A)




5106-M50 (with stand type B)

## SPECIFICATION

| Code | 5106-M40 | 5106-M40T | 5106-M50 | 5106-M50T |
|---|---|---|---|---|
| Stand | type A | | type B | |
| Optical tube | binocular | trinocular | binocular | trinocular |
| Eyepiece (wide field) | 10X (view field: Ø22mm) | | | |
| Objective | 0.8X~5X (zoom) | | | |
| Zoom ratio | 1:6.3 | | | |
| Pupil distance | 55~75mm | | | |
| Diopter adjustment | ±5 diopter (two eyepieces) | | | |
| Working distance of objective | 115mm | | | |
| Max. workpiece height | 300mm | | | |
| Illumination | adjustable reflected LED ring light | | | |
| Power supply | power adapter | | | |
| Dimension (L×W×H) | 610×220×430mm | | 790×230×430mm | |
| Weight | 13.7kg | | 20kg | |



## STANDARD DELIVERY

| | |
|---|---|
| Main unit (with stand) | 1 pc |
| WF10X eyepiece | 2 pcs |
| LED ring light | 1 pc |
| Anti-dust cover | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| Auxiliary objective | 0.5X | ISM-ZS50-OB05X* |
| | 2X | ISM-ZS50-OB2X |
| Eyepiece | 10X dividing eyepiece (0.1mm/div.) | ISM-ZS50-EPD10X |
| | WF15X (view field: Ø16mm) | ISM-ZS50-EP15X |
| | WF20X (view field: Ø12mm) | ISM-ZS50-EP20X |
| Adapter sleeve | | ISM-ZS30-ADAPTER |
| 0.5X adapter for 5106-M40T/M50T | | ISM-MAS-ADAPTER |
| Digital camera for 5106-M40T/M50T ** | | ISM-CM20, ISM-CM63 |

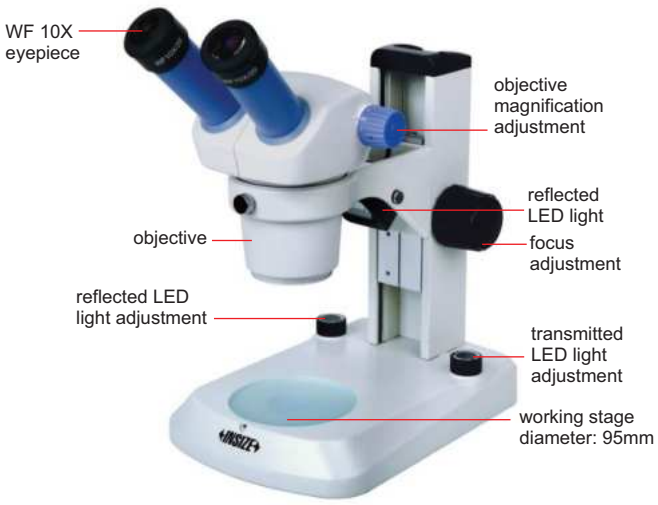
* 0.5X auxiliary objiective must be used with **ISM-ZS30-ADAPTER**

** Digital camera must be used with 0.5X adapter **ISM-MAS-ADAPTER**



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# ZOOM STEREO MICROSCOPE (BASIC TYPE)
# CODE ISM-ZS30




## SPECIFICATION

| | |
|---|---|
| **Optical tube** | binocular |
| **Eyepiece (wide field)** | 10X (view field: Ø20mm) |
| **Objective** | 1X~4.5X (zoom) |
| **Zoom ratio** | 1:4.5 |
| **Pupil distance** | 55~75mm (adjustable) |
| **Diopter adjustment** | ±5 diopter (two eyepieces) |
| **Working distance of objective** | 97mm |
| **Max. workpiece height** | 60mm |
| **Illumination** | adjustable reflected and transmitted LED light |
| **Power supply** | 110/220V, 50/60Hz |
| **Dimension (L×W×H)** | 260×190×400mm |
| **Weight** | 4.3kg |



LED ring light (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **WF 10X eyepiece** | 2 pcs |
| **Ø95mm glass plate** | 1 pc |
| **Ø95mm white/black plate** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Auxiliary objective** | **0.5X** | **ISM-ZS30-OB05X*** |
| | **0.63X** | **ISM-ZS30-OB06X*** |
| | **0.75X** | **ISM-ZS30-OB07X*** |
| | **2X** | **ISM-ZS30-OB2X** |
| **Eyepiece** | **10X dividing eyepiece (graduation 0.1mm/div.)** | **ISM-ZS30-EPD10X** |
| | **WF15X (view field: Ø16mm)** | **ISM-ZS50-EP15X** |
| | **WF20X (view field: Ø12mm)** | **ISM-ZS50-EP20X** |
| **LED ring light** | | **ISM-ZS-RL** |
| **Sleeve for auxiliary objective** | | **ISM-ZS30-ADAPTER** |
| **Digital camera** | | **ISM-CM63** |
| **Camera adapter 0.75X** ** | | **ISM-AD-0D75** |

*0.5X, 0.63X and 0.75X auxiliary objectives must be used with **ISM-ZS30-ADAPTER**

**Digital camera must be used with camera adapter 0.75X

# LONG WORKING DISTANCE STEREO MICROSCOPES (LOW MAGNIFICATION)

VIDEO




**5305-ZS80**




**5305-ZS90**

## SPECIFICATION

| Code | **5305-ZS80** (with metal base) | **5305-ZS90** (with magnetic base) |
|---|---|---|
| Magnification | 8X | |
| Eyepiece (wide field) | 10X (view field: Ø20mm) | |
| Objective | 0.8X | |
| Pupil distance | 55~75mm | |
| Diopter adjustment | ±5 diopter (one eyepiece) | |
| Working distance of objective | 115mm | |
| Max. workpiece height | 100mm | 140mm |
| Dimension (L×W×H) | 280x160x370mm | 280x180x410mm |
| Weight | 3.7kg | 2.1kg |

LED ring light (**optional**)



## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 10X eyepieces | 1 pair |
| 0.8X objective | 1 pc |
| Anti-dust cover | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| Eyepiece | WF5X (view field: Ø20mm) | 5305-ZS80-EP5X |
| | WF15X (view field: Ø15mm) | 5305-ZS80-EP15X |
| | WF20X (view field: Ø10mm) | 5305-ZS80-EP20X |
| LED ring light | | ISM-ZS-RL |

VIDEO

# POLARIZING MICROSCOPE
# CODE ISM-POL1000




- Widely used in geology, mineralogy, fossil fuel exploration
- Single polarization, othorgonal polarization or conoscopic observation are available

## SPECIFICATION

| | | | | | |
|---|---|---|---|---|---|
| **Magnification** | 40X~600X | | | | |
| **Eyepiece** | 10X (view field: Ø20mm) | | | | |
| **Infinite strain free plan achromatic objective** | 4X (transmitted/ reflected) | 10X (transmitted/ reflected) | 20X (transmitted) | 40X (transmitted) | 60X (transmitted) |
| **Working distance** | 22.2mm | 6.1mm | 6.4mm | 0.6mm | 0.3mm |
| **Numerical aperture** | 0.1 | 0.25 | 0.4 | 0.65 | 0.8 |
| **Stage** | revolving round stage | | | | |
| | diameter: Ø160mm | | | | |
| | graduation: 1°, resolution: 6' | | | | |
| **Pupil distance** | 53~75mm | | | | |
| **Diopter adjustment** | ±5 diopter (one eyepiece) | | | | |
| **Illumination** | 12V/50W halogen lamp, brightness is adjustable (reflected illumination) | | | | |
| | 12V/20W halogen lamp, brightness is adjustable (transmitted illumination) | | | | |
| **Power supply** | 110/220V, 50/60Hz | | | | |
| **Dimension (L×W×H)** | 614×250×394mm | | | | |
| **Weight** | 13kg | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Micrometer** | 1 pc |
| **Grid plate** | 1 pc |
| **10X crossing eyepiece (view field: Ø20mm)** | 1 pc |
| **10X dividing eyepiece (view field: Ø20mm, graduation 0.1mm)** | 1 pc |
| **λ slip (first class red) and 1/4λ slip** | 1 pc |
| **Quartz wedge** | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Objective for reflected system** | **PL20X** | **ISM-POL1000-OBR20X** |
| | **PL40X** | **ISM-POL1000-OBR40X** |
| | **PL60X** | **ISM-POL1000-OBR60X** |
| | **PL100X** | **ISM-POL1000-OBR100X** |
| **Objective for transmitted system** | **PL100X** | **ISM-POL1000-OBT100X** |
| **Specimen presser** | | **ISM-POL1000-SP** |

# 3D LARGE DEPTH OF FIELD CAMERA
# CODE ISM-DF80

ROTATABLE OBSERVATION

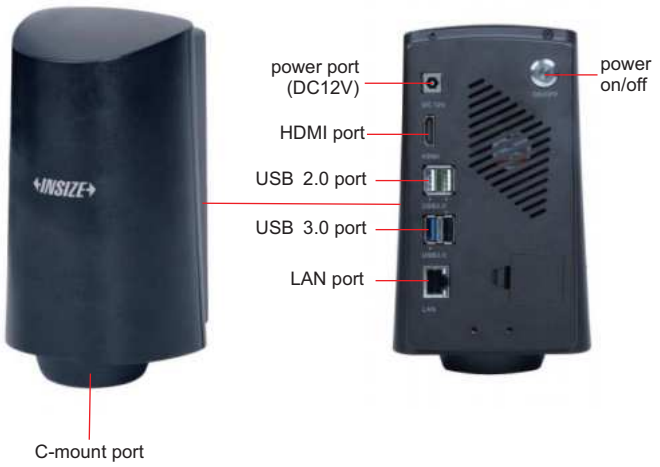
STEREOSCOPIC 3D IMAGING AND MEASUREMET

AUTO FOCUS

VIDEO

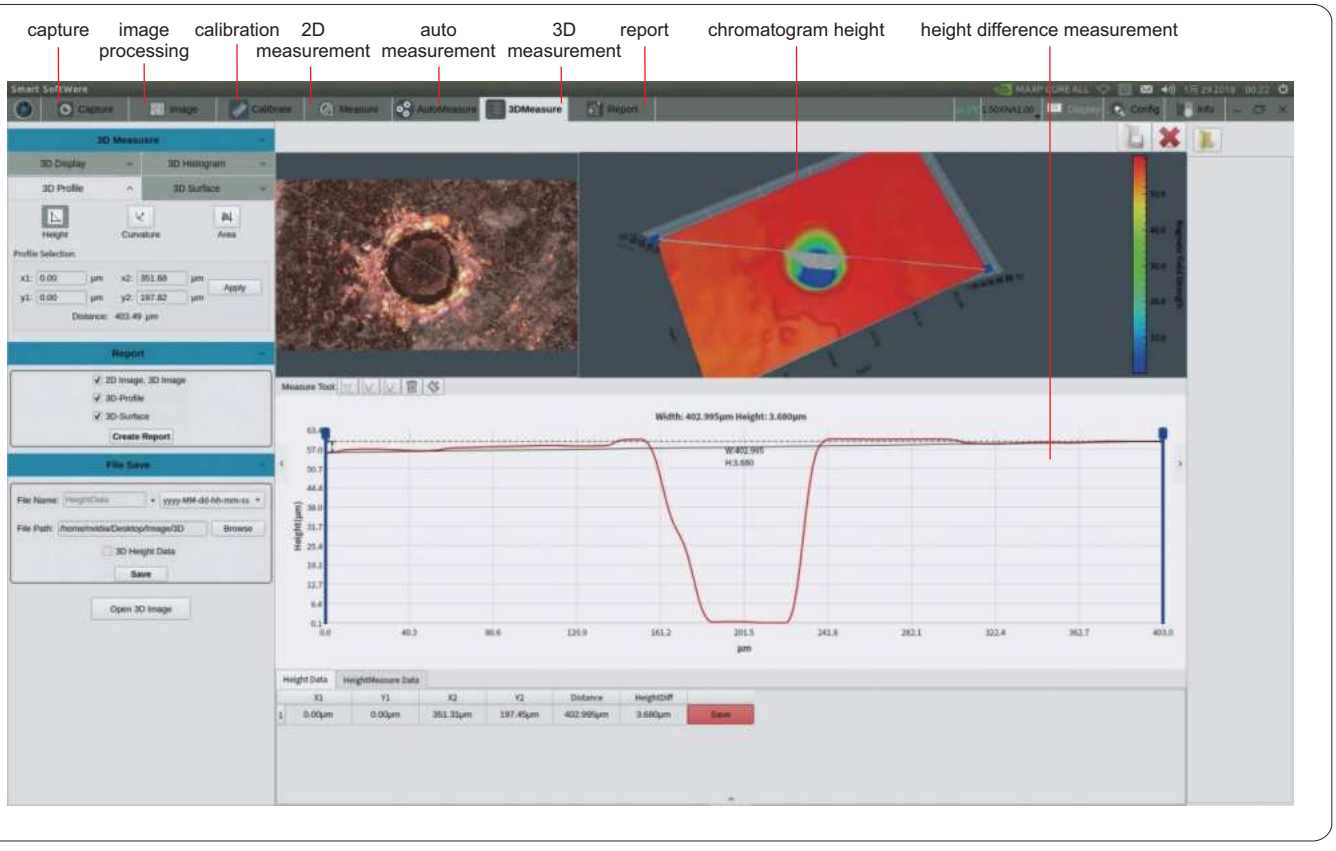
mounted on microscope






- Built-in measuring software for display, without computer
- 2D observation and measurement, auto focus
- Focus stacking for large depth of feld observation
- Constructing 3D imaging and 3D measurement
- Creating report automatic and data can be exported
- Real-time wide dynamic, effectively eliminating reflections on metal surfaces

## SOFTWARE



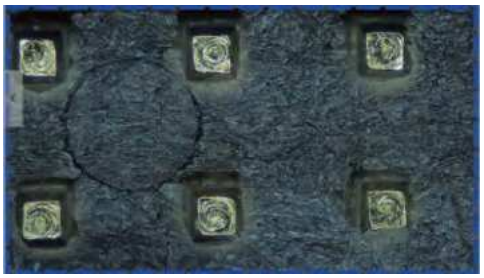

To be continued



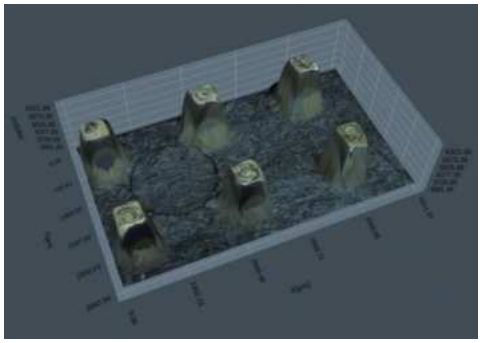
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Continued from previous page

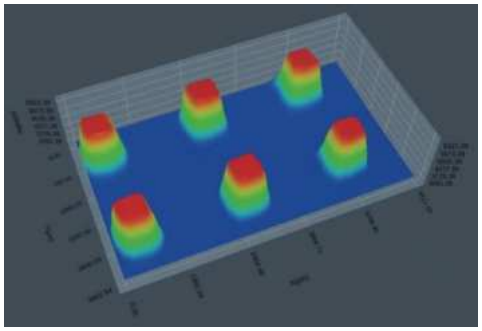
### 3D COMPOSITE IMAGE



depth of field synthesized image



3D composite image

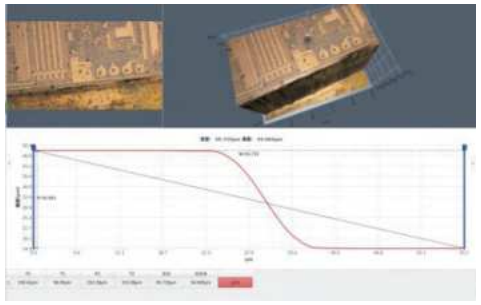


chromatogram height image

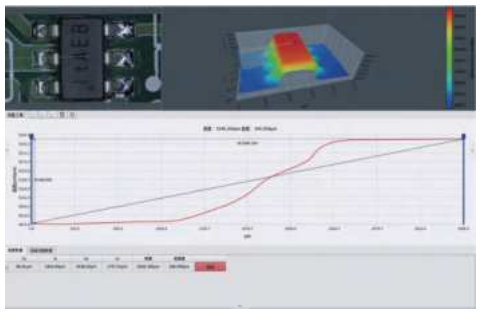
### 3D MEASUREMENT APPLICATION



measurement of component bore height



measurement of height difference of metal parts



measurement of board height differences



### SPECIFICATION

| | |
|---|---|
| **Sensor** | 1/2" CMOS |
| **Resolution** | 1920×1080 |
| **Pixel** | 2M |
| **Single pixel** | 3.75×3.75μm |
| **Frame rate** | 60fps (normal) / 30fps (WDR) |
| **Output** | HDMI/LAN |
| **Lens connection** | C-mount |
| **Exposure** | auto: 0.1~16.6ms, manual: 0.0001~1s |
| **Power supply** | 110~220V, 50/60Hz |
| **Dimension (L×W×H)** | 87×181×103mm |
| **Weight** | 2500g |

### STANDARD DELIVERY

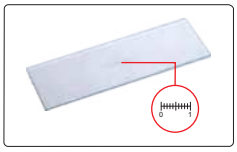
| | |
|---|---|
| **Camera** | 1 pc |
| **16G USB flash disk** | 1 pc |
| **Mouse** | 1 pc |
| **Keyboard** | 1 pc |
| **HDMI 2.0 cable** | 1 pc |
| **Glass calibration ruler** | 1 pc |
| **Calibration block** | 1 set |
| **Power adapter** | 1 pc |

# DIGITAL CAMERA FOR MICROSCOPES (WITH PAD)
# CODE ISM-ZS70-S

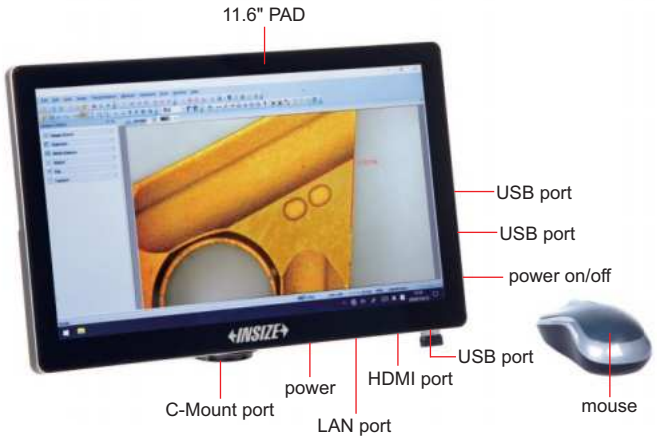
**ATTENTION: CAMERA CONNECTOR AND ADAPTER ARE NEEDED ACCORDING TO MICROSCOPES**

**MEASUREMENT, TAKE PICTURES AND VIDEOS**

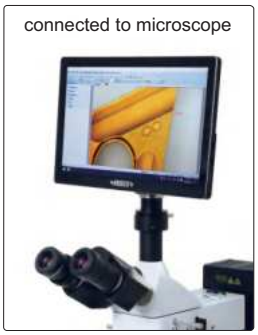
VIDEO



glass calibration ruler
(included, graduation 0.1mm)

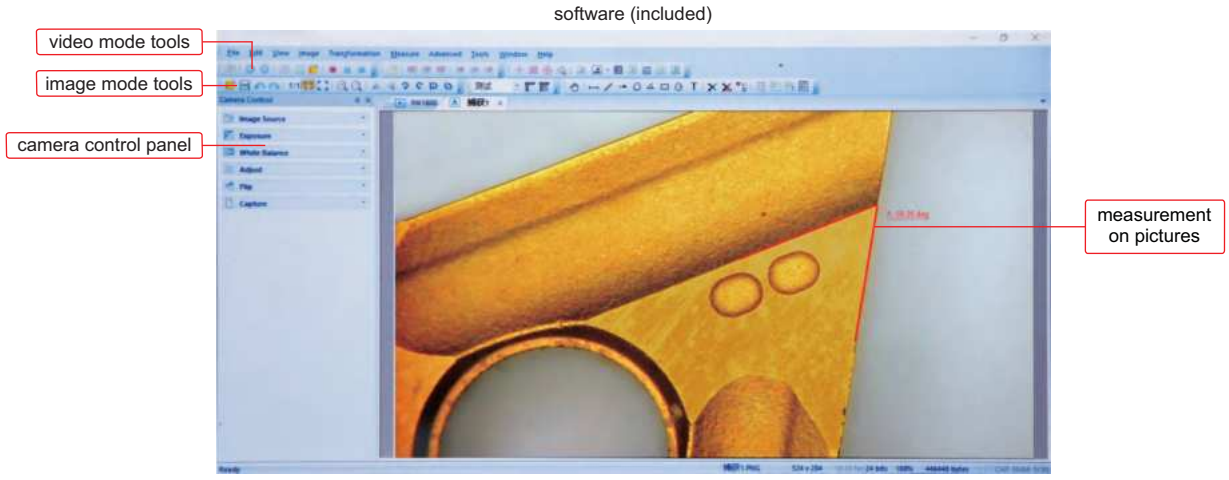



application
connected to microscope



- Windows 10 operation system
- Built-in software, can take pictures and videos, can measure
- Language: Chinese, English, French, Japanese, German, Polish, Arabic
- Automatic exposure, white balance, brightness, contrast ratio, saturation are adjustable
- Image process feature: zoom in/out, flip, mirror, stitching and so on
- Output to Excel or CSV file

software (included)




- **Measuring tools**

measure line | measure meander line | arrow mark | measure polygon | calibration
measure angle | measure rectangle | measure circle | text mark | show/hide scale

**SPECIFICATION**

| | |
|---|---|
| **Sensor** | 1/2.3" CMOS |
| **Pixel** | 16M |
| **Resolution** | 800×600, 1600×1200, 1920×1080, 2048×1536, 2304×1728, 2592×1944, 4608×3456 |
| **Frame rate** | 30fps (1920×1080) |
| **Output** | HDMI, USB 3.0 |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 280.3×177.4×12.5mm |
| **Weight** | 0.9kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Mouse** | 1 pc |
| **Glass calibration ruler (graduation 0.1mm)** | 1 pc |
| **AC/DC adapter** | 1 pc |

VIDEO

**ATTENTION: ADAPTERS ARE NEEDED ACCORDING TO MICROSCOPES**

# DIGITAL CAMERA FOR MICROSCOPES
# CODE ISM-CM63

- To be used with computers
- Sony Exmor back-illuminated CMOS sensor
- USB3.0 transmission
- Automatic exposure, gain adjustment, white balance, chrominance adjustment, saturation adjustment, gamma correction, luminance adjustment, contrast adjustment

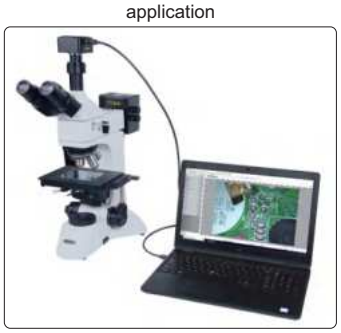



C-mount port

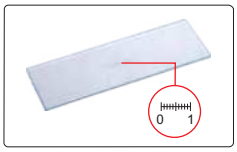
adapter 0.75X (**optional**)



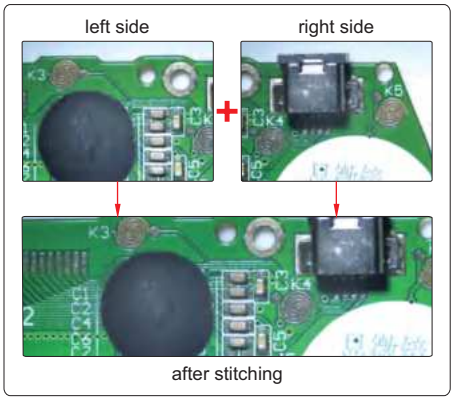
application



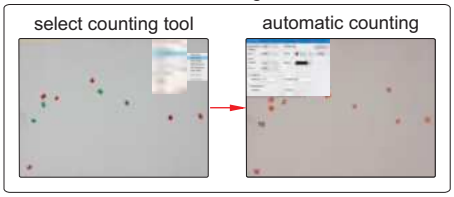
glass calibration ruler (included, graduation 0.1mm)




automatic image stitching (expand field of view)




counting



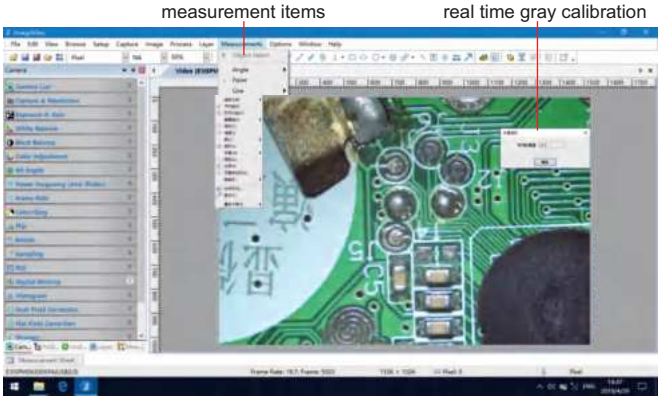

software (included)

selectable resolution



measurement items

real time gray calibration



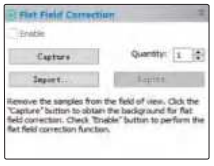
histogram (quantify the distribution of color and brightness)



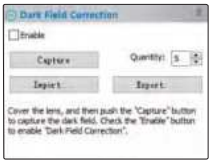
black balance (reduce color difference)




flat field correction (reduce brightness difference)




dark field correction (reduce thermal noise)




The software can control image completely, including measurement, image stitching, extend focus depth, image gray processing, RGB histogram observation, image color sampling, 3D plot (3D representation of image intensity), image exposure, white balance, black balance, image bit depth, flat field correction and dark field correction, etc.

focus stacking

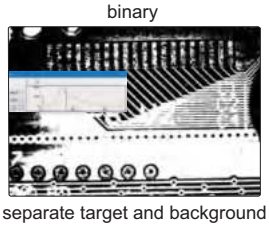


focus on the top | focus on the bottom | clear image of both top and bottom

**Measuring tools:**

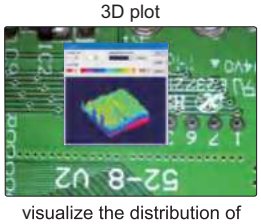
- measure length of line or distance between two points
- measure distance between two parallel lines
- measure angle
- measure radius, girth and area of circle
- measure axis lengths, girth and area of ellipse
- calibration
- measure rectangle
- measure width and diameter of ring
- measure diameter, length, perimeter angle of arc
- measure area of polygon
- measure center distance between two circles
- measure length of open curve

binary



separate target and background

3D plot



visualize the distribution of image brightness and color

To be continued

Continued from previous page

### SPECIFICATION

| | |
|---|---|
| Sensor (back-up) | 1/1.8" CMOS |
| Resolution | 3072×2048 |
| Pixel | 6.3M |
| Single pixel size | 2.4×2.4μm |
| Spectral range | 380-650nm (with infrared cut filter) |
| Frame rate | 30fps |
| Sampling average | 1×1 |
| Exposure time | 0.1ms~15s |
| Power supply | USB port |
| Weight | 400g |

### COMPUTER REQUIREMENT

| | |
|---|---|
| Operation system | Windows 7/8/10 |
| CPU | Intel Core 2 2.8Hz or above |
| Memery | 2GB or above |
| USB port | USB3.0 (recommand) or USB2.0 |
| Display | 17" or above |

### STANDAER DELIVERY

| | |
|---|---|
| Camera (USB cable included) | 1 pc |
| Software | 1 pc |
| Glass calibration ruler (graduation 0.1mm) | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Adapter 0.75X | ISM-AD-0D75 |

## DIGITAL CAMERA FOR MICROSCOPES
## CODE ISM-KM60

FOCUS STACKING | AUTOMATIC IMAGE STITCHING | ATTENTION: ADAPTERS ARE NEEDED ACCORDING TO MICROSCOPES | VIDEO

adapter 0.75X (**optional**)



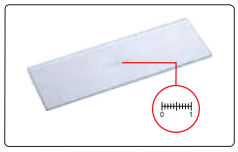


C-mount port

application

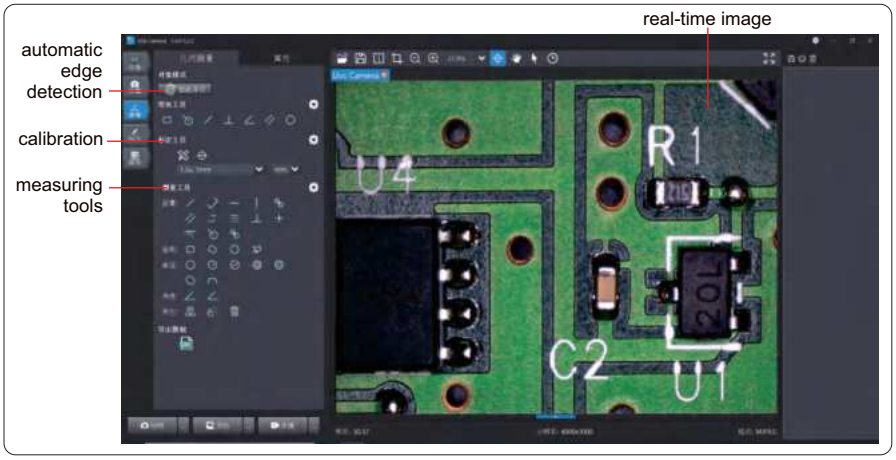


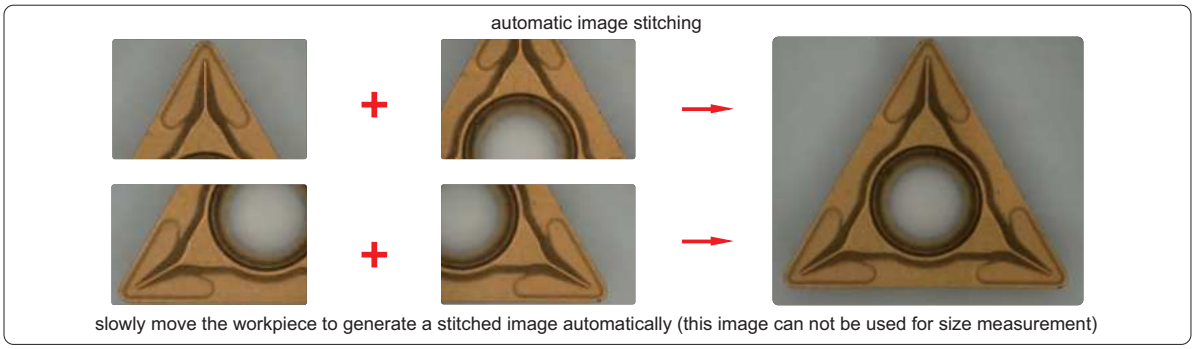
glass calibration ruler (included, graduation 0.1mm)



- To be used with computers
- Sony Exmor back-illuminated CMOS sensor
- USB3.0 transmission
- Measuring software for computers is included
- For bright field, dark field or fluorescent field
- Automatic exposure, gain adjustment, white balance, chrominance adjustment, saturation adjustment, gamma correction, luminance adjustment, contrast adjustment

**PROFESSIONAL MEASURING SOFTWARE (INCLUDED, FOR COMPUTERS)**



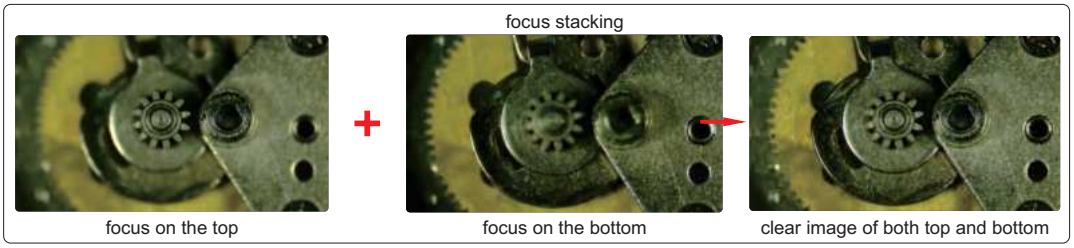




To be continued



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Continued from previous page




**SPECIFICATION**

| | |
|---|---|
| **Sensor (back-up)** | 1/1.8" CMOS |
| **Resolution** | 3072×2048 |
| **Pixel** | 6M |
| **Single pixel size** | 2.4×2.4μm |
| **Frame rate** | 30fps |
| **Lens connection** | C-mount |
| **Output** | USB 3.0 |
| **Environmental requirement** | temperature: -20°C~70°C |
| **Weight** | 275g |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Adapter 0.75X** | **ISM-AD-0D75** |

**COMPUTER REQUIREMENT**

| | |
|---|---|
| **Operation system** | Windows 10 or above |
| **CPU** | Intel Core i5 7th gen or above |
| **Memery** | 8GB or above |
| **USB port** | USB3.0 |

**STANDAER DELIVERY**

| | |
|---|---|
| **Camera (USB cable included)** | 1 pc |
| **Software** | 1 pc |
| **Glass calibration ruler (graduation 0.1mm)** | 1 pc |

VIDEO

# SMART CAMERA CODE ISM-MV10



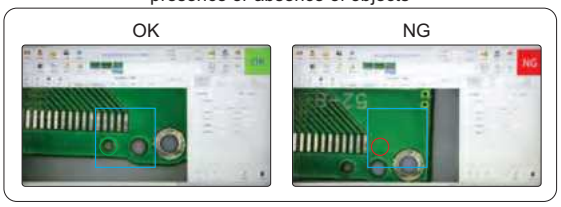

- Built-in software, operated by mouse.
- Automatically calculate, store the test results and sent to Excel
- Camera with PLC control input and output interface, can be integrated with automation equipment
- Functions: presence or absence of objects, position tilt correction, object counting, color detection, stain detection, dimension measurement, position guide, etc.

**SPECIFICATION**

| | |
|---|---|
| **Chip structure** | FPGA+ARM |
| **Operation system** | Linux 3.10 |
| **Kernel structure** | dual-core Cortex-A9 |
| **Frequency** | 1GHZ |
| **I/O port** | 3 sets of input and output (can be connected to photoelectric switch, wire switch, PLC, etc.) |
| **Operation temperature** | -10~70°C |
| **Sensor** | 1/2" CMOS |
| **Single pixel size** | 3.75×3.75μm |
| **Resolution** | 1920×1080 |
| **Frame rate** | 60fps |
| **Video output** | HDMI port |
| **Lens connection** | standard C port |

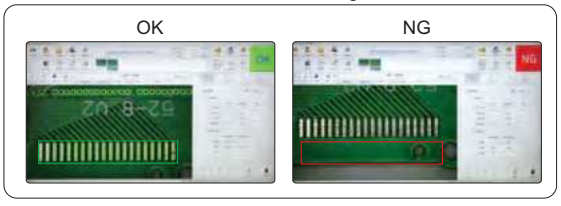
**SOFTWARE**

presence or absence of objects




select the area and specify the target, the camera will automatically detect the presence or absence of the target.

automatic counting




select the area and specify the target, the camera will automatically calculate the number of targets.

dimension measurement




measuring angle, distance, radius, center distance, etc.

**STANDAER DELIVERY**

| | |
|---|---|
| **Camera (with HDMI cable)** | 1 pc |
| **Software** | 1 pc |

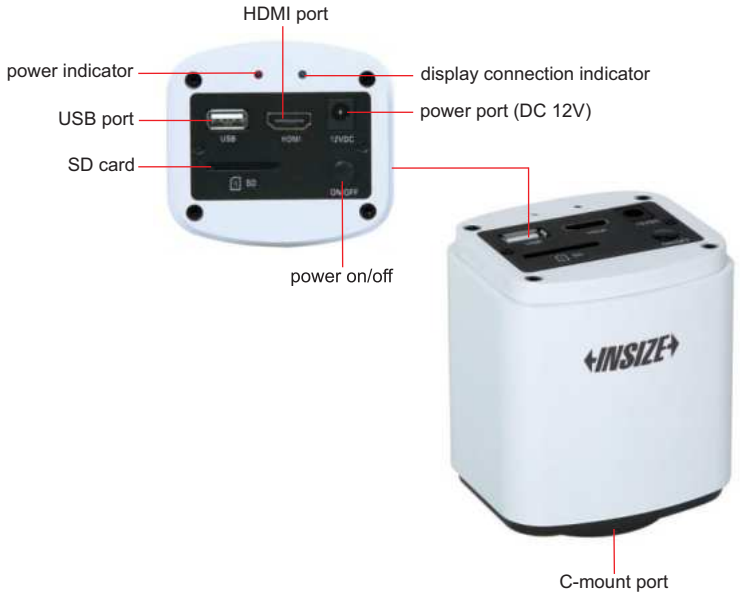
# DIGITAL CAMERA FOR MICROSCOPES
# CODE ISM-CM20

ATTENTION: ADAPTERS ARE NEEDED ACCORDING TO MICROSCOPES

FOCUS STACKING

AUTOMATIC IMAGE STITCHING

VIDEO

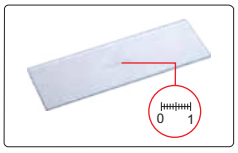



application



- 1080P high-definition image
- Can be connected with displays or computers
- Built-in simple measuring software for displays, without computer
- Professional measuring software for computers is included
- For bright field, dark field or fluorescent field
- Automatic exposure, white balance, gain adjustment, gamma correction, brightness contrast adjustment, saturation adjustment, chroma sharpness adjustment
- Focus stacking, automatic image stitching

glass calibration ruler
(included, graduation 0.1mm)



adapter 0.5X (**optional**)



## SIMPLE MEASURING SOFTWARE (BUILT-IN, FOR DISPLAYS)

- **Measuring tools:**
  - measure length of line or distance between two points
  - measure distance between point and line
  - measure rectangle
  - measure concentric circles
  - measure circle
  - measure curve
  - measure polygon
  - measure center distance of two circles
  - measure angle of two lines




auto exposure, white balance, gain adjustment, gamma, chroma contrast adjustment, brightness sharpness adjustment, size measurement

To be continued



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## PROFESSIONAL MEASURING SOFTWARE (INCLUDED, FOR COMPUTERS)

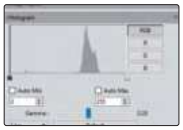
selectable resolution



white balance
(balance color based on actual light source)



histogram
(quantify the distribution of color and brightness)



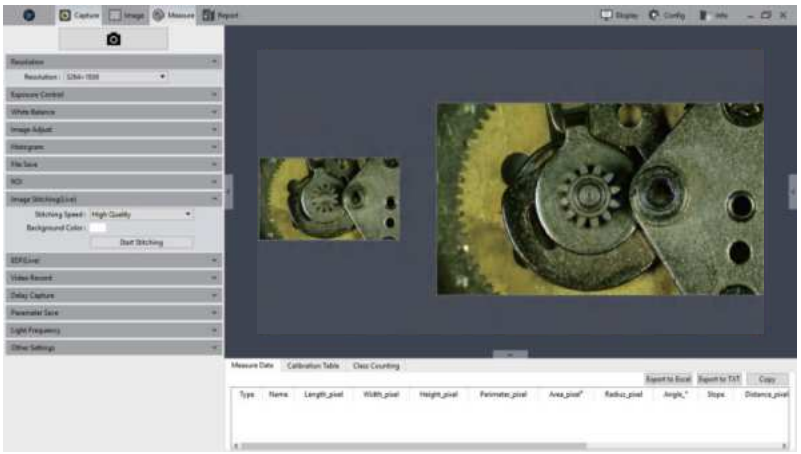


image coloring, fluorescence synthesis, binary, image smoothing, color filter/color extraction/ color inversion, delay capture, focus stacking, automatic image stitching, metrics flow, manual counting, dynamic and static measurement, layered measurement, report generation and printing, delay record, flat field correction, image adjustment, histogram.

flat field correction



metrics flow
(create templates, set tolerances and build metrics flow)



manual counting
(class counting)

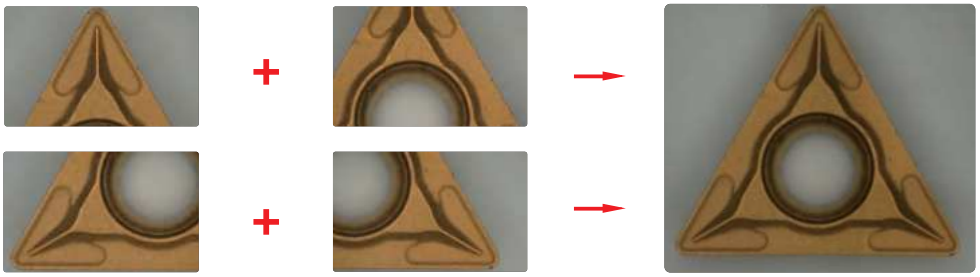


focus stacking



focus on the top | focus on the bottom | clear image of both top and bottom

automatic image stitching



slowly move the workpiece to generate a stitched image automatically (this image can not be used for size measurement)

## SPECIFICATION

| | |
|---|---|
| **Sensor** | 1/2.8" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Frame rate** | 30fps |
| **Power supply** | power adapter |
| **Output** | HDMI/USB |
| **Lens connection** | C-mount |

## COMPUTER (optional) REQUIREMENT

| | |
|---|---|
| **Operation system** | Windows 7/8/10 (64 bit) |
| **CPU** | Intel Core i5 or above |
| **Memory** | 8GB or above |
| **USB port** | USB 3.0 |

## DISPLAY (optional) REQUIREMENT

| | |
|---|---|
| **Size** | 13" or above |
| **Resolution** | 1080P or above |
| **HDMI port** | type A |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **16G memory card and holder** | 1 pc |
| **Glass calibration ruler (graduation 0.1mm)** | 1 pc |
| **Mouse** | 1 pc |
| **HDMI cable** | 1 pc |
| **USB cable** | 1 pc |
| **Power supply** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Adapter 0.5X** | **ISM-MAS-ADAPTER** |



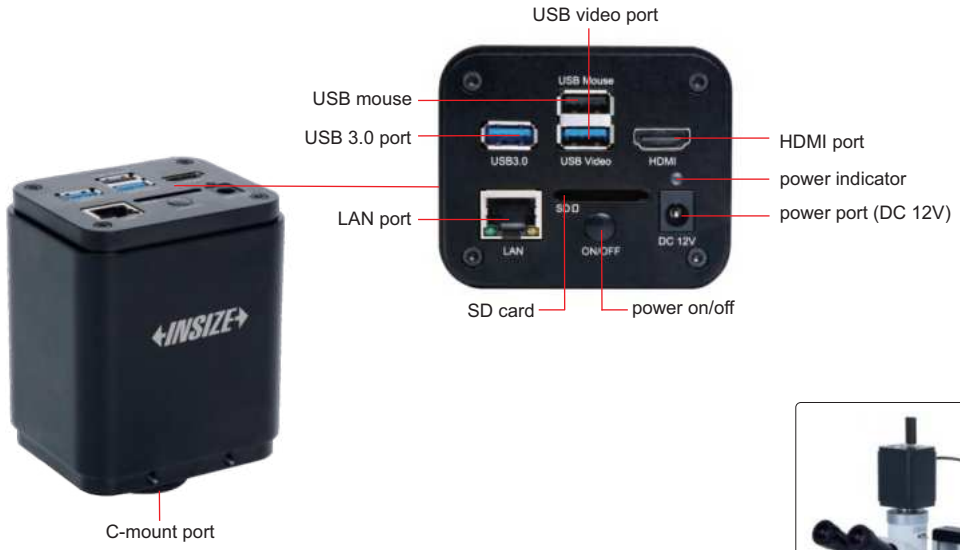


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# WIFI 4K CAMERA FOR MICROSCOPES
# CODE ISM-MP8B

WIRELESS AD-HOC NETWORK | AUTOMATIC IMAGE STITCHING | FOCUS STACKING

VIDEO

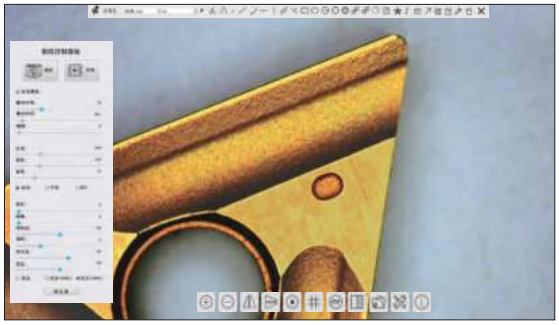



application



- 4K high-definition image
- Can be connected with displays or computers
- Built-in simple measuring software for display, without computer
- Professional measuring software for computers is included
- 4K HDMI/LAN/USB multiple video outputs
- 4K/1080P automatically switched by display resolution
- Focus stacking, automatic image stitching
- Wireless network or wired network

simple measuring software (built-in, for displays)



professional measuring software (included, for computers)



**SPECIFICATION**

| | |
|---|---|
| **Sensor** | 1/1.2" CMOS |
| **Pixel** | 8M |
| **Resolution** | 3840×2160, 1920×1080 |
| **Single pixel** | 2.9×2.9μm |
| **Frame rate** | 60fps@3840×2160 (HDMI)<br>30fps@3840×2160 (LAN)<br>30fps@3840×2160 (USB) |
| **Binning** | 1×1 |
| **Exposure** | 0.04~1000ms |
| **Output** | HDMI/USB/LAN |
| **Lens connection** | C-mount |
| **Power supply** | DC 12V 1A |
| **Dimension (L×W×H)** | 80×65×105mm |
| **Weight** | 700g |

**CONNECTION**

| | |
|---|---|
| **HDMI** | comply with HDMI 2.0 standard<br>4K/1080P automatically switched by display resolution |
| **LAN** | H264 encoded video<br>bandwidth adjustment in real time<br>DHCP configuration or manual configuration<br>unicast/multicast configuration |
| **WLAN** | connecting 5G WLAN adapter (USB 3.0 interface)<br>in AP/STA mode |
| **COMPUTER** | connecting USB video port of PC for video transmission<br>H264/MJPEG format video |

To be continued





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Continued from previous page

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| 32G SD card | 1 pc |
| USB mouse | 1 pc |
| HDMI2.0 cable | 1 pc |
| USB3.0 cable | 1 pc |
| USB wlan adapter | 1 pc |
| Wlan cable | 1 pc |
| Glass calibration ruler | 1 pc |
| Calibration plate | 1 pc |
| Software | 1 pc |
| Power adapter | 1 pc |

**OPTIONAL ACCESSORY**

| | | |
|---|---|---|
| 16G USB flash disk | | IS-USBDISK-16G |
| Adjustable lens adapter | Ø23.2mm eyepiece tube | ISM-MP-2A075 |
| | Ø31.75mm eyepiece tube | ISM-MP-3A075 |
| Fixed lens adapter | Ø23.2mm eyepiece tube | ISM-MP-2F075 |
| | Ø31.75mm eyepiece tube | ISM-MP-3F075 |
| Adapter ring for Ø30.0mm eyepiece tube | | ISM-MP-300R |
| Adapter ring for Ø30.5mm eyepiece tube | | ISM-MP-305R |

**COMPUTER**

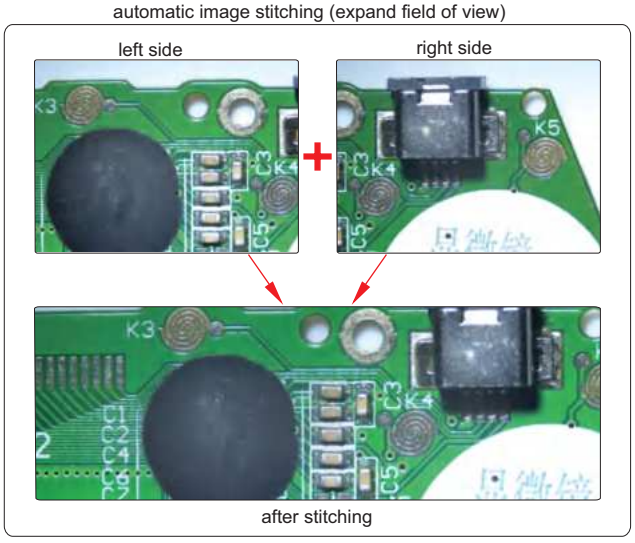
| | |
|---|---|
| Operation system | Windows 7/8/10/11 |
| CPU | Intel Core 2 2.8Hz |
| Memory | 2GB |
| USB port | USB 3.0 or USB 2.0 port |
| Display | 17" |

**PROFESSIONAL MEASURING SOFTWARE (INCLUDED, FOR COMPUTERS)**

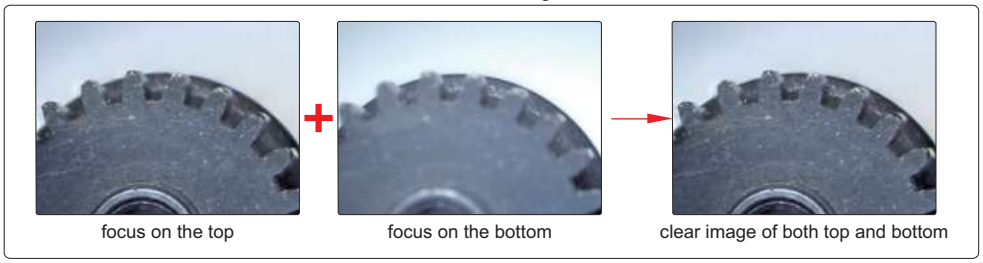
**Measuring tools**:

- measure length of line or distance between two points
- measure distance between two parallel lines
- measure angle
- measure radius, girth and area of circle
- measure axis lengths, girth and area of ellipse
- calibration
- measure rectangle
- measure width and diameter of ring
- measure diameter, length, perimeter angle of arc
- measure area of polygon
- measure center distance between two circles
- measure length of open curve

automatic image stitching (expand field of view)

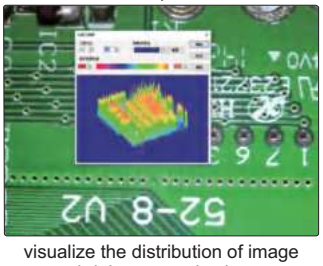



focus stacking



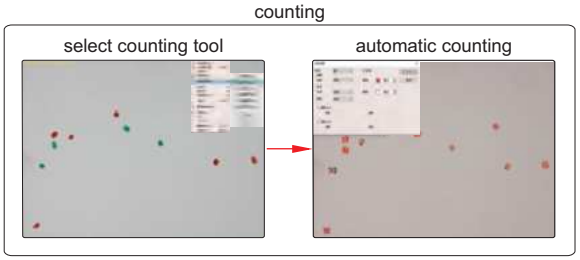
focus on the top | focus on the bottom | clear image of both top and bottom

3D plot

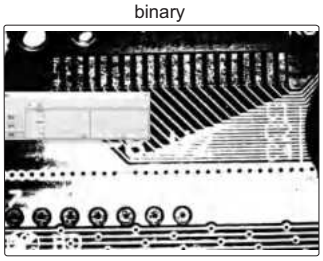


visualize the distribution of image brightness and color

counting




binary



separate target and background



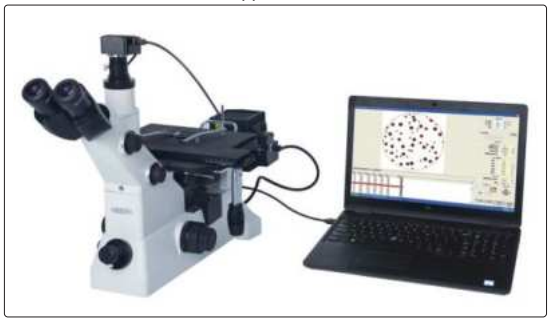
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# METALLURGICAL ANALYSIS SOFTWARE AND CAMERA
# CODE ISM-MAS100

- More than 100 standards (ISO, ASTM, JIS, etc.)
- For metallurgical microscopes
- The camera can be inserted into the eyepiece tube or camera connector of microscopes
- Metallurgical analysis software is included, which can make comparative analysis, measurement and evaluation of various materials



application



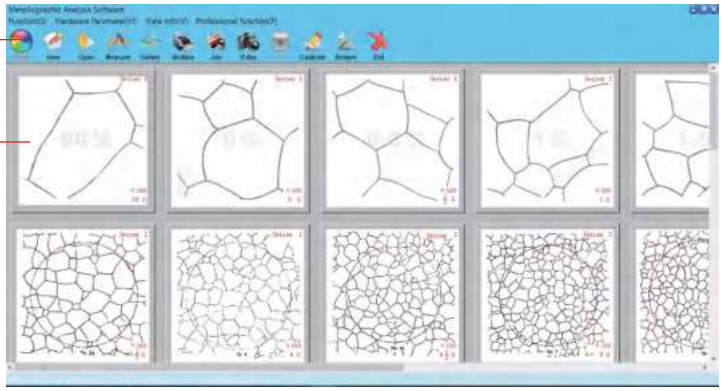


software flash disk
(included)



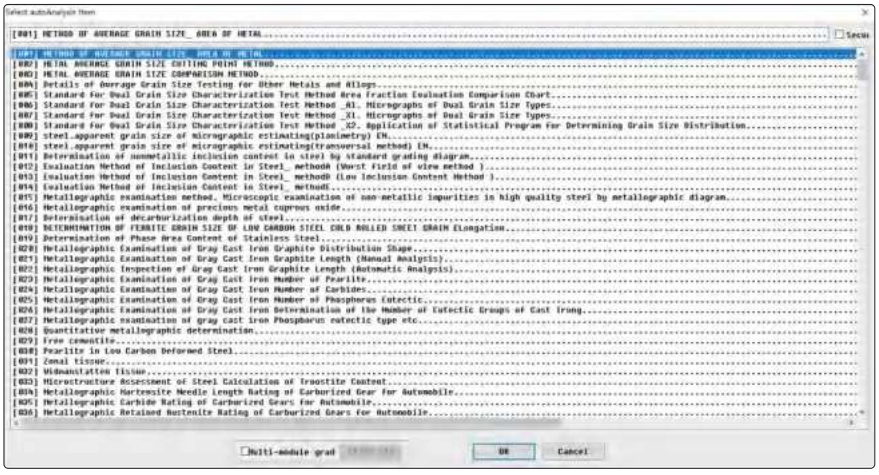
glass calibration ruler
(included)

metallurgical analysis software (included)




this software can be used with variety of metallographic microscopes for acquisition, processing, analysis, report generation of metallurgical images

metallurgical module list



To be continued

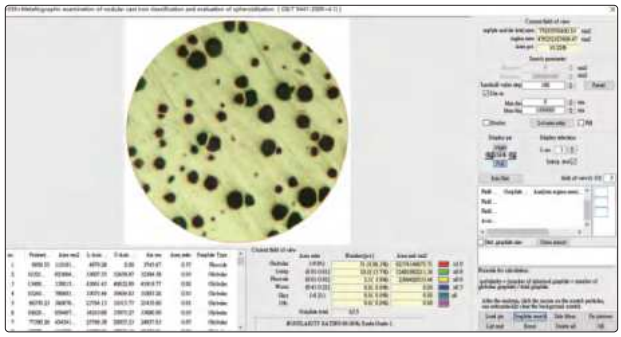


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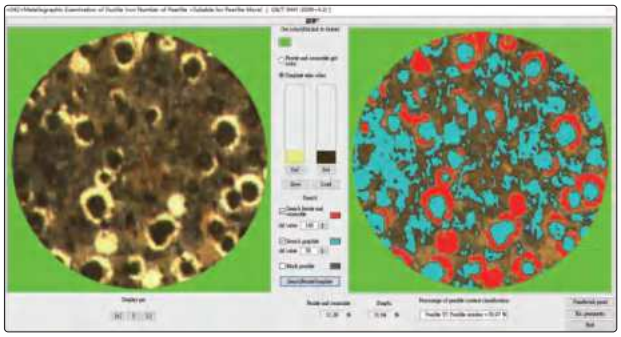
Continued from previous page

examples of metallurgical analysis

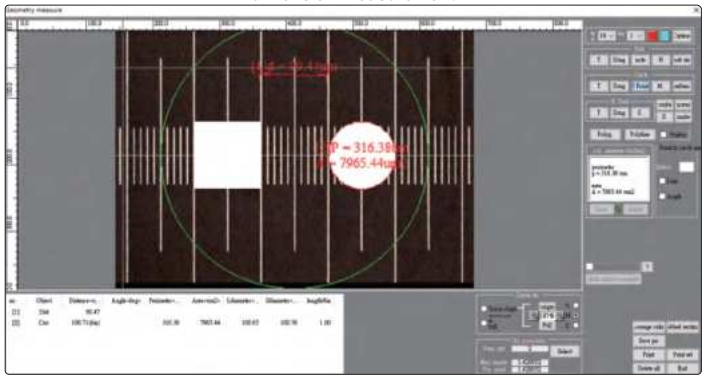
metallurgical analysis of ductile cast iron-spheroidizing grading



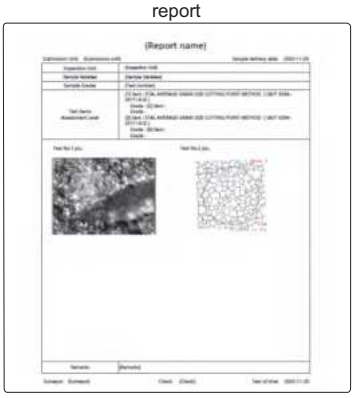
metallurgical analysis of ductile cast iron-pearlite quantity



dimension measurement



report




focus stacking

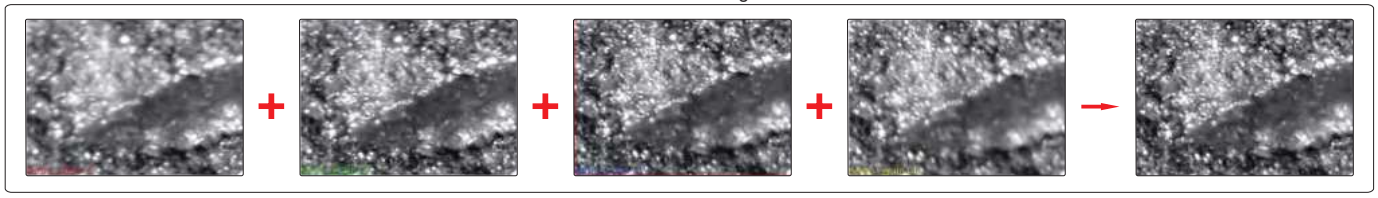
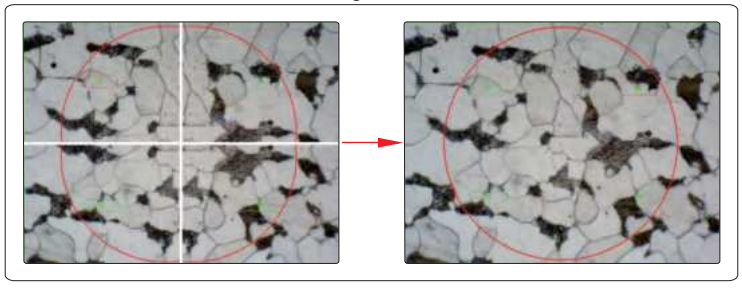
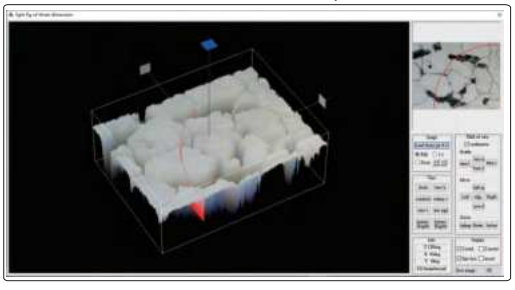


image stitch



three dimension map





**SPECIFICATION**

| | |
|---|---|
| **Sensor** | 1/1.8" CMOS |
| **Pixel** | 6.3M |
| **Resolution** | 3072×2048 |
| **Frame rate** | 30fps |
| **Exposure time** | 0.1ms~15s |
| **Power supply** | USB port |
| **Weight** | 400g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Camera (USB cable included)** | 1 pc |
| **Software** | 1 pc |
| **Glass calibration ruler** | 1 pc |



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## CAMERA ADAPTERS

- Ø23.2/30mm eyepiece adapter is included
- Suitable for digital cameras **ISM-CM20, ISM-CM63, ISM-ZS70-S, ISM-KM60**



Ø23.2/30mm eyepiece adapter (included)




**0.5X camera adapter (fixed focus distance) ISM-AD-0D5**




**0.75X camera adapter (fixed focus distance) ISM-AD-0D75**




**0.5X camera adapter (adjustable focus distance) ISM-AD-A0D5**




**0.75X camera adapter (adjustable focus distance) ISM-AD-A0D75**

application




**SPECIFICATION**

| Code | ISM-AD-0D5 | ISM-AD-A0D5 * | ISM-AD-0D75 | ISM-AD-A0D75 |
|---|---|---|---|---|
| Type | fixed focus distance | adjustable focus distance | fixed focus distance | adjustable focus distance |
| Magnification | 0.5X | 0.41X~0.58X | 0.75X | 0.64X~0.86X |

* There may be shadows on the edge of image when **ISM-AD-A0D5** is used

## PORTABLE MEASURING MICROSCOPES




**ISM-PM100**

**SPECIFICATION**

| Code | ISM-PM20 | ISM-PM40 | ISM-PM50 | ISM-PM100 |
|---|---|---|---|---|
| Total magnification | 20X | 40X | 50X | 100X |
| Eyepiece | 10X with graduation | 10X with graduation | 10X with graduation | 10X with graduation |
| Objective (achromatic) | 2X (numerical aperture: 0.05) | 4X (numerical aperture: 0.1) | 5X (numerical aperture: 0.12) | 10X (numerical aperture: 0.25) |
| Working distance | 17.2mm | 18mm | 17.6mm | 7mm |
| Graduation | 0.05mm | 0.025mm | 0.02mm | 0.01mm |
| Viewing field | Ø9mm | Ø4.5mm | Ø3.6mm | Ø1.8mm |
| Focus range | 30mm | | | |
| Illumination | LED light | | | |
| Diameter of base | Ø63mm | | | |
| Height | 210mm | | | |
| Weight | 650g | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Pen light | 1 pc |
| Battery (AAA) | 2 pcs |





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## TABLE MAGNIFIER WITH ILLUMINATION CODE 7517-3D

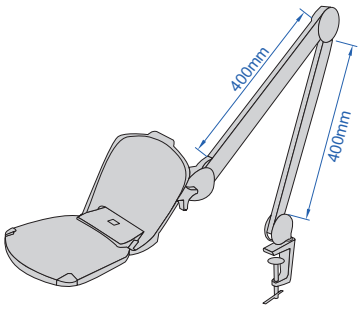
- Four steps brightness adjustment
- LED illumination, working life 20000h
- Resin lens




**SPECIFICATION**

| | |
|---|---|
| **Magnification** | 1.75X |
| **Diopter** | 3D |
| **Lens diameter** | Ø125mm |
| **Illumination** | power: 3W, illumination: 260lm |
| **Power supply** | power adapter 12V, 1A |

## TABLE MAGNIFIERS WITH ILLUMINATION




- LED illumination, working life 20000h
- Resin lens





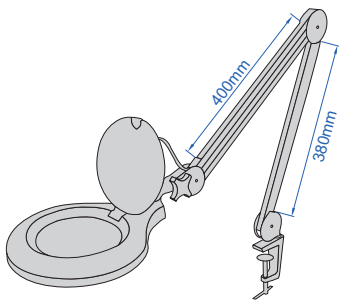


**SPECIFICATION**

| Code | 7520-320D | 7521-3D |
|---|---|---|
| **Magnification** | two magnifications 1.75X/6X | 1.75X |
| **Diopter** | 3D/20D | 3D |
| **Lens dimension** | 160×127mm | Ø126mm |
| **Illumination** | power: 6W, illumination: 550lm | |
| **Power supply** | power adapter 12V, 1A | |

## TABLE MAGNIFIER WITH ILLUMINATION CODE 7516-5D

- LED illumination, working life 20000h







**SPECIFICATION**

| | |
|---|---|
| **Magnification** | 2.25X |
| **Diopter** | 5D |
| **Lens diameter** | Ø122mm |
| **Illumination** | power: 7W, illumination: 420lm |
| **Power supply** | 100~240V, 50~60Hz |

# DIGITAL MAGNIFIER
# CODE 7525-D4




- 720P60 camera
- Auto focus
- With screen freezing function
- 26 color modes can be switched to meet the needs of different people
- Port to TV
- Automatic shutdown after 3 minutes

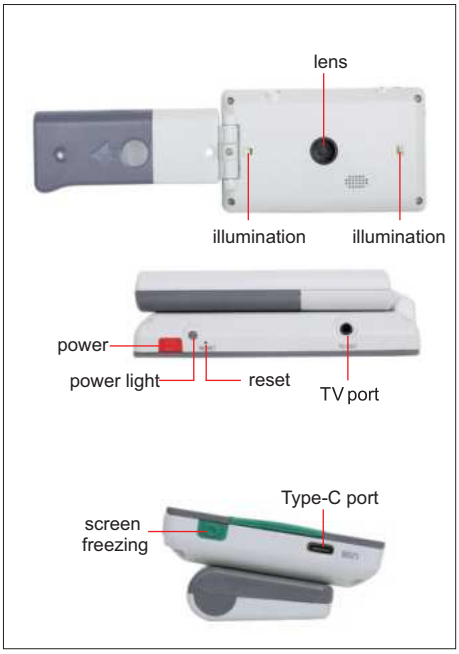
after the handle is folded, the magnifier can be directly placed on the object for observation



## SPECIFICATION

| | |
|---|---|
| **Screen size** | 4.3 inch |
| **Screen resolution** | 480×272 |
| **Magnification** | 2X-32X |
| **Pixel** | 8M |
| **Focus** | manual/automatic |
| **Color mode (26 modes)** | color mode, color enhancement mode, negative mode, monochrome mode, black on white, white on black, blue on white, white on blue, yellow on black, black on yellow, yellow on blue, blue on yellow, green on white, white on green, orange on white, white on orange, red on black, black on red, orange on black, black on orange, yellow on green, green on yellow, red on white, white on red, yellow on white, white on yellow |
| **Output** | TV |
| **Charging port** | Type-C |
| **Lithium battery** | 1600mAH (for 4 hours working) |
| **Dimension (LxWxH)** | 123×39×76mm (when the handle is folded) |
| **Weight** | 210g |

side and back




## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Video output cable** | 1 pc |
| **USB charging cable** | 1 pc |
| **Power adapter** | 1 pc |





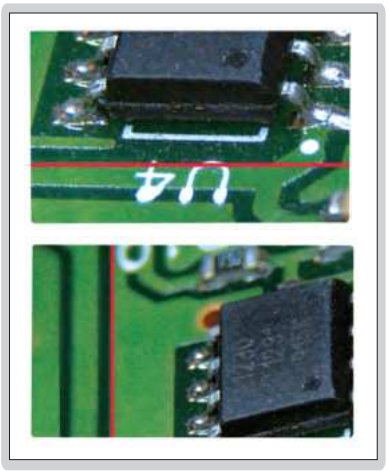
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# DIGITAL MAGNIFIER
# CODE 7526-D5

VIDEO




horizontal and vertical red lines



- 720P60 (close view) and 1080P30 (far view) cameras
- Double autofocus
- 26 color modes can be switched to meet the needs of different people
- Adopt folding bracket
- Detachable handle design, suitable for left-handed or right-handed use
- TV and HDMI ports to TV and display
- Automatic shutdown after 3 minutes

## SPECIFICATION

| | |
|---|---|
| **Screen size** | 5 inch |
| **Screen resolution** | 800×480 |
| **Magnification** | 2X-32X |
| **Close view pixel** | 8M |
| **Far view pixel** | 8M |
| **Focus** | manual/automatic |
| **Color mode (26 modes)** | color mode, color enhancement mode, negative mode, monochrome mode, black on white, white on black, blue on white, white on blue, yellow on black, black on yellow, yellow on blue, blue on yellow, green on white, white on green, orange on white, white on orange, red on black, black on red, orange on black, black on orange, yellow on green, green on yellow, red on white, white on red, yellow on white, white on yellow |
| **Line** | horizontal and vertical red lines |
| **Function** | screen freezing, image moving, photo playback, and high definition storage |
| **Output** | TV and HDMI |
| **Storage** | supports up to 32G TF card |
| **Charging port** | Type-C |
| **Lithium battery** | 2500mAH (for 4 hours working) |
| **Dimension (LxWxH)** | 145×30×85mm (when the handle is folded) |
| **Weight** | 275g |

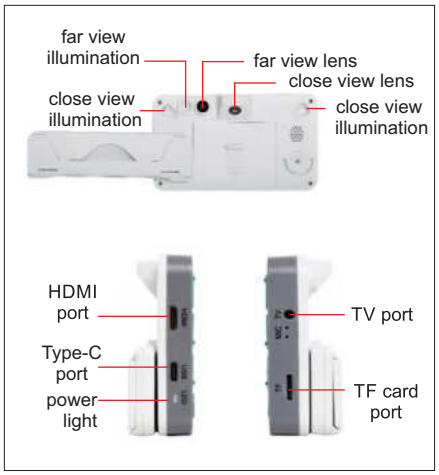
## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **HDMI cable** | 1 pc |
| **Video output cable** | 1 pc |
| **USB charging cable** | 1 pc |
| **Power adapter** | 1 pc |

after the handle is folded, the magnifier can be directly placed on the object for observation



side and back



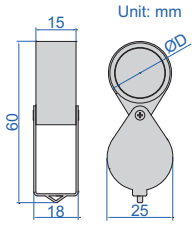
## FOLDING MAGNIFIER

- Glass lens



7511-8




| Code | Magnification | Lens diameter (ØD) |
|---|---|---|
| 7511-8 | 10X | Ø21mm |

## FOLDING MAGNIFIER WITH ILLUMINATION

- Resin lens
- Powered by 3xLR927 batteries (included)

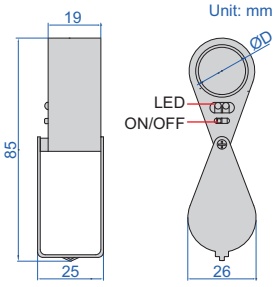






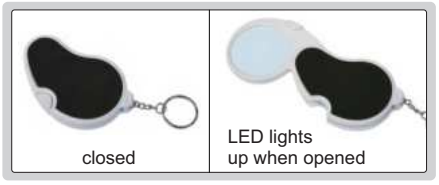


7515-10




| Code | Magnification | Lens diameter (ØD) |
|---|---|---|
| 7515-10 | 10X | Ø21mm |

## FOLDING MAGNIFIER WITH ILLUMINATION

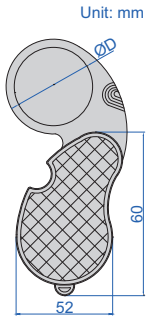



- Resin lens
- Powered by 2xCR1620 batteries (included)
- LED lights up automatically when opened



7514-1

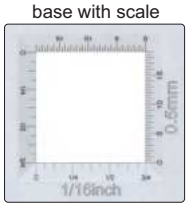



| Code | Magnification | Lens diameter (ØD) |
|---|---|---|
| 7514-1 | 2.5X | Ø45mm |

## MAGNIFIER WITH ILLUMINATION

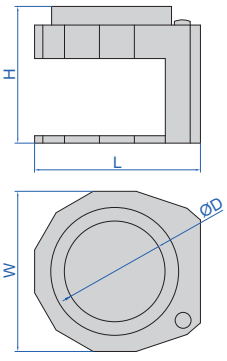
- Glass lens
- Powered by 3xAG7 batteries
- 3 pcs LED and 3 pcs UV
- Base with scale, graduation: 0.5mm, 1/16"





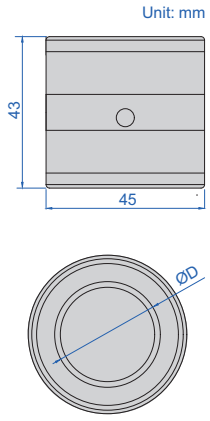


7524-10




| Code | Magnification | Lens diameter (ØD) | L | H | W |
|---|---|---|---|---|---|
| 7524-10 | 10X | Ø30mm | 60mm | 50mm | 56mm |

# MEASURING MAGNIFIERS (WITH ILLUMINATION)

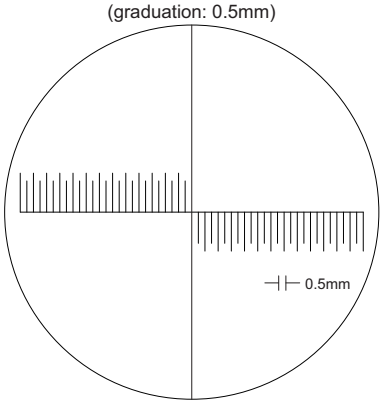




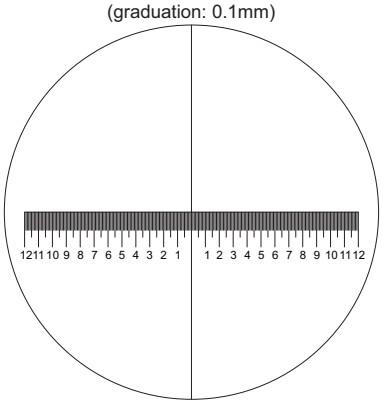


**7527-D1**

scale of **7527-D1**
(graduation: 0.5mm)




scale of **7527-D1B**
(graduation: 0.1mm)

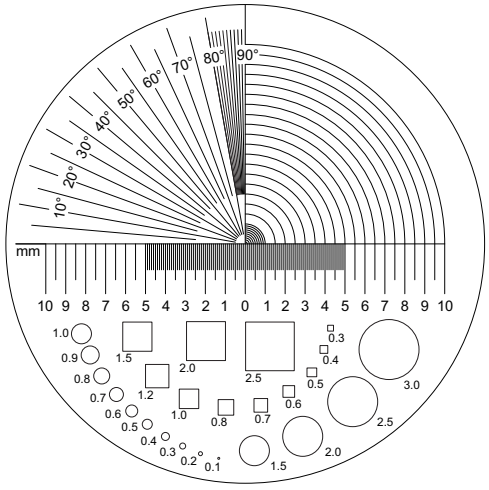



- Base with scale
- With 5 white LED and 5 UV LED
- Charging port: Type-C
- Work for 1.5h after fully charged

base with scale




scale of **7527-D2**
(0-5mm graduation: 0.1mm, 5-10mm graduation: 0.5mm)



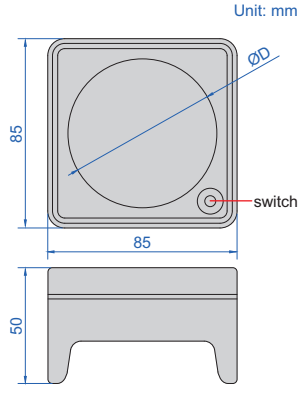

| Code | Magnification | Lens diameter (ØD) |
|---|---|---|
| **7527-D1** | 10X | Ø30mm |
| **7527-D2** | 10X | Ø30mm |
| **7527-D1B** | 10X | Ø30mm |

# MAGNIFIER WITH ILLUMINATION

- Glass lens
- With 4 white LED, three levels brightness adjustment
- Charging port: Type-C




**7528-3**




| Code | Magnification | Lens diameter (ØD) |
|---|---|---|
| **7528-3** | 3X | Ø70mm |

## MAGNIFIERS WITH ILLUMINATION



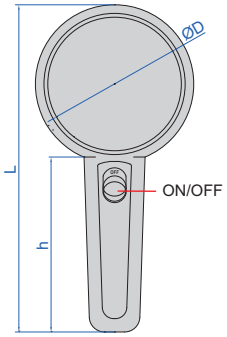

- Glass lens
- Powered by 3xAAA batteries (included)



7513-2



7513-4



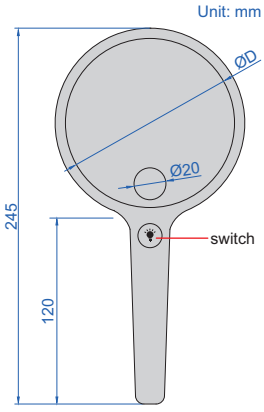

| Code | Magnification | Lens diameter (ØD) | L | h |
|---|---|---|---|---|
| 7513-2 | 2X | Ø75mm | 170mm | 90mm |
| 7513-4 | 4X | Ø50mm | 145mm | 90mm |

## MAGNIFIER WITH ILLUMINATION

- Resin lens
- With 20 white LED, three levels brightness adjustment
- Charging port: Type-C




7529-24




| Code | Magnification | Lens diameter (ØD) |
|---|---|---|
| 7529-24 | 2X/4X | Ø105mm |

## MAGNIFIER WITH TWO LENSES

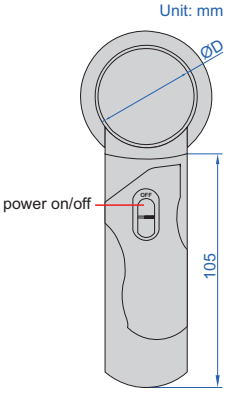
- Resin lens
- Interchangeable lenses
- Powered by 3 pcs AAA batteries (included)







7522-610




| Code | Lens number | Magnification | Lens diameter (ØD) |
|---|---|---|---|
| 7522-610 | 2 pcs | 6X | 50mm |
| | | 10X | 37mm |

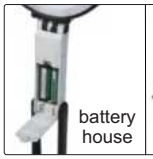


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## THREE WAYS MAGNIFIER WITH ILLUMINATION

three ways use









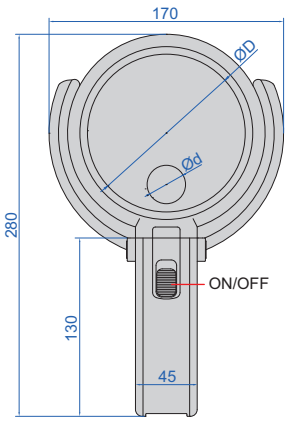






**7512-1**

Unit: mm




- Resin lens
- Powered by 2xAA batteries (included) or power adapter (110~240V, 50~60Hz)

| Code | Magnification | Lens diameter (ØD/Ød) |
|---|---|---|
| **7512-1** | 2X/4X | Ø120mm/Ø28mm |

## MAGNIFICATION GLASSES

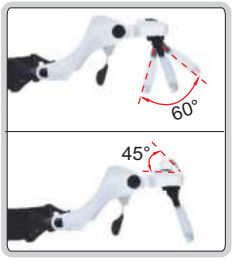


**7523-3D5**

interchangeable lenses



adjustable lens and LED angle




head band (included)



- Resin lens
- Interchangeable lenses
- Powered by 3 pcs AAA batteries (included)

| Code | Lens number | Magnification |
|---|---|---|
| **7523-3D5** | 5 pcs | 1X |
| | | 1.5X |
| | | 2X |
| | | 2.5X |
| | | 3.5X |

adjustable holder angle




moveable lens for focus



2 pcs LED



## MAGNIFIER

using on table



hanging around neck



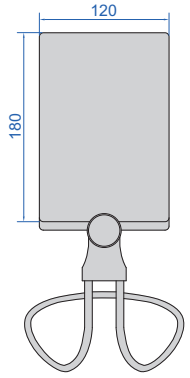
- Resin lens
- Silicone hose can be shaped according to needs
- Can be used on table or hanging around neck

| Code | Magnification | Lens size |
|---|---|---|
| 7530-1D8 | 1.8X | 180×120mm |




7530-1D8

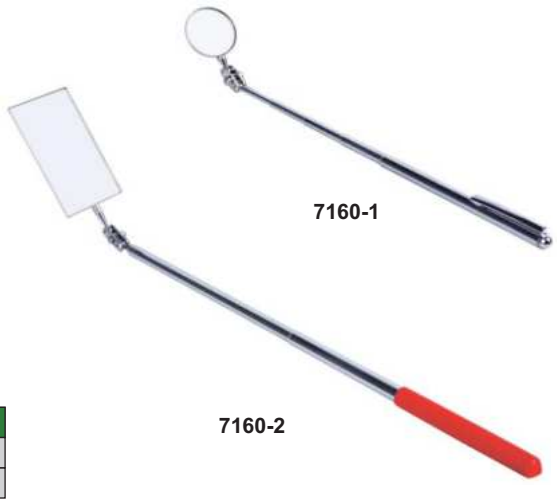
Unit: mm




## TELESCOPING INSPECTION MIRRORS

- Inspect hidden areas
- Rotation of the mirror: 360°
- Length of handle is adjustable, handle is made of stainless steel

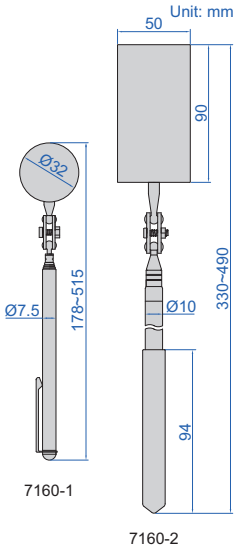
| Code | Size of mirror | Length |
|---|---|---|
| 7160-1 | Ø32mm | 178~515mm |
| 7160-2 | 50×90mm | 330~490mm |



7160-1

7160-2

Unit: mm




7160-1

7160-2

## TELESCOPING INSPECTION MIRROR (WITH ILLUMINATION)

- Inspect hidden areas
- Head can bend and rotate
- Telescoping handle, made of stainless steel
- With two CR2032 batteries

head can bend and rotate



handle length is adjustable

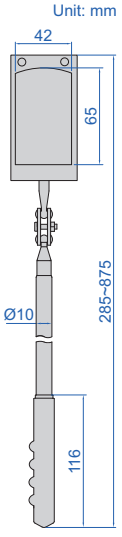


| Code | Size of mirror | Length |
|---|---|---|
| 7162-1 | 65×42mm | 285~875mm |



7162-1

Unit: mm






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## TELESCOPING MAGNETIC PICK-UP AND FLASHLIGHT



7163-1



magnetic head

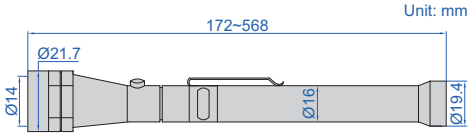


magnetic end to attach on steel surfaces




- For illumination and pick up steel parts in hidden areas
- Head can bend
- Telescoping handle, made of stainless steel
- Magnetic head and end
- With four LR44 batteries

Unit: mm




| Code | Magnetic force of the end | Magnetic force of the head | Flashlight range | Battery life | Length |
|---|---|---|---|---|---|
| 7163-1 | 4kgf | 2kgf | 3m | 8h | 172~568mm |

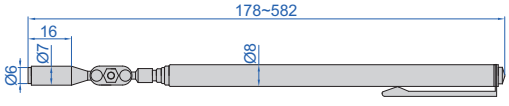
## TELESCOPING MAGNETIC PICK-UP



7161-1

- Pick up steel parts from hidden areas
- Rotation of magnetic head: 360°
- Length of handle is adjustable, handle is made of stainless steel

Unit: mm




| Code | Size of magnetic tip | Magnetic force | Length |
|---|---|---|---|
| 7161-1 | Ø6mm | 0.45kgf | 178~582mm |

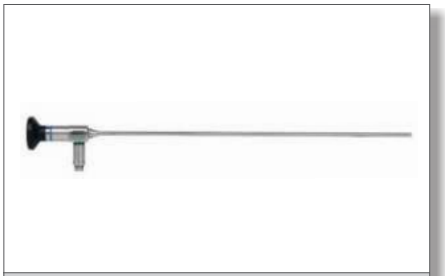
# 25 VIDEOSCOPES



Videoscopes
Page 774-788



Carbon Fiber Telescopic Pole Videoscopes
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Rigid Borescopes
Page 790



Fixture For Rigid Borescopes
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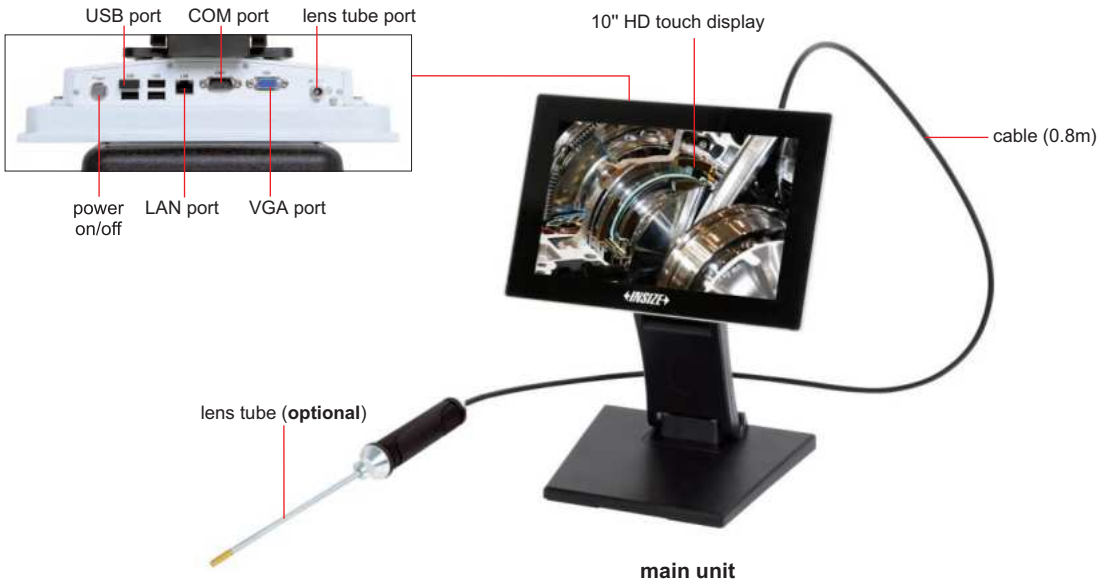


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REAR FIBER ILLUMINATION

# VIDEOSCOPE (DESK TYPE)

VIDEO




main unit

## MAIN UNIT (WITHOUT LENS TUBE)

| Code | ISV-Y |
|---|---|
| Display | 10" HD touch display |
| Function | take picture, take video |
| File format | picture: JPG, video: MP4 |
| Memory | built-in hard disk or USB flash disk |
| Image process | image zoom (1X, 2X, 3X) |
| Image control | noise reduction, negative film, flip over, freeze, on-line edit |
| Illumination | stepless adjustment |
| Additional function | real-time dynamic annotation, real-time watermark, rapid defect mark |
| Output | USB |
| Power supply | AC/DC adapter (for continuous working) |
| Weight | 1000g |

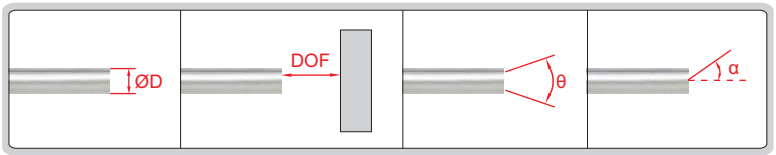
## STANDARD DELIEVERY

| | |
|---|---|
| Main unit | 1 pc |
| USB disk | 1 pc |
| Mouse | 1 pc |
| AC/DC adapter | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Lens tube | refer to below details |
| Software for automatic defect identification | can be customized |




diameter (ØD) | depth of field (DOF) | angle of view (θ) | view direction (α)

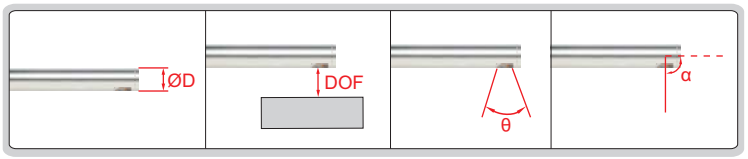
## RIGID STRAIGHT LENS TUBE, FRONT VIEW

| Code | Lens tube | | Lens | | | | | |
|---|---|---|---|---|---|---|---|---|
| | diameter (ØD) | length (L) | pixel | illumination | angle of view (θ) | depth of field (DOF) | view direction (α) | dust/ waterproof |
| ISV-Y1210 | 1.2mm | 90mm | 0.04M | rear optical fiber | 120° | 3~70mm | 0° | IP67 |
| ISV-Y1810 | 1.8mm | 120mm (**optional** 90-150mm) | 0.16M | | | 3~70mm | 0° | |
| ISV-Y2010 | 2.0mm | 120mm (**optional** 90-150mm) | 0.16M | | | 3~70mm | 0° | |
| ISV-Y2410 | 2.4mm | 150mm (**optional** 90-300mm) | 0.16M | | | 3~70mm | 0° | |
| ISV-Y2810 | 2.8mm | 150mm (**optional** 90-300mm) | 0.16M | | | 3~70mm | 0° | |
| ISV-Y3910 | 3.9mm | 200mm (**optional** 90-500mm) | 1M | | | 8~150mm | 0° (**optional** 30°, 70°) | |
| ISV-Y6010 | 6.0mm | 300mm (**optional** 90-1000mm) | 1M | | | 12~200mm | 0° (**optional** 30°, 70°) | |

To be continued

Continued from previous page



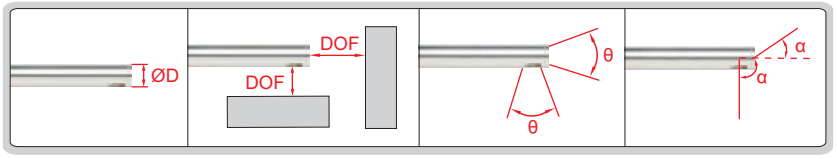




diameter (ØD) depth of field (DOF) angle of view (θ) view direction (α)

**RIGID STRAIGHT LENS TUBE, SIDE VIEW**

| Code | Lens tube | | Lens | | | | | |
|---|---|---|---|---|---|---|---|---|
| | diameter (ØD) | length (L) | pixel | illumination | angle of view (θ) | depth of field (DOF) | view direction (α) | dust/ waterproof |
| **ISV-Y2810C** | 2.8mm | 150mm (**optional** 90-300mm) | 0.16M | rear optical fiber | 120° | 3~70mm | 90° | IP67 |
| **ISV-Y3910C** | 3.9mm | 200mm (**optional** 90-500mm) | 1M | | | 8~150mm | | |
| **ISV-Y4510C** | 4.5mm | 250mm (**optional** 90-800mm) | 1M | | | 8~150mm | | |
| **ISV-Y6010C** | 6.0mm | 300mm (**optional** 90-1000mm) | 1M | | | 12~200mm | | |



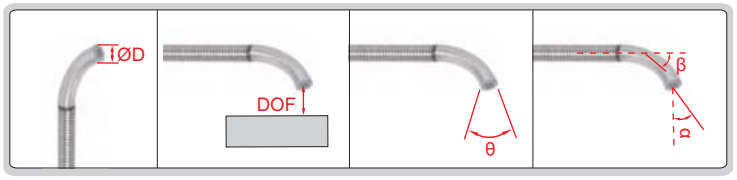




diameter (ØD) depth of field (DOF) angle of view (θ) view direction (α)

**RIGID STRAIGHT LENS TUBE, FRONT VIEW & SIDE VIEW**

| Code | Lens tube | | Lens | | | | | |
|---|---|---|---|---|---|---|---|---|
| | diameter (ØD) | length (L) | pixel | illumination | angle of view (θ) | depth of field (DOF) | view direction (α) | dust/ waterproof |
| **ISV-Y6010S** | 6.0mm | 300mm (**optional** 90-1000mm) | 1M | rear optical fiber | 120° | front view: 12~200mm<br>side view: 8~150mm | front view: 0°<br>side view: 90° | IP67 |






diameter (ØD) depth of field (DOF) angle of view (θ) view direction (α)
bending angle (β)

**BENDING SPRING LENS TUBE**

| Code | Lens tube | | Lens | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | diameter (ØD) | length (L) | pixel | illumination | angle of view (θ) | depth of field (DOF) | view direction (α) | bending angle (β) | dust/ waterproof |
| **ISV-Y3010W** | 3.0mm | 1000mm | 0.16M | rear optical fiber | 120° | 8~150mm | 0° | 75° (can be customized) | IP65 |
| **ISV-Y5010W** | 5.0mm | | 1M | | | 8~150mm | | | |
| **ISV-Y7010W** | 7.0mm | | 1M | | | 12~200mm | | | |

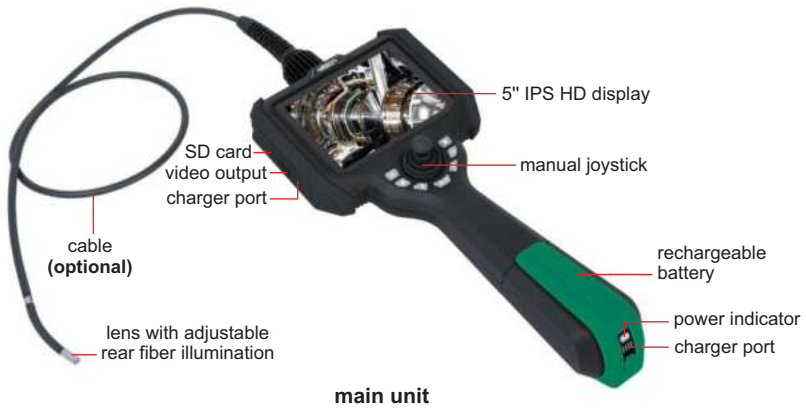


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REAR FIBER ILLUMINATION

VIDEO

# VIDEOSCOPE (CABLE IS OPTIONAL)




main unit



changeable lens cable



tripod (included)



**ISV-L-HOOK** (optional)



**ISV-L-MAGNET** (optional)



WIFI real-time image transmission



**ISV-L-CLAMP** (optional)

**MAIN UNIT (WITHOUT CABLE)**

| | |
|---|---|
| **Code** | **ISV-L** |
| **Display** | 5" high definition LCD |
| **Resolution** | 1024×720 |
| **Function** | take pictures, take videos |
| **File format** | picture: JPG, video: MP4 |
| **Image process** | image zoom (1X, 2X, 3X, 4X) |
| **Image control** | freeze, flip over, playback and analog ruler |
| **Memory** | memory card |
| **Output** | WIFI (only for Android OS), USB, HDMI |
| **Power supply** | rechargeable lithium battery (working time ≥ 4hours)<br>AC/DC adapter (for continuous working) |
| **Weight** | 1000g |

**OPERATION ENVIRONMENT**

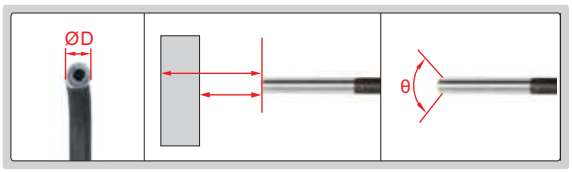
| | |
|---|---|
| **Main unit** | -10~50°C, no preheat |
| **Operation temperature** | -20~70°C |
| **Storage temperature** | -20~60°C |
| **Relative humidity** | maximum 90%, no condensation |

**STANDARD DELIEVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **32G SD card** | 1 pc |
| **Card reader** | 1 pc |
| **USB cable** | 1 pc |
| **Tripod** | 1 pc |
| **AC/DC adapter** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Cable** | please refer to details |
| **Temperature alarm** | **ISV-L-HTALARM** (must be installed in factory, for Ø3.9mm, Ø4.5mm and Ø6.0mm) |
| **Hook** | **ISV-L-HOOK** (must be installed in factory, for Ø3.9mm, Ø4.5mm and Ø6.0mm) |
| **Magnet** | **ISV-L-MAGNET** (must be installed in factory, for Ø3.9mm, Ø4.5mm and Ø6.0mm) |
| **Clamp** | **ISV-L-CLAMP** |



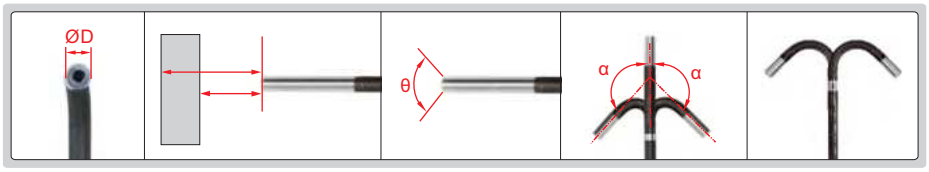

diameter (ØD) depth of field (DOF) angle of view (θ)

**ONE-DIRECTION CABLE (NO BENDING), FRONT VIEW**

| Code | Cable | | Lens | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | length | type | view direction | diameter (ØD) | depth of field (DOF) | angle of view (θ) | illumination | pixel | resolution | dust/ waterproof |
| **ISV-L09505** | 0.5m | spring tube | front view | 0.95mm | 3~30mm | >120° | rear fiber | 0.16M | 400×400 | IP65 |
| **ISV-L09510** | 1m | | | | | | | | | |
| **ISV-L1210** | 1m | | | 1.2mm | 3~30mm | | | | | |
| **ISV-L1510** | 1m | tungsten wire weaved cable | | 1.5mm | 3~70mm | | | | | |
| **ISV-L1515** | 1.5m | | | | | | | | | |

To be continued

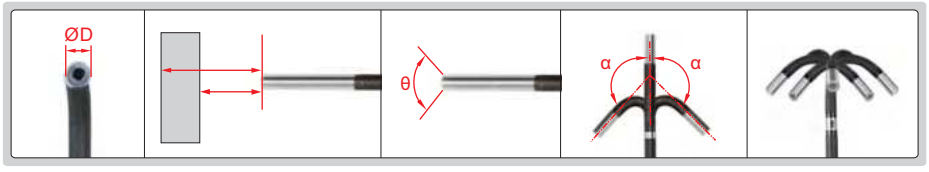
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diameter (ØD) | depth of field (DOF) | angle of view (θ) | bend range (α) | bend in 2 directions

**TWO-DIRECTION BENDING CABLE, FRONT VIEW**

| Code | Cable | | Lens | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | length | type | view direction | bend direction | diameter (ØD) | depth of field (DOF) | bend range (α) | angle of view (θ) | illumination | pixel | resolution | dust/ waterproof |
| **ISV-L1810** | 1m | tungsten wire weaved cable | front view | two directions | 1.8mm | 3~30mm | ±160° | >120° | rear fiber | 0.16M | 400×400 | IP65 |
| **ISV-L2010** | 1m | | | | 2.0mm | 3~30mm | | | | | | |
| **ISV-L2410** | 1m | | | | 2.4mm | 3~70mm (**optional** 5~100mm) | | | | | | |
| **ISV-L2415** | 1.5m | | | | | | | | | | | |
| **ISV-L2420** | 2m | | | | | | | | | | | |



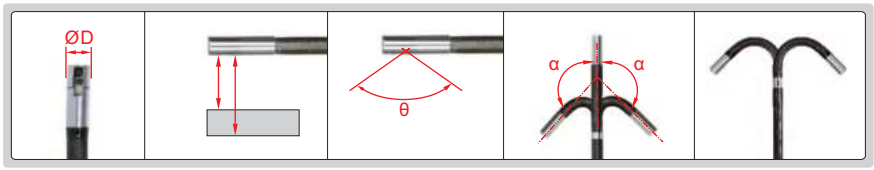

diameter (ØD) | depth of field (DOF) | angle of view (θ) | bend range (α) | bend in 4 directions

**FOUR-DIRECTION BENDING CABLE, FRONT VIEW**

| Code | Cable | | Lens | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | length | type | view direction | bend direction | diameter (ØD) | depth of field (DOF) | bend range (α) | angle of view (θ) | illumination | pixel | resolution | dust/ waterproof |
| **ISV-L2810** | 1m | tungsten wire weaved cable | front view | four directions | 2.8mm | 3~70mm (**optional** 5~100mm) | ±160° | >120° | rear fiber | 0.16M | 400×400 | IP65 |
| **ISV-L2815** | 1.5m | | | | | | | | | | | |
| **ISV-L2820** | 2m | | | | | | | | | | | |
| **ISV-L2830** | 3m | | | | | | | | | | | |
| **ISV-L3910** | 1m | | | | 3.9mm | 8~150mm (**optional** 3~70mm) | | | | 0.92M | 1280×720 | IP67 |
| **ISV-L3915** | 1.5m | | | | | | | | | | | |
| **ISV-L3920** | 2m | | | | | | | | | | | |
| **ISV-L3930** | 3m | | | | | | | | | | | |
| **ISV-L3940** | 4m | | | | | | | | | | | |
| **ISV-L3950** | 5m | | | | | | | | | | | |
| **ISV-L6010** | 1m | | | | 6.0mm | 12~200mm (**optional** 3~70mm, 8~150mm) | | | | 0.92M | 1280×720 | IP67 |
| **ISV-L6015** | 1.5m | | | | | | | | | | | |
| **ISV-L6020** | 2m | | | | | | | | | | | |
| **ISV-L6030** | 3m | | | | | | | | | | | |
| **ISV-L6040** | 4m | | | | | | | | | | | |
| **ISV-L6050** | 5m | | | | | | | | | | | |
| **ISV-L6060** | 6m | | | | | | | | | | | |
| **ISV-L6070** | 7m | | | | | | | | | | | |

To be continued

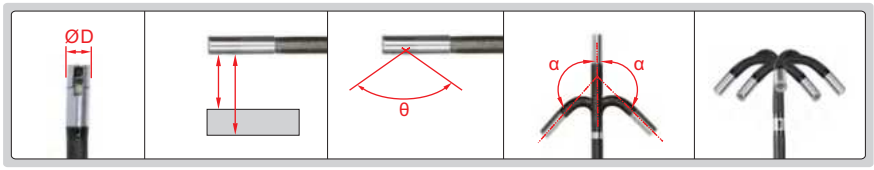
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diameter (ØD) | depth of field (DOF) | angle of view (θ) | bend range (α) | bend in 2 directions

**TWO-DIRECTION BENDING CABLE, SIDE VIEW**

| Code | Cable | | Lens | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | length | type | view direction | bend direction | diameter (ØD) | depth of field (DOF) | bend range (α) | angle of view (θ) | illumination | pixel | resolution | dust/ waterproof |
| ISV-L1810C | 1m | tungsten wire weaved cable | side view | two directions | 1.8mm | 3~30mm | ±160° | >120° | rear fiber | 0.16M | 400×400 | IP65 |
| ISV-L1815C | 1.5m | | | | | | | | | | | |




diameter (ØD) | depth of field (DOF) | angle of view (θ) | bend range (α) | bend in 4 directions

**FOUR-DIRECTION BENDING CABLE, SIDE VIEW**

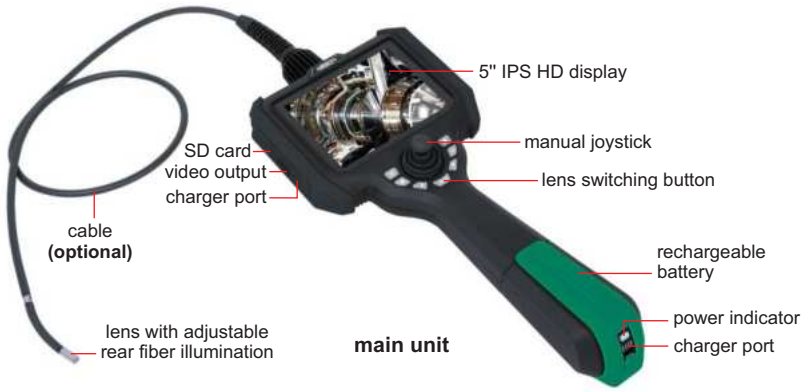
| Code | Cable | | Lens | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | length | type | view direction | bend direction | diameter (ØD) | depth of field (DOF) | bend range (α) | angle of view (θ) | illumination | pixel | resolution | dust/ waterproof |
| ISV-L2810C | 1m | tungsten wire weaved cable | side view | four directions | 2.8mm | 3~70mm | ±160° | >120° | rear fiber | 0.16M | 400×400 | IP65 |
| ISV-L2815C | 1.5m | | | | | | | | | | | |
| ISV-L2820C | 2m | | | | | | | | | | | |
| ISV-L2830C | 3m | | | | | | | | | | | |
| ISV-L4510C | 1m | | | | 4.5mm | 5~100mm (**optional** 8~150mm) | | | | 0.92M | 960×720 | IP67 |
| ISV-L4515C | 1.5m | | | | | | | | | | | |
| ISV-L4520C | 2m | | | | | | | | | | | |
| ISV-L4530C | 3m | | | | | | | | | | | |
| ISV-L6010C | 1m | | | | 6.0mm | 8~150mm (**optional** 5~100mm) | | | | | | |
| ISV-L6015C | 1.5m | | | | | | | | | | | |
| ISV-L6020C | 2m | | | | | | | | | | | |
| ISV-L6030C | 3m | | | | | | | | | | | |
| ISV-L6040C | 4m | | | | | | | | | | | |
| ISV-L6050C | 5m | | | | | | | | | | | |



## FRONT AND SIDE VIEW VIDEOSCOPE (CABLE IS OPTIONAL)

REAR FIBER ILLUMINATION

VIDEO




To be continued

Continued from previous page



WIFI real-time image transmission



**ISV-K-CLAMP (optional)**



changeable lens cable



tripod (included)



**ISV-S-HOOK (optional)**



**ISV-S-MAGNET (optional)**

## MAIN UNIT (WITHOUT CABLE)

| Code | ISV-S |
|---|---|
| Display | 5" high definition LCD |
| Resolution | 1024×720 |
| Function | take pictures, take videos |
| File format | picture: JPG, video: MP4 |
| Image process | image zoom (1X, 2X, 3X, 4X) |
| Image control | freeze, flip over, playback and analog ruler |
| Memory | memory card |
| Output | WIFI (only for Android OS), USB, HDMI |
| Power supply | rechargeable lithium battery (working time ≥ 4hours) AC/DC adapter (for continuous working) |
| Weight | 1000g |

## STANDARD DELIEVERY

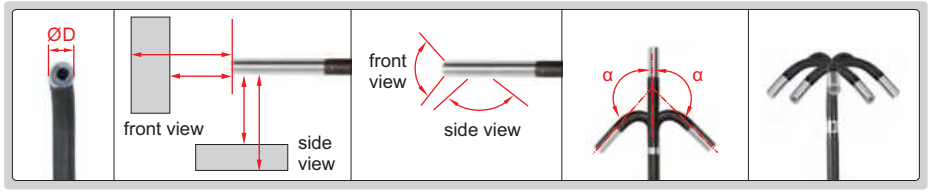
| | |
|---|---|
| Main unit | 1 pc |
| 32G SD card | 1 pc |
| Card reader | 1 pc |
| USB cable | 1 pc |
| Tripod | 1 pc |
| AC/DC adapter | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Cable | please refer to details |
| Temperature alarm | **ISV-S-HTALARM** (must be installed in factory, for Ø3.9mm, Ø6.0mm) |
| Hook | **ISV-S-HOOK** (must be installed in factory, for Ø3.9mm, Ø6.0mm) |
| Magnet | **ISV-S-MAGNET** (must be installed in factory, for Ø3.9mm, Ø6.0mm) |
| Clamp | **ISV-K-CLAMP** |

## OPERATION ENVIRONMENT

| | |
|---|---|
| Main unit | -10~50°C, no preheat |
| Operation temperature | -20~70°C |
| Storage temperature | -20~60°C |
| Relative humidity | maximum 90%, no condensation |




diameter (ØD) depth of field (DOF) angle of view (θ) bend range (α) bend in 4 directions

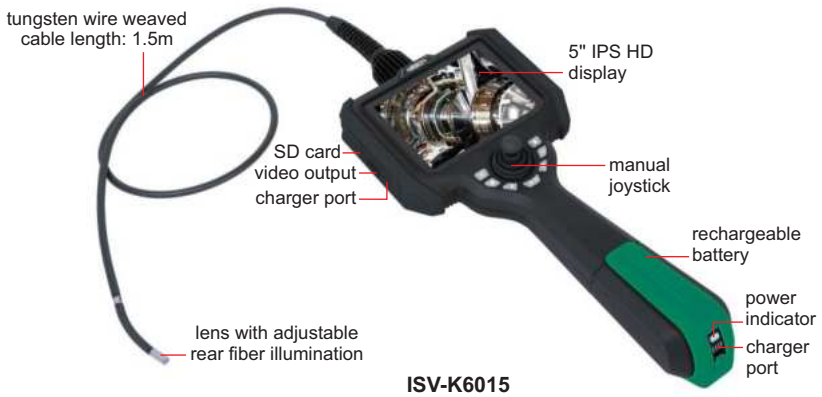
## FOUR-DIRECTION BENDING CABLE, FRONT VIEW&SIDE VIEW

| Code | Cable | | Lens | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | length | type | view direction | bend direction | diameter (ØD) | depth of field (DOF) | bend range (α) | angle of view (θ) | illumination | pixel | resolution | dust/ waterproof |
| ISV-S2810 | 1m | tungsten wire weaved cable | front view and side view | four directions | 2.8mm | front view: 3~70mm side view: 3~70mm | ±160° | >120° | front LED | 0.16M | 400×400 | IP65 |
| ISV-S2815 | 1.5m | | | | | | | | | | | |
| ISV-S2820 | 2m | | | | | | | | | | | |
| ISV-S2830 | 3m | | | | | | | | | | | |
| ISV-S3910 | 1m | tungsten wire weaved cable | front view and side view | four directions | 3.9mm | front view: 7~150mm side view: 5~80mm | ±160° | >120° | rear fiber | 0.92M | 1280×720 | IP67 |
| ISV-S3915 | 1.5m | | | | | | | | | | | |
| ISV-S3920 | 2m | | | | | | | | | | | |
| ISV-S3930 | 3m | | | | | | | | | | | |
| ISV-S3940 | 4m | | | | | | | | | | | |
| ISV-S3950 | 5m | | | | | | | | | | | |
| ISV-S6010 | 1m | tungsten wire weaved cable | front view and side view | four directions | 6.0mm | front view: 12~200mm (**optional** 3~70mm) side view: 8~150mm (**optional** 3~70mm) | ±160° | >120° | rear fiber | 0.92M | 1280×720 | IP67 |
| ISV-S6015 | 1.5m | | | | | | | | | | | |
| ISV-S6020 | 2m | | | | | | | | | | | |
| ISV-S6030 | 3m | | | | | | | | | | | |
| ISV-S6040 | 4m | | | | | | | | | | | |
| ISV-S6050 | 5m | | | | | | | | | | | |

REAR FIBER ILLUMINATION

# VIDEOSCOPES (WITH CABLE)

VIDEO



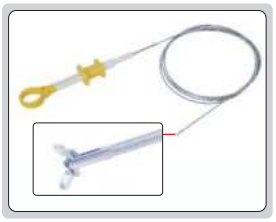

**ISV-K6015**



WIFI real-time image transmission



changeable lens cable



**ISV-K-CLAMP (optional)**



**ISV-K-MAGNET (optional)**



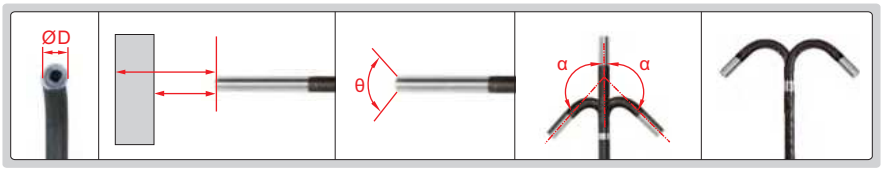
**ISV-K-HOOK (optional)**

**SPECIFICATION**

| Code | | ISV-K1810 | ISV-K2410 | ISV-K2810 | ISV-K3915 | ISV-K6015 |
|---|---|---|---|---|---|---|
| Lens | diameter (ØD) | 1.8mm | 2.4mm | 2.8mm | 3.9mm | 6.0mm |
| | pixel | 0.16M | | | 0.92M | |
| | resolution | 400×400 | | | 1280×720 | |
| | depth of field | 3-30mm | 3-70mm | 3-70mm | 8-150mm | 12-200mm |
| | bending direction | two directions | two directions | four directions | four directions | four directions |
| | bending range (α) | ±160° | | | | |
| | angle of view (θ) | 120° | | | | |
| | illumination | rear fiber | | | | |
| | lens | sapphire glass lens | | | | |
| | dust/waterproof | IP65 | | | IP67 | |
| | bend control | manual joystick | | | | |
| Cable | length | 1m | 1m | 1m | 1.5m | 1.5m |
| | type | tungsten wire weaved cable | | | | |
| Main unit | display | 5" high definition LCD | | | | |
| | function | take pictures, take videos | | | | |
| | file format | picture: JPG, video: MP4 | | | | |
| | image process | image zoom (1X, 2X, 3X, 4X) | | | | |
| | image control | freeze, flip over, playback and analog ruler | | | | |
| | memory | memory card | | | | |
| | output | WIFI (only for Android OS), USB, HDMI | | | | |
| | power supply | rechargeable lithium battery (working time ≥ 4 hours), AC/DC adapter (for continuous working) | | | | |
| Weight | | 1000g | | | | |

To be continued

Continued from previous page




diameter (ØD) | depth of field (DOF) | angle of view (θ) | bend range (α) | bend

**STANDARD DELIEVERY**

| | |
|---|---|
| **Main unit (with cable)** | 1 pc |
| **32G SD card** | 1 pc |
| **Card reader** | 1 pc |
| **USB cable** | 1 pc |
| **Tripod** | 1 pc |
| **AC/DC adapter** | 1 pc |

**OPERATION ENVIRONMENT**

| | |
|---|---|
| **Main unit** | -10~50°C, no preheat |
| **Operation temperature** | -20~70°C |
| **Storage temperature** | -20~60°C |
| **Relative humidity** | maximum 90%, no condensation |

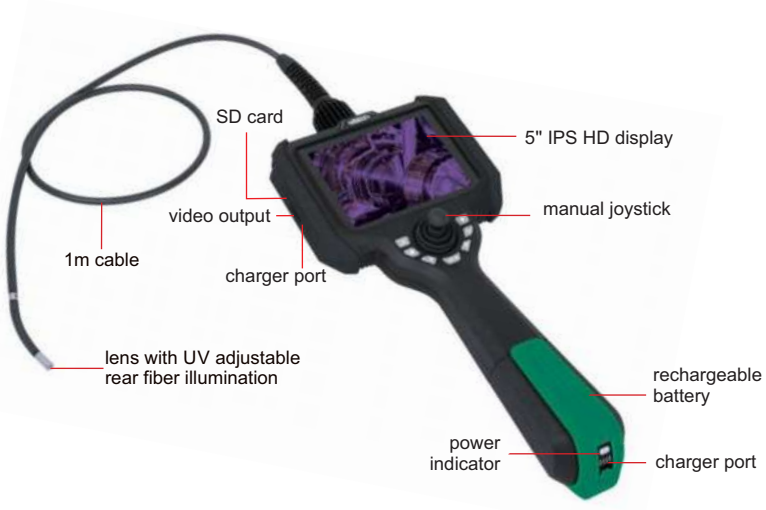
**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Temperature alarm** | **ISV-K-HTALARM** (must be installed in factory, for **ISV-K3915** and **ISV-K6015**) |
| **Hook** | **ISV-K-HOOK** (must be installed in factory, for **ISV-K3915** and **ISV-K6015**) |
| **Magnet** | **ISV-K-MAGNET** (must be installed in factory, for **ISV-K3915** and **ISV-K6015**) |
| **Clamp** | **ISV-K-CLAMP** |

## UV VIDEOSCOPES (WITH CABLE)

UV OPTICAL FIBER ILLUMINATION

VIDEO




**ISV-U6010**



tripod (included)



WIFI real-time image transmission



changeable lens cable



**ISV-K-CLAMP** (**optional**)



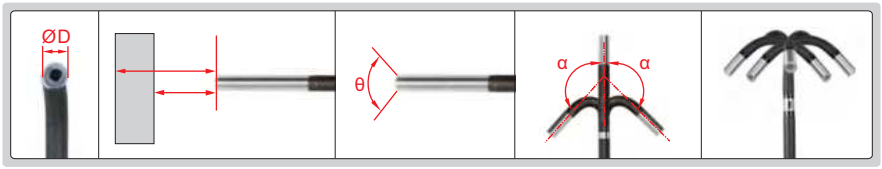
**ISV-U-MAGNET** (**optional**)



**ISV-U-HOOK** (**optional**)

To be continued

Continued from previous page




diameter (ØD) | depth of field (DOF) | angle of view (θ) | bend range (α) | bend in 4 directions

## TECHNICAL PARAMETER

| Code | | ISV-U6010 | ISV-U6020 | ISV-U6030 | ISV-U8010 | ISV-U8020 | ISV-U8030 |
|---|---|---|---|---|---|---|---|
| Camera | diameter (ØD) | Ø6mm | | | Ø8mm | | |
| | pixel | 1M | | | | | |
| | lens length | 13±0.5mm | | | | | |
| | depth of field (DOF) | 10~200mm (**optional** 50mm~∞) | | | | | |
| | bend direction | four directions | | | | | |
| | bend ramher (a) | ±150° | ±130° | ±100° | ±150° | ±130° | ±100° |
| | angel of view (θ) | 120° | | | | | |
| | lighting | rear UV fiber optic illumination | | | | | |
| | ultraviolet wavelength | 365nm | | | | | |
| | waterproof grade | IP67 | | | | | |
| Cable | length | 1m | 2m | 3m | 1m | 2m | 3m |
| | type | soft (tungsten wire weaved cable) | | | | | |
| Main unit | display | 5" HD IPS display screen | | | | | |
| | file format | picture: JPG, video: AVI | | | | | |
| | image control | freezing, zoom, flip over, playback and analog ruler | | | | | |
| | memory | memory card | | | | | |
| | output | WIFI (only for Android OS), USB, HDMI | | | | | |
| | power supply | rechargeable lithium battery (working time ≥ 4hours),<br>AC/DC adapter (for continuous working) | | | | | |
| Weight | | 1000g | | | | | |

## STANDARD DELIEVERY

| | | | |
|---|---|---|---|
| Main unit (with cable) | 1 pc | USB cable | 1 pc |
| 32G SD card | 1 pc | Tripod | 1 pc |
| Card reader | 1 pc | AC/DC adapter | 1 pc |

## OPERATION ENVIRONMENT

| | |
|---|---|
| Main unit | -10~50°C, no preheat |
| Operation temperature | -20~70°C |
| Storage temperature | -20~60°C |
| Relative humidity | maximum 90%, no condensation |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Hook | **ISV-U-HOOK** (must be installed in factory) |
| Magnet | **ISV-U-MAGNET** (must be installed in factory) |
| Clamp | **ISV-K-CLAMP** |

# VIDEOSCOPES (BASIC TYPE)

VIDEO

TUNGSTEN WIRE WEAVED CABLE
BREAK AND WEAR RESISTANCE

IP67
WATERPROOF

POPULAR
MODEL



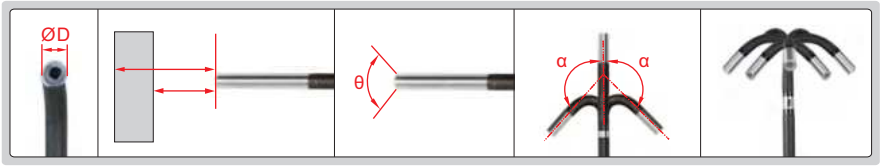
WIFI real-time image transmission




ISV-J6010

replaceable lens cable






diameter (ØD) | depth of field (DOF) | angle of view (θ) | bend range (α) | bend in 4 directions

## SPECIFICATION

| Code | | ISV-J2810 | ISV-J2815 | ISV-J4010 | ISV-J4030 | ISV-J6010 | ISV-J6030 |
|---|---|---|---|---|---|---|---|
| Lens | diameter (ØD) | 2.8mm | 2.8mm | 4.0mm | 4.0mm | 6.0mm | 6.0mm |
| | pixel | 0.16M | | 1M | | | |
| | resolution | 400×400 | | 1280×720 | | | |
| | depth of field | 10~∞mm | | | | | |
| | bending direction | four directions | | | | | |
| | bending range (α) | ±160° | | | | | |
| | angle of view (θ) | 120° | | | | | |
| | illumination | front LED | | | | | |
| | lens | sapphire glass lens | | | | | |
| | dust/waterproof | IP67 | | | | | |
| | bend control | manual joystick | | | | | |
| Cable | length | 1m | 1.5m | 1m | 3m | 1m | 3m |
| | type | wire weaved cable | | | | | |
| Main unit | display | 5" HD screen (resolution: 1920x1080) | | | | | |
| | function | take pictures, take videos | | | | | |
| | file format | picture: JPG, video: MOV | | | | | |
| | image process | image zoom (1X, 2X, 3X, 4X, 5X) | | | | | |
| | image control | freeze, flip over, playback, analog ruler | | | | | |
| | memory | 32G memory card | | | | | |
| | output | WIFI (only for Android OS), USB, HDMI | | | | | |
| | power supply | rechargeable lithium battery (working time ≥ 4 hours), AC/DC adapter (for continuous working) | | | | | |
| Weight | | 1000g | | | | | |

To be continued



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**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| 32G SD card | 1 pc |
| Card reader | 1 pc |
| USB cable | 1 pc |
| AC/Dc adapter | 1 pc |

**OPERATION ENVIRONMENT**

| | |
|---|---|
| Main unit | -10~50°C, no preheat |
| Operation temperature | -20~70°C |
| Storage temperature | -20~60°C |
| Relative humidity | maximum 90%, no condensation |

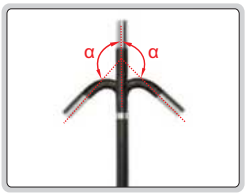
VIDEO

# MOBILE PHONE VIDEOSCOPE CODE ISV-P6




the clamping range of mobile phone bracket L=56-95mm




bending of lens up to 180°




angle of view




lens with LED



bend in any direction

- For Android and iOS mobile phones

**SPECIFICATION**

| | |
|---|---|
| Diameter of lens (ØD) | 6±0.2mm |
| Length of cable | 1m |
| Resolution | 960×720, 1280×720 (switchable) |
| Depth of field | 20mm~∞ |
| Angle of view (θ) | 100° |
| Bending range (α) | 0~180° |
| Illumination | LED with 3 levels control |
| Cable type | wear resistant |
| Interface | USB, Type-C |
| Mobile phone system | Android, iOS |
| Power supply | rechargeable battery (for 2 hours working) |
| Dimension (L×W×H) | 195×57×105mm |
| Weight | 450g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit (with cable) | 1 pc |
| Type-C cable | 1 pc |
| Micro USB cable | 1 pc |
| Iphone cable | 1 pc |
| Charging cable | 1 pc |

# VIDEOSCOPE (BASIC TYPE)
# CODE ISV-E40

MEMORY CABLE CAN BE FIXED AT ANY SHAPE

IP67 WATERPROOF

VIDEO





magnet pick up (included)


hook (included)


45° mirror (included)

## SPECIFICATION

| | | |
|---|---|---|
| Lens | diameter (ØD) | 8mm |
| | pixel | 0.92M |
| | resolution | 1280x720 |
| | depth of field | 30~80mm |
| | angle of view | 77° |
| | illumination | 3 levels |
| | dust/waterproof | IP67 |
| Cable | length | 1180mm |
| | type | memory (can be set at any shape) |
| Main unit | display | 5" IPS LCD |
| | function | take picture, take video |
| | file format | picture: JPG, video: MOV |
| | image process | image zoom (1.5X, 2X, 3X, 4X) |
| | memory | memory card (**optional**) |
| | output | Type-C |
| | power supply | rechargeable lithium battery (for 5 hours working) |
| | dimension | 217×155×131mm |
| Weight | | 506g |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 45° mirror | 1 pc |
| Hook | 1 pc |
| Magnet pick up | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 32G memory card | ISV-E40-CARD |
| Card reader | ISV-E40-READER |

## OPERATION ENVIRONMENT

| | |
|---|---|
| Operation temperature | -10~50°C |
| Storage temperature | -20~60°C |
| Operation humidity | 15%~85% |





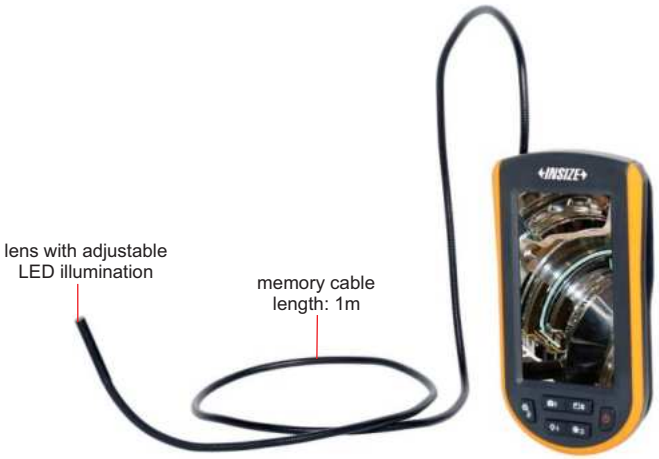
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MEMORY CABLE CAN BE FIXED AT ANY SHAPE

IP67 WATERPROOF

# VIDEOSCOPE (ECONOMIC TYPE)
# CODE ISV-E30

VIDEO





magnet pick up (included)


hook (included)


cable can be wrapped around the main unit

## SPECIFICATION

| | | |
|---|---|---|
| Lens | diameter | 5.2mm |
| | pixel | 0.4M |
| | depth of field | 30~80mm |
| | angle of view | 72° |
| | illumination | 8 levels |
| | dust/waterproof | IP67 |
| Cable | length | 1m |
| | type | memory (can be set at any shape) |
| Main unit | display | 4.3" LCD |
| | function | take picture, take video |
| | file format | picture: JPG, video: AVI |
| | image zoom | 2X |
| | memory card | memory card (**optional**) |
| | output | micro USB |
| | power supply | AA battery |
| | dimension | 154×32.5×87.5mm |
| Weight | | 280g |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Hook | 1 pc |
| Magnet pick up | 1 pc |
| AA battery | 4 pcs |

## OPTIONAL ACCESSORY

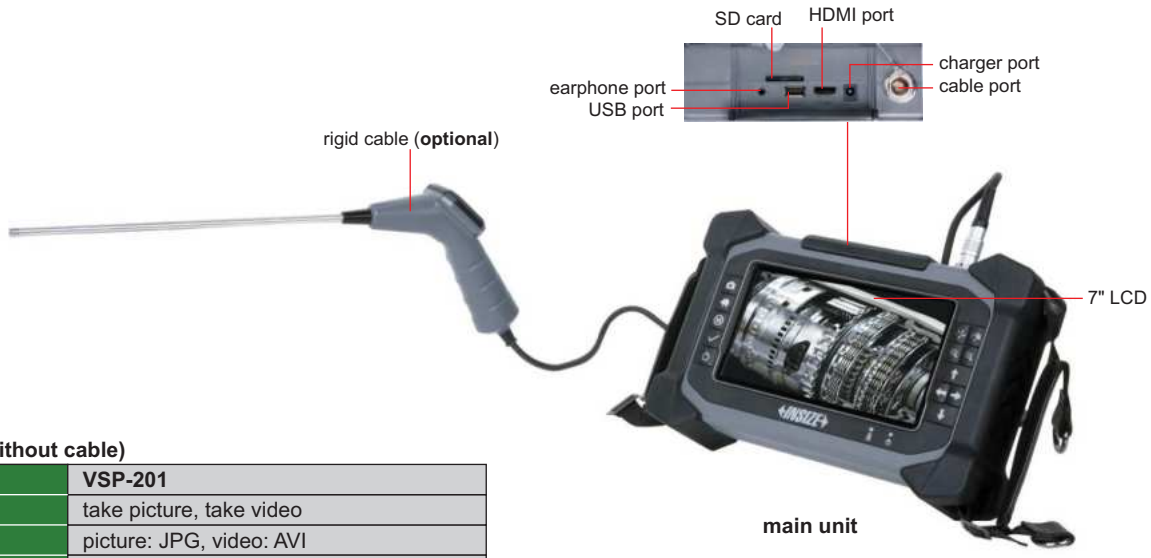
| | |
|---|---|
| 32G memory card | ISV-E40-CARD |
| Card reader | ISV-E40-READER |

## OPERATION ENVIRONMENT

| | |
|---|---|
| Operation temperature | -10~50°C |
| Storage temperature | -20~60°C |
| Operation humidity | 15%~85% |

# MULTIPURPOSE VIDEOSCOPE

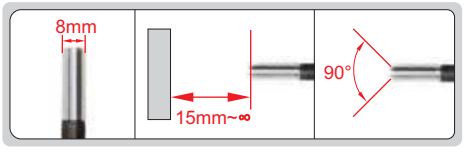
VIDEO




main unit

**MAIN UNIT (without cable)**

| | |
|---|---|
| **Code** | **VSP-201** |
| **Function** | take picture, take video |
| **File format** | picture: JPG, video: AVI |
| **Image process** | brightness, contrast |
| **Memory** | 64GB |
| **Output** | HDMI, USB |
| **Power supply** | rechargeable battery (for 4 hours working) |
| **Dimension** | 260×170×65mm |
| **Weight** | 1.2kg |




diameter (ØD) | focus distance (F) | angle of view (θ)




bend in any direction | 360° swivel in clockwise and counter-clockwise | bend within 120°



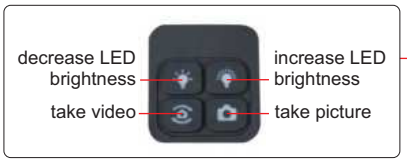

**FOUR-DIRECTION BENDING CABLE (FRONT VIEW)**

| | | |
|---|---|---|
| **Code** | | **VSP-201D** |
| **Cable** | **length** | 3m |
| | **type** | tungsten wire weaved cable |
| **Lens** | **diameter (ØD)** | 8mm |
| | **focus distance (F)** | 15mm~∞ |
| | **angle of view (θ)** | 90° |
| | **illumination** | 6 pcs LED |
| | **pixel** | 1M |
| | **resolution** | 1280×720 |
| | **dust/waterproof** | IP67 |




To be continued

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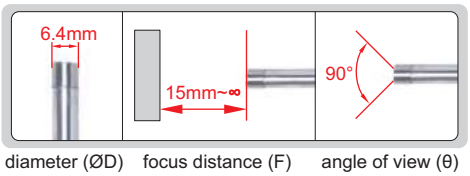






### RIGID CABLE

| Code | | VSP-201H |
|---|---|---|
| Cable | length (L) | 250mm |
| | type | stainless steel |
| Lens | diameter (ØD) | 6.4mm |
| | focus distance (F) | 15mm~∞ |
| | angle of view (θ) | 90° |
| | illumination | 6 pcs LED |
| | pixel | 1M |
| | resolution | 1280×720 |
| | dust/waterproof | IP64 |



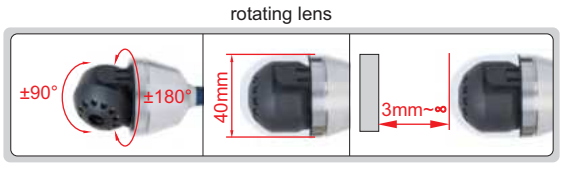

### ROTATING LENS CABLE

| Code | | VSP-201R |
|---|---|---|
| Cable | length | 30m |
| | type | high strength glass fibre |
| Lens | diameter (ØD) | 40mm |
| | focus distance (F) | 3mm~∞ |
| | angle of view (θ) | 100° |
| | illumination | 12 pcs LED |
| | pixel | 1M |
| | resolution | 1280×720 |
| | dust/waterproof | IP67 |
| | lens control | motorized |









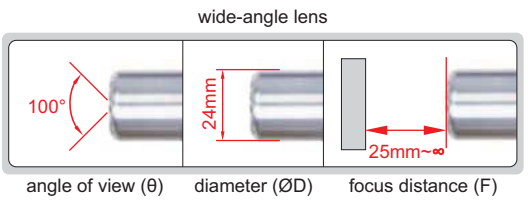

### WIDE-ANGLE LENS CABLE

| Code | | VSP-201W |
|---|---|---|
| Cable | length | 30m |
| | type | high strength glass fibre |
| Lens | diameter (ØD) | 24mm |
| | focus distance (F) | 25mm~∞ |
| | angle of view (θ) | 100° |
| | illumination | 12 pcs LED |
| | pixel | 1M |
| | resolution | 1280×720 |
| | dust/waterproof | IP67 |





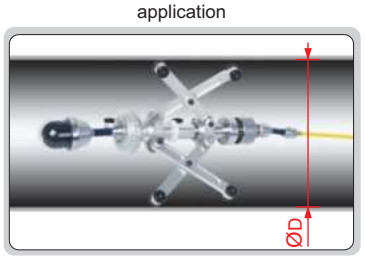





### ADJUSTABLE SUPPORT

| Code | Working diameter (ØD) | Remark |
|---|---|---|
| VSP-201-R200 | 60~200mm | for **VSP-201R** or **VSP-201W** |





# 4K CARBON FIBER TELESCOPIC POLE VIDEOSCOPE
# CODE ISV-CF5

IP65
WATERPROOF

VIDEO



built-in infrared and white light
for night and day use




dual motorized control of lens view,
300° horizontal and vertical 360° rotation



WIFI real-time image transmission




- Dual motorized control of lens view, 300° horizontal and vertical 360° rotation
- 4K HD true color camera
- Built-in infrared and white light for night and day use
- Insert SD card and export photos, videos

application scenario



underbody inspection



constructure inspection
(WIFI real-time image transmission)



ceiling duct inspection



roof inspection



car roof inspection

## SPECIFICATION

| | |
|---|---|
| **Display** | 7" color touch LCD |
| **Function** | take photos and videos |
| **Resolution** | 3840×2160 |
| **Image process** | image mirror or flipping, real-time image magnification (1X, 2X, 3X, 4X) |
| **Lens diameter (ØD)** | 40mm |
| **Display image ratio** | 16:9, 4:3, 1:1 |
| **Memory** | SD card (128G Max) |
| **Ilumination** | infrared and white light LED, manual 5-level brightness adjustment |
| **Output** | HDMI |
| **Wireless transmission** | WIFI real-time image transmission |
| **Pole** | carbon fiber, can be fixed between 1~5 meters |
| **Environmental requirement** | temperature: -20°C~60°C, relative humidity: 10%~85% |
| **Power supply** | rechargeable battery (18650 lithium battery), power adapter (for continuous working) |
| **Dust/waterproof** | IP65 |
| **Weight** | 2kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **32G SD card** | 1 pc |
| **Card reader** | 1 pc |

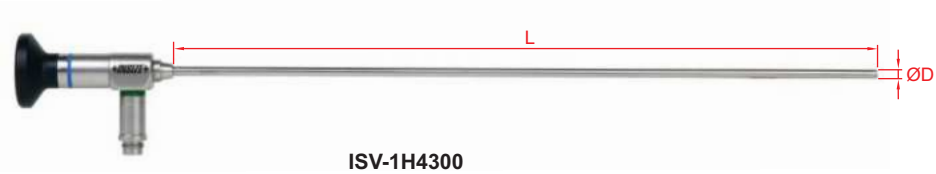
| | |
|---|---|
| **Carbon fiber telescopic pole** | 1 pc |
| **HDMI cable** | 1 pc |
| **Power adapter** | 1 pc |



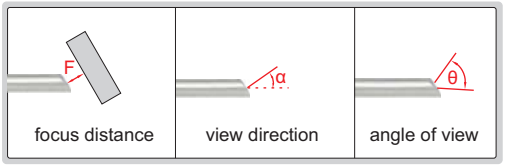
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IP67
WATERPROOF

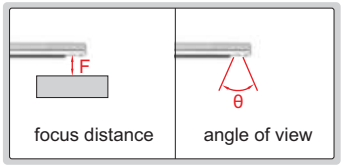
# RIGID BORESCOPES



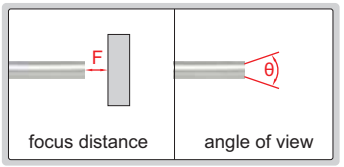

ISV-1H4300




view direction α=30° or 70°




view direction α=90°




view direction 0°

- Focus distance: 2mm, depth of view: 5~100mm
- Dust/waterproof level: IP67
- Can be used in liquid with temperature -10°C~85°C



LED light handle (**optional**)



adjustable LED light source (**optional**)



camera and display (**optional**)

25

**SPECIFICATION**

| Code | Length (L) | View direction (α) | Diameter (ØD) | Angle of view (θ) |
|---|---|---|---|---|
| **ISV-1H4170** | 174mm | 0° | 4mm | ≥60° |
| **ISV-1H4173** | 174mm | 30° | | |
| **ISV-1H4177** | 174mm | 70° | | |
| **ISV-1H4179** | 166mm | 90° | | |
| **ISV-1H4300** | 302mm | 0° | | |
| **ISV-1H4303** | 302mm | 30° | | |
| **ISV-1H4307** | 302mm | 70° | | |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **LED light handle** | **ISV-1HLED** |
| **Adjustable LED light source** | **ISV-1LED1** |
| **Camera and display** | **ISV-2CAM** |

## LED LIGHT HANDLE
## CODE ISV-1HLED


battery (included)


charger (included)





- For rigid borescopes

**SPECIFICATION**

| | |
|---|---|
| **Power** | 3W |
| **Battery** | 3.7V rechargeable battery (for 2 hours working) |
| **Dimension** | 120×27×27mm |
| **Weight** | 300g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 1 pc |
| **Charger** | 1 pc |

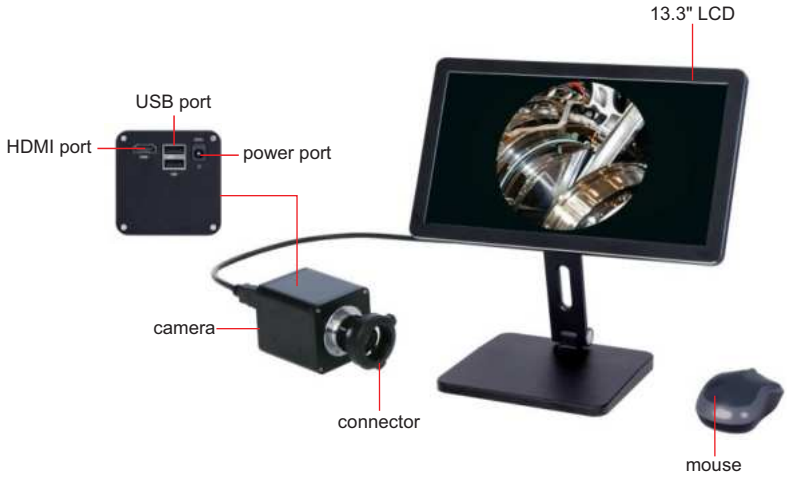
## CAMERA (WITH DISPLAY)
## CODE ISV-2CAM

TAKE PICTURES AND VIDEOS

AUTO FOCUS

VIDEO






- For rigid borescopes
- 1080P high-definition image
- Auto-focus camera
- Take pictures and videos, saved to USB flash disk
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable

**SPECIFICATION**

| | |
|---|---|
| **Sensor** | 1/2.8" CMOS |
| **Pixel** | 2M |
| **Resolution** | 1920×1080 |
| **Frame rate** | 60fps |
| **Output** | HDMI |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 350×100×430mm |
| **Weight** | 2kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Camera** | 1 pc |
| **Connector** | 1 pc |
| **13.3" LCD (with stand)** | 1 pc |
| **16G USB flash disk** | 1 pc |
| **Mouse** | 1 pc |
| **HDMI cable** | 1 pc |
| **Power adapter** | 2 pcs |


16G USB flash disk (included)





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## ADJUSTABLE LED LIGHT SOURCE
## CODE ISV-1LED1





- For rigid borescopes
- High LED illumination and brightness is adjustable
- For long time work with low noise

**SPECIFICATION**

| | |
|---|---|
| **Color temperature** | 5600K |
| **Cooling** | fan cooling |
| **Power supply** | AC110~220V, 50/60Hz |
| **Dimension** | 400×300×112mm |
| **Weight** | 7kg |

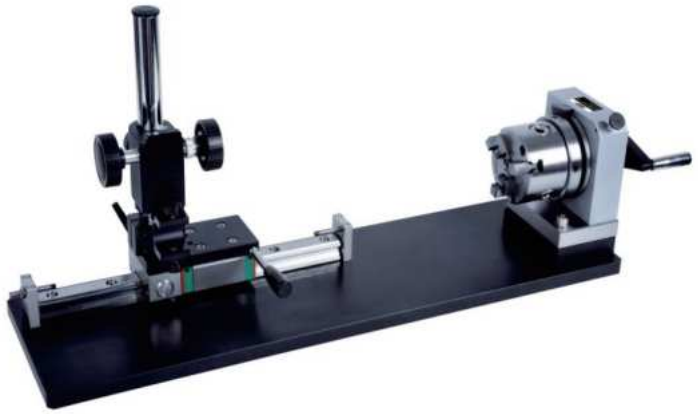
**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **1.8m optical fiber cable** | 1 pc |

CUSTOMIZED ACCORDING TO WORKPIECES

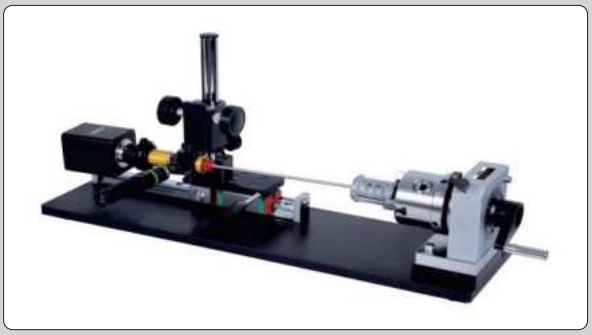
## FIXTURE FOR RIGID BORESCOPES
## CODE ISV-H□□□

VIDEO



- Rotation by handle
- Move borescope along sliding rail
- For viewing the inside of workpieces
- Can be customized according to workpieces

application



**SPECIFICATION**

| | |
|---|---|
| **Max. clamping diameter of chuck** | Ø68mm |
| **Max. length of workpieces** | 384mm |
| **Dimension (L×W×H)** | 650×180×297mm |

# 26 VARIOUS INSTRUMENTS



Air Leakage Testers
Page 794



Air Gauges And Displays
Page 795-798



Digital Gap Gauges
Page 799-800



Laser Scan Micrometers
Page 801-806



Length Measuring Machines
Page 807-808



Total Stations
Page 809



Industrial Acoustic Imagers
Page 810



Automatic Cleanliness
Analysis Systems
Page 811-812



Automatic Vision
Inspection Machines
Page 813-814



Three-Dimension Full-field
Strain Measurement Systems
Page 815



Large Field Of View Dynamic
Measurement Systems
Page 816



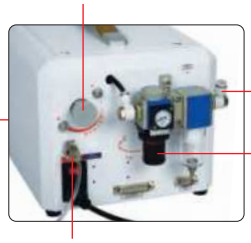
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DATA OUTPUT

VIDEO

# AIR LEAKAGE TESTER
# CODE ALT-P150






- Smart operation system with touch screen, operation UI based on testing procedure
- High sensitivity pressure sensor and adjustment unit with software algorithm ensure high accuracy and stability
- Test pressure range: -100kPa~1000kPa, positive and negative pressure mode with 8 basic test mode
- Up to 100 groups of subprogram, each can be edited separately, for individual or combination testing
- Built-in communication interface, MODBUS and TCP/IP communication protocol supported
- Pressure curve screenshot and history data can export to flash disk
- Accessories such as testing tooling and fixture, inflatable bypass, fast connector, standard leak can be customized for different products; optional electronic regulator enables multiple sets of pressure sequence testing
- Language: English, Chinese



standard leak (**optional**)



quick connector (**optional**)



scanner (**optional**)



tooling and fixture (**optional**)



## SPECIFICATION

| | |
|---|---|
| **Device type** | direct pressure |
| **Channel** | single-channel (customizable dual-channel) |
| **Pressure mode** | positive and negative pressure |
| **Range*** | -60kPa~150kPa |
| **Resolution** | 0.1Pa |
| **Accuracy** | ±0.2%FS |
| **Pressure unit** | kPa, Pa, kgf/cm², psi, $mmH_2O$, bar, mbar, mmHg |
| **Flow unit** | SCCM |
| **Test medium** | compressed air or specified gas, 0.4MPa~0.8MPa |
| **Tube caliber** | gas inlet: Ø8mm, test port: Ø4mm |
| **Pressure regulation** | mechanical pressure regulator |
| **Interface** | USB, RS232, 25 PIN I/O interface, RJ45 (**optional**) |
| **Operation environment** | temperature: 0°C~50°C,<br>humidity: ≤95%RH, no condensation |
| **Power supply** | AC 220V, 50Hz |
| **Dimension (L×W×H)** | 340×225×187mm |
| **Weight** | 7.3kg |

* Available range: -80kPa~0kPa, -80kPa~600kPa, 0Pa~200kPa, 10kPa~700kPa; other ranges customizable

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Gas pressure regulator** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Software** | **ALT-P150-SW** |
| **Scanner (with scan software)** | **ALT-P150-SC** |
| **Standard leak** | customizable |
| **Quick connector** | |
| **Tooling and fixture** | |

# AIR GAUGES
# CODE 9401

CUSTOM-MADE

air plug gauges and standard rings



air ring gauges and standard plain plug gauges



air snap gauges and standard gauges



air taper gauges and standard gauges



air outside diameter measuring stages
and standard gauges



air inside diameter measuring stages
and standard rings



air angle gauges and standard gauges

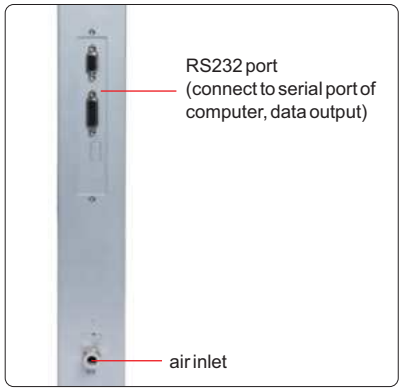


INSPECTION CERTIFICATE

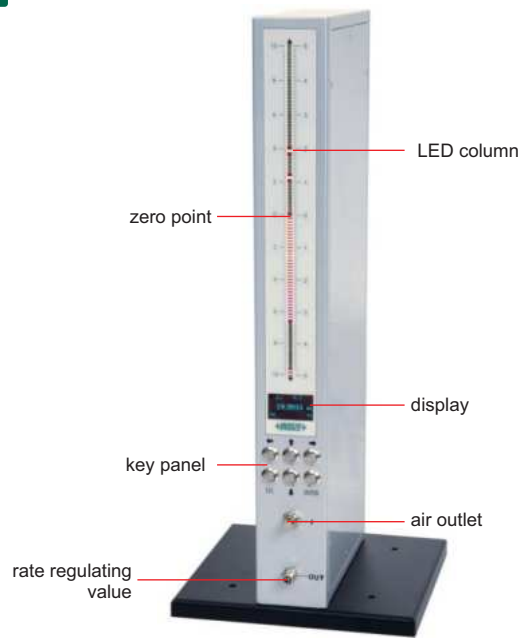
DATA OUTPUT

VIDEO

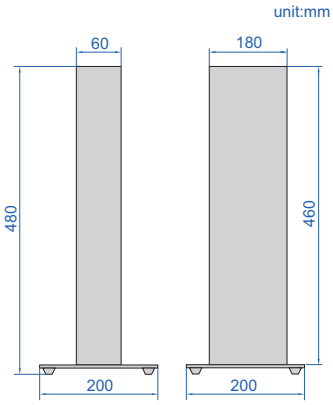
# AIR GAUGE DISPLAYS (BASIC TYPE)




back of **9416-2**




**9416-2**




- Can store 9 measuring programs, and the programs can be switched quickly
- Data storage function, 99 groups data can be stored

## SPECIFICATION

| Code | **9416-1** (without data output) | | **9416-2** (with data output) | |
|---|---|---|---|---|
| LED quantity | 101 pcs | | | |
| LED color | red, orange, green | | | |
| LED height | 254mm | | | |
| Range, resolution and accuracy | range | resolution | | accuracy |
| | | LED | display | |
| | 10μm | 0.1μm | 0.1μm | 0.2μm |
| | 20μm | 0.2μm | 0.1μm | 0.4μm |
| | 50μm | 0.5μm | 0.5μm | 1μm |
| | 100μm | 1μm | 0.5μm | 2μm |
| Unit | mm, μm | | | |
| Air supply | dry and clean, 0.4~0.8MPa | | | |
| Data interface | / | | RS232 | |
| Operation temperature | -20~45°C | | | |
| Power supply | 220V, 50Hz | | | |
| Dimension (L×W×H) | 200×200×480mm | | | |
| Weight | 3kg | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Air filter | **9401-FILTER-A** |
| Pressure regulating valve | **9404-PRV** |
| RS232 cable | **9416-CB** |
| Foot switch | **9416-FS** (requires pre-shipment installation) |
| Data output cable (keyboard format) | **7302-9416** |



air filter (**optional**)



pressure regulating valve (**optional**)



RS232 cable (**optional**)



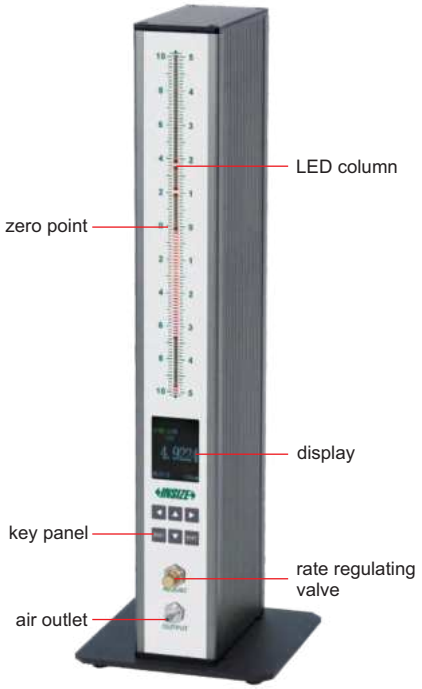
foot switch (**optional**) (for data transmission)

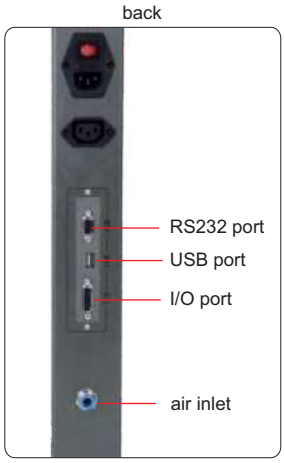
# AIR GAUGE DISPLAY
# CODE 9408-QD100

VIDEO

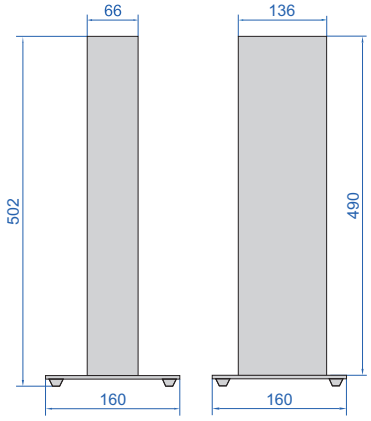
DATA OUTPUT

- Can store 10 measuring programs, and the programs can be switched quickly
- Data storage and query function




Unit: mm




## SPECIFICATION

| | | | | | |
|---|---|---|---|---|---|
| **LED quantity** | | 101 pcs | | | |
| **LED color** | | red, orange, green | | | |
| **LED height** | | 254mm | | | |
| **Range, resolution and accuracy** | | range (μm) | resolution(μm) | | accuracy (μm) |
| | | | LED | display | |
| | | 10 | 0.1 | 0.1 | 0.2 |
| | | 20 | 0.2 | 0.1 | 0.4 |
| | | 50 | 0.5 | 0.1 | 1 |
| | | 100 | 1 | 0.2 | 3 |
| **Unit** | | mm, inch | | | |
| **Air supply** | | dry and clean, 0.4~0.7MPa | | | |
| **Data interface** | | RS232, USB | | | |
| **Operation temperature** | **temperature** | 0~45°C | | | |
| | **humidity** | ≤85% | | | |
| **Power supply** | | AC185~265V, 50/60Hz | | | |
| **Dimension (L×W×H)** | | 160×160×490mm | | | |
| **Weight** | | 2.8kg | | | |



foot switch (**optional**)



RS232 cable (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **RS232 cable** | **9408-CB** |
| **Foot switch** | **9408-FS** (must be installed in factory) |
| **Data output cable (keyboard format)** | **7302-9408** |
| **Wireless transmitter (receiver is needed)** | **7315-9408** |
| **Air filter** | **9401-FILTER-A** |
| **Pressure regulating valve** | **9404-PRV** |



pressure regulating valve (**optional**)



air filter (**optional**)

VIDEO

TOUCH SCREEN

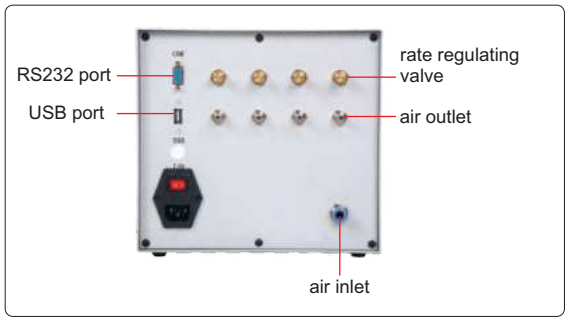
# MULTI CHANNEL AIR GAUGE DISPLAYS

- Data storage function, 2 million groups data can be stored
- Can store 10 groups measuring programs, and the program can be switched quickly
- Insert USB flash disk to output storage data, updata program
- Data can be shared or networked via TCP/IP (customized)
- With data statistics and analysis functions, can display graphs and Xbar-R control charts



**9440-DP4**

back of display




air filter (**optional**)



RS232 cable (**optional**)



foot switch (**optional**)



**SPECIFICATION**

| Code | 9440-DP1 | 9440-DP2 | 9440-DP3 | 9440-DP4 | 9440-DP5 | 9440-DP6 | 9440-DP7 | 9440-DP8 |
|---|---|---|---|---|---|---|---|---|
| Number of channels | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Display screen | 7" TFT LCD touch screen display | | | | 10" TFT LCD touch screen display | | | |
| Display mode | graphic display, digital display | | | | | | | |
| Range | 10μm, 20μm, 50μm, 100μm (adjustable) | | | | | | | |
| Accuracy | 0.2μm (range 10μm) | | | | | | | |
| | 0.4μm (range 20μm) | | | | | | | |
| | 1μm (range 50μm) | | | | | | | |
| | 3μm (range 100μm) | | | | | | | |
| Resolution | 0.1μm | | | | | | | |
| Unit | mm | | | | | | | |
| Air supply | dry and clean, 0.4~0.7MPa | | | | | | | |
| Data interface | RS232/USB* | | | | | | | |
| Operation temperature | -10~55°C | | | | | | | |
| Power supply | 220V, 50/60Hz | | | | | | | |
| Dimension (L×W×H) | 240×230×230mm | | | | 320×145×325mm | | | |
| Weight | 5.6kg | | | | 11.2kg | | | |

*RS485 port, I/O port, ethernet communication port can be customized according to customer requirements

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Air filter | 9401-FILTER-A |
| Foot switch | 9440-FS |
| RS232 cable | 9440-CB |
| Data output cable (keyboard format) | 7302-9440 |

# DIGITAL GAP GAUGE

INSIZE PLUS
MADE IN EUROPE

DATA OUTPUT

VIDEO

CUSTOMIZABLE PROBES
MEASURING RANGE: 0.35~6mm
MEASURING DEPTH: 2~500mm

TITANIUM AND SYNTHETIC DIAMOND COATED PROBES ARE OPTIONAL




- Real-time measurement: display maximum value, minimum value current measurement value and measurement curve
- Group measurement: target value and upper and lower tolerance can be set, automatic judgement of OK and NG

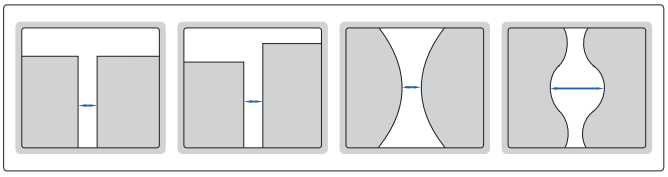
measurement principle



the deformation of the probe results in the output of an analogue signal, which is then used by the software to calculate the dimensional value

**ISE-DF10**

application





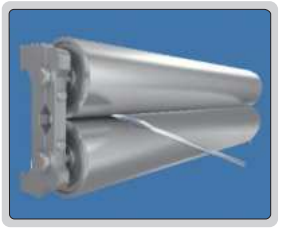

real-time measurement



measuring car body seam



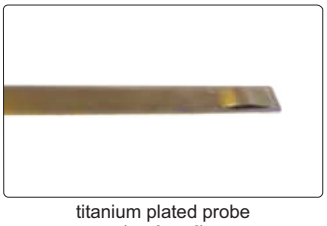
measuring gaps on the car dashboard



measuring roll gap



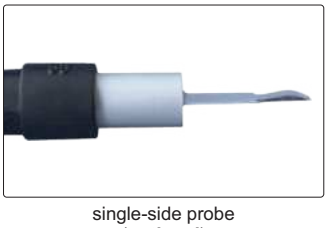
measuring blade to sidewall gap



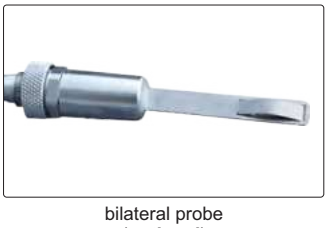
titanium plated probe
(**optional**)



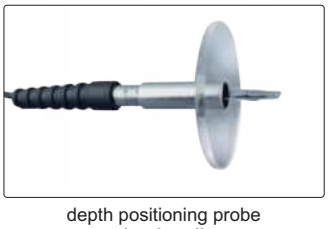
synthetic diamond coated probe
(**optional**)



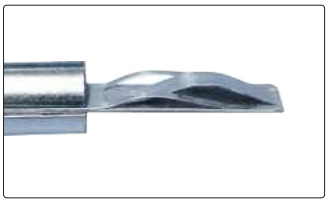
single-side probe
(**optional**)



bilateral probe
(**optional**)



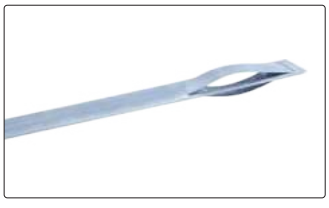
depth positioning probe
(**optional**)



single-side probe
(**optional**)



bilateral probe
(**optional**)



bilateral probe
(**optional**)

To be continued



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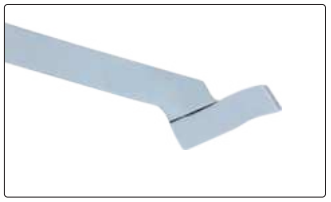
Continued from previous page



bilateral long depth probe
(**optional**)



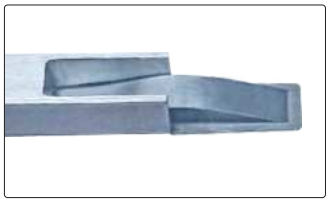
single-side hockey stick shaped probe
(**optional**)



single-side hockey stick shaped probe
(**optional**)



90° probe
(**optional**)



single-side positioning probe
(**optional**)



single-side probe
(**optional**)

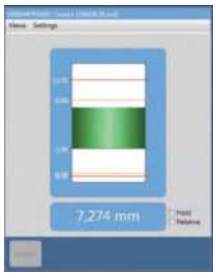


single-side positioning probe
(**optional**)

PC software (**optional**)
connect the probe without main unit, export CSV or PDF file



scheduled measurement mode
set the tolerance and judge OK or NG



real-time
measurement mode




average value
measurement mode




maximum
measurement mode




minimum
measurement mode



display of
measurement curve

**SPECIFICATION OF MAIN UNIT**

| | |
|---|---|
| **Code** | **ISE-DF10** |
| **Resolution** | 0.1/0.01/0.001mm adjustable |
| **RAM** | 8GB |
| **Output** | USB, WIFI |
| **Output format** | XML, CSV |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **PC software** | **ISE-DF10-SOFTWARE** |
| **Probe** | customized to customer requirements |

**SPECIFICATION OF PROBES (OPTIONAL)**

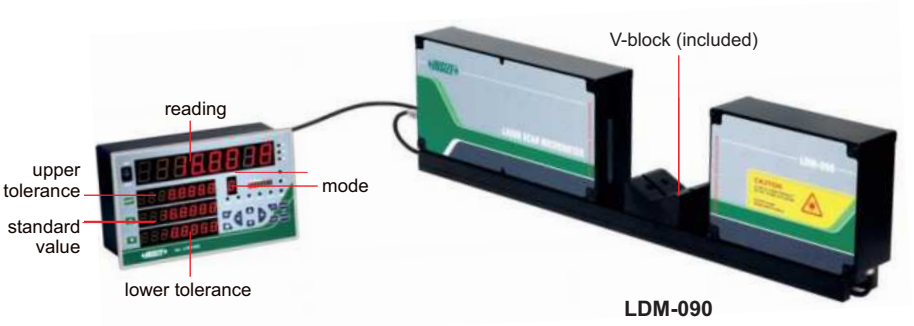
| | |
|---|---|
| **Customizable measuring range** | 0.35-6mm |
| **Effective range** | ±0.5mm |
| **Accuracy** | range: 0.35~2.0mm, accuracy: ±0.03mm<br>range: 0.35~6.0mm, accuracy: ±0.04mm |
| **Max. customizable length** | 500mm |
| **Repeatability** | 0.02mm |
| **Measuring force** | <3.5N |
| **Measuring time** | <1s |

# LASER SCAN MICROMETERS

VIDEO

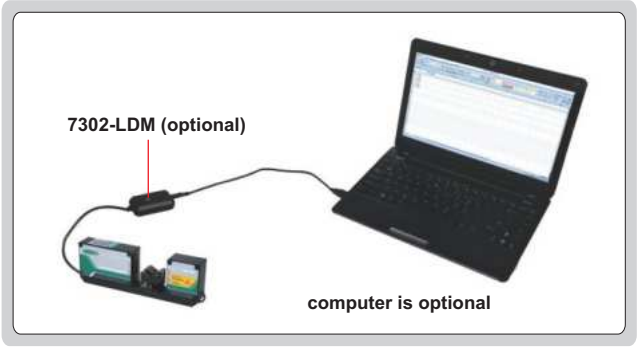



**LDM-030**

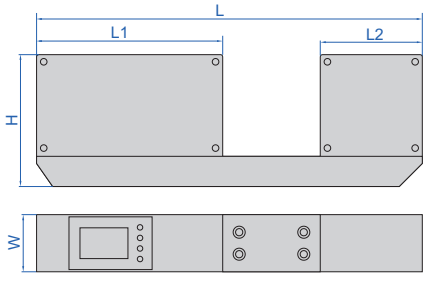



**LDM-090**

- Measure outer diameter, ellipticity, run-out, maximum diameter of tools, etc.
- Can be used for transparent or non transparent workpieces
- Tolerance measurement
- Online or offline measurement
- Connected with computer, PLC, control box




keyboard signal, can be transmitted to Excel

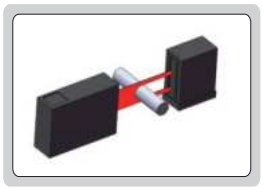


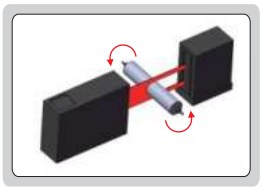

**Dimension** **(mm)**

| Code | LDM-030 | LDM-065 | LDM-090 |
|---|---|---|---|
| L | 351 | 469 | 608 |
| W | 52 | 52 | 60 |
| H | 120 | 146 | 162 |
| L1 | 170 | 203 | 278 |
| L2 | 95 | 131 | 178 |

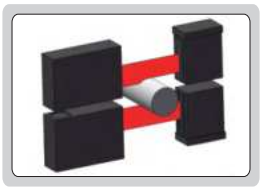
To be continued

Continued from previous page


measure external diameter


measure ellipticity and run-out


two-axis measurement


large size measurement

## SPECIFICATION

| Code | LDM-030 | LDM-065 | LDM-090 |
|---|---|---|---|
| Measuring range | 0.1~30mm | 0.5~65mm | 1~85mm |
| Resolution | 0.01/0.1/1/10/100μm selectable | | |
| Accuracy (25°C in laboratory) | ±(0.5+10%D)μm, D is measuring diameter in mm | | ±6μm |
| Repeatability (25°C in laboratory) | (0.3+5%D)μm, D is measuring diameter in mm | | 3μm |
| Laser wave length | 650nm | | |
| Measuring speed | 800~3200times/s (adjustable) | | |
| Operation temperature | 0~50°C | | |
| Operation humidity | 35~85RH without condensation | | |
| Output | dual channel RS485 | | |
| Alarm output | 24V, 1A | | |
| Power supply | DC24V, 2A | | |
| Dimension (L×W×H) | 351×52×120mm | 469×52×146mm | 608×60×162mm |
| Weight | 5kg | 8kg | 10kg |


connect to control box (**optional**)


calibration gauge (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| V-block | 1 pc |
| AC/DC adapter | 1 pc |
| RS485 cable | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Data output cable (keyboard format) | **7302-LDM** page 22 |
| Calibration gauge | custom made |
| Control box | custom made |

# LASER SCAN MICROMETER (BASIC TYPE)
# CODE LDM-D090

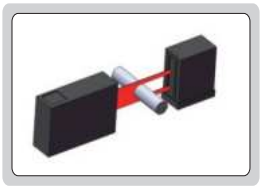
VIDEO



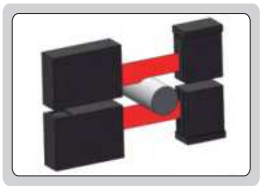



calibration gauge (**optional**)

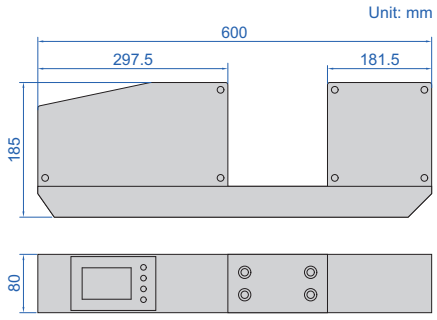
- Can measure the width and thickness of flat cables and tapes
- Can measure the outer diameter of cables, pipes and wires
- Laser scanning technology, large measurement range, high accuracy, high repeatability
- Connected with PLC and PC with RS485 interface
- Use high-precision F (θ) mirror, the swing of the measured object does not affect the measurement



measure external diameter



large size measurement




**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | 0.5~90mm |
| **Resolution** | 1μm |
| **25°C accuracy** | ±(5+20%D)μm, D is measuring diameter in mm |
| **Repeatability** | (3+20%D)μm, D is measuring diameter in mm |
| **Laser wave length** | 650nm |
| **Measuring speed** | 600 times/s |
| **Operation temperature** | 5~45°C |
| **Operation humidity** | ≤80%RH without condensation |
| **Output** | RS485/MODBUS protocol |
| **Alarm output** | 24V, 1A |
| **Power supply** | AC85V~220V (50~60Hz) |
| **Dimension (L×W×H)** | 600×80×185mm |
| **Weight** | 6.5kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **V-block** | 1 pc |
| **AC/DC adapter** | 1 pc |
| **RS485 cable** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Calibration gauge** | custom made |



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VIDEO

CUSTOMIZED ACCORDING TO WORKPIECES

# AUTOMATIC LASER SCAN MICROMETER
# CODE LDM-AT01






center-type bench center (included)



V-type bench center (included)



clamping workpieces by V-type bench center



clamping workpieces by center-type bench center

- Motorised rotation with adjustable speed
- Auto-moving laser scan micrometer
- Measure the outer diameter, roundness and runout of workpieces at multiple sections

## SPECIFICATION

| | | | |
|---|---|---|---|
| **Workpiece clamping mode** | | center-type bench center (with centre holes at the end) | V-type bench center (without centre holes at the end) |
| **Measuring range of workpieces** | **length** | 5~300mm | 10~230mm |
| | **diameter** | 3~60mm | 10~60mm |
| | **max. weight** | 20kg | 1.5kg |
| **Accuracy at 25°C** | | ±(0.5+10%D)μm, D is measuring diameter in mm | |
| **Repeatability at 25°C** | | (0.3+5%D)μm, D is measuring diameter in mm | |
| **Runout accuracy at 25°C** | | ≤5μm | |
| **Size of working table** | | 400×200mm | |
| **Driving method** | | motor drive | |
| **Power supply** | | 220V, 50/60Hz | |
| **Dimension** | | 750×600×900mm | |
| **Weight** | | 50kg | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Center-type bench center** | 1 pc |
| **V-type bench center** | 1 pc |

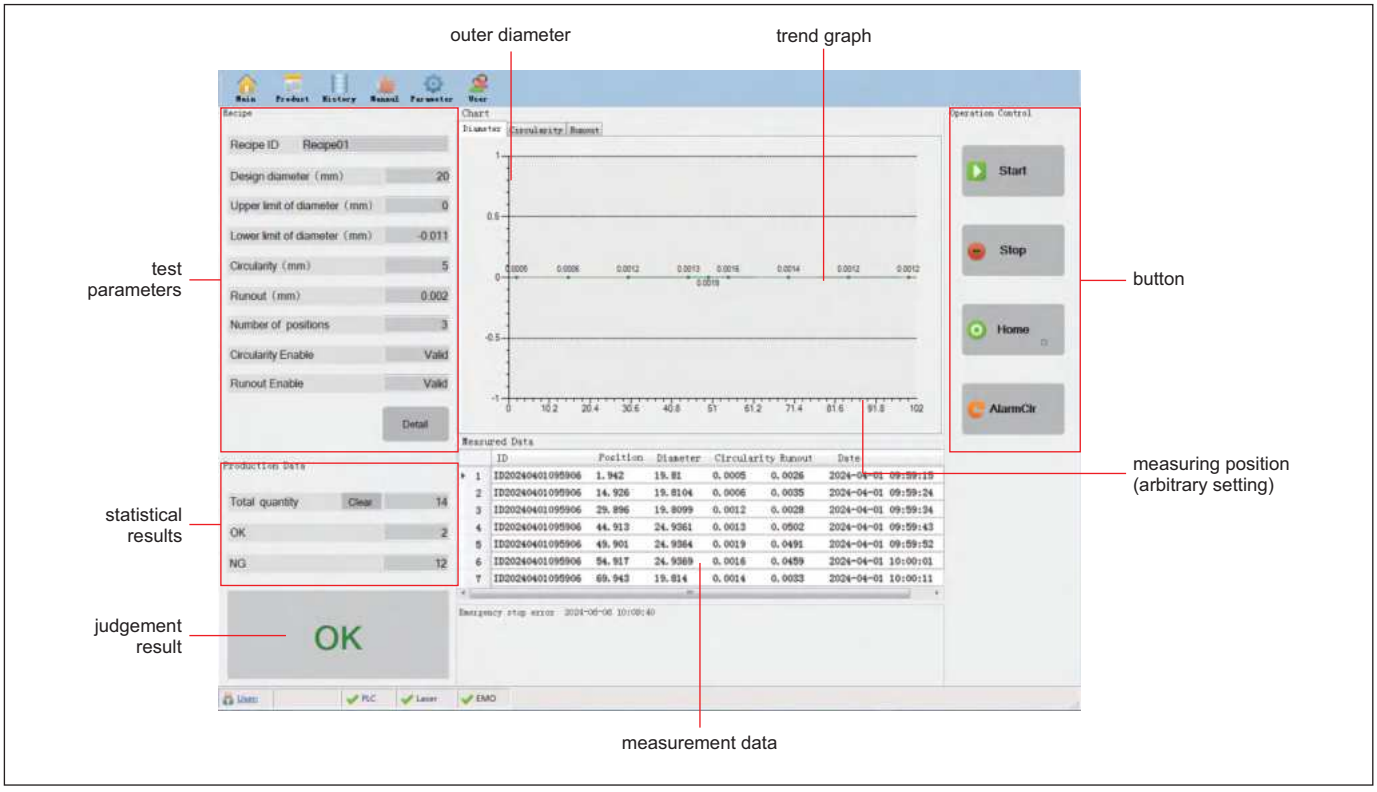
To be continued

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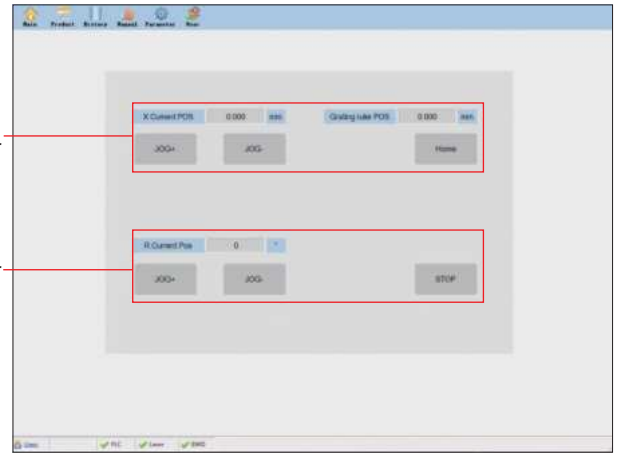
**MEASURING SOFTWARE (INCLUDED)**

- Language: English and Chinese
- Operation system: Windows 7
- Measure the outer diameter, roundness and runout of workpieces automatically, then the data, trend graphs and judgement results can be displayed in real time
- Auto-saving measurement data, query and export to EXCEL at any time
- Switch to manual test to move the laser scan micrometer and rotate the motor by hand

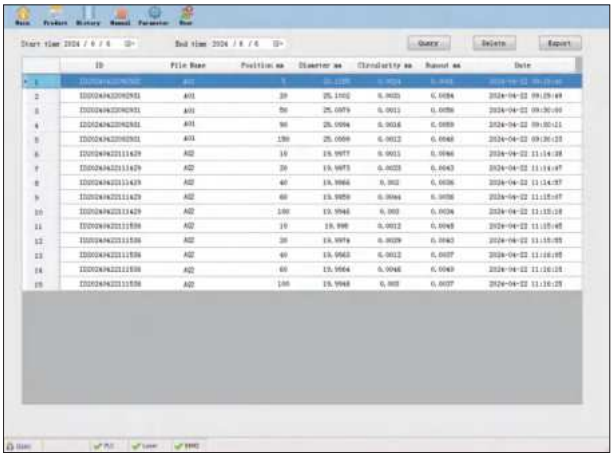
main interface




manual test



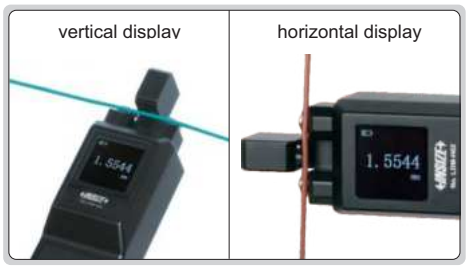

history data



# HANDHOLD LASER SCAN MICROMETER
# CODE LDM-H02

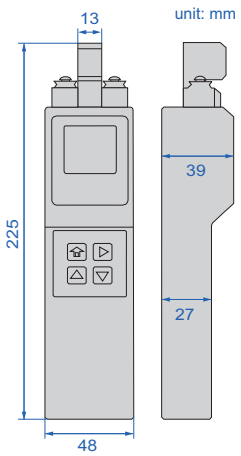
VIDEO

application




calibration gauge (included)









- Measure the outside diameter of cables, pipes and wires
- For transparent or non transparent workpieces
- Unit: mm, inch, mil, μm
- Compact and portable, the reading can be displayed vertically or horizontally

**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | 0.02~2mm |
| **Resolution** | 0.001mm/0.0001mm/0.00001mm adjustable |
| **Accuracy (at 25°C)** | ±0.5μm |
| **Repeatability (at 25°C)** | 0.3μm |
| **Laser wave length** | 650nm |
| **Measuring speed** | 800 times/s |
| **Operation temperature** | 0~50°C |
| **Operation humidity** | 35~85%RH without condensation |
| **Power supply** | built-in 7.4V rechargeable battery |
| **Weight** | 495g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Calibration gauge** | 3 pcs (0.10±0.001mm, 0.30±0.001mm, 0.80±0.001mm) |
| **AC/DC adapter** | 1 pc |

# FIXTURE FOR LASER SCAN MICROMETERS

CUSTOMIZED TO WORKPIECES

VIDEO

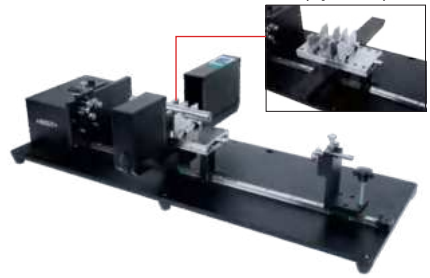


**LDM-RF001-P**

application



customized fixture (**optional**)



customized fixtures are available for special shapes of workpieces, such as stepped shapes

- Motorised rotation with adjustable speed
- Move laser scan micrometer by hand
- Measurement of the outer diameter and runout of workpieces at multiple sections
- Can be customized to the workpieces

**SPECIFICATION**

| **Code** | | **LDM-RF001-P** | **LDM-RF001-K** | **LDM-RF001-B** |
|---|---|---|---|---|
| **Measuring range** | **diameter** | Ø3~25mm | | |
| | **length** | 50~350mm | | |
| **Runout accuracy** | | 2μm | | |
| **Power supply** | | AC 220V, 50/60Hz | | |
| **Power cord** | | European type | British type | Brazilian type |
| **Dimension** | | 680×360×200mm | | |

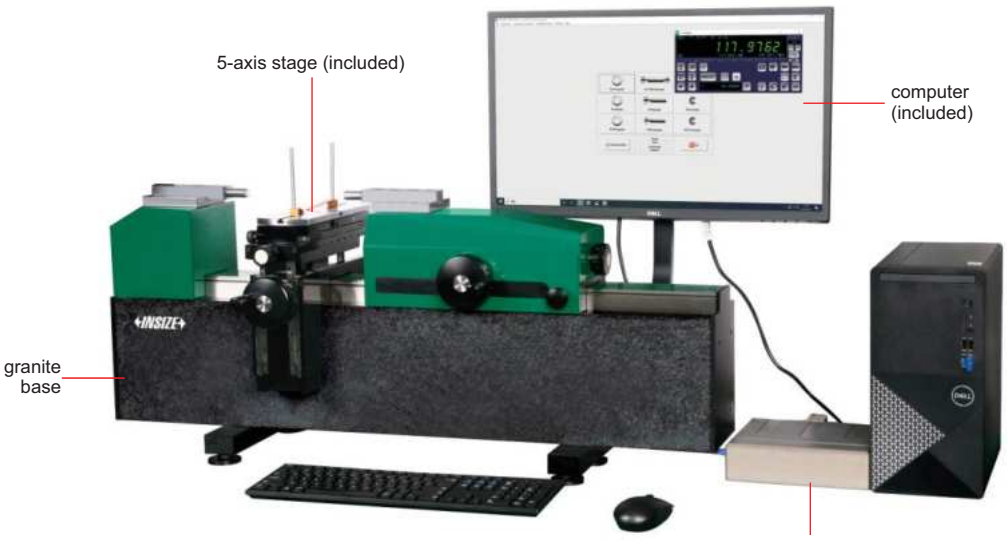
**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Customized fixture** | customized according to customer workpieces |

# LENGTH MEASURING MACHINES

INSPECTION CERTIFICATE

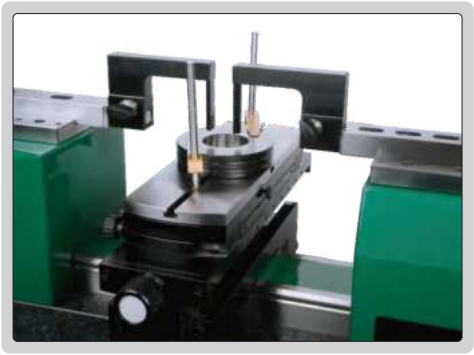
VIDEO




**ISQ-ULM300**

- High quality granite base ensures measurement stability and rigidity
- Measuring workpieces do not require pre-calibration with gauge blocks, and there is no transmission error
- The measuring force can be continuously adjusted
- Full range absolute measurement with high measurement efficiency
- The coaxiality of the anvils is extremely high, eliminating the need for repeated alignment
- 5-axis table can be moved freely in the direction of the guideway, locking

ring gauge measurement



thread ring gauge measurement



plug gauge measurement



pin gauge measurement



To be continued

Continued from previous page

## SPECIFICATION

| Code | | ISQ-ULM300 | ISQ-ULM500 | ISQ-ULM1000 | ISQ-ULM1500 | ISQ-ULM2000 | ISQ-ULM3000 |
|---|---|---|---|---|---|---|---|
| Range | outside dimension | 0~300mm | 0~500mm | 0~1000mm | 0~1500mm | 0~2000mm | 0~3000mm |
| | inside dimension | 1~180mm | 1~380mm | 1~880mm | 1~1380mm | 1~1880mm | 1~2880mm |
| Grating scale length | | 330mm | 530mm | 1030mm | 1530mm | 2030mm | 3030mm |
| Resolution | | 0.01μm | | | | | |
| Accuracy | | (0.15+L/1000)μm, (L is the measuring length in mm) | | | (0.25+L/1000)μm, (L is the measuring length in mm) | | |
| Repeatability | | outside dimension: <0.2μm, inside dimension: <0.1μm | | | | | |
| Measuring force | | 0~12N, continuously adjustable | | | | | |
| Environmental requirement | temperature | 19°C~21°C | | | | | |
| | humidity | 40%~70% | | | | | |
| Calibration requirements | | calibration temperature: 20℃±0.5℃, temperature change: ≤0.5℃/h; humidity: 50%±5% | | | | | |
| Power supply | | 220V, 50/60Hz | | | | | |
| Dimension (L×W×H) | | 982×290 ×425mm | 1147×290 ×425mm | 1647×290 ×425mm | 2147×290 ×425mm | 2737×290 ×425mm | 3740×290 ×425mm |
| Weight | | 130kg | 180kg | 260kg | 310kg | 620kg | 920kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Computer | 1 pc |
| Software | 1 pc |
| Spring finger | 1 pc |
| 5-axis stage (Max. load 12kg) | 1 pc |
| Flat probes | 2 pcs |
| Temperature compensation system | 1 pc |

## OPTIONAL ACCESSORY

| | | | |
|---|---|---|---|
| Micrometer rod calibration measuring device | adjustable vertical bracket | ISQ-ULM300-DM-1 | 1 pc |
| | V-bracket | ISQ-ULM300-DM-2 | 2 pcs |
| Plain ring gauge measuring device | electronic measuring arm | ISQ-ULM300-SR-1 | 1 set |
| | single ball head set (probes 0.1/1.0/2.5/5mm) | ISQ-ULM300-SR-2 | 1 set |
| | 40mm ring gauge | ISQ-ULM300-SR-3 | 1 pc |
| | dual hook probes | ISQ-ULM300-SR-4 | 2 pcs |
| Thread ring gauge measuring device | electronic measuring arm | ISQ-ULM300-SR-1 | 1 set |
| | T-probe set (probes 0.455/0.53/0.62/0.725/ 0.895/1.1/1.35/1.65/2.05/2.55/3.2/4.0mm) | ISQ-ULM300-TR-2 | 1 set |
| Plain plug gauge measuring device | plug gauge measuring stage | ISQ-ULM300-SP-1 | 1 pc |
| | knife edge probes | ISQ-ULM300-SP-2 | 2 pcs |
| Thread plug gauge measuring device | 3-wire set (Ø0.170/0.195/0.220/0.250/0.290/ 0.335/0.390/0.455/0.530/0.620/0.725/0.895/ 1.100/1.350/1.650/2.050/2.550/3.200mm) | ISQ-ULM300-TP-2 | 1 set |
| Gauge block measuring device | airey point bracket (100-300)mm | ISQ-ULM300-BM | 1 pc |
| | 10mm ball probe | ISQ-ULM300-FP | 2 pcs |
| | airey point bracket (100-500)mm | ISQ-ULM500-BM | 1 pc |
| | 10mm ball probe | ISQ-ULM300-FP | 2 pcs |
| | airey point bracket (100-1000)mm | ISQ-ULM1000-BM | 1 pc |
| | 10mm ball probe | ISQ-ULM300-FP | 2 pcs |
| OFFICE software | | 7313-OFFICE | 1 set |
| 5-axis stage (Max. load 40kg) | | ISQ-ULM300-FT | 1 pc |
| Ring gauge holder (for ring gauges >100mm) | | ISQ-ULM300-RG | 1 pc |

Other measuring devices shall be consulted according to the requirements of specific measuring tools

# TOTAL STATION (BASIC TYPE)
# CODE TSA-B33

VIDEO

measuring tape (included)



USB flash drive (included)






IP55 WATERPROOF

DATA OUTPUT

- With rear intersection, setting out, overhang measurement, eccentricity measurement and other functions
- Widely used in surveying and mapping engineering, construction engineering and many other precise measurement fields
- Safe class 3R laser rangefinder with prism-free range up to 1500m
- Absolute coded goniometric technology, horizontal and vertical discs are easy to measure with a counterpoise probe
- Biaxial liquid photoelectric electronic compensator automatically corrects instrument leveling errors
- Built-in temperature and air pressure sensor automatically corrects distance measurement errors
- Can revise prism constant

single prism (**optional**)



tripod (included)



prism tripod (**optional**)



## SPECIFICATION

| | | |
|---|---|---|
| **Distance measurement (With cooperation target)** | **measuring range** | prism: 5000m |
| | | reflective patch (60mm×60mm): 1000m |
| | **accuracy** | ±(2+D/500)mm, D: measured distance, unit: m |
| | **measuring time** | continuous measurement: 0.25s,<br>tracking measurement: 0.1s,<br>single measurement: <1.0s |
| **Prism-free distance measurement (Without cooperation target)** | **measuring range** | 1500m (Kodak Grey, 90% reflectivity)* |
| | **accuracy** | 0-300m: ±(3+D/500)mm<br>300-600m: ±(5+D/500)mm<br>>600m: ±(10+D/500)mm, D: measured distance, unit: m |
| | **measuring time** | continuous measurement: 0.25s<br>tracking measurement: 0.1s<br>single measurement: <1.0s |
| **Angle accuracy** | | ±2" |
| **Minimum angular reading** | | 0.1"/1" (selectable) |
| **Telescope barrel length** | | 152mm |
| **Telescope magnification** | | 30X |
| **Field of view** | | 1°30" |
| **Frame rate** | | 3" |
| **Minimum focus distance** | | 1.5m |
| **Compensator** | | range: ±6', accuracy: ±1" |
| **Tube level bubble** | | 30"/2mm |
| **Round level bubble** | | 8'/2mm |
| **Display** | **screen type** | 240×160 dot matrix high definition high brightness display |
| | **screen size** | 3.1 inch |
| | **digital display** | maximum: 99999999.9999m minimum: 0.1mm |
| **Data transmission** | | USB flash drive, bluetooth |
| **Power supply** | | 7.4V replaceable battery for 8 hours of continuous operation |
| **Dimension (L×W×H)** | | 206×180×353mm |
| **Weight** | | 5.4kg |

* Good weather: overcast sky, light wind, no fog, visibility about 40km

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Tripod** | 1 pc |
| **Power adapter and charging cable** | 1 set |
| **Li-ion battery** | 2 pcs |
| **USB flash drive** | 1 pc |
| **Measuring tape** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Single prism** | **TSA-B33-PR** |
| **Prism tripod** | **TSA-B33-PRT** |





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VIDEO

IP56
WATERPROOF

# INDUSTRIAL ACOUSTIC IMAGER
# CODE SCX-DMM72






application



- Suitable for gas leakage detection under the pressure or vacuum conditions, equipment noise localization, partial discharge localization and other scenarios
- Partial discharge pattern display function: real-time display of pulse emission pattern
- Leakage assessment function: adjustable measuring distance, more accurate assessment of the leakage rate
- Intelligent noise reduction function: automatically filter sound signals outside the focus frame
- Adjustable decibel threshold function: used to filter background noise
- Support photo and video recording of fault location
- Language: Chinese, English

## SPECIFICATION

| | | |
|---|---|---|
| Microphone array | microphone | 132 channels MEMS microphone |
| | frequency band | 2kHz~65kHz |
| | sound image field of view | 62°×45° |
| | sound image frame rate | 25FPS |
| | test sound pressure level range | 30dB~120dB |
| | detect distance | 0.5m~100m |
| | position accuracy | ±1cm |
| Camera | camera focal length | 3.04mm |
| | focusing mode | automatic |
| Display screen | resolution | 1024×600 |
| | size | 10" |
| | touch screen | capacitive |
| | backlight | adjustable |
| Storage | data interface | TF memory card/USB 3.0/TYPE-C |
| | data storage format | .jpg (picture), .mp4 (video) |
| Power system | battery type | rechargeable lithium-ion battery, working time about 3.5h |
| | charging mode | TYPE-C charging; portable charger, capable of charging while using |
| Environment parameter | switch-on temperature | -10°C~40°C |
| | operation temperature | -25°C~50°C |
| | storage temperature | -20°C~40°C |
| | relative humidity | 10%RH~95%RH (non-condensing) |
| Physical parameter | lamp | 1w |
| | shell material | aluminium alloy, drop-proof design |
| | protection | IP56 |
| | dimension | 272mm×200mm×50mm |
| | weight | 2.1kg (including handle and shoulder strap) |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 128G TF card | 1 pc |
| Reader | 1 pc |
| Power adapter | 1 pc |

# PARTS CLEANLINESS TESTING CABINET
# CODE OPP-GZ01

CUSTOMIZABLE TESTING CABINET SIZES

COMPLY WITH VDA19.1, ISO16232 STANDARDIZED TESTING PROCESS

VIDEO



- High-efficiency air filtration system on the top, effectively improving the reliability of environmental testing and eliminating cross-contamination
- 10" color touch screen operation, easy to operate, can store the test process, more automated
- An exhaust port is located at the top of the wash tank to remove aerosol emissions from the inspection process, improving product and user safety
- Three-layer membrane holder for three different membrane sizes

**SPECIFICATION**

| | |
|---|---|
| **Control panel** | 10" touch screen (can store cleaning programs) |
| **Analysis area** | 304 stainless steel |
| **Temperature monitoring** | liquid temperature monitoring |
| **Flushing pressure** | 0~6bar |
| **Airbrush flow rate** | 0~6Lmin |
| **Flow setting range** | 0~999L |
| **Control method** | airbrush+footswitch control |
| **System filter** | multi-stage precision filtration system, accuracy 0.2μm |
| **Hepa purification** | high efficiency filtration precision 0.3μm, 99.995% filtration efficiency |
| **Ultrasound** | 28kHz/40kHz |
| **Cleaning tank size** | 700×600×800mm |
| **Power supply** | AC 220V, 50/60Hz, 1.5kW |
| **Dimension (W×H×D)** | 1300×900×2000mm |
| **Weight** | 350kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Rack** | 1 pc |
| **Membrane** | 1 box |
| **Air filter** | 1 set |
| **Cleaning cartridge** | 1 set |
| **Maintenance tool** | 1 set |
| **Power line** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Perfusion module** | **OPP-GZ01-PERFUSION** |
| **Shaker** | **OPP-GZ01-SHAKERS** |
| **Heating module** | **OPP-GZ01-HEATING** |



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COMPLIES WITH VDA19.1, ISO16232
STANDARDIZED TESTING PROCESS

# AUTOMATIC CLEANLINESS ANALYSIS SYSTEM
# CODE OPP-OM53

VIDEO







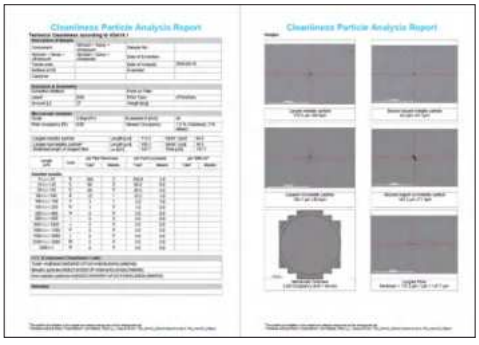
scanning image stitching



test result statistics



example of cleanliness report analysis



- High resolution metallographic optics
- Automatically detects and distinguishes particle types
- One scan, one click report
- High reliability, high accuracy
- Parameters such as length, width, area, maximum fiber length, total length, etc. can be evaluated

## SPECIFICATION

| | |
|---|---|
| **Magnification** | 50X, 200X (customizable) |
| **Detecting particle size** | ≥5μm (customizable 2μm) |
| **Distinguish between particle types** | metals, non-metals, fibers |
| **Height detection** | included |
| **Polarized light** | automatic adjustment |
| **Light source control** | automatic adjustment |
| **Focus display** | automatic adjustment, real-time display |
| **Power supply** | AC 220V, 50Hz |
| **Overall dimensions (W×H×D)** | 1200×600×650mm |
| **Weights** | 25kg |

cleanliness analysis software (included)



## STANDARD DELIVERY

| | |
|---|---|
| **Microscope** | 1 pc |
| **Analysis software** | 1 pc |
| **Camera** | 1 pc |
| **Computer** | 1 pc |
| **Filter membrane fixture** | 1 pc |
| **Motorized scanning station** | 1 pc |
| **Calibration disk** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Metallographic analysis software** | **ISM-MAS100C-SOFTWARE** |
| **Objective lens 10X** | **OPP-OM53-PLO10X** |
| **Objective lens 50X** | **OPP-OM53-PLO50X** |
| **Objective lens 100X** | **OPP-OM53-PLO100X** |

# AUTOMATIC VISION INSPECTION MACHINE
# CODE AVIM

AUTOMATIC INSPECTION OF LARGE QUANTITIES OF WORKPIECES

AUTOMATIC SORTING

VIDEO

SIZES MEASUREMENT AND DETECTION OF SURFACE DEFECTS

CUSTOM-MADE



- For testing fasteners, mobile phone parts, plastical products, electronic components and special-shaped hardware, etc.
- Can be equipped with laser, marking, automatic counting and packing, automatic feeding, eddy probe (detecting heat treatment)

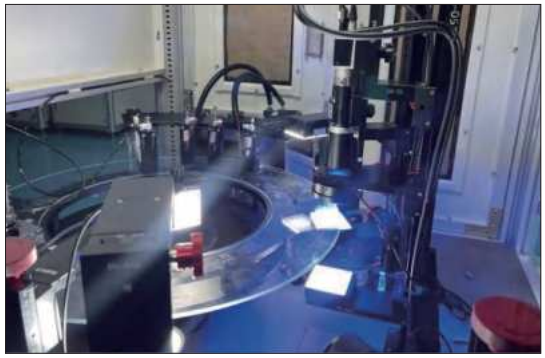
**SPECIFICATION**

| | |
|---|---|
| **Diameter of workpiece** | 1-25mm |
| **Height of workpiece** | 1-40mm |
| **Sorting accuracy** | ±0.005~±0.02mm |
| **Air pressure** | 5kg/cm² |
| **PC mainframe** | industrial computer |
| **Digital camera** | 8 sets of industrial cameras (to be determined according to the actual situation) |
| **Weight** | 800kg |
| **Dimension (L×W×H)** | 1500×1100×1800mm |

**INTERNAL STRUCTURE**



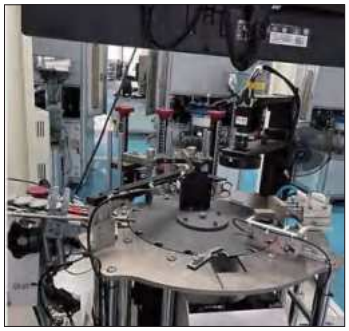
electrical system



glass sorting plate



vibratory feeder loading



turntable structure



multiple cameras detection

To be continued

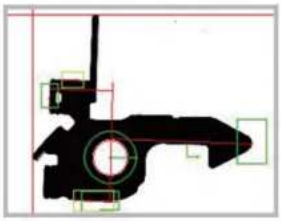


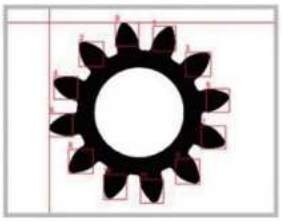
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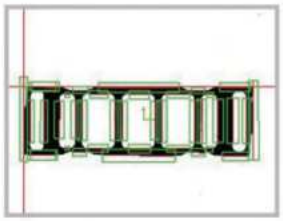
Continued from previous page

**PARTS EXAMPLE**

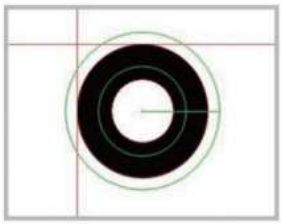

burr in hole

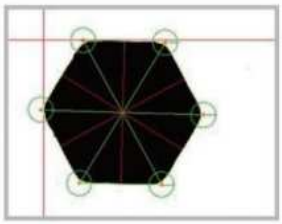

special stamping

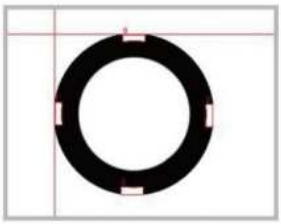

number of tooth

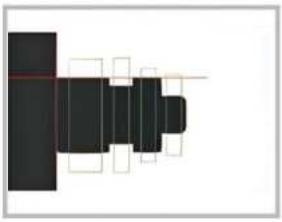

special hardware

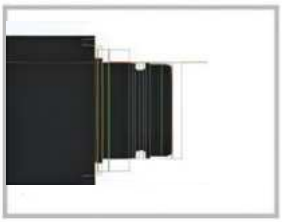

cross recess excess material

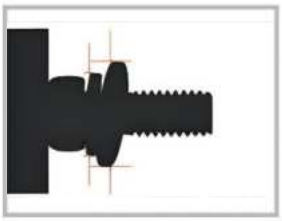

concentricity, roundness

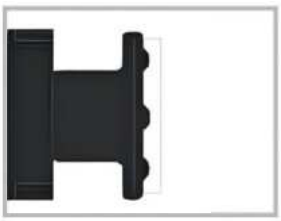

diagonal, opposite side


gap


multi-width


multi-height


gasket


welding height

**PRODUCT EXAMPLES**


precision screws


nuts


automative fasteners


powder metallurgy


new energy parts


electronic products


plastic or rubber parts


capacitance resistances


semiconductor workpieces


magnetic products


connectors


electronic cigarettes

# THREE-DIMENSION FULL-FIELD STRAIN MEASUREMENT SYSTEMS

VIDEO

SUBPIXEL MEASUREMENT ACCURACY

DISPLACEMENT/DEFORMATION AND MOTION ANALYSIS

MULTIPLE MEASUREMENTS

- Accurate calculation of 3D coordinates, 3D displacements and strains, velocities and accelerations, etc.
- By analyzing the measurement data, parameters of the mechanical properties, trajectory and deformation of the material are obtained
- Comprehensive range of measurement results, including single-point, multi-point, full-field data, 2D/3D data, images, tables, videos, curves, and customized data



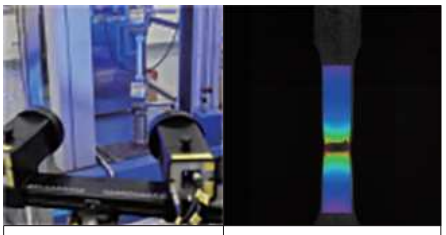
ISD-TD1

**Main application**

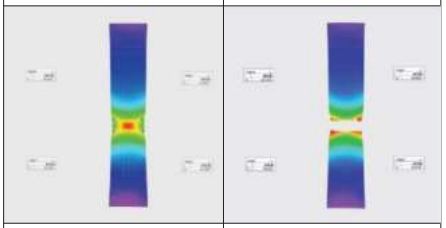
- Testing of mechanical properties of materials and parts
- Structural strength and stiffness analysis
- Vibration analysis
- Collision test
- Complex 3D motion analysis
- High and low temperature expansion analysis
- Video Extensometer

**Typical application**

tensile testing of steel plates of automobiles



test site | picture after breaking

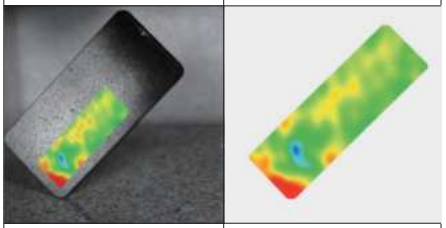


cloud picture before breaking | cloud picture after breaking

various drop tests



test site | battery pack drop test strain field picture



mobile phone drop test strain field picture | mobile phone drop test strain field cloud picture

**SPECIFICATION**

| Code | ISD-TD1 | ISD-TD2 | ISD-TD3 |
|---|---|---|---|
| Pixel | 5M | 12M | 25M |
| Frame rate | 60fps | 30fps | 90fps |
| Strain accuracy | ≤50με | ≤20με | ≤20με |
| Strain range | 0.005%~2000% | 0.002%~2000% | 0.002%~2000% |
| View field | 10mm~4m | 10mm~10m | 10mm~10m |

*Can be customized according to actual scenarios (microscopic, high-speed, etc.)

**STANDARD DELIVERY**

| | |
|---|---|
| Camera | 2 pcs |
| Tripod | 1 pc |
| Computer | 1 pc |
| Three-dimension software | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Video extensometer software | ISD-UTM-M |



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SUBPIXEL MEASUREMENT ACCURACY

WIDE MEASURING RANGE

CUSTOM-MADE

VIDEO

# LARGE FIELD OF VIEW DYNAMIC MEASUREMENT SYSTEM CODE ISD-LF



- A three-dimension dynamic system based on marking points of tracking, using close-range industrial photogrammetry and visual triangulation
- Measuring the trajectory, attitude and velocity accurately of the marking point in 3D space
- Analyzes data such as 3D coordinates, 3D motion deformation, 3D velocity and acceleration, 3D trajectory measurement, and 6-degree-of-freedom measurement
- Measurement results can be provided as images, tables, videos, curves, customized data, etc.
- Adaptable to high and low temperatures, high-speed shock, vibration and other environments
- Traceable testing process

**Application**



deformation monitoring of large building vibration test



deformation monitoring of bridges and tunnels



wind blade deformation inspection



static and dynamic load deformation inspection of large traveling frame structures

**SPECIFICATION**

| | |
|---|---|
| **Pixel** | 5M~25M |
| **View field** | 1m~200m |
| **Real-time measurement speed** | 20Hz~500Hz |
| **Accuracy** | 0.01% |

**STANDARD DELIVERY**

| | |
|---|---|
| **Camera** | 2 pcs |
| **Tripod** | 1 pc |
| **Computer** | 1 pc |
| **Three-dimension software** | 1 pc |

*Customized according to actual scenarios





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# 27 HARDNESS TESTERS



Rockwell Hardness Testers
Page 819-831



Micro-Vickers Hardness Testers
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Vickers Hardness Testers
Page 838-843



Brinell Hardness Testers
Page 844-845



Brinell/Rockwell/Vickers Hardness Testers
Page 846-848



Brinell Indentation Automatic Measuring Systems
Page 849



Brackets
Page 850



Ultrasonic Hardness Testers
Page 851-852




Leeb Hardness Testers
Page 853-861



Magnetic Brinell/Rockwell Hardness Testers
Page 862-863



Portable Brinell And Rockwell Hardness Testers
Page 864



Pin Brinell Hardness Testers
Page 865



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# HARDNESS TESTERS





Hydraulic Brinell Hardness Testers
Page 866



Aluminum Hardness Testers
Page 867-868



Aluminum Hardness Testers
Page 869



Shore Durometers
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Fruit Hardness Testers
Page 874



Hardness Test Blocks
Page 875-876



Concrete Strength Testers
Page 877



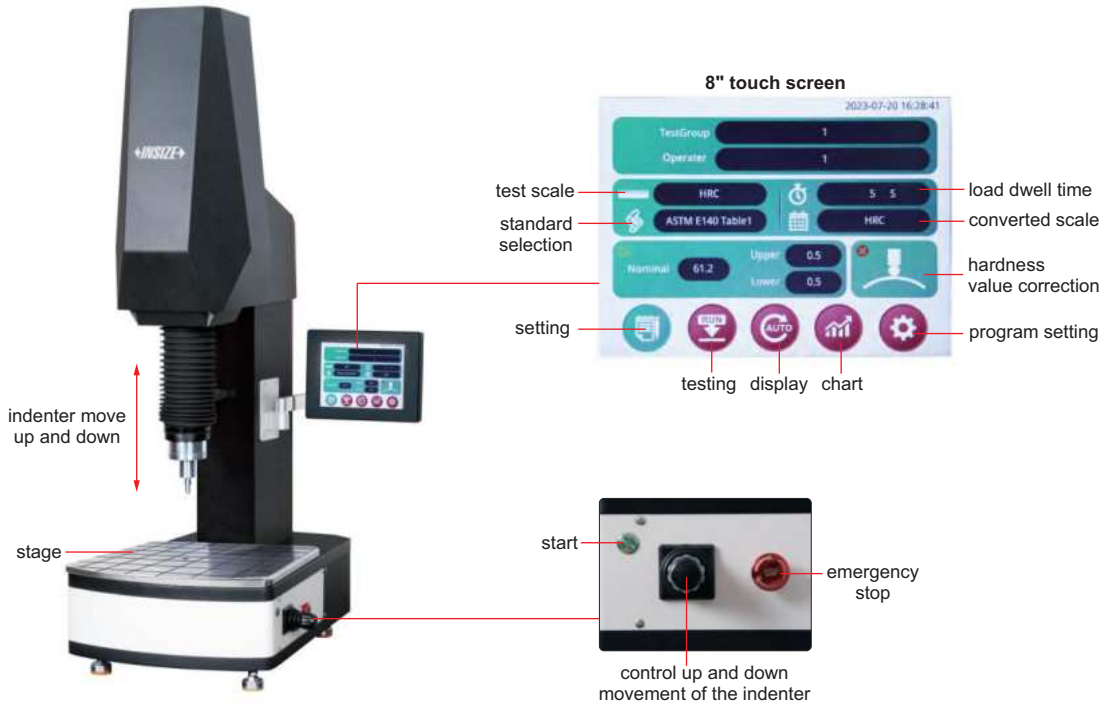
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# AUTOMATIC DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTER (ADVANCED TYPE)
# CODE HDT-CRS200

BUILT-IN BLUETOOTH | AUTOMATIC TEST | FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS) | TOUCH SCREEN | HIGH ACCURACY | HIGH EFFICIENCY

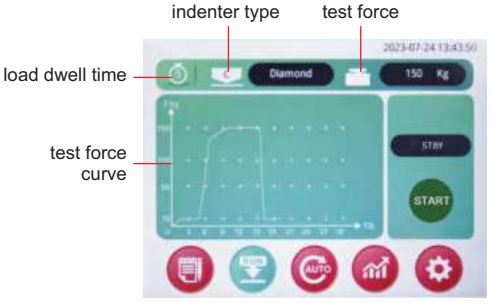
INSPECTION CERTIFICATE

VIDEO




- One click operation can obtain measurement results, enabling large-scale hardness measurement of workpieces
- CNC system, close-loop electronic control system applies test force
- Touch screen operation and display
- Cantilevered structure, achieving full automation of hardness measurement
- The big flat stage is convenient for testing and can work in conjunction with robotic arms and automation equipment to step up online hardness testing and achieve completely unmanned testing
- Bluetooth, RS232 data transmission to computer, data management using hardness management software
- According to ISO 6508, ASTM E18, JIS Z2245

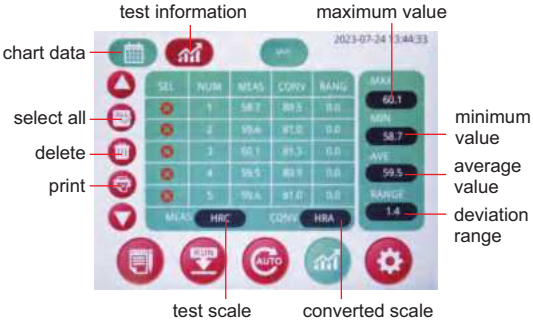
test interface




test result display interface




chart interface




To be continued



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Continued from previous page


Ø58mm flat anvil
(included)


V-type anvil
(included)


bluetooth printer
(included)

**SPECIFICATION**

| | | |
|---|---|---|
| **Measurement range** | | Rockwell: 20~88HRA, 20~100HRB, 20~70HRC<br>Superficial RockWell: 70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T |
| **Hardness scale** | **with indenter included** | HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T |
| | **with optional indenter** | HRE, HRH, HRK, HRL, HRM, HRP,HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y |
| **Preliminary test force** | | Superficial Rockwell: 29.4N (3kgf)<br>Rockwell: 98N (10kgf) |
| **Test force** | | Superficial Rockwell: 147N (15kg), 294N (30kg),441N (45kg)<br>Rockwell: 588N (60kg), 980N (100kg),1471N (150kg) |
| **Test force accuracy** | | ±1% |
| **Operational mode** | | automatic |
| **Load control** | | automatic (load/dwell/unload) |
| **Resolution** | | 0.05HR |
| **Load dwell time** | | 0~99 second |
| **Max. workpiece height** | | 300mm |
| **Max. testing width** | | 200mm (from the center of indenter to the wall of main body) |
| **Output** | | bluetooth printer, RS232 |
| **Power supply** | | 220V, 50/60Hz |
| **Dimension** | | 555×400×1250mm |
| **Weight** | | 130kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Diamond indenter** | 1 pc |
| **Ø1.588mm carbide ball indenter** | 1 pc |
| **Ø58mm flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Hardness test block HRB20~30** | 1 pc |
| **Hardness test block HRC60~70** | 1 pc |
| **Hardness test block HRBW80~100** | 1 pc |
| **Hardness test block HR30N60~85** | 1 pc |
| **Hardness test block HR30TW70~85** | 1 pc |
| **Bluetooth printer** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Hardness test block HRC20~30** | **HDT-B-HRC1** |
| **Hardness test block HRC60~70** | **HDT-B-HRC3** |
| **Hardness test block HRB80~100** | **HDT-B-HRB** |
| **Hardness test block HR15N78~88** | **HDT-B-HR15N2** |
| **Hardness test block HR30N55~73** | **HDT-B-HR30N2** |
| **Hardness test block HR30T73~82** | **HDT-B-HR30T** |
| **Desk** | **HDT-DESK1** |

# MOTORIZED DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS (DOLPHIN-NOSE TYPE)

FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS)

TOUCH SCREEN

INSPECTION CERTIFICATE

VIDEO

workpiece demonstration



can test rings, tubes, internal surfaces of frame parts, etc.




**HDT-DM310**

- Full closed-loop precise control, real-time monitoring of test force, greatly increase the accuracy
- Dolphin-nose structure indenter, more measuring space
- Measurements on 30 Rockwell and Superficial Rockwell scales
- Convertible to various hardness standards such as HB, HV, HLD, HK and tensile strength
- 250 sets of data are stored independently in the mainframe, which can be accessed at any time
- Mean, variance, maximum and minimum statistics are available
- USB communication port, can be connected to an external computer, measurement data Excel output
- Correction function automatically corrects the measurement results of curved parts
- Conforms to ASTM E-18, ISO 6508



Ø150mm flat anvil (included)

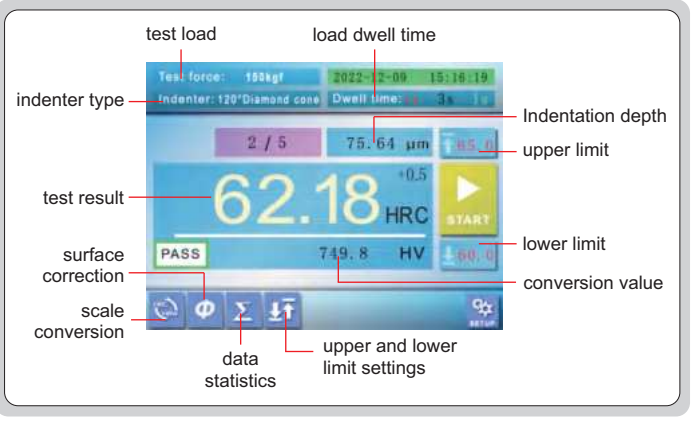


V-type anvil (included)

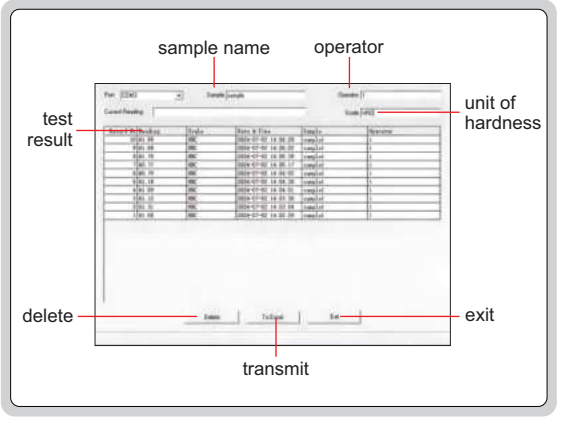


integrated printer (**optional**)

test interface




computer software (included)




To be continued



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Continued from previous page

## SPECIFICATION

| Code | | HDT-DM290 | HDT-DM300 | HDT-DM310 |
|---|---|---|---|---|
| Type | | Rockwell | Superficial Rockwell | Rockwell and Superficial Rockwell |
| Hardness scale | with indenter included | HRA, HRB, HRC, HRD, HRF, HRG | HR15N, HR30N, HR45N, HR15T, HR30T, HR45T | HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T |
| | with optional indenter | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV | HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y |
| Preliminary test force | | 98N/10kgf for Rockwell | 29.4N/3kgf for superficial Rockwell | 98N/10kgf for Rockwell<br>29.4N/3kgf for superficial Rockwell |
| Test force | | 588N (60kg),<br>980N (100kg),<br>1471N (150kg) | 147N (15kg),<br>294N (30kg),<br>441N (45kg) | 147N (15kg), 294N (30kg),<br>441N (45kg), 588N (60kg),<br>980N (100kg), 1471N (150kg) |
| Stage elevation | | manual | | |
| Load control | | automatic (load/dwell/unload) | | |
| Load dwell time | | 2~250 seconds, can be set | | |
| Resolution | | 0.01HR | | |
| Max. workpiece height | | 290mm | | |
| Max. testing width | | 220mm | | |
| Max. bore depth | | 130mm | | |
| Min. testing inner diameter | | 35mm | | |
| Power supply | | 220V, 50/60Hz | | |
| Dimension | | 700×290×880mm | | |
| Weight | | 85kg | | |

## STANDARD DELIVERY

| Code | HDT-DM290 | HDT-DM300 | HDT-DM310 |
|---|---|---|---|
| Main unit | 1 pc | 1 pc | 1 pc |
| Diamond indenter | 1 pc | 1 pc | 1 pc |
| Ø1.5875mm carbide ball indenter | 1 pc | 1 pc | 1 pc |
| Ø150mm flat anvil | 1 pc | 1 pc | 1 pc |
| V-type anvil | 1 pc | 1 pc | 1 pc |
| Hardness test block HRC20~30 | 1 pc | — | 1 pc |
| Hardness test block HRC35~55 | 1 pc | — | 1 pc |
| Hardness test block HRC60~70 | 1 pc | — | 1 pc |
| Hardness test block HRB85~100 | 1 pc | — | 1 pc |
| Hardness test block HRA80~88 | 1 pc | — | 1 pc |
| Hardness test block HR15N89~91 | — | 1 pc | 1 pc |
| Hardness test block HR15T88~93 | — | 1 pc | 1 pc |
| Hardness test block HR30N74~80 | — | 1 pc | 1 pc |
| Hardness test block HR30T70~82 | — | 1 pc | 1 pc |
| Computer software and USB cable | 1 pc | 1 pc | 1 pc |
| Anti-dust cover | 1 pc | 1 pc | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Hardness test block HRC20~30 | HDT-B-HRC1 |
| Hardness test block HRC35~55 | HDT-B-HRC2 |
| Hardness test block HRC60~70 | HDT-B-HRC3 |
| Hardness test block HRB88~100 | HDT-B-HRB |
| Hardness test block HRA80~84 | HDT-B-HRA |
| Hardness test block HR15N78~88 | HDT-B-HR15N2 |

| | |
|---|---|
| Hardness test block HR15T88~93 | HDT-B-HR15T |
| Hardness test block HR30N55~73 | HDT-B-HR30N2 |
| Hardness test block HR30T73~82 | HDT-B-HR30T |
| Ø90mm flat anvil | HDT-DM290-FA |
| Ø230mm flat anvil | HDT-DM290-FB |
| Integrated printer (Require pre-installation) | HDT-DM290-PT |

# MOTORIZED DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS

POPULAR MODEL

VIDEO

INSPECTION CERTIFICATE

FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS)

TOUCH SCREEN



Ø58mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included)



printer (included)

8" touch screen

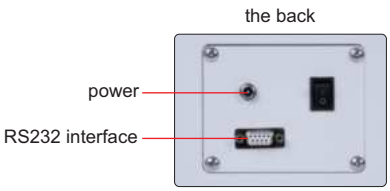




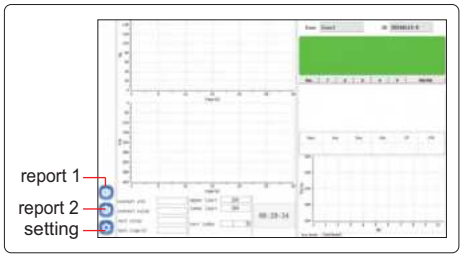


HDT-RT151

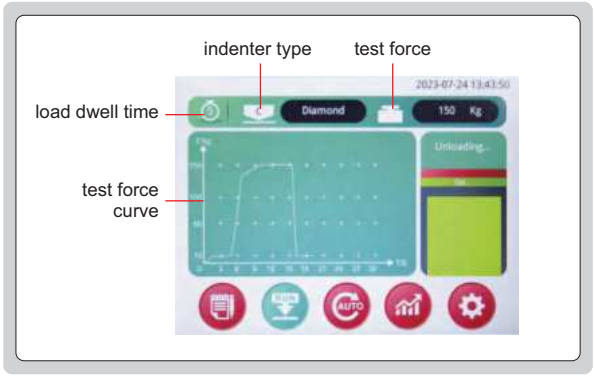
the back




computer software (**optional**)




test interface




test result display interface

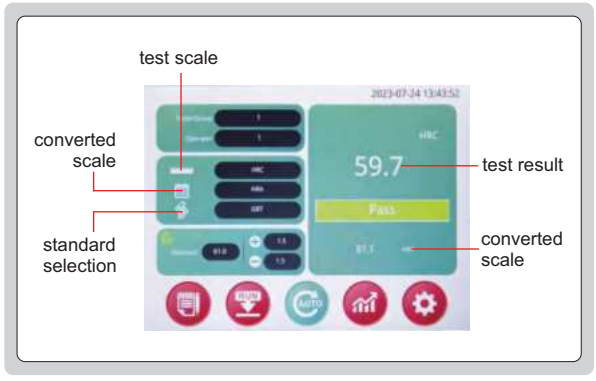
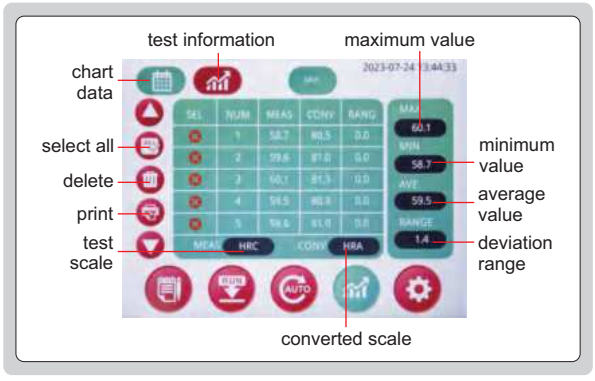



chart interface




To be continued

Continued from previous page

- Electronic loading test force, high accuracy of force value, and stable measurement value
- Touch screen operation and display, simple operation interface
- 15 types of Rockwell hardness scales can be tested
- Convertible to various hardness standards such as HB and HV
- 500 sets of storage
- With correction function, the hardness value can be corrected based on the size of the cylinders
- According to ISO 6508

## SPECIFICATION

| Code | | HDT-RT151 | HDT-RT152 | HDT-RT153 |
|---|---|---|---|---|
| Type | | Rockwell | Superficial Rockwell | Rockwell and Superficial Rockwell |
| Measurement range | | 20~88HRA, 20~100HRB, 20~70HRC | 70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T | Rockwell: 20~88HRA, 20~100HRB, 20~70HRC; Superficial RockWell: 70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T |
| Hardness scale | with indenter included | HRA, HRB, HRC, HRD, HRF, HRG | HR15N, HR30N, HR45N, HR15T, HR30T, HR45T | HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T |
| | with optional indenter | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV | HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y |
| Preliminary test force | | 98N/10kgf for Rockwell | 29.4N/3kgf for Superficial Rockwell | 98N/10kgf for Rockwell<br>29.4N/3kgf for Superficial Rockwell |
| Test force | | 588N (60kg), 980N (100kg), 1471N (150kg) | 147N (15kg), 294N (30kg), 441N (45kg) | 147N (15kg), 294N (30kg), 441N (45kg), 588N (60kg), 980N (100kg), 1471N (150kg) |
| Stage elevation | | manual | | |
| Load control | | automatic (load/dwell/unload) | | |
| Load dwell time | | 2~60 second | | |
| Resolution | | 0.1HR | | |
| Max. workpiece height | | 230mm | | |
| Max. testing width | | 170mm | | |
| Power supply | | 100~240V, 50/60Hz | | |
| Dimension | | 475×200×700mm | | |
| Weight | | 70kg | | |

## STANDARD DELIVERY

| Code | HDT-RT151 | HDT-RT152 | HDT-RT153 |
|---|---|---|---|
| Main unit | 1 pc | 1 pc | 1 pc |
| Diamond indenter | 1 pc | 1 pc | 1 pc |
| Ø1.5875mm carbide ball indenter | 1 pc | 1 pc | 1 pc |
| Ø58mm flat anvil | 1 pc | 1 pc | 1 pc |
| Ø150mm flat anvil | 1 pc | 1 pc | 1 pc |
| V-type anvil | 1 pc | 1 pc | 1 pc |
| Hardness test block HRC20~30 | 1 pc | — | 1 pc |
| Hardness test block HRC40~50 | 1 pc | — | — |
| Hardness test block HRC60~70 | 1 pc | — | 1 pc |
| Hardness test block HRBW80~100 | 1 pc | — | 1 pc |
| Hardness test block HRA80~90 | 1 pc | — | — |
| Hardness test block HR15N80~90 | — | 1 pc | — |
| Hardness test block HR30N60~85 | — | 1 pc | 1 pc |
| Hardness test block HR30TW70~85 | — | 1 pc | 1 pc |
| Printer | 1 pc | 1 pc | 1 pc |
| Anti-dust cover | 1 pc | 1 pc | 1 pc |

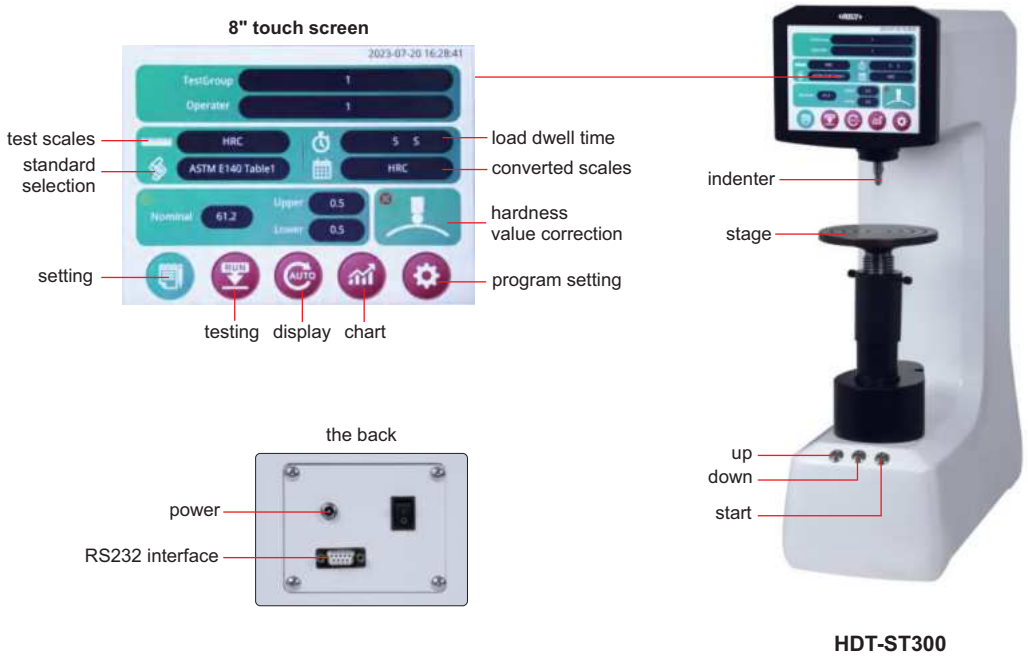
## OPTIONAL ACCESSORY

| | | | |
|---|---|---|---|
| Hardness test block HRC20~30 | HDT-B-HRC1 | Hardness test block HR30N55~73 | HDT-B-HR30N2 |
| Hardness test block HRC35~55 | HDT-B-HRC2 | Hardness test block HR30T73~82 | HDT-B-HR30T |
| Hardness test block HRC60~70 | HDT-B-HRC3 | Software | HDT-RT15-RECEIVER |
| Hardness test block HRB88~100 | HDT-B-HRB | Ø12.7mm carbide ball indenter | HDT-RT15-INDENTER1 |
| Hardness test block HRA80~84 | HDT-B-HRA | Ø6.35mm carbide ball indenter | HDT-RT15-INDENTER2 |
| Hardness test block HR15N78~88 | HDT-B-HR15N2 | Ø3.175mm carbide ball indenter | HDT-RT15-INDENTER3 |

# AUTOMATIC DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS

INSPECTION CERTIFICATE | LARGE RANGE | AUTOMATIC LIFTING/ LOADING/UNLOADING | TOUCH SCREEN

VIDEO




**HDT-ST300**

- Comply with the test standards of GB/T 230, ISO 6508, ASTM E18, JIS Z2245
- Implement the scale conversion standards such as ISO, ASTM, and GB
- 8 inch touch screen for operation and display
- Capable of testing 15 Rockwell hardness scales and surface Rockwell scales
- The main unit can independently store 500 groups of data, and the data will not be lost in case of power failure
- With correction function, the hardness value can be corrected based on the size of the cylinders




Ø58mm flat anvil (included)


Ø150mm flat anvil (included)


V-type anvil (included)


printer (included)

test result display interface

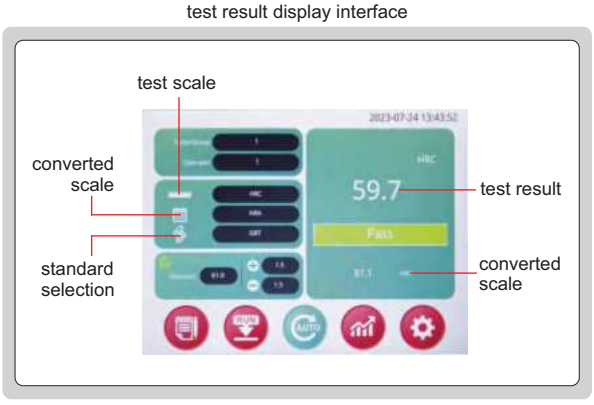
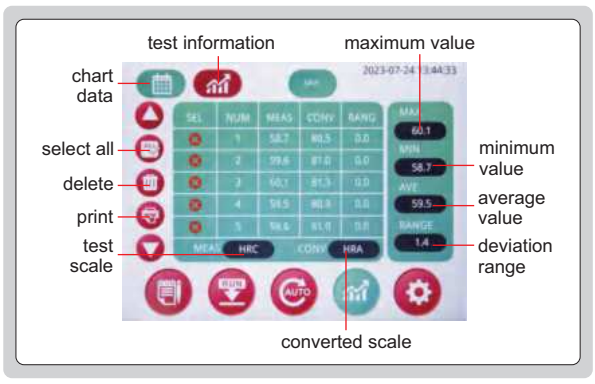



chart interface




To be continued



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Continued from previous page

## SPECIFICATION

| Code | | HDT-ST300 | HDT-ST310 | HDT-ST320 |
|---|---|---|---|---|
| Type | | Rockwell | Superficial Rockwell | Rockwell and Superficial Rockwell |
| Measurement range | | 20~95HRA, 10~100HRB, 10~70HRC | 70~94HR15N, 42~86HR30N, 20~77HR45N, 67~93HR15T, 29~82HR30T, 10~72HR45T | Rockwell: 20~95HRA, 10~100HRB, 10~70HRC; Superficial RockWell: 70~94HR15N, 42~86HR30N, 20~77HR45N, 67~93HR15T, 29~82HR30T, 10~72HR45T |
| Hardness scale | with indenter included | HRA, HRB, HRC, HRD, HRF, HRG | HR15N, HR30N, HR45N, HR15T, HR30T, HR45T | HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T |
| | with optional indenter | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV | HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y |
| Preliminary test force | | 98N/10kgf for Rockwell | 29.4N/3kgf for Superficial Rockwell | 98N/10kgf for Rockwell<br>29.4N/3kgf for Superficial Rockwell |
| Test force | | 588N (60kg), 980N (100kg), 1471N (150kg) | 147N (15kg), 294N (30kg), 441N (45kg) | 147N (15kg), 294N (30kg), 441N (45kg), 588N (60kg), 980N (100kg), 1471N (150kg) |
| Stage elevation | | automatic up, down and return | | |
| Load control | | automatic (initial test force, main test force loading/holding/unloading) | | |
| Load dwell time | | 2~60second | | |
| Resolution | | 0.1HR | | |
| Max. workpiece height | | 230mm | | |
| Max. testing width | | 170mm | | |
| Power supply | | 100~240V, 50/60Hz | | |
| Dimension | | 475×200×700mm | | |
| Weight | | 70kg | | |

## STANDARD DELIVERY

| Code | HDT-ST300 | HDT-ST310 | HDT-ST320 |
|---|---|---|---|
| Main unit | 1 pc | 1 pc | 1 pc |
| Diamond indenter | 1 pc | 1 pc | 1 pc |
| Ø1.5875mm carbide ball indenter | 1 pc | 1 pc | 1 pc |
| Ø58mm flat anvil | 1 pc | 1 pc | 1 pc |
| Ø150mm flat anvil | 1 pc | 1 pc | 1 pc |
| V-type anvil | 1 pc | 1 pc | 1 pc |
| Hardness test block HRC20~30 | 1 pc | — | 1 pc |
| Hardness test block HRC40~50 | 1 pc | — | — |
| Hardness test block HRC60~70 | 1 pc | — | 1 pc |
| Hardness test block HRBW80~100 | 1 pc | 1 pc | 1 pc |
| Hardness test block HRA80~90 | 1 pc | — | — |
| Hardness test block HR15N80~90 | — | 1 pc | — |
| Hardness test block HR30N60~85 | — | 1 pc | 1 pc |
| Hardness test block HR30TW70~85 | — | 1 pc | 1 pc |
| Printer | 1 pc | 1 pc | 1 pc |
| Anti-dust cover | 1 pc | 1 pc | 1 pc |

## OPTIONAL ACCESSORY

| | | | |
|---|---|---|---|
| Hardness test block HRC20~30 | HDT-B-HRC1 | Hardness test block HR30N55~73 | HDT-B-HR30N2 |
| Hardness test block HRC35~55 | HDT-B-HRC2 | Hardness test block HR30T73~82 | HDT-B-HR30T |
| Hardness test block HRC60~70 | HDT-B-HRC3 | Software | HDT-RT15-HID |
| Hardness test block HRB88~100 | HDT-B-HRB | Ø12.7mm carbide ball indenter | HDT-RT15-INDENTER1 |
| Hardness test block HRA80~84 | HDT-B-HRA | Ø6.35mm carbide ball indenter | HDT-RT15-INDENTER2 |
| Hardness test block HR15N78~88 | HDT-B-HR15N2 | Ø3.175mm carbide ball indenter | HDT-RT15-INDENTER3 |

# MOTORIZED ROCKWELL HARDNESS TESTER (BASIC TYPE)
# CODE HDT-RA151

INSPECTION CERTIFICATE

VIDEO




- According to ISO 6508


Ø58mm flat anvil (included)


Ø150mm flat anvil (included)


V-type anvil (included) for cylinders with diameter Ø4~60mm


level (included)


small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm


desk (**optional**)

**SPECIFICATION**

| | |
|---|---|
| **Hardness scale** | HRA, HRB, HRC, HRD, HRF, HRG |
| **Preliminary test force** | 98N |
| **Test force** | 588N, 980N, 1471N |
| **Display** | analogue |
| **Stage elevation** | manual |
| **Load control** | automatic (load/dwell/unload) |
| **Load dwell time** | 1~60 second |
| **Min. reading** | 0.5HR |
| **Max. workpiece height** | 170mm |
| **Max. testing width** | 128mm (from the center of indenter to the wall of main body) |
| **Power supply** | 220V, 50/60Hz |
| **Dimension** | 500×225×640mm |
| **Weight** | 65kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø58mm flat anvil** | 1 pc |
| **Ø150mm flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Diamond indenter** | 1 pc |
| **Ø1.5875mm steel ball indenter** | 1 pc |
| **Level** | 1 pc |
| **Hardness test block HRA80~88** | 1 pc |
| **Hardness test block HRB85~95** | 1 pc |
| **Hardness test block HRC20~30** | 1 pc |
| **Hardness test block HRC35~55** | 1 pc |
| **Hardness test block HRC60~70** | 1 pc |
| **Anti-dust cover** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Hardness test block HRA80~84** | **HDT-B-HRA** |
| **Hardness test block HRB88~100** | **HDT-B-HRB** |
| **Hardness test block HRC20~30** | **HDT-B-HRC1** |
| **Hardness test block HRC35~55** | **HDT-B-HRC2** |
| **Hardness test block HRC60~70** | **HDT-B-HRC3** |
| **Small V-type anvil** | **HDT-RW160-SV** |
| **Desk** | **HDT-DESK** |

INSPECTION CERTIFICATE

# MOTORIZED HIGH ROCKWELL HARDNESS TESTER
# CODE HDT-RM421

VIDEO




- According to ISO 6508


level (included)


V-type anvil (included) for cylinders with diameter Ø4~60mm


Ø150mm flat anvil (included)


Ø58mm flat anvil (included)


small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

## SPECIFICATION

| | |
|---|---|
| **Hardness scale** | HRA, HRB, HRC, HRD, HRF, HRG |
| **Preliminary test force** | 98N (10kg) |
| **Test force** | 588N (60kg), 980N (100kg), 1471N (150kg) |
| **Display** | analogue |
| **Stage elevation** | manual |
| **Load control** | automatic (load/dwell/unload) |
| **Load dwell time** | 1~60 second |
| **Min. reading** | 0.5HR |
| **Max. workpiece height** | 400mm |
| **Max. testing width** | 160mm (form the center of indenter to the wall of main body) |
| **Power supply** | 220V, 50/60Hz |
| **Dimension** | 540×300×1030mm |
| **Weight** | 140kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø58mm flat anvil** | 1 pc |
| **Ø150mm flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Diamond indenter** | 1 pc |
| **Ø1.5875mm steel ball indenter** | 1 pc |
| **Ø1.5875mm steel ball** | 5 pcs |
| **Level** | 1 pc |
| **Hardness test block HRA80~84** | 1 pc |
| **Hardness test block HRB88~100** | 1 pc |
| **Hardness test block HRC20~30** | 1 pc |
| **Hardness test block HRC35~55** | 1 pc |
| **Hardness test block HRC60~70** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Hardness test block HRA80~84** | **HDT-B-HRA** |
| **Hardness test block HRB88~100** | **HDT-B-HRB** |
| **Hardness test block HRC20~30** | **HDT-B-HRC1** |
| **Hardness test block HRC35~55** | **HDT-B-HRC2** |
| **Hardness test block HRC60~70** | **HDT-B-HRC3** |
| **Small V-type anvil** | **HDT-RW160-SV** |

# MANUAL HIGH ROCKWELL HARDNESS TESTER
# CODE HDT-RH411

INSPECTION CERTIFICATE

VIDEO





level (included)


V-type anvil (included) for cylinders with diameter Ø4~60mm


Ø150mm flat anvil (included)


Ø58mm flat anvil (included)


small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

- According to ISO 6508

**SPECIFICATION**

| | |
|---|---|
| **Hardness scale** | HRA, HRB, HRC, HRD, HRF, HRG |
| **Preliminary test force** | 98N (10kg) |
| **Test force** | 588N (60kg), 980N (100kg), 1471N (150kg) |
| **Display** | analogue |
| **Stage elevation** | manual |
| **Load control** | manual |
| **Min. reading** | 0.5HR |
| **Max. workpiece height** | 400mm |
| **Max. testing width** | 160mm (form the center of indenter to the wall of main body) |
| **Dimension** | 540×300×1030mm |
| **Weight** | 140kg |

27

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø58mm flat anvil** | 1 pc |
| **Ø150mm flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Diamond indenter** | 1 pc |
| **Ø1.5875mm steel ball indenter** | 1 pc |
| **Ø1.5875mm steel ball** | 5 pcs |
| **Level** | 1 pc |
| **Hardness test block HRA80~84** | 1 pc |
| **Hardness test block HRB88~100** | 1 pc |
| **Hardness test block HRC20~30** | 1 pc |
| **Hardness test block HRC35~55** | 1 pc |
| **Hardness test block HRC60~70** | 1 pc |
| **Anti-dust cover** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Hardness test block HRA80~84** | **HDT-B-HRA** |
| **Hardness test block HRB88~100** | **HDT-B-HRB** |
| **Hardness test block HRC20~30** | **HDT-B-HRC1** |
| **Hardness test block HRC35~55** | **HDT-B-HRC2** |
| **Hardness test block HRC60~70** | **HDT-B-HRC3** |
| **Small V-type anvil** | **HDT-RW160-SV** |

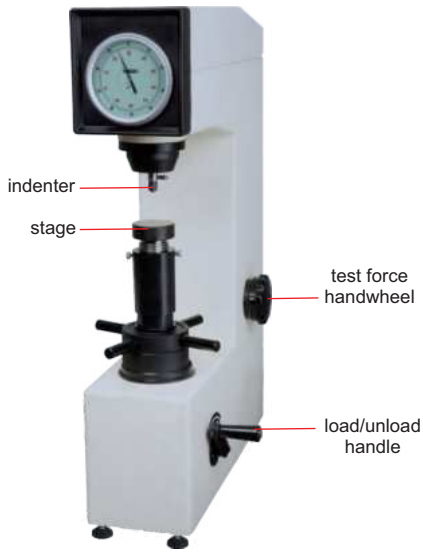


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INSPECTION CERTIFICATE

# MANUAL ROCKWELL HARDNESS TESTER
# CODE ISH-R150

VIDEO




- According to ISO 6508


Ø60mm flat anvil (included)


Ø150mm flat anvil (included)


V-type anvil (included) for cylinders with diameter Ø4~60mm


small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm


desk (**optional**)



## SPECIFICATION

| | |
|---|---|
| **Hardness scale** | HRA, HRB, HRC, HRD, HRF, HRG |
| **Preliminary test force** | 98N |
| **Test force** | 588N, 980N, 1471N |
| **Display** | analogue |
| **Stage elevation** | manual |
| **Load control** | manual |
| **Min. reading** | 0.5HR |
| **Max. workpiece height** | 170mm |
| **Max. testing width** | 165mm (from the center of indenter to the wall of main body) |
| **Dimension** | 520×160×700mm |
| **Weight** | 60kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø60mm flat anvil** | 1 pc |
| **Ø150mm flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Diamond indenter** | 1 pc |
| **Ø1.5875mm carbide ball indenter** | 1 pc |
| **Hardness test block HRB88~95** | 1 pc |
| **Hardness test block HRC60~65** | 1 pc |
| **Hardness test block HRC20~30** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

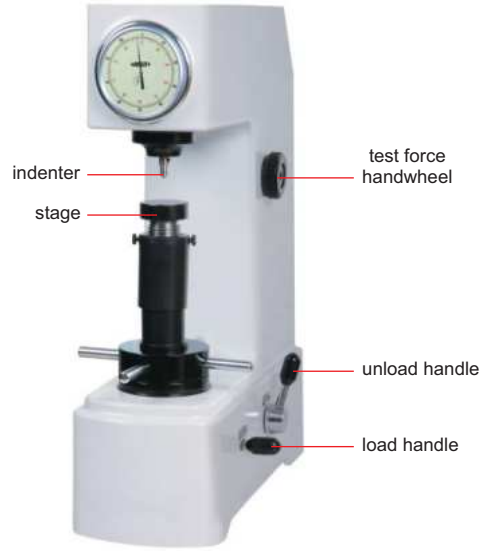
| | |
|---|---|
| **Hardness test block HRB88~100** | **HDT-B-HRB** |
| **Hardness test block HRC60~70** | **HDT-B-HRC3** |
| **Hardness test block HRC20~30** | **HDT-B-HRC1** |
| **Small V-type anvil** | **ISH-SMALLANVIL** |
| **Desk** | **HDT-DESK** |

# MANUAL ROCKWELL HARDNESS TESTER (BASIC TYPE)
# CODE HDT-RW160

INSPECTION CERTIFICATE

VIDEO

POPULAR MODEL




- According to ISO 6508


Ø58mm flat anvil (included)


Ø150mm flat anvil (included)


V-type anvil (included) for cylinders with diameter Ø4~60mm


level (included)


small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm


desk (**optional**)

## SPECIFICATION

| | |
|---|---|
| **Hardness scale** | HRA, HRB, HRC, HRD, HRF, HRG |
| **Preliminary test force** | 98N (10kg) |
| **Test force** | 588N (60kg), 980N (100kg), 1471N (150kg) |
| **Display** | analogue |
| **Stage elevation** | manual |
| **Load control** | manual |
| **Min. reading** | 0.5HR |
| **Max. workpiece height** | 170mm |
| **Max. testing width** | 135mm (from the center of indenter to the wall of main body) |
| **Dimension** | 466×238×630mm |
| **Weight** | 70kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø58mm flat anvil** | 1 pc |
| **Ø150mm flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Diamond indenter** | 1 pc |
| **Ø1.5875mm steel ball indenter** | 1 pc |
| **Ø1.5875mm steel ball** | 5 pcs |
| **Level** | 1 pc |
| **Hardness test block HRA80~88** | 1 pc |
| **Hardness test block HRB85~95** | 1 pc |
| **Hardness test block HRC20~30** | 1 pc |
| **Hardness test block HRC35~55** | 1 pc |
| **Hardness test block HRC60~70** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Hardness test block HRA80~84** | **HDT-B-HRA** |
| **Hardness test block HRB88~100** | **HDT-B-HRB** |
| **Hardness test block HRC20~30** | **HDT-B-HRC1** |
| **Hardness test block HRC35~55** | **HDT-B-HRC2** |
| **Hardness test block HRC60~70** | **HDT-B-HRC3** |
| **Small V-type anvil** | **HDT-RW160-SV** |
| **Desk** | **HDT-DESK** |

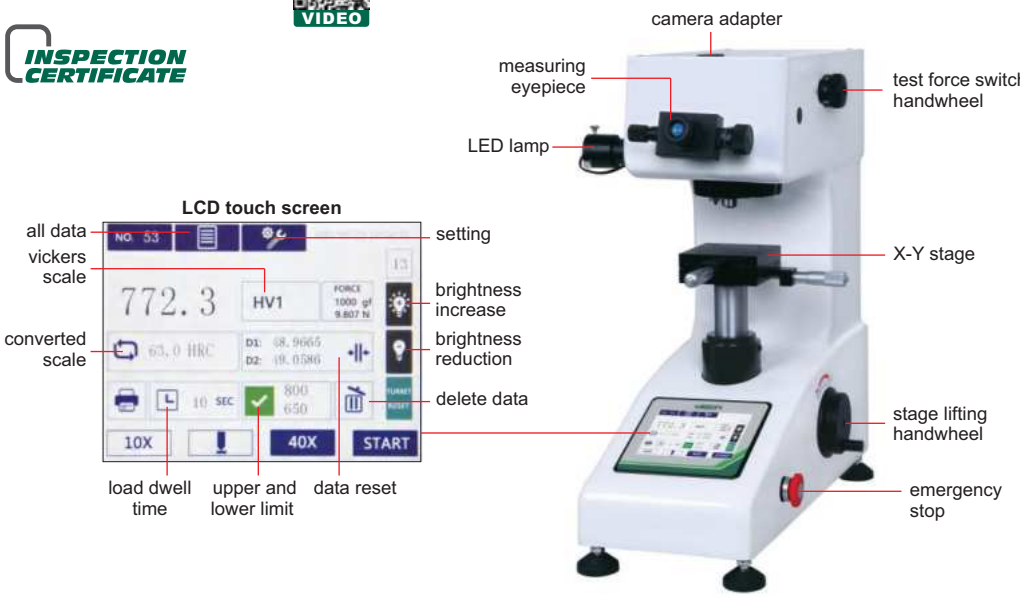


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MOTOR DRIVEN TURRET | TOUCH SCREEN | VIDEO

INSPECTION CERTIFICATE

# DIGITAL MICRO-VICKERS HARDNESS TESTER (BASIC TYPE)
# CODE HDT-MVE1300




step: 1



measure indentation diagonal lengthes by measuring microscope

step: 2



input the indentation diagonal lengthes, the hardness value is shown on screen automatically

- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507


cylinder holder (included)


slice holder (included)


vice (included)


desk (**optional**)


camera (**optional**)

camera and measuring software (**optional**)



## SPECIFICATION

| | |
|---|---|
| **Test force** | 0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf) |
| **Vickers scales** | HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1 |
| **Converted scales** | HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T |
| **Range** | 5~3000HV |
| **Length measurement resolution** | 0.5μm |
| **Objective/indenter switch** | motor driven turret |
| **Stage lifting** | manual |
| **Load control** | automatic (load/dwell/unload) |
| **Load dwell time** | 1~60 second |
| **Objective** | 10X, 40X |
| **Eyepiece** | 10X |
| **Total magnification** | 100X (for measurement or observation), 400X (for measurement) |
| **Max. workpiece height** | 90mm |
| **Max. testing width** | 95mm (from the center of indenter to the wall of main body) |
| **X-Y stage** | dimension: 100×100mm, travel range: 25×25mm |
| **Power supply** | 220V, 50/60Hz |
| **Dimension** | 510×290×570mm |
| **Weight** | 40kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **10X, 40X objective** | 1 pc of each |
| **Micro vickers indenter** | 1 pc |
| **Hardness test block 400~500HV0.2** | 1 pc |
| **Hardness test block 700~750HV1** | 1 pc |
| **Slice holder** | 1 pc |
| **Vice** | 1 pc |
| **Cylinder holder** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Hardness test block 400~500HV0.2** | **HDT-B-HV02C** |
| **Hardness test block 700~750HV1** | **HDT-B-HV1F** |
| **Knoop indenter** | **HDT-MV-KNOOP** |
| **Camera** | **HDT-MVH-CM** |
| **Measuring software (manual)** | **HDT-MVH-SW** |
| **Measuring software (automatic)** | **HDT-MVH-AW** |
| **Desk** | **HDT-DESK** |

# DIGITAL MICRO-VICKERS HARDNESS TESTER (STANDARD TYPE)
# CODE HDT-MVH1100

INSPECTION CERTIFICATE

PRESS INPUT BUTTON TO HAVE DIRECT READING OF HARDNESS

VIDEO

TOUCH SCREEN

MOTOR DRIVEN TURRET

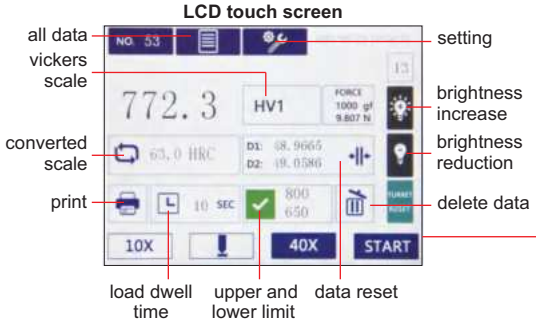




cylinder holder (included)


vice (included)


slice holder (included)




- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507


camera (**optional**)

camera and measuring software (**optional**)



## SPECIFICATION

| | |
|---|---|
| **Test force** | 0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf) |
| **Vickers scales** | HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1 |
| **Converted scales** | HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T |
| **Range** | 5~3000HV |
| **Length measurement resolution** | 0.025μm |
| **Objective/indenter switch** | motor driven turret |
| **Stage lifting** | manual |
| **Load control** | automatic (load/dwell/unload) |
| **Load dwell time** | 1~60 second |
| **Objective** | 10X, 40X |
| **Eyepiece** | 10X |
| **Total magnification** | 10X (for measurement or observation), 400X (for measurement) |
| **Max. workpiece height** | 90mm |
| **Max. testing width** | 95mm (from the center of indenter to the wall of main body) |
| **X-Y stage** | dimension: 100×100mm, travel range: 25×25mm |
| **Data output** | built-in printer |
| **Power supply** | 220V, 50/60Hz |
| **Dimension** | 510×290×570mm |
| **Weight** | 40kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **10X, 40X objective** | 1 pc of each |
| **Micro vickers indenter** | 1 pc |
| **Hardness test block 400~500HV0.2** | 1 pc |
| **Hardness test block 700~750HV1** | 1 pc |
| **Slice holder** | 1 pc |
| **Vice** | 1 pc |
| **Cylinder holder** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Hardness test block 400~500HV0.2** | **HDT-B-HV02C** |
| **Hardness test block 700~750HV1** | **HDT-B-HV1F** |
| **Knoop indenter** | **HDT-MV-KNOOP** |
| **Camera** | **HDT-MVH-CM** |
| **Measuring software (manual)** | **HDT-MVH-SW** |
| **Measuring software (automatic)** | **HDT-MVH-AW** |

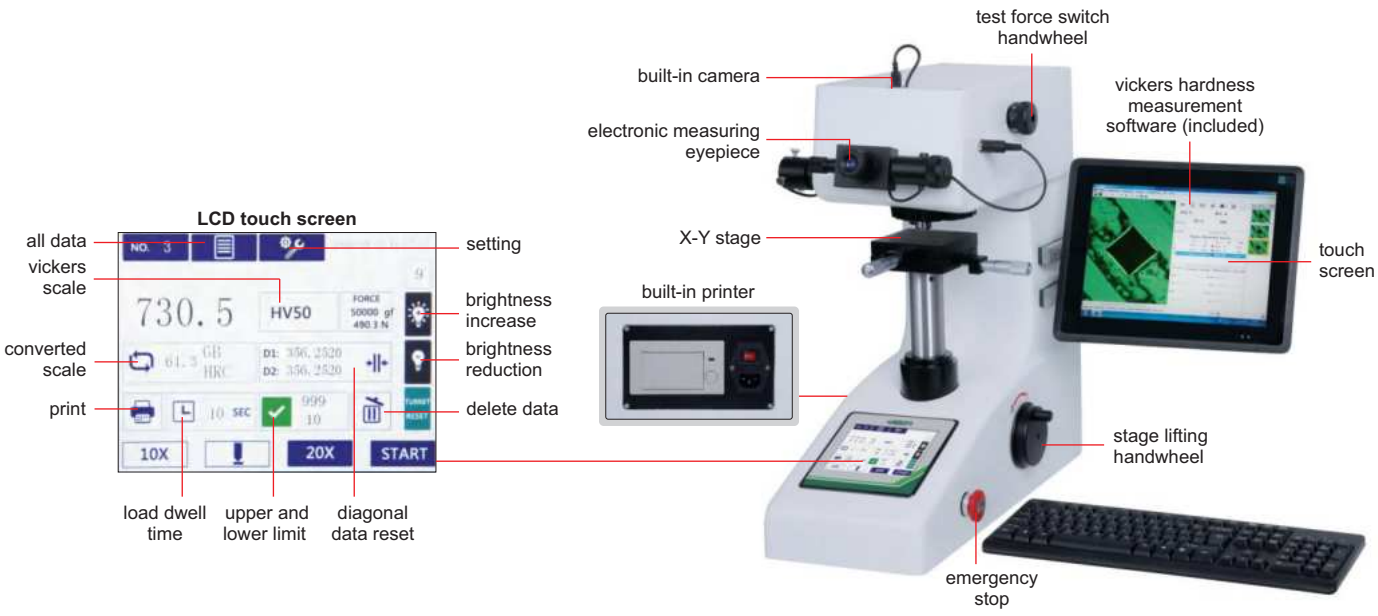
INSPECTION CERTIFICATE

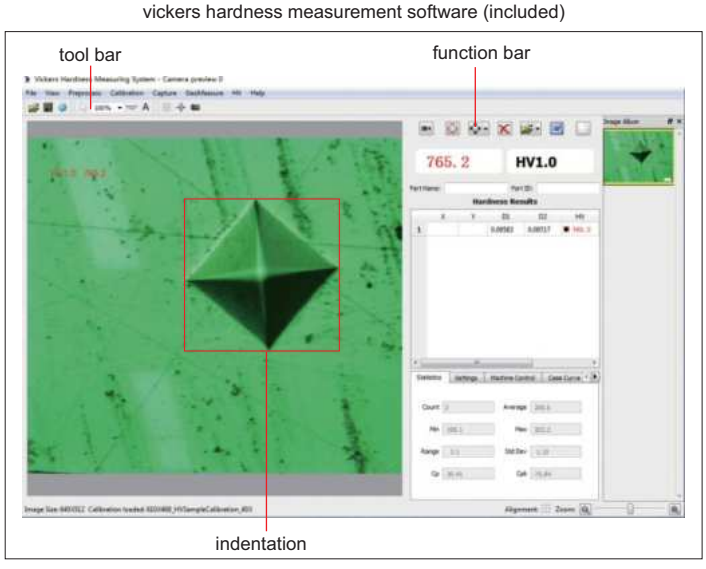
# DUAL TOUCH SCREEN DIGITAL MICRO-VICKERS HARDNESS TESTER (ADVANCED TYPE) CODE HDT-DMV90

MOTOR DRIVEN TURRET

AUTOMATIC TEST

VIDEO





cylinder holder (included)


vice (included)


slice holder (included)


desk (**optional**)

- Dual touch screen control, high-definition image measurement and analysis
- One click start, automatic pressing and automatic measurement
- The host and vickers hardness measurement software can be operated independently
- Automatic switch between the indenter and objective lens
- Data storage and average value calculation
- Can connect with wired and wireless networks to transmit data
- According to ISO 6507

To be continued

Continued from previous page

**SPECIFICATION**

| | |
|---|---|
| **Test force** | 0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf) |
| **Vickers scales** | HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1 |
| **Converted scales** | HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T |
| **Range** | 5~3000HV |
| **Length measurement resolution** | 0.01μm |
| **Objective/indenter switch** | motor driven turret |
| **Stage lifting** | manual |
| **Load control** | automatic (load/dwell/unload) |
| **Load dwell time** | 1~60 second |
| **Objective** | 10X, 40X |
| **Eyepiece** | 10X |
| **Total magnification** | 100X (for measurement or observation), 400X (for measurement) |
| **Max. workpiece height** | 90mm |
| **Max. testing width** | 95mm (from the center of indenter to the wall of main body) |
| **X-Y stage** | dimensions: 100×100mm, travel range: 25×25mm |
| **Data output** | built-in printer, USB |
| **Power supply** | 220V, 50/60Hz |
| **Dimension** | 500×420×480mm |
| **Weight** | 42kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Vickers hardness measurement software** | 1 pc |
| **10X, 40X objective** | 1 pc of each |
| **Micro vickers indenter** | 1 pc |
| **Hardness test block 400~500HV0.2** | 1 pc |
| **Hardness test block 700~750HV1** | 1 pc |
| **Wireless keyboard** | 1 pc |
| **Wireless mouse** | 1 pc |
| **Vice** | 1 pc |
| **Slice holder** | 1 pc |
| **Cylinder holder** | 1 pc |
| **Auti-dust cover** | 1 pc |

**OPTIONAL ACCESSORY**

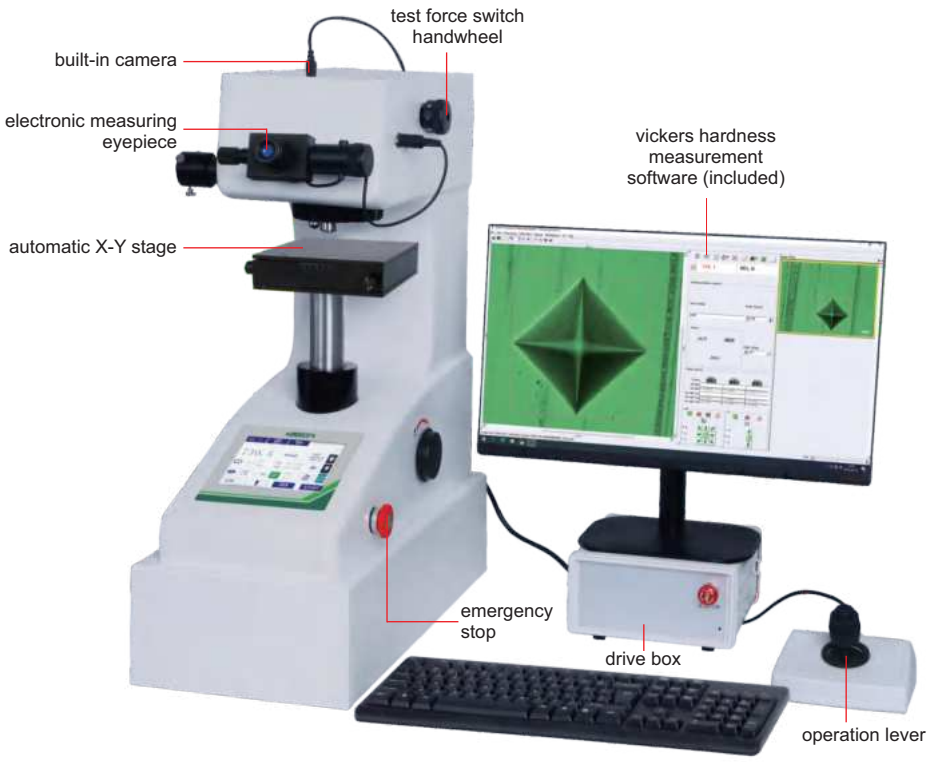
| | |
|---|---|
| **Hardness test block 400~500HV0.2** | **HDT-B-HV02C** |
| **Hardness test block 700~750HV1** | **HDT-B-HV1F** |
| **Knoop indenter** | **HDT-MV-KNOOP** |
| **Desk** | **HDT-DESK** |
| **OFFICE software** | **7313-OFFICE** |

MOTOR DRIVEN TURRET | AUTOMATIC TEST | Z-AXIS AUTOFOCUS

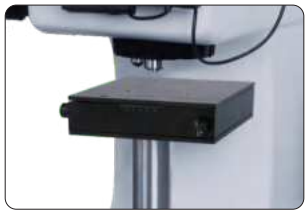
# AUTOMATIC MICRO-VICKERS HARDNESS TESTER
# CODE HDT-AMV338

INSPECTION CERTIFICATE

VIDEO




automatic X-Y stage




cylinder holder (included)


vice (included)

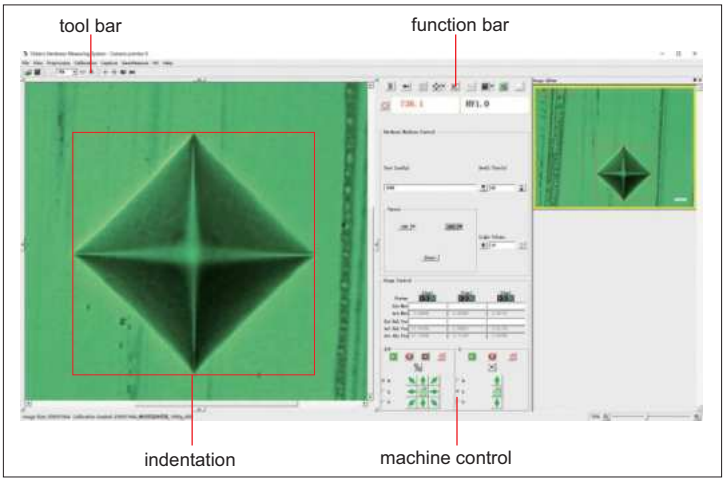

slice holder (included)


desk (**optional**)



- Suitable for micro-hardness determination of various metals and non-metal materials, effective depth and heat affected area measurement, especially suitable for measuring workpieces hardness gradient distribution curve and surface hardness after heat treatment, effective hardening layer depth
- Automatic switch between the indenter and objective lens
- Z-axis automatic focus, X, Y axis automatic movement, can be for multi-point continuous measurement
- Automatic moving table by built-in step motor, high positioning accuracy, good repeatability, fast moving speed, high efficiency
- Automatic moving table bidirectional movement, equipped with safety devices to avoid misoperation
- The software can control the hardness tester hardware operation, two-way communication with each other
- The image acquisition device has fast reaction speed, high automatic measurement accuracy and good repeatability
- The system can automatically generate Word or Excel test report, and the report template can be modified
- According to ISO 6507

vickers hardness measurement software (included)




To be continued

Continued from previous page

### AUTOMATIC TEST CONTROL SYSTEM

| | |
|---|---|
| **Hardness tester control** | 1. automatic turret, automatic loading, automatic measurement<br>2. automatic display of test force, load dwell time, illumination brightness |
| **Automatic control of X-Y stage** | software system automatic control of X-Y stage movement |
| **Measurement mode** | 1. automatic mode: automatic loading, automatic measurement, automatic display of measurement results<br>2. manual measurement mode can be selected |
| **Automatic measurement** | about 0.3sec of one indentation |
| **Measurement repeatability** | ±1% (700HV/500gf) |
| **The smallest indentation that can be measured** | about 5μm (automatic measurement) |
| **Data output format/ edit functions** | 1. inspection reports can be customized according to customer requirements<br>2. the depth of hardened layer is shown in table form<br>3. output various measurement data, hardness table, hardening layer depth, maximum value, average value, minimum value, image with hardness value |

### AUTOMATIC X-Y STAGE

| | |
|---|---|
| **Drive motor** | step motor |
| **Drive control** | movement control by software, speed is adjustable |
| **Dimension** | 110×110mm |
| **Max. travel distance** | 50×50mm |
| **Min. travel distance** | 1μm |
| **Movement speed** | 1~10mm/sec, speed can be adjusted |
| **Displacement repetition accuracy** | within 1μm |

### SPECIFICATION

| | |
|---|---|
| **Test force** | 0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf) |
| **Vickers scales** | HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1 |
| **Converted scales** | HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T |
| **Range** | 5~3000HV |
| **Length measurement resolution** | 0.01μm |
| **Objective/indenter switch** | motor driven turret |
| **Stage lifting** | manual |
| **Focus mode** | Z-axis autofocus |
| **Load control** | automatic (load/dwell/unload) |
| **Load dwell time** | 1~60 second |
| **Objective** | 10X, 40X |
| **Eyepiece** | 10X |
| **Total magnification** | 100X (for measurement or observation), 400X (for measurement) |
| **Max. workpiece height** | 80mm |
| **Max. testing width** | 110mm (from the center of indenter to the wall of main body) |
| **Pixel** | 5M |
| **Communication interface** | RS232 |
| **Power supply** | 220V, 50/60Hz |
| **Dimension** | 520×290×680mm |
| **Weight** | 42kg |

### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **10X, 40X objective** | 1 pc of each |
| **Micro vickers indenter** | 1 pc |
| **Hardness test block 400~500HV0.2** | 1 pc |
| **Hardness test block 700~750HV1** | 1 pc |
| **Automatic X-Y stage drive box** | 1 pc |
| **Vickers hardness measurement software** | 1 pc |
| **Computer** | 1 pc |
| **Vice** | 1 pc |
| **Slice holder** | 1 pc |
| **Cylinder holder** | 1 pc |
| **Auti-dust cover** | 1 pc |

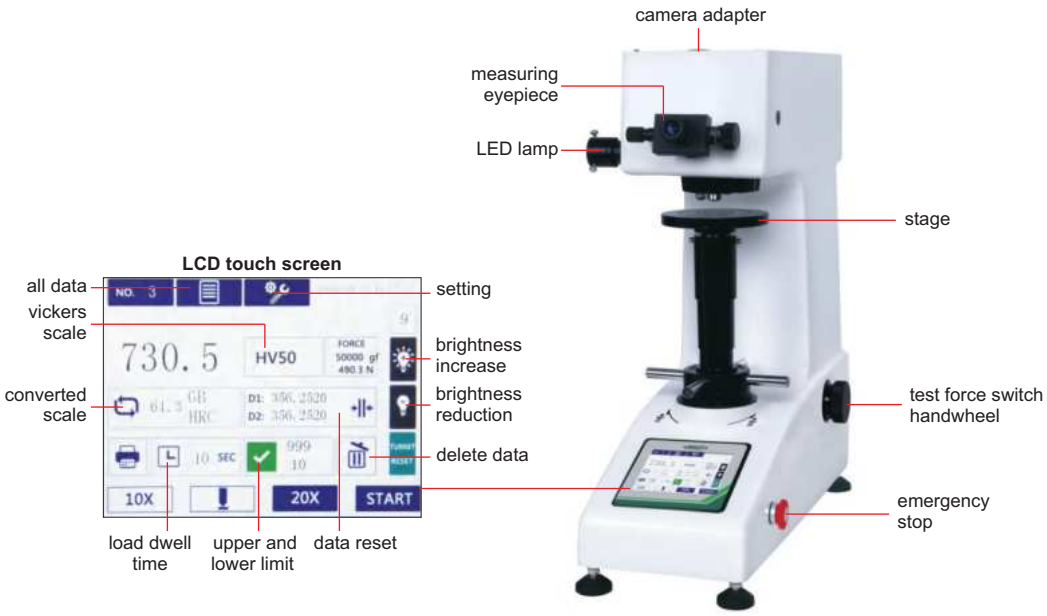
### OPTIONAL ACCESSORY

| | |
|---|---|
| **Hardness test block 400~500HV0.2** | **HDT-B-HV02C** |
| **Hardness test block 700~750HV1** | **HDT-B-HV1F** |
| **Knoop indenter** | **HDT-MV-KNOOP** |
| **Desk** | **HDT-DESK** |
| **OFFICE software** | **7313-OFFICE** |

INSPECTION CERTIFICATE | MOTOR DRIVEN TURRET | TOUCH SCREEN

# DIGITAL VICKERS HARDNESS TESTERS (BASIC TYPE)

VIDEO




**HDT-VE56**

- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507

| step: 1 | step: 2 |
|---|---|
|  |  |
| measure indentation diagonal lengthes by measuring microscope | input the indentation diagonal lengthes, the hardness value is shown on screen automatically |


XY platform (**optional**)


Ø58mm flat anvil (included)


Ø150mm flat anvil (included)


V-type anvil (included)


desk (**optional**)


camera (**optional**)

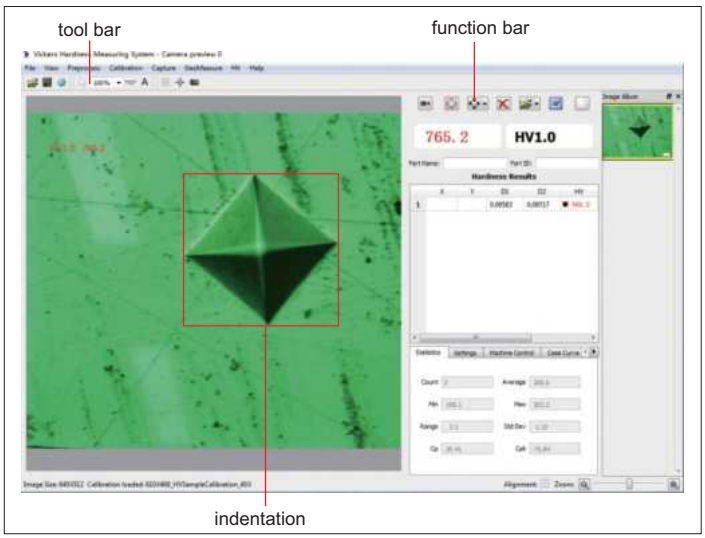
camera and measuring software (**optional**)



To be continued

Continued from previous page

vickers hardness measurement software (**optional**)




## SPECIFICATION

| Code | HDT-VE03 | HDT-VE14 | HDT-VE35 | HDT-VE56 |
|---|---|---|---|---|
| Test force | 0.3kgf, 0.5kgf, 1kgf, 2kgf, 3kgf, 5kgf | 0.3kgf, 0.5kgf, 1kgf, 3kgf, 5kgf, 10kgf | 1kgf, 3kgf, 5kgf, 10kgf, 20kgf, 30kgf | 1kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf |
| Vickers scales | HV0.3, HV0.5, HV1, HV2, HV3, HV5 | HV0.3, HV0.5, HV1, HV3, HV5, HV10 | HV1, HV3, HV5, HV10, HV20, HV30 | HV1, HV5, HV10, HV20, HV30, HV50 |
| Converted scales | HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T | | | |
| Range | 8~3000HV | | | |
| Length measurement resolution | 0.5μm | | | |
| Objective/indenter switch | motor driven turret | | | |
| Stage lifting | manual | | | |
| Load control | automatic (load/dwell/unload) | | | |
| Load dwell time | 1~60 second | | | |
| Objective | 10X, 20X | | | |
| Eyepiece | 10X | | | |
| Total magnification | 100X (for measurement or observation), 200X (for measurement) | | | |
| Max. workpiece height | 175mm | | | |
| Max. testing width | 135mm (form the center of indenter to the wall of main body) | | | |
| Power supply | 220V, 50/60Hz | | | |
| Dimension | 580×320×660mm | | | |
| Weight | 55kg | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 10X, 20X objective | 1 pc of each |
| Vickers indenter | 1 pc |
| Hardness test block 400~500HV10 | 1 pc |
| Hardness test block 700~750HV50 | 1 pc |
| Ø58mm flat anvil | 1 pc |
| Ø150mm flat anvil | 1 pc |
| V-type anvil | 1 pc |
| Anti-dust cover | 1 pc |

## OPTIONAL ACCESSORY

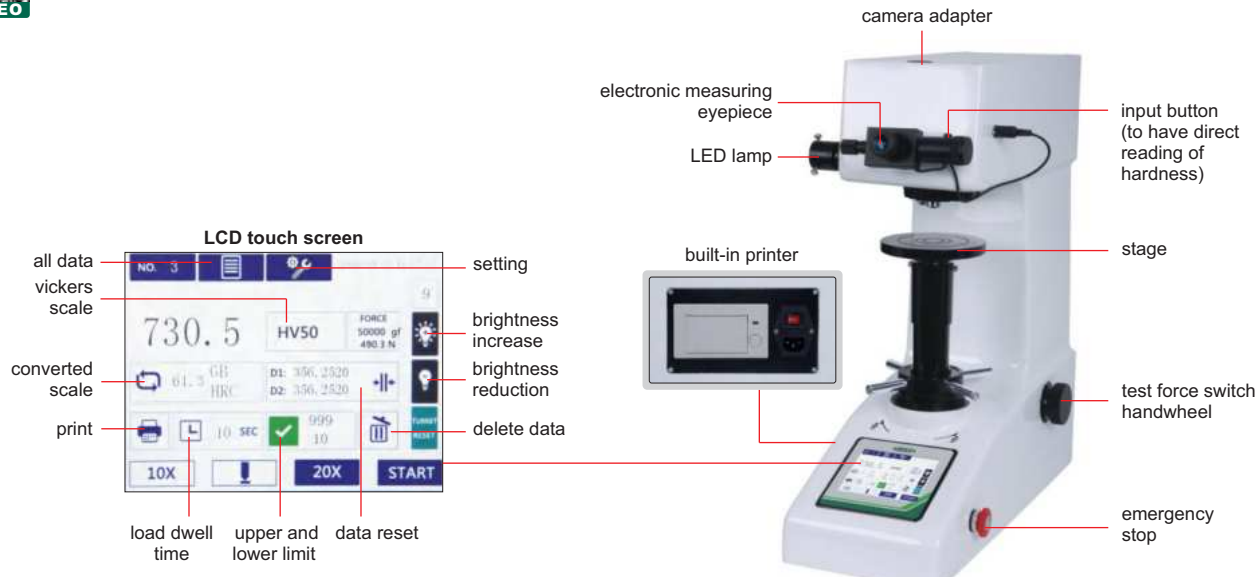
| | |
|---|---|
| Hardness test block 400~500HV10 | HDT-B-HV10D |
| Hardness test block 700~750HV50 | HDT-B-HV50G |
| Desk | HDT-DESK |
| Vickers hardness tester camera (fit 5kg and 10kg) | HDT-MVH-CM1 |
| Vickers hardness tester camera (fit 30kg and 50kg) | HDT-MVH-CM2 |
| XY working platform | HDT-VEH-ST |
| Measuring software (manual) | HDT-MVH-SW |
| Measuring software (automatic) | HDT-MVH-AW |

# DIGITAL VICKERS HARDNESS TESTERS (STANDARD TYPE)

INSPECTION CERTIFICATE

MOTOR DRIVEN TURRET | PRESS INPUT BUTTON TO HAVE DIRECT READING OF HARDNESS | TOUCH SCREEN

VIDEO




**HDT-VH51**

- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507



Ø58mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included)



desk (**optional**)



XY platform (**optional**)



camera (**optional**)

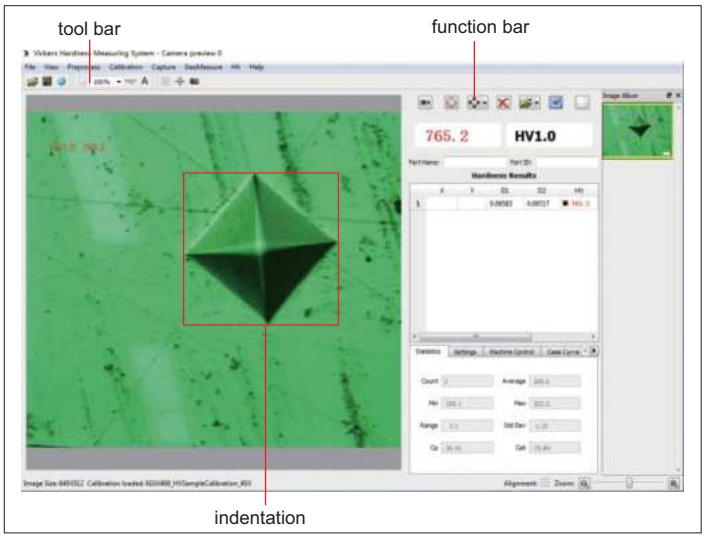
camera and measuring software (**optional**)



To be continued

Continued from previous page

vickers hardness measurement software (**optional**)




**SPECIFICATION**

| Code | HDT-VH05 | HDT-VH11 | HDT-VH31 | HDT-VH51 |
|---|---|---|---|---|
| Test force | 0.3kgf, 0.5kgf, 1kgf, 2kgf, 3kgf, 5kgf | 0.3kgf, 0.5kgf, 1kgf, 3kgf, 5kgf, 10kgf | 1kgf, 3kgf, 5kgf, 10kgf, 20kgf, 30kgf | 1kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf |
| Vickers scales | HV0.3, HV0.5, HV1, HV2, HV3, HV5 | HV0.3, HV0.5, HV1, HV3, HV5, HV10 | HV1, HV3, HV5, HV10, HV20, HV30 | HV1, HV5, HV10, HV20, HV30, HV50 |
| Converted scales | HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T | | | |
| Range | 8~3000HV | | | |
| Length measurement resolution | 0.125μm | | | |
| Objective/indenter switch | motor driven turret | | | |
| Stage lifting | manual | | | |
| Load control | automatic (load/dwell/unload) | | | |
| Load dwell time | 1~60 second | | | |
| Objective | 10X, 20X | | | |
| Eyepiece | 10X | | | |
| Total magnification | 100X (for measurement or observation), 200X (for measurement) | | | |
| Max. workpiece height | 175mm | | | |
| Max. testing width | 135mm (form the center of indenter to the wall of main body) | | | |
| Output | built-in printer | | | |
| Power supply | 220V, 50/60Hz | | | |
| Dimension | 580×320×660mm | | | |
| Weight | 55kg | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| 10X, 20X objective | 1 pc of each |
| Vickers indenter | 1 pc |
| Hardness test block | 2 pcs |
| Ø58mm flat anvil | 1 pc |
| Ø150mm flat anvil | 1 pc |
| V-type anvil | 1 pc |
| Anti-dust cover | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Hardness test block | page 875~876 |
| Desk | HDT-DESK |
| Vickers hardness tester camera (fits 5kgf and 10kgf) | HDT-MVH-CM1 |
| Vickers hardness tester camera (fits 30kgf and 50kgf) | HDT-MVH-CM2 |
| XY working platform | HDT-VEH-ST |
| Measuring software (manual) | HDT-MVH-SW |
| Measuring software (automatic) | HDT-MVH-AW |



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# AUTOMATIC VICKERS HARDNESS TESTERS

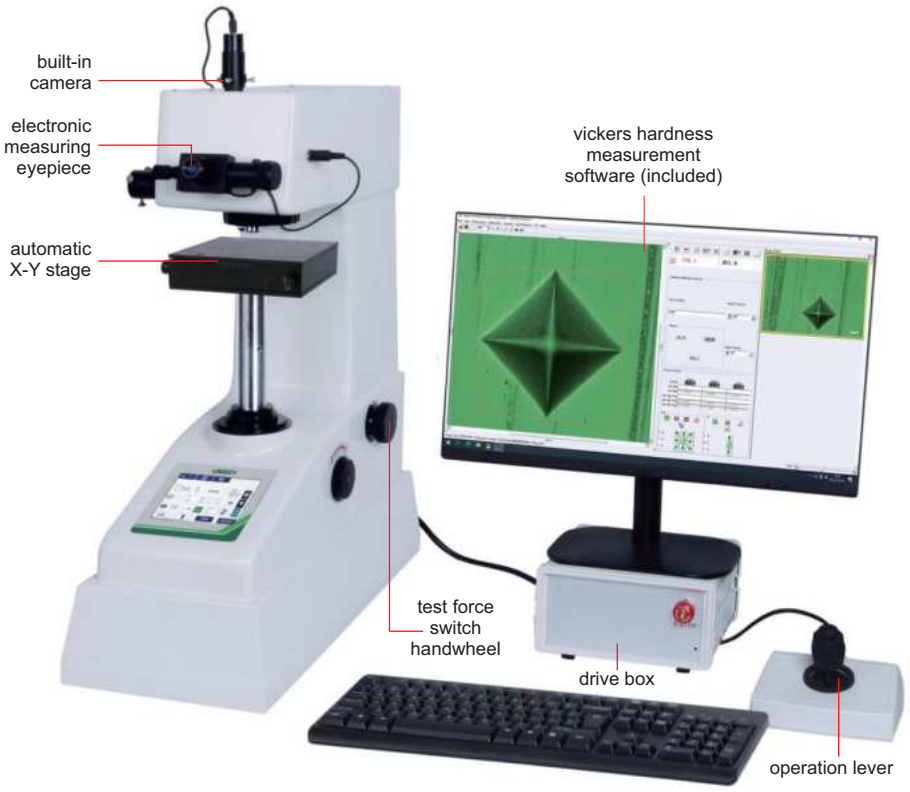
MOTOR DRIVEN TURRET

AUTOMATIC TEST

Z-AXIS AUTO FOCUS

VIDEO

INSPECTION CERTIFICATE




HDT-AVH50

automatic X-Y stage

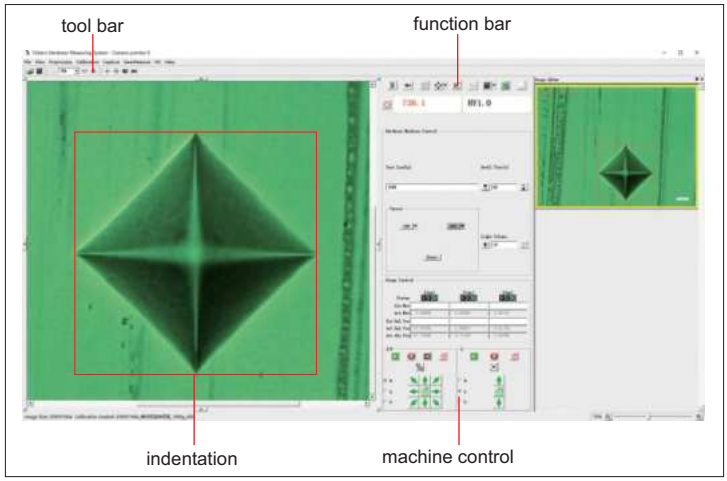




desk (**optional**)

- Suitable for vickers hardness determination of various metals and non-metal materials, effective depth and heat affected area measurement, especially suitable for measuring workpieces hardness gradient distribution curve and surface hardness after heat treatment, effective hardening layer depth
- Automatic switch between the indenter and objective lens
- Z-axis automatic focus, X, Y axis automatic movement, can be for multi-point continuous measurement
- Automatic moving table by built-in step motor, high positioning accuracy, good repeatability, fast moving speed, high efficiency
- Automatic moving table bidirectional movement, equipped with safety devices to avoid misoperation
- The software can control the hardness tester hardware operation, two-way communication with each other
- The image acquisition device has fast reaction speed, high automatic measurement accuracy and good repeatability
- The system can automatically generate Word or Excel test report, and the report template can be modified
- According to ISO 6507

vickers hardness measurement software (included)




**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **10X, 20X objective** | 1 pc of each |
| **Vickers indenter** | 1 pc |
| **Hardness test block** | 2 pcs |
| **Automatic X-Y stage drive box** | 1 pc |
| **Vickers hardness measurement software** | 1 pc |
| **Computer** | 1 pc |
| **Auti-dust cover** | 1 pc |

To be continued

Continued from previous page

**AUTOMATIC TEST CONTROL SYSTEM**

| | |
|---|---|
| **Hardness tester control** | 1.automatic turret, automatic loading, automatic measurement<br>2.automatic display of test force, load dwell time, illumination brightness |
| **Automatic control of X-Y stage** | software system automatic control of X-Y stage movement |
| **Measurement mode** | 1.automatic mode: automatic loading, automatic measurement, automatic display of measurement results<br>2.manual measurement mode can be selected |
| **Automatic measurement** | about 0.3sec of one indentation |
| **Measurement repeatability** | ±1% (700HV/5kgf) |
| **The smallest indentation that can be measured** | about 10μm (automatic measurement) |
| **Data output format/ edit functions** | 1.inspection reports can be customized according to customer requirements<br>2.the depth of hardened layer is shown in table form<br>3.output various measurement data, hardness table, hardening layer depth, maximum value, average value, minimum value, image with hardness value |

**AUTOMATIC X-Y STAGE**

| | |
|---|---|
| **Drive motor** | step motor |
| **Drive control** | movement control by software, speed is adjustable |
| **Dimension** | 110x110mm |
| **Max. travel distance** | 50x50mm |
| **Min. travel distance** | 1μm |
| **Movement speed** | 1~10mm/sec, speed can be adjusted |
| **Displacement repetition accuracy** | within 1μm |

**SPECIFICATION**

| **Code** | **HDT-AVH05** | **HDT-AVH10** | **HDT-AVH30** | **HDT-AVH50** |
|---|---|---|---|---|
| **Test force** | 0.3kgf, 0.5kgf, 1kgf, 2kgf, 3kgf, 5kgf | 0.3kgf, 0.5kgf, 1kgf, 3kgf, 5kgf, 10kgf | 1kgf, 3kgf, 5kgf, 10kgf, 20kgf, 30kgf | 1kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf |
| **Vickers scales** | HV0.3, HV0.5, HV1, HV2, HV3, HV5 | HV0.3, HV0.5, HV1, HV3, HV5, HV10 | HV1, HV3, HV5, HV10, HV20, HV30 | HV1, HV5, HV10, HV20, HV30, HV50 |
| **Converted scales** | HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T | | | |
| **Range** | 5~3000HV | | | |
| **Length measurement resolution** | 0.01μm | | | |
| **Objective/indenter switch** | motor driven turret | | | |
| **Stage lifting** | manual/electric | | | |
| **Focus mode** | Z-axis autofocus | | | |
| **Load control** | automatic (load/dwell/unload) | | | |
| **Load dwell time** | 1~60 second | | | |
| **Objective** | 10x, 20X | | | |
| **Eyepiece** | 10X | | | |
| **Total magnification** | 100X (for measurement or observation), 200X (for measurement) | | | |
| **Max.workpiece height** | 160mm | | | |
| **Max. testing width** | 130mm (from the center of indenter to the wall of main body) | | | |
| **Pixel** | 5M | | | |
| **Communication interface** | RS232 | | | |
| **Power supply** | 220V, 50/60Hz | | | |
| **Dimension** | 630x300x800mm | | | |
| **Weight** | 75kg | | | |

**OPTIONAL ACCESSORY**

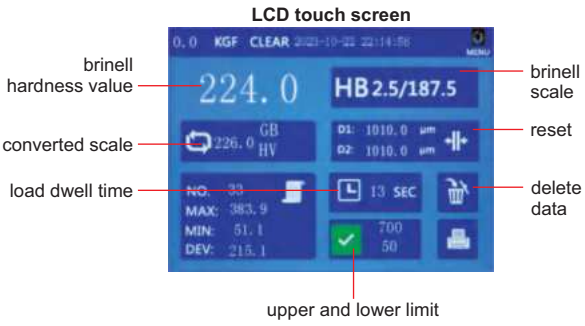
| | |
|---|---|
| **Hardness test block** | page 875~876 |
| **Desk** | **HDT-DESK** |
| **OFFICE software** | **7313-OFFICE** |

INSPECTION CERTIFICATE

# MOTORIZED DIGITAL BRINELL HARDNESS TESTER (BASIC TYPE)
# CODE HDT-MBE320

TOUCH SCREEN | FORCE LOADING BY ELECTRIC MOTOR (WITHUOT WEIGHT) | VIDEO

LCD touch screen







step: 1



measure indentation diameter by measuring microscope

step: 2



input the diameters, the hardness value is shown on screen automatically

- Touch screen color LCD display
- Measure indentation diameter by measuring microscope, then input the diameters, the hardness value is shown on screen automatically
- Electric loading test force, without weights
- Casting case, structurally stable and not deformed
- According to ISO 6506



Ø78mm flat anvil (included)



Ø200mm flat anvil (included)



V-type anvil (included)



desk (**optional**)



measuring microscope (included)

## SPECIFICATION

| | | |
|---|---|---|
| **Test force** | | 62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf |
| **Brinell scale** | | HBW2.5/62.5, HBW2.5/187.5, HBW5/62.5, HBW5/125, HBW5/250, HBW5/750, HBW10/100, HBW10/250, HBW10/500, HBW10/1000, HBW10/1500, HBW10/3000 |
| **Range** | | 8~650HBW |
| **Hardness resolution** | | 0.1HBW |
| **Stage elevation** | | manual |
| **Load control** | | automatic (load/dwell/unload) |
| **Load dwell time** | | 0~60 second |
| **Measuring microscope** | **magnification** | 20X |
| | **resolution** | 0.01mm |
| **Max. workpiece height** | | 230mm |
| **Max. testing width** | | 140mm (form the center of indenter to the wall of main body) |
| **Power supply** | | 220V, 50/60Hz |
| **Dimension** | | 510×210×750mm |
| **Weight** | | 130kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø78mm flat anvil** | 1 pc |
| **Ø200mm flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Ø2.5mm carbide ball indenter** | 1 pc |
| **Ø5mm carbide ball indenter** | 1 pc |
| **Ø10mm carbide ball indenter** | 1 pc |
| **Hardness test block 100~200HBW2.5/187.5** | 1 pc |
| **Hardness test block 90~200HBW10/1000** | 1 pc |
| **Hardness test block 100~200HBW10/3000** | 1 pc |
| **Measuring microscope** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Hardness test block 100~200HBW2.5/187.5** | **HDT-B-HB25A1** |
| **Hardness test block 90~200HBW10/1000** | **HDT-B-HB10C1** |
| **Hardness test block 100~200HBW10/3000** | **HDT-B-HB10A1** |
| **Desk** | **HDT-DESK** |
| **Measuring software** | **HDT-MB□□□** |

# MOTORIZED DIGITAL BRINELL HARDNESS TESTERS (STANDARD TYPE)

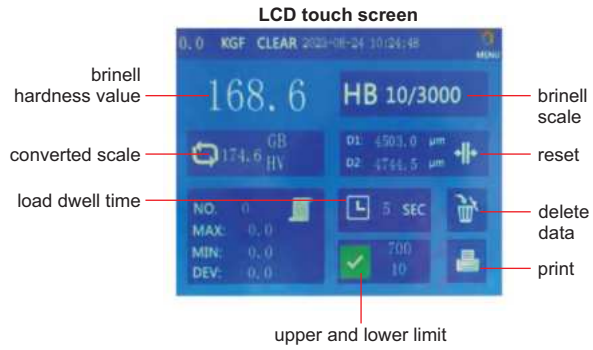
VIDEO

TOUCH SCREEN

FORCE LOADING BY ELECTRIC MOTOR (WITHUOT WEIGHT)

INSPECTION CERTIFICATE

LCD touch screen








Ø78mm flat anvil (included)


Ø200mm flat anvil (included)


V-type anvil (included)


desk (**optional**)

- Touch screen color LCD display
- Measure the indentation with microscope, automatically calculate the hardness value and display it on the screen
- Electric loading test force, without weights
- Casting case, structurally stable and not deformed
- According to ISO 6506

**SPECIFICATION**

| Code | | HDT-MB610 | HDT-MB710 |
|---|---|---|---|
| Turret rotation | | manual | automatic |
| Test force | | 62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf | |
| Brinell scale | | HBW2.5/62.5, HBW2.5/187.5, HBW5/125, HBW5/750, HBW10/100, HBW10/250, HBW10/500, HBW10/1000, HBW10/1500, HBW10/3000 | |
| Range | | 8~650HBW | |
| Hardness resolution | | 0.1HBW | |
| Stage elevation | | manual | |
| Load control | | automatic (load/dwell/unload) | |
| Load dwell time | | 0~60 second | |
| Measuring microscope | magnification | 20X | |
| | resolution | 0.1μm | |
| Max. workpiece height | | 200mm | |
| Max. testing width | | 135mm (form the center of indenter to the wall of main body) | |
| Data output | | built-in printer, RS232 | |
| Power supply | | 220V, 50/60Hz | |
| Dimension | | 510×210×750mm | |
| Weight | | 130kg | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Ø78mm flat anvil | 1 pc |
| Ø200mm flat anvil | 1 pc |
| V-type anvil | 1 pc |
| Ø2.5mm carbide ball indenter | 1 pc |
| Ø5mm carbide ball indenter | 1 pc |
| Ø10mm carbide ball indenter | 1 pc |
| Hardness test block 100~200HBW2.5/187.5 | 1 pc |
| Hardness test block 90~200HBW10/1000 | 1 pc |
| Hardness test block 100~200HBW10/3000 | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Hardness test block 100~200HBW2.5/187.5 | HDT-B-HB25A1 |
| Hardness test block 90~200HBW10/1000 | HDT-B-HB10C1 |
| Hardness test block 100~200HBW10/3000 | HDT-B-HB10A1 |
| Desk | HDT-DESK |
| Measuring software | HDT-MB□□□ |

TOUCH SCREEN

# MOTORIZED DIGITAL ROCKWELL/BRINELL/VICKERS HARDNESS TESTER
# CODE HDT-BRV330

FORCE LOADING BY ELECTRIC MOTOR (WITHUOT WEIGHT)

INSPECTION CERTIFICATE

VIDEO



Ø60mm flat anvil (included)



Ø150mm flat anvil (included)

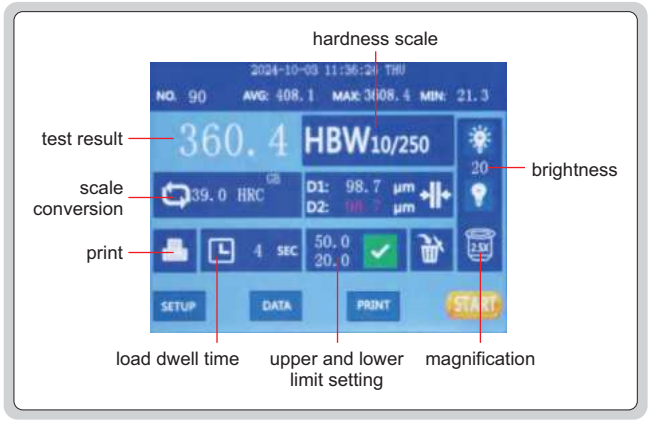


V-type anvil (included)

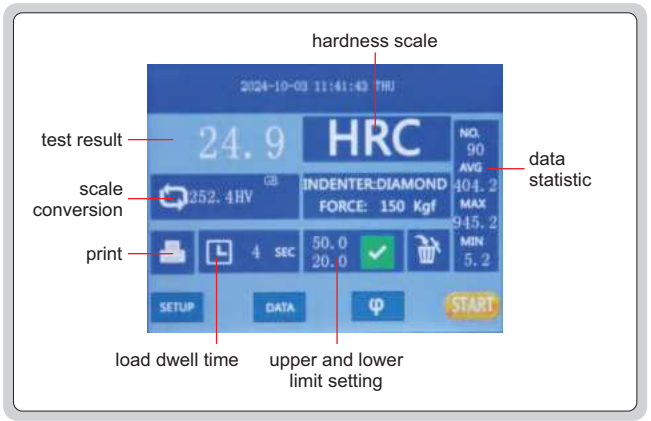



- 5.6" color touch LCD display
- Electronic closed-loop control of the applied test force, easy to use, stable display value
- Total of 21 measurement scales, including Brinell, Rockwell and Vickers test method
- Convertible to various hardness standards such as HB, HV, HRC, HK, etc.
- Two types of internal and external illumination are available, and different illumination is used according to the size of the indentation to make the indentation clearer
- Average, maximum and minimum value statistic are available
- Data storage and query function, can be printed out by the printer
- According to ISO 6506, ISO 6507, ISO 6508, ASTM E-10, ASTM E-18, ASTM E-92

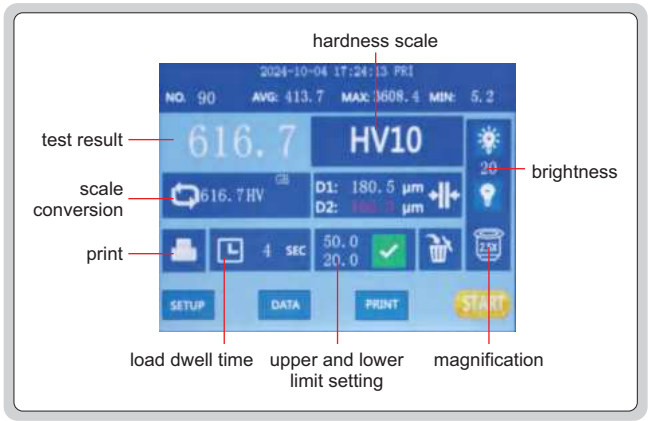
Brinell measurement interface




Rockwell measurement interface




Vickers measurement interface




To be continued

Continued from previous page

**SPECIFICATION**

| Type | Brinell | Rockwell | Vickers |
|---|---|---|---|
| Test force | 306.5N (31.25kg), 612.9N (62.5kg), 1226N (125kg), 1839N (187.5kg), 980.8N (100kg), 2451.6N (250kg) | 588N (60kg), 980N (100kg), 1471N (150kg) | 49.03N (5kg), 98.07N (10kg), 196.1N (20kg), 294.2N (30kg), 490.3N (50kg), 980.7N (100kg) |
| Hardness scale | HBW2.5/31.25, HBW2.5/62.5, HBW2.5/187.5, HBW5/62.5, HBW5/125, HBW5/250, HBW10/100, HBW10/250 | HRA, HRB, HRC, HRD, HRF, HRG | HV3, HV5, HV10, HV20, HV30, HV50, HV100 |
| Conversion scale | HRA, HRB, HRC, HRD,HRF, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HB, HV, HK | | |
| Range | 5-650HBW | 20-88HRA, 20-100HRB, 20-70HRC | 10-2900HV |
| Stage lifting | manual | | |
| Load control | automatic (load/dwell/unload) | | |
| Eyepiece | 10X | | |
| Objective | 2.5X (included, for Brinell), 5X (included, for Vickers), 10X (**optional**, for Vickers) | | |
| Resolution | 0.1HB | 0.1HR | 0.1HV |
| Load dwell time | 0~99 seconds, can be set | | |
| Max. testing width | 160mm | | |
| Max. workpiece height | 165mm | 180mm | 165mm |
| Power supply | 220V, 50/60Hz | | |
| Dimension | 550×235×720mm | | |
| Weight | 80kg | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Diamond Rockwell indenter | 1 pc |
| Diamond Vickers indenter | 1 pc |
| Ø2.5mm ball indenter | 1 pc |
| Ø5mm ball indenter | 1 pc |
| Ø1.5875 carbide ball indenter | 1 pc |
| Ø150mm flat anvil | 1 pc |
| Ø60mm flat anvil | 1 pc |
| V-type anvil | 1 pc |
| Skateboard stage | 1 pc |
| Internal lighting bulb | 1 pc |
| External lighting bulb | 1 pc |
| Hardness test block HRC20~30 | 1 pc |
| Hardness test block HRC60~70 | 1 pc |
| Hardness test block HRB85~100 | 1 pc |
| Hardness test block HBW2.5/187.5 | 1 pc |
| Hardness test block HV30 | 1 pc |
| Anti-dust cover | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| 10X objective | HDT-OB-10 |
| Ø10mm ball indenter | HDT-BRV-INDENTER10 |
| Hardness test block 20~30HRC | HDT-B-HRC1 |
| Hardness test block 35~55HRC | HDT-B-HRC2 |
| Hardness test block 60~70HRC | HDT-B-HRC3 |
| Hardness test block 88~100HRB | HDT-B-HRB |
| Hardness test block 80~84HRA | HDT-B-HRA |
| Hardness test block 400~500HBW2.5/187.5 | HDT-B-HB25A4 |
| Hardness test block 400~500HV5 | HDT-B-HV5D |

VIDEO

INSPECTION CERTIFICATE

# BRINELL/ROCKWELL/VICKERS HARDNESS TESTER
# CODE ISH-BRV


Ø60mm flat anvil for Rockwell (included)


Ø150mm flat anvil for Rockwell (included)


Ø60mm flat anvil for Vickers and Brinell (included)


V-type anvil for Rockwell (included), for cylinders with diameter Ø4~60mm


V-type anvil for Vickers and Brinell (included)


small V-type anvil for Rockwell (**optional**), for cylinders with diameter Ø2~4mm


desk (**optional**)




- According to ISO 6506, ISO 6507, ISO 6508

## SPECIFICATION

| | |
|---|---|
| **Rockwell test load** | 98N preload, 588, 980, 1471N total load |
| **Min. Rockwell reading** | 0.5HR |
| **Brinell test load** | 306, 613, 1839N |
| **Vickers test load** | 294N |
| **Stage elevation** | manual |
| **Load control** | manual |
| **Magnification of microscope** | 37.5X/75X |
| **Max. workpiece height** | 180mm |
| **Max. testing width** | 200mm (from the center of indenter to the wall of main body) |
| **Power supply** | 220V, 50/60Hz |
| **Dimension** | 546×300×767mm |
| **Weight** | 90kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø1.5875mm carbide ball indenter** | 1 pc |
| **Diamond Rockwell indenter** | 1 pc |
| **Ø5mm Brinell indenter** | 1 pc |
| **Ø2.5mm Brinell indenter** | 1 pc |
| **Vickers indenter** | 1 pc |
| **Ø60mm flat anvil for Rockwell** | 1 pc |
| **Ø150mm flat anvil for Rockwell** | 1 pc |
| **V-type anvil for Rockwell** | 1 pc |
| **Ø60mm flat anvil for Vickers and Brinell** | 1 pc |
| **V-type anvil for Vickers and Brinell** | 1 pc |
| **Hardness test block HRB88~95** | 1 pc |
| **Hardness test block HRC60~65** | 1 pc |
| **Hardness test block HRC20~30** | 1 pc |
| **Hardness test block 400~500HV30** | 1 pc |
| **Hardness test block 180~300HBW2.5/187.5** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Hardness test block HRB88~100** | **HDT-B-HRB** |
| **Hardness test block HRC60~70** | **HDT-B-HRC3** |
| **Hardness test block HRC20~30** | **HDT-B-HRC1** |
| **Hardness test block 400-500HV30** | **HDT-B-HV30D** |
| **Hardness test block 200-300HBW2.5/187.5** | **HDT-B-HB25A2** |
| **Small V-type anvil for Rockwell** | **ISH-SMALLANVIL** |
| **Desk** | **HDT-DESK** |

# BRINELL INDENTATION AUTOMATIC MEASURING SYSTEMS

AUTOMATIC MEASURMENT

INSPECTION CERTIFICATE

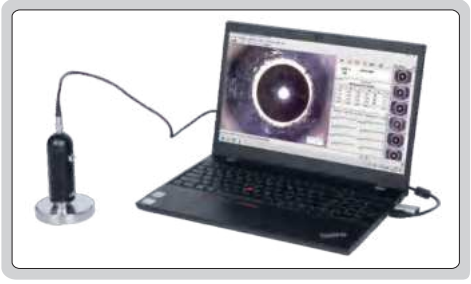
VIDEO

- Automatic or manual measurement of the indentation diameter and calculation of the corresponding Brinell hardness value
- Automatically calculates statistical values such as mean and variance of measured hardness
- Automatic labeling of abnormal values, automatic alarm when hardness exceeds the specified value
- Measurement data including indentation images can be stored on file
- The system can automatically generate reports in Word or Excel format

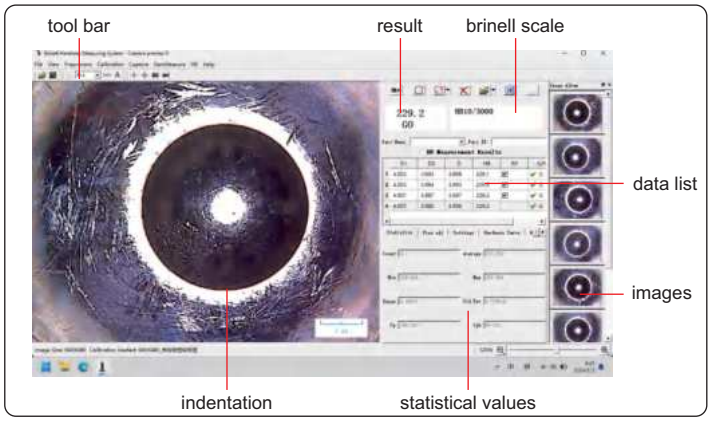


**HDT-MB325**

application



software (included)




27

## SPECIFICATION

| Code | HDT-MB325 | HDT-MB326 |
|---|---|---|
| Range of indentation diameter | Ø1~2mm, Ø2~4mm | Ø0.5~1.6mm, Ø3~6mm |
| Appliable Brinell indenter | Ø2.5mm, Ø5mm, Ø10mm | Ø1mm, Ø2.5mm, Ø5mm, Ø10mm |
| Diameter measuring accuracy | ±0.5% | |
| Hardness range | 15~650HBW | |
| Camera Pixel | 2M | |
| Dimension | 44×40×120mm | |
| Weight | 275g | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Software | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| OFFICE software | 7313-OFFICE |



info@insz.sk | +421 944 367 573 | www.insz.sk

## BALANCING BRACKET
## CODE ISH-BL01




application



- Suitable for hardness measurement of long strip specimens
- By adjusting the counterweight, to ensure that the indenter is perpendicular to the specimen

**SPECIFICATION**

| | |
|---|---|
| **Sample diameter** | <50mm |
| **Test bench type** | V-type anvil |
| **Dimension** | 600×100×100mm |
| **Weight** | 5kg |

## JACK LIFTING BRACKET
## CODE ISH-ST02



application



- No need to hold the sample, fixing the sample can reduce measurement error

**SPECIFICATION**

| | |
|---|---|
| **Sample diameter** | <50mm |
| **Test bench type** | V-type anvil |
| **Adjusting the height** | 200mm (customizable) |
| **Dimension** | 250×250×400mm |
| **Weight** | 11kg |

# ULTRASONIC HARDNESS TESTERS

INSPECTION CERTIFICATE

ATTENTION: NEED TO CONFIRM IF THE WORKPIECES ARE SUITABLE BEFORE PURCHASE

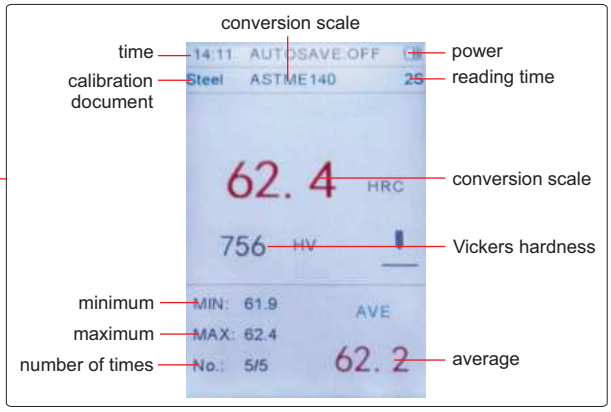
SMALL TEST INDENTATION

POPULAR MODEL

VIDEO

ATTENTION: HARDNESS BLOCKS FOR CALIBRATION ARE OPTIONAL




**9646-300**



bluetooth printer
(included in **9646-301**)



stand (**optional**), suitable for measuring small workpieces, fast and stable

- Small size, light weight, portable, convenient for on-line measurement and can be used to measure large workpieces
- Support 360°measurement, fast test speed, the fastest results in 1 second
- Standard Vickers indentation, small test indentation and low damage to the workpiece
- 100 measurement data sets and 10 calibration data sets can be stored
- Large display, directly shows the current measured value, maximum value, minimum value, average value and unit conversion value
- For unspecified conversion tables and unknown materials, multi-point calibration on any hardness scale you can choose to eliminate of systematic errors due to conversion tables
- According to DIN 50159, ASTM A1038 standards

Applications:
1. Hardness measurement of flange edges and gear root stampings, gears and gear grooves with surface hardening of lamina, taper sections
2. Hardness measurement of shafts and thin-walled pipes and container
3. Hardness measurement of thin plating, wheels, turbine rotors and welded parts
4. Measurement of the depth of a certain diameter deep holes, dents of the larger curvature and convex marks, irregular planes
5. Covering the majority of hardness measurement of industrial production of ferrous metals, non-ferrous metals and their alloys

To be continued

Continued from previous page

## SPECIFICATION

| Code | 9646-300 | 9646-301 |
|---|---|---|
| Data printout | without printer | with bluetooth printer |
| Main test parameter | HV | |
| Convertible parameters | HRA, HRB, HRC, HBW, HS, MPa | |
| Measurement range | 50-1599HV, 20-68HRC, 85-650HB, 41-100HRB, 61-85.6HRA, 34.2-97.3HS, 255-2180MPa | |
| Resolution | 1HV, 0.1HRA, 0.1HRB, 0.1HRC, 1HB, 0.1HS, 1MPa | |
| Accuracy | ±4%HV, ±4%HB, ±1.5HR | |
| Calibration method | normal material: one-point calibration<br>special material: multi-point calibration | |
| Operation temperature | -10°C~40°C | |
| Power supply | built-in rechargeable lithium battery (for 10 hours working) | |
| Dimension of main unit | 190×82×30mm | |
| Dimension of probe | 150×Ø22mm | |
| Weight | 540g | |

## STANDARD DELIVERY

| Code | 9646-300 | 9646-301 |
|---|---|---|
| Main unit | 1 pc | 1 pc |
| 19.6N manual probe | 1 pc | 1 pc |
| Bluetooth printer | — | 1 pc |
| Charger | 1 pc | 1 pc |
| USB cable | 1 pc | 1 pc |
| Randomized standard hardness block | 1 pc | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 9.8N manual probe | 9646-300-10 |
| 29.4N manual probe | 9646-300-30 |
| 49N manual probe | 9646-300-50 |
| 98N manual probe | 9646-300-98 |
| Hardness test block HRC20~30 | HDT-B-HRCU1 |
| Hardness test block HRC35~55 | HDT-B-HRCU2 |
| Hardness test block HRC60~70 | HDT-B-HRCU3 |
| Hardness test block 200~300HV2 | HDT-B-HV2U8 |
| Hardness test block 400~500HV2 | HDT-B-HV2U9 |
| Hardness test block 700~750HV2 | HDT-B-HV2U10 |
| Hardness test block 90~200HBW10/1000 | HDT-B-HB10U1 |
| Hardness test block 200~300HBW10/3000 | HDT-B-HB10U2 |
| Hardness test block 400~500HBW10/3000 | HDT-B-HB10U3 |
| Stand | 9646-300-STAND |

## SPECIFICATION OF PROBE

| Probe type | 9.8N (**optional**) | 19.6N (included) | 29.4N (**optional**) | 49N (**optional**) | 98N (**optional**)** |
|---|---|---|---|---|---|
| Diameter | 22mm | 22mm | 22mm | 22mm | 22mm |
| Length | 150mm | 150mm | 150mm | 150mm | 150mm |
| Maximum roughness of measuring surface | Ra<3.2μm | Ra<5μm | Ra<5μm | Ra<10μm | Ra<15μm |
| Minimum workpiece weight | 0.3kg* | 0.3kg* | 0.3kg* | 0.3kg* | 0.3kg* |
| Minimum thickness of workpiece | 2mm | 2mm | 2mm | 2mm | 2mm |
| Application | mold shells, fixtures, thin-walled parts, bearings, tooth sides and pipe interiors | | | measurement of grooves, gear flanks and gear roots | workpieces with low roughness requirement |

*If the weight or thickness of workpieces is less than required, the workpieces should be fixed or coupled on solid support

**For large test force, it is recommended to use the probe with a stand

## PORTABLE LEEB HARDNESS TESTER
## APPLICABLE MATERIAL AND HARDNESS RANGE OF IMPACT DEVICE D

| Material | HLD | HV | HB | HRC | HRB | HS | Tensile strength (MPa) |
|---|---|---|---|---|---|---|---|
| Steel & cast steel | 300-900 | 81-955 | 81-654 | 20-68 | 38-100 | 32-100 | 375-2639 |
| Tool steel | 300-840 | 80-898 | | 20-67 | | | |
| Stainless steel | 300-800 | 85-802 | 85-655 | | 46-101 | | |
| Cast iron | 360-650 | | 93-334 | | | | |
| Cast aluminum alloy | 170-570 | | 19-164 | | 23-84 | | |
| Brass | 200-550 | | 40-173 | | 13-95 | | |
| Bronze | 300-700 | | 60-290 | | | | |
| Copper | 200-690 | | 45-315 | | | | |

## PORTABLE LEEB HARDNESS TESTERS

BLUETOOTH DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO




**HDT-CB320**
(wired probe is included)




**HDT-WL320**
(wireless probe is included)

- Can use wired probes or wireless probes
- Dual-coil probe for high accuracy
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (σb)
- Dual value display, shows both Leeb and converted hardness
- Large 2.4" LCD display with backlight
- With a magnet on the back, the main unit can be attached on steel surfaces
- According to ASTM A956 and DIN 50156



hardness test block D (included)



small support ring (included)

connect to PC, upload the data to PC, print and send to Excel (software is included)




connect to bluetooth printer (**optional**)




To be continued

Continued from previous page

## SPECIFICATION

| Code | HDT-CB320 | HDT-WL320 |
|---|---|---|
| Probe included | wired probe D | wireless probe D |
| Optional probes | wired (DC/C/D/D+15/DL/E/G), wireless (DC/C/D/DL/G) | |
| Resolution | 1HLD/1HV/1HB/0.1HRC/0.1HRB/0.1HRA/0.1HS/1MPa | |
| Accuracy | ±6HLD (when HLD=800) | |
| Output | USB | |
| Measuring range | HL 170-960/HRC 1.3-74.7/HRB 1.2-139.7/HB 28-1027/HV 45-1221<br>HS 4.0-112.1/HRA 1.3-88.5/MPa 118-3315N/mm² | |
| Applicable materials | 1. steel/cast steel 2. alloy steel 3. stainless steel 4. gray pig iron<br>5. nodular cast iron 6. cast aluminum 7. brass 8. bronze<br>9. copper 10. forging steel 11. rolling steel | |
| Statistics | average/max./min./s.value | |
| Memory | 999 data | |
| Working environment | -10°C~45°C | |
| Power supply | 2×AA batteries | |
| Dimension | 145×68×28mm | |
| Weight | 158g | |

## STANDARD DELIVERY

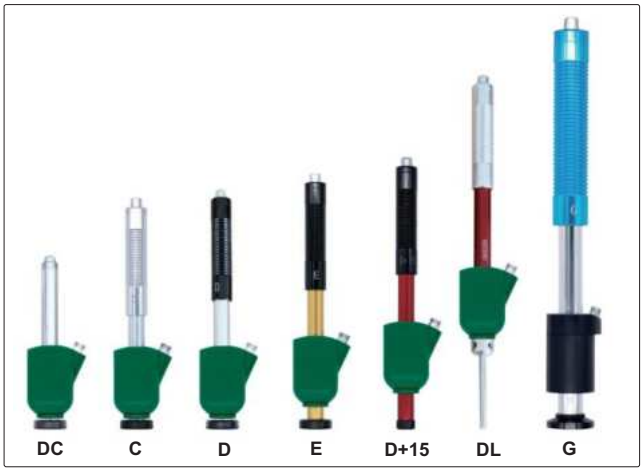
| Code | HDT-CB320 | HDT-WL320 |
|---|---|---|
| Main unit | 1 pc | 1 pc |
| Wired probe D | 1 pc | — |
| Wireless probe D | — | 1 pc |
| Hardness test block D | 1 pc | 1 pc |
| Small support ring | 1 pc | 1 pc |
| Cleaning brush | 1 pc | 1 pc |

## OPTIONAL ACCESSORY

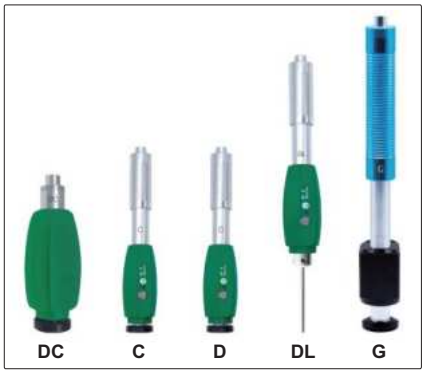
| | | |
|---|---|---|
| Wired probe | DC | HDT-CB320-DC |
| | C | HDT-CB320-C |
| | D | HDT-CB320-D |
| | D+15 | HDT-CB320-D15 |
| | DL | HDT-CB320-DL |
| | E | HDT-CB320-E |
| | G | HDT-CB320-G |
| Wireless probe | DC | HDT-WL320-DCW |
| | C | HDT-WL320-CW |
| | D | HDT-WL320-DW |
| | DL | HDT-WL320-DLW |
| | G | HDT-WL320-GW |
| Hardness test block D ** | | HDT-B-HLD3 |
| Hardness test block G * | | HDT-B-HLG2 |
| Printer | | ISH-LP200-PRINTER |
| Support rings | | page 862 |

* Hardness test block G (**HDT-B-HLG2**) is for probe G (**HDT-CB320-G** or **HDT-WL320-GW**)
** Hardness test block D (**HDT-B-HLD3**) is for all other probes

wired probes (**optional**)




wireless probes (**optional**)




## APPLICABLE WORKPIECE

| Probes | | DC | C | D | D+15 | DL | E | G |
|---|---|---|---|---|---|---|---|---|
| Application | | inner wall of small space | small or thin workpiece, coating layer | general use | deep groove | narrow slot or small hole | very hard material | casting or forging workpiece |
| Maximum roughness of workpiece (Ra) | | 2μm | 0.4μm | 2μm | 2μm | 2μm | 2μm | 7μm |
| Minimum weight of workpiece | direct measurement | 5kg | 1.5kg | 5kg | 5kg | 5kg | 5kg | 15kg |
| | on solid support | 2.5kg | 0.5kg | 2kg | 2kg | 2kg | 2.5kg | 5kg |
| | coupled on plate | 0.05-2kg | 0.02kg | 0.05-2kg | 0.1kg | 0.1kg | 0.1-2kg | 0.5kg |
| Minimum thickness of workpiece | | 3mm | 1mm | 3mm | 3mm | 3mm | 3mm | 10mm |

# PORTABLE LEEB HARDNESS TESTER (BUILT-IN BLUETOOTH)
# CODE ISH-PHB-B

BUILT-IN BLUETOOTH | DATA OUTPUT

VIDEO | INSPECTION CERTIFICATE

- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Memory of 99 measurement values for browsing
- Set measurement times (1~9) to have average value
- Connected with printer via wireless module
- Automatic power off
- According to ASTM A 956
- Wired data transmission (keyboard signal):
  USB cable connect to computer, press transmission button to send data
- Wireless data transmission (keyboard signal):
  built-in Bluetooth module connect to computer or mobile phone,
  press transmission button to send data



hardness test block D (included)



small support ring (included)



wireless printer (**optional**)




transmission button

**SPECIFICATION**

| | | |
|---|---|---|
| **Min. reading** | 1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa | |
| **Accuracy** | ±6HLD (when HLD=800) | |
| **Display** | Leeb (HLD), converted hardness, material, impact direction, test times, average value, date | |
| **Output** | bluetooth, USB | |
| **Applicable workpiece** | minimum weight | 5kg |
| | | 2kg (on solid support) |
| | | 0.1kg (coupled on plate) |
| | minimum thickness: 5mm | |
| | minimum radius of curved surface: 30mm | |
| | maximum roughness (Ra): 1.6μm | |
| **Power supply** | 3×AAA batteries | |
| **Dimension** | 150×84×28mm | |
| **Weight** | 200g | |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Impact device D** | 1 pc |
| **Hardness test block D** | 1 pc |
| **USB cable** | 1 pc |
| **Small support ring** | 1 pc |
| **Cleaning brush** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Wireless printer** | **ISH-DS-PRINTER** |
| **Couplant** | **ISH-COUPLANT** |
| **Support rings** | page 862 |
| **Hardness test block D** | **HDT-B-HLD3** |

connected to computer by USB cable, upload the data in real time



connected to computer by bluetooth module, upload the data in real time







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INSPECTION CERTIFICATE

VIDEO

# PORTABLE LEEB HARDNESS TESTER WITH WIRELESS PROBE
# CODE HDT-WP201

- Bluetooth digital probe
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRB), Shore (HSD) and tensile strength (σb)
- Dual value display, shows both Leeb and converted hardness
- Large LCD display with backlight
- Can choose large font display and statistics display
- Automatically calculate maximum, minimum and average value
- Save 300 data
- Operation temperature: -10°C~45°C
- According to ASTM A956, DIN 50156 GB/T 17394





hardness test block D (included)



small support ring (included)



bluetooth printer (**optional**)

## SPECIFICATION

| | |
|---|---|
| **Resolution** | 1HLD/1HV/1HB/0.1HRC/0.1HRB/ 0.1HSD/1σb |
| **Accuracy** | ±6HLD (when HLD=800) |
| **Measuring range** | HL 170-960/HRC 17-69/HRB 13-101.7/ HB 20-655/HV 80-940/HSD 32-99.5/ σb (rm) 255-2180N/mm² |
| **Power supply** | 2×AA batteries |
| **Dimension** | 135×77×32mm |
| **Weight** | 240g |



large font display



statistics display

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Hardness test block D** | 1 pc |
| **Small support ring** | 1 pc |
| **Cleaning brush** | 1 pc |
| **Impact device D** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Impact device DC** | **HDT-WL320-DCW** |
| **Impact device C** | **HDT-WL320-CW** |
| **Impact device DL** | **HDT-WL320-DLW** |
| **Impact device G** | **HDT-WL320-GW** |
| **Hardness test block D**** | **HDT-B-HLD3** |
| **Hardness test block G*** | **HDT-B-HLG2** |
| **Bluetooth printer** | **ISH-LP200-PRINTER** |
| **Support rings** | page 862 |

* Hardness test block G (**HDT-B-HLG2**) is for probe G (**HDT-WL320-GW**)
** Hardness test block D (**HDT-B-HLD3**) is for all others probes



DC **(optional)** C **(optional)** D (included) DL **(optional)** G **(optional)**

## APPLICABLE WORKPIECE

| **Impact device** | | **DC** | **C** | **D** | **DL** | **G** |
|---|---|---|---|---|---|---|
| **Application** | | inner wall of small space | small or thin workpiece, coating layer | general use | narrow slot or small hole | casting or forging workpiece |
| **Maximum roughness of workpiece (Ra)** | | 2μm | 0.4μm | 2μm | 2μm | 7μm |
| **Minimum weight of workpiece** | **direct measurement** | 5kg | 1.5kg | 5kg | 5kg | 15kg |
| | **on solid support** | 2kg | 0.5kg | 2kg | 2kg | 5kg |
| | **coupled on plate** | 0.05kg | 0.02kg | 0.05kg | 0.05kg | 0.5kg |
| **Minimum thickness of workpiece** | | 3mm | 1mm | 3mm | 3mm | 10mm |

# PORTABLE LEEB HARDNESS TESTERS (BASIC TYPE)

INSPECTION CERTIFICATE

VIDEO

POPULAR MODEL

- Can change probes
- Dual-coil probe for high accuracy
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRB), Shore (HSD) and tensile strength (σb)
- Dual value display, shows both Leeb and converted hardness
- Large LCD display with backlight
- Can choose large font display and statistics display
- Automatically calculate maximum, minimum and average value
- Save 300 data
- Operation temperature: -10°C~45°C
- According to ASTM A956, GB/T 17394



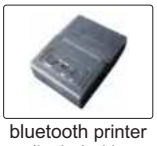
HDT-LP200



hardness test block D (included)



small support ring (included)



bluetooth printer (included in **HDT-LP200B**)



large font display



statistics display

### SPECIFICATION

| Code | HDT-LP200 | HDT-LP200B |
|---|---|---|
| Printer | not included | included |
| Resolution | 1HLD/1HV/1HB/0.1HRC/0.1HRB/ 0.1HSD/1σb | |
| Accuracy | ±6HLD (when HLD=800) | |
| Measuring range | HL 170-960/HRC 17-70/HRB 13-109/ HB 20-655/HV 80-940/HSD 32-99.5/ σb(rm) 255-2639N/mm² | |
| Power supply | 2×AA batteries | main unit: 2×AA batteries printer: rechargeable lithium battery |
| Dimension | 135×77×32mm | |
| Weight | 240g | |

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Hardness test block D | 1 pc |
| Small support ring | 1 pc |
| Cleaning brush | 1 pc |
| Impact device D | 1 pc |
| Bluetooth printer (included in HDT-LP200B) | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Impact device DC | HDT-LP200-DC |
| Impact device C | HDT-LP200-C |
| Impact device D+15 | HDT-LP200-D15 |
| Impact device DL | HDT-LP200-DL |
| Impact device G | HDT-LP200-G |
| Hardness test block D** | HDT-B-HLD3 |
| Hardness test block G* | HDT-B-HLG2 |
| Support rings | page 862 |

* Hardness test block G (**HDT-B-HLG2**) is for impact device G (**HDT-LP200-G**)

** Hardness test block D (**HDT-B-HLD3**) is for all other impact devices



DC (**optional**) C (**optional**) D (included) D+15 (**optional**) DL (**optional**) G (**optional**)

### APPLICABLE WORKPIECE

| Impact device | | DC | C | D | D+15 | DL | G |
|---|---|---|---|---|---|---|---|
| Application | | inner wall of small space | small or thin workpiece, coating layer | general use | deep groove | narrow slot or small hole | casting or forging workpiece |
| Maximum roughness of workpiece (Ra) | | 2μm | 0.4μm | 2μm | 2μm | 2μm | 7μm |
| Minimum weight of workpiece | direct measurement | 5kg | 1.5kg | 5kg | 5kg | 5kg | 15kg |
| | on solid support | 2kg | 0.5kg | 2kg | 2kg | 2kg | 5kg |
| | coupled on plate | 0.05kg | 0.02kg | 0.05kg | 0.1kg | 0.05kg | 0.5kg |
| Minimum thickness of workpiece | | 3mm | 1mm | 3mm | 3mm | 3mm | 10mm |





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DATA OUTPUT | HIGH ACCURACY | DL PROBE IS OPTIONAL

# PEN-TYPE LEEB HARDNESS TESTER (ADVANCED TYPE)
# CODE HDT-L410

INSPECTION CERTIFICATE

VIDEO


software flash disk (included)


hardness test block D (included)


wireless printer (**optional**)


small support ring (included)

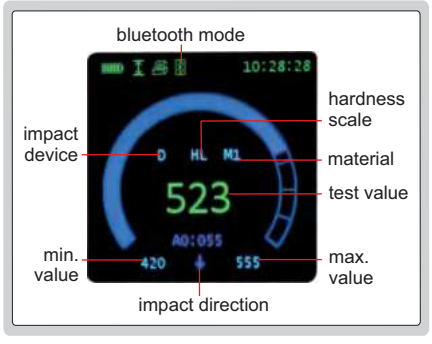



DL probe can be installed (**optional**)

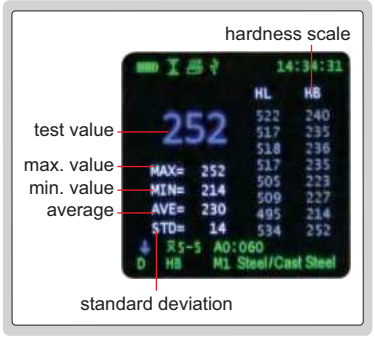



- Metal housing
- HD TFT 320×320 display
- Impact device D
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (SGM)
- Four display modes
- Automatic direction correction
- Tolerance testing
- Automatic power off, automatic calculation of statistics
- Dual value display, shows both Leeb and other conversion values
- 31 files can be saved, each containing 100 measurement data
- Connected to PC software via USB or Bluetooth 2.0
- Connected with printer via Bluetooth
- Operation temperature: -20°C~70°C
- According to ASTM A956, DIN 50156, GB/T 17394

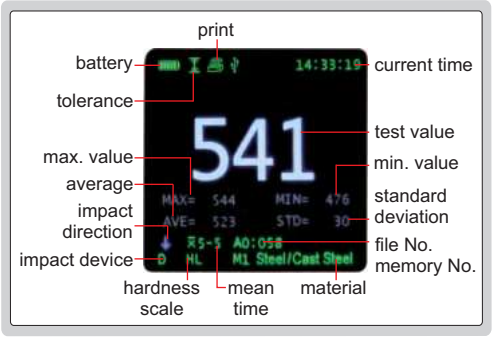
dynamic ring display




statistic display




can choose large font display

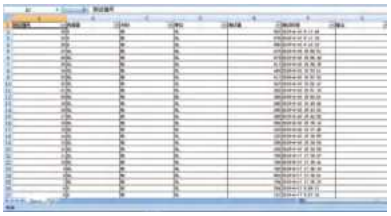



software (included), upload the memory to PC, print and send to EXCEL

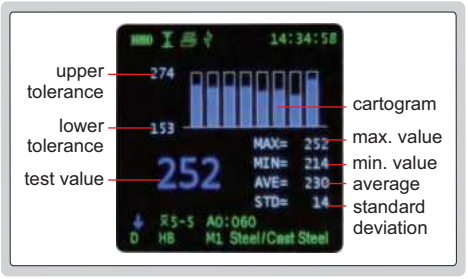
upload the memory to PC software via USB cable or Bluetooth



send the stored data to EXCEL



histogram display




## SPECIFICATION

| | | |
|---|---|---|
| **Resolution** | 1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HS, 1SGM | |
| **Accuracy** | ±4HLD (when HLD=800) | |
| **Output** | USB and bluetooth | |
| **Applicable workpiece** | minimum weight | 5kg (direct measurement) |
| | | 2kg (on solid support) |
| | | 0.05kg (coupled on plate) |
| | minimum thickness: 5mm | |
| | minimum radius of curved surface: 30mm | |
| | maximum roughness (Ra): 2μm | |
| **Power supply** | built-in 3.7V rechargeable battery | |
| **Dimension** | 148×44×22mm | |
| **Weight** | 115g | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Hardness test block D** | 1 pc |
| **Small support ring** | 1 pc |
| **Cleaning brush** | 1 pc |
| **AC/DC adapter** | 1 pc |
| **Software flash disk and USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Printer** | **HDT-L410-PRINTER** |
| **Support rings** | page 862 |
| **Hardness test block D** | **HDT-B-HLD3** |
| **DL probe** | **HDT-L410-DL** |

# PEN-TYPE LEEB HARDNESS TESTER (STANDARD TYPE)
# CODE HDT-B430

DATA OUTPUT | DL PROBE IS OPTIONAL | INSPECTION CERTIFICATE


software flash disk (included)


hardness test block D (included)


small support ring (included)


wireless printer (**optional**)

VIDEO

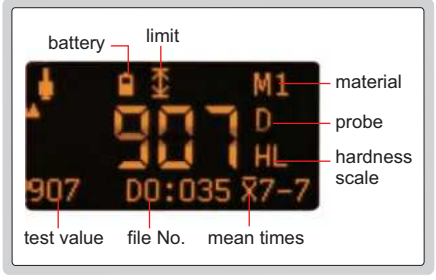


DL probe can be installed (**optional**)

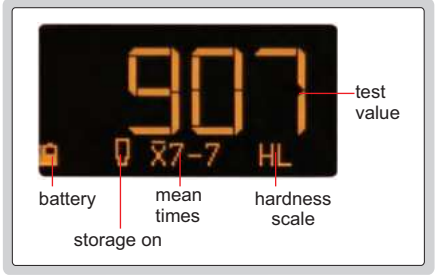


- Impact device D is included
- High contrast OLED display
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (σb)
- Dual value display, shows both Leeb and other conversion values
- No need to set the testing direction
- 31 files can be saved, each containing 100 measurement data
- Automatically calculate maximum, minimum, average value
- Connected to PC software via USB or Bluetooth
- Connected with printer via Bluetooth
- Operation temperature: -20°C~45°C
- According to ASTM A956, DIN 50156 GB/T, 17394

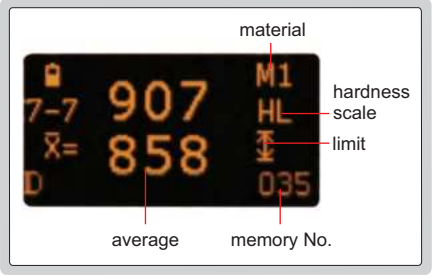
standard display



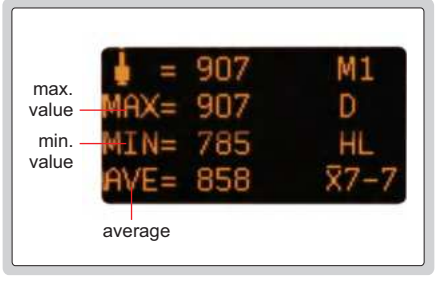

big character display




average display




statistical parameter display




software (included), upload the memory to PC, print and send to EXCEL

upload the memory to PC software via USB cable or Bluetooth



send the stored data to EXCEL



## SPECIFICATION

| | | |
|---|---|---|
| **Resolution** | 1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HSD, 16b | |
| **Accuracy** | ±6HLD (when HLD=800) | |
| **Measuring range** | HLD170-960, HRC17-70, HRB13-109, HB20-655, HV80-940 HSD32-99.5, HRA30-88, σb (rm) 255-2180N/mm² | |
| **Applicable workpiece** | minimum weight | 5kg (direct measurement) |
| | | 2kg (on solid support) |
| | | 0.05kg (coupled on plate) |
| | minimum thickness: 5mm | |
| | minimum radius of curved surface: 30mm | |
| | maximum roughness (Ra): 2μm | |
| **Output** | USB and bluetooth | |
| **Power supply** | built-in 3.7V rechargeable battery | |
| **Dimension** | 148×44×28mm | |
| **Weight** | 110g | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Hardness test block D** | 1 pc |
| **Small support ring** | 1 pc |
| **Cleaning brush** | 1 pc |
| **AC/DC adapter** | 1 pc |
| **Software flash disk and USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Printer** | **ISH-LP200-PRINTER** |
| **Support rings** | page 862 |
| **Hardness test block D** | **HDT-B-HLD3** |
| **DL probe** | **HDT-L410-DL** |





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DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO

# PEN-TYPE LEEB HARDNESS TESTER (BASIC TYPE)
# CODE HDT-L411





software flash disk (included)

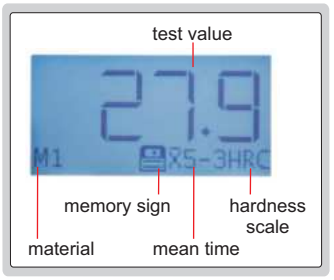


hardness test block D (included)



small support ring (included)

can choose large font display

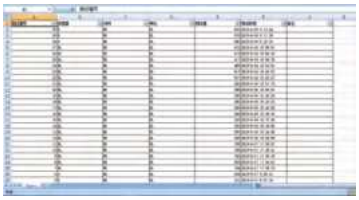



software (included), upload the memory to PC, print and send to EXCEL

upload the memory to PC software via USB cable



send the stored data to EXCEL



- Impact device D
- Universal testing angle, no need to set impact direction
- Dual-coil probe, high accuracy
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (SGM)
- Dual value display, shows both Leeb and converted hardness
- High contrast digital LCD display
- Can choose large font display
- Automatically calculate maximum, minimum, average value
- Connected to PC via USB
- Save 999 data
- Operation temperature: -20°C~45°C
- According to ASTM A956, DIN 50156, GB/T 17394

## SPECIFICATION

| | | |
|---|---|---|
| **Resolution** | 1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HS, 1SGM | |
| **Accuracy** | ±6HLD (when HLD=800) | |
| **Output** | USB | |
| **Measuring range** | HL100-960, HRC1-74.7, HRB1.2-140, HB28-1027, HV45-1230, HS4-112, HRA7-88.5, SGM (rm) 118-3315N/mm² | |
| **Applicable workpiece** | minimum weight | 5kg (direct measurement) |
| | | 2kg (on solid support) |
| | | 0.05kg (coupled on plate) |
| | minimum thickness: 5mm | |
| | minimum radius of curved surface: 30mm | |
| | maximum roughness (Ra): 2μm | |
| **Power supply** | 1×AAA battery | |
| **Dimension** | 148×45×21mm | |
| **Weight** | 105g | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Hardness test block D** | 1 pc |
| **Cleaning brush** | 1 pc |
| **AAA battery** | 1 pc |
| **Small support ring** | 1 pc |
| **Software flash disk and USB cable** | 1 pc |

## OPTIONAL ACCESSORY

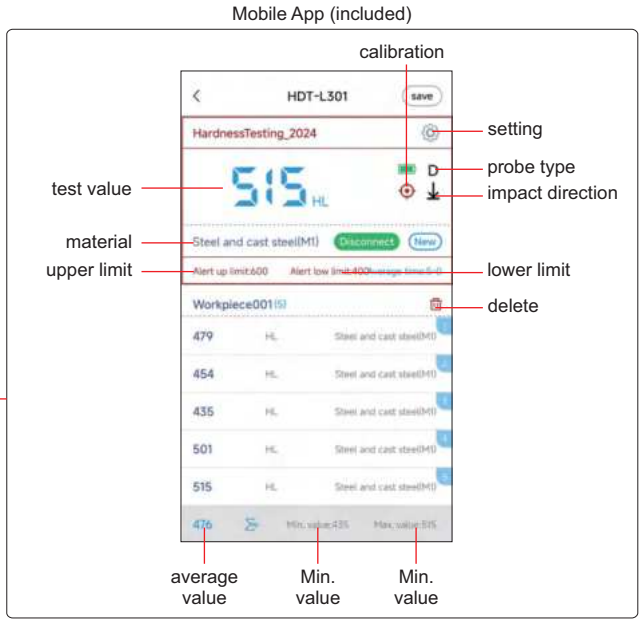
| | |
|---|---|
| **Support rings** | page 862 |
| **Hardness test block D** | **HDT-B-HLD3** |

# MINI LEEB HARDNESS TESTER
# CODE HDT-L301

BUILT-IN BLUETOOTH | DATA OUTPUT | INSPECTION CERTIFICATE

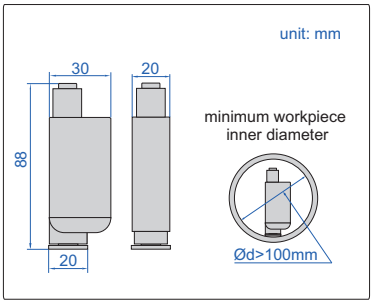
VIDEO



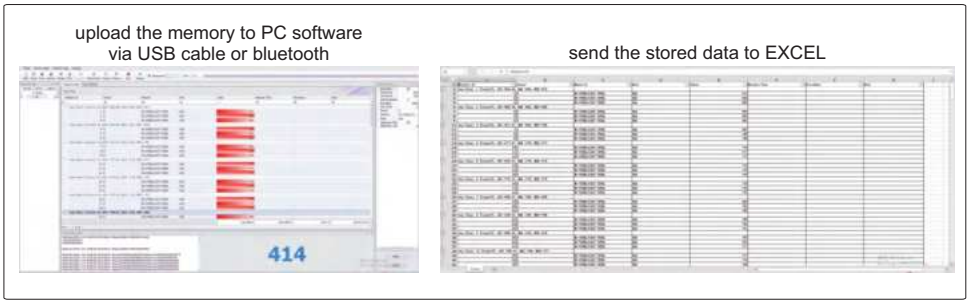




- One-handed operation is possible, making test easier and faster
- Suitable for testing hardness in small space
- All directions test, do not need to set impact direction
- The hardness value can be displayed on hardness tester and the cell phone App at the same time. It can also be connected by computer
- Automatic shutdown
- Support unlimited storage and sharing of test reports
- According to DIN 50156, EN ISO 16859, ASTM A956 standards

dimension of main unit




computer software (included)




## SPECIFICATION

| | |
|---|---|
| **Accuracy** | ±6HLD (when HLD=800) |
| **Impact device** | D |
| **Hardness scale** | HLD, HRA, HRB, HRC, HB, HS, HV, MPa |
| **Measurement range** | 170-960HLD, 7-88.5HRA, 1.2-140HRB, 1-74HRC, 18-1027HB, 3.9-112HS, 42-1220HV, 89-3300MPa |
| **Resolution** | 1HV, 0.1HRA, 0.1HRB, 0.1HRC, 1HB, 0.1HS, 1MPa |
| **Applicable material** | 1. steel/cast steel 2. alloy tool steel<br>3. stainless steel 4. grey cast iron<br>5. nodular cast iron 6. cast aluminium<br>7. brass 8. bronze<br>9. copper 10. forged steel |
| **Output** | USB and bluetooth |
| **Operation temperature** | -20°C~45°C |
| **Power supply** | 3.7V Li-ion rechargeable battery |
| **Dimension** | 88×30×20mm |
| **Weight** | 45g |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Hardness test block D** | 1 pc |
| **Support ring** | 1 pc |
| **Cleaning brush** | 1 pc |
| **Loading rod** | 1 pc |
| **Software and USB cable** | 1 pc |

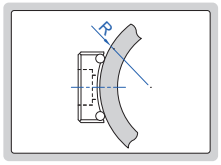


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## SUPPORT RING SET FOR PORTABLE LEEB HARDNESS TESTER
## CODE ISH-PH-SP9

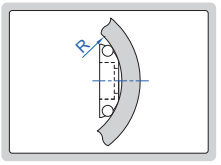
type A





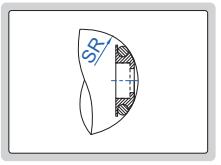

type B






type C






**SPECIFICATION**

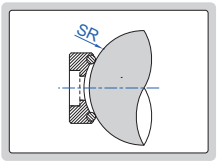
| Type | Applicable workpieces | Range (mm) | Quantity |
|---|---|---|---|
| A | cylindrical outside surface | R10-15 | 3 pcs |
| | | R14.5-30 | |
| | | R25-50 | |
| B | cylindrical inside surface | R11-13 | 3 pcs |
| | | R12.5-17 | |
| | | R16.5-30 | |
| C | spherical inside surface | SR11-13 | 3 pcs |
| | | SR12.5-17 | |
| | | SR16.5-30 | |
| D | spherical outside surface | SR10-15 | 2 pcs |
| | | SR14.5-30 | |
| E | cylindrical outside surface | R>10 | 1 pc |

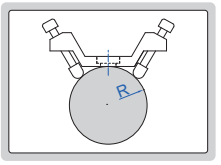
type D



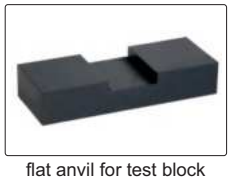
type E






## DIGITAL MAGNETIC ROCKWELL HARDNESS TESTER
## CODE ISHR-D121



flat anvil for test block
(included)




- Apply to large and heavy steel or iron workpieces
- With statistic function, display average, maximum and minimum values
- Convert to HV, HB and tensile strength
- According to ISO 6508, ASTM E18

**SPECIFICATION**

| | |
|---|---|
| **Hardness scale** | HRA, HRB, HRC |
| **Preliminary test force** | 10kg |
| **Test force** | 60kg, 100kg, 150kg |
| **Load control** | manual |
| **Min. reading** | 0.1HR |
| **Flat workpiece requirement** | length>190mm, width>60mm, thickness>5mm |
| **Cylinder or tube workpiece requirement** | length>200mm, diameter>Ø50mm, wall thickness>8mm |
| **Power supply** | 3×AA batteries |
| **Dimension** | 245×105×230mm |
| **Weight** | 5.3kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Flat anvil** | 1 pc |
| **Diamond indenter** | 1 pc |
| **Ø1.5875mm carbide ball indenter** | 1 pc |
| **Hardness test block HRB85~95** | 1 pc |
| **Hardness test block HRC60~70** | 1 pc |
| **Hardness test block HRC20~30** | 1 pc |

## MAGNETIC ROCKWELL HARDNESS TESTER
## CODE ISHR-M111

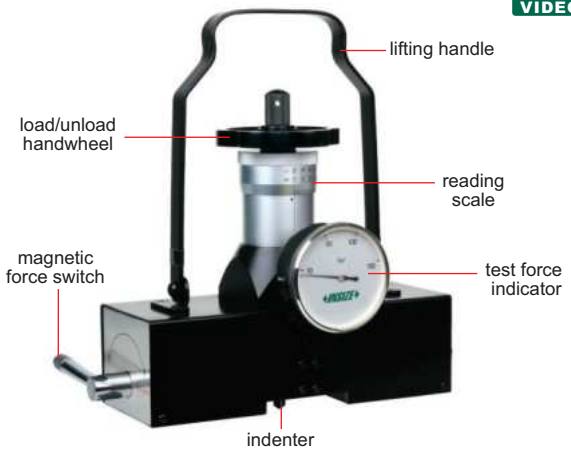
VIDEO

- Apply to large and heavy steel or iron workpieces
- According to ISO 6508, ASTM E18


flat anvil for test block (included)


supports for cylinder or tube workpieces (included)


magnifier with LED (included)




### SPECIFICATION

| | |
|---|---|
| Hardness scale | HRA, HRB, HRC, HRD, HRF, HRG |
| Preliminary test force | 10kg |
| Test force | 60kg, 100kg, 150kg |
| Load control | manual |
| Min. reading | 1HR |
| Flat workpiece requirement | length>180mm, width>60mm, thickness>5mm |
| Cylinder or tube workpiece requirement | length>180mm, diameter>Ø50mm, wall thickness>8mm |
| Dimension | 220×70×220mm |
| Weight | 4.7kg |

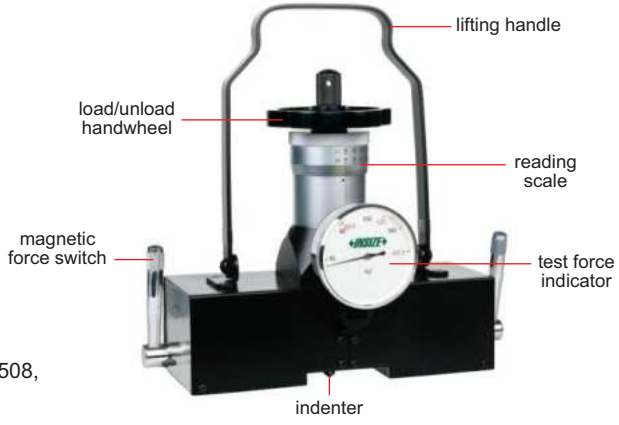
### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Diamond indenter | 1 pc |
| Ø1.5875mm carbide ball indenter | 2 pcs |
| Hardness test block HRB85~95 | 1 pc |
| Hardness test block HRC60~70 | 1 pc |
| Hardness test block HRC20~30 | 1 pc |
| Flat anvil | 1 pc |
| Support | 4 pcs |
| Magnifier with LED | 1 pc |

## MAGNETIC BRINELL/ROCKWELL HARDNESS TESTER
## CODE ISHR-B141

VIDEO






- Apply to large steel or iron workpieces
- According to ISO 6508, ASTM E18


flat anvil for test block (included)


supports for cylinder or tube workpieces (included)


magnifier with LED (included)


measuring microscope (included)

### SPECIFICATION

| | |
|---|---|
| Rockwell scale | HRA, HRB, HRC, HRD, HRF, HRG |
| Brinell measuring range | 20~650HBW |
| Rockwell test force | 10kg preload, 60kg, 100kg, 150kg total load |
| Brinell test force | 62.5kg, 125kg, 187.5kg |
| Load control | manual |
| Min. Rockwell reading | 1HR |
| Measuring microscope | 40X, graduation 0.01mm |
| Flat workpiece requirement | length>180mm, width>60mm, thickness>5mm |
| Cylinder and tube workpiece requirement | length>180mm, diameter>Ø50mm, thickness>8mm |
| Dimension | 220×70×220mm |
| Weight | 4.7kg |

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Flat anvil | 1 pc |
| Support | 4 pcs |
| Diamond Rockwell indenter | 1 pc |
| Ø1.5875mm carbide ball indenter | 1 pc |
| Ø2.5mm Brinell indenter | 1 pc |
| Hardness test block HRB85~95 | 1 pc |
| Hardness test block HRC60~70 | 1 pc |
| Hardness test block HRC20~30 | 1 pc |
| Brinell test block | 1 pc |
| Measuring microscope | 1 pc |
| Magnifier with LED | 1 pc |

VIDEO

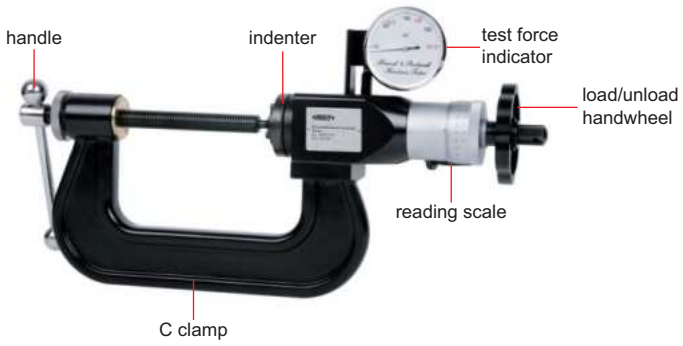
# PORTABLE BRINELL AND ROCKWELL HARDNESS TESTER
# CODE ISBR-H181

- Apply to huge or medium-size workpieces
- According to ISO 6506, ISO 6508, ASTM E10, ASTM E18


flat anvil (included)


V-type anvil (included)


measuring microscope (included)




**SPECIFICATION**

| | |
|---|---|
| Rockwell hardness scale | HRA, HRB, HRC |
| Brinell test range | 16~650HBW |
| Rockwell preliminary test force | 10kgf |
| Rockwell total test force | 60kgf, 100kgf, 150kgf |
| Brinell test force | 62.5kgf, 125kgf, 187.5kgf |
| Load control | manual |
| Min. reading | rockwell 0.5HR<br>brinell 0.005mm (indentation diameter) |
| Max. workpiece thickness | 75mm |
| Max. testing width | 100mm (from the center of indenter to the main body) |
| Dimension | 510×380×180mm |
| Weight | 2.3kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Diamond indenter | 1 pc |
| Ø1.5875mm carbide ball indenter | 1 pc |
| Ø2.5mm carbide ball indenter | 1 pc |
| Ø5mm carbide ball indenter | 1 pc |
| Hardness test block HRBW88~95 | 1 pc |
| Hardness test block HRC20~30 | 1 pc |
| Hardness test block HRC60~65 | 1 pc |
| Hardness test block 200~300HBW2.5/187.5 | 1 pc |
| Flat anvil | 1 pc |
| V-type anvil | 1 pc |
| Measuring microscope | 1 pc |

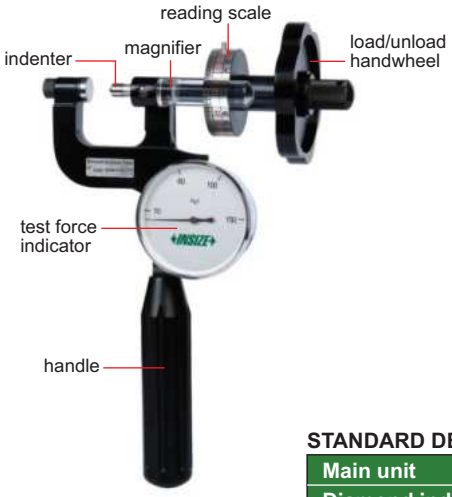
VIDEO

# PORTABLE ROCKWELL HARDNESS TESTER
# CODE ISHR-P151


anvil extension for thin workpieces (included)


flat anvil (included)


V-type anvil (included)







- According to ISO 6508, ASTM E18

**SPECIFICATION**

| | |
|---|---|
| Hardness scale | HRA, HRB, HRC, HRD, HRF, HRG |
| Preliminary test force | 10kg |
| Test force | 60kg, 100kg, 150kg |
| Load control | manual |
| Min. reading | 1HR |
| Max. workpiece thickness | 25mm |
| Max. testing width | 25mm (from the center of indenter to the main body) |
| Dimension | 240×70×160mm |
| Weight (with base) | 2.5kg |

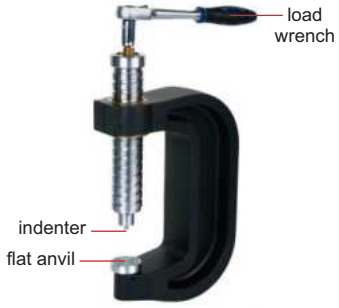
**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Diamond indenter | 1 pc |
| Ø1.5875mm carbide ball indenter | 2 pcs |
| Hardness test block HRB88~95 | 1 pc |
| Hardness test block HRC60~65 | 1 pc |
| Hardness test block HRC20~30 | 1 pc |
| Flat anvil | 1 pc |
| V-type anvil | 1 pc |
| Base | 1 pc |
| Anvil extension | 1 pc |
| Magnifier | 2 pcs |

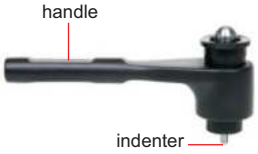
# PIN BRINELL HARDNESS TESTER
# CODE ISHB-P101

VIDEO

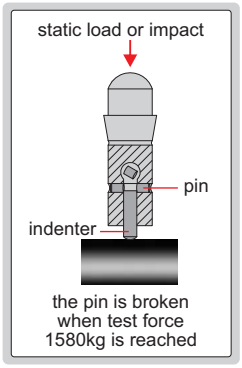
- Measure Brinell hardness of large and heavy workpieces
- 1580kg test force and Ø7.26mm ball indenter, equal to 3000kg test force and Ø10mm ball indenter
- Static and impact test modes
- According to ISO and ASTM standard




**static test clamp**




**impact test handle**




static test



impact test





measuring microscope (included)



pins (included)



V-type anvil (included)

### SPECIFICATION

| | |
|---|---|
| **Measuring range** | 100~350HBW (with Ø7.26mm indenter, included)<br>350~650HBW (with Ø4mm indenter, **optional**) |
| **Test force** | 1580kg |
| **Accuracy** | static test: ±3%<br>impact test: ±5% |
| **Measuring microscope** | 20X, graduation 0.01mm |
| **Max. workpiece height of static test** | 150mm |
| **Max. testing width of static test** | 80mm (from the center of indenter to the clamp) |
| **Dimension** | 195×60×350mm |
| **Weight** | 4.2kg |

### STANDARD DELIVERY

| | |
|---|---|
| **Static test clamp** | 1 pc |
| **Impact test handle** | 1 pc |
| **Flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Ø7.26mm indenter** | 1 pc |
| **Hardness test block** | 1 pc |
| **Pin** | 250 pcs |
| **Measuring microscope** | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| **Ø4mm indenter** | **ISHB-P101-INDENTER** |
| **Pin (250 pcs)** | **ISHB-P101-PIN** |

# HAMMER IMPACT BRINELL HARDNESS TESTER
# CODE HDT-PB350

27




VIDEO



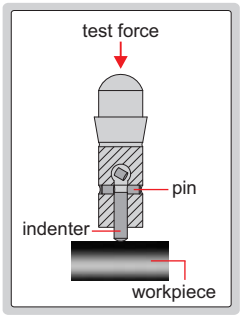
hammer impact to apply test force



pins (included)



measuring microscope (included)




the pin is broken when test force 1580kg is reached

- Measure Brinell hardness of large and heavy workpieces
- 1580kg test force and Ø7.26mm ball indenter, equal to 3000kg test force and Ø10mm ball indenter

### SPECIFICATION

| | |
|---|---|
| **Measuring range** | 100~350HBW (with Ø7.26mm indenter, included)<br>350~650HBW (with Ø4mm indenter, **optional**) |
| **Test force** | 1580kg |
| **Accuracy** | ±5%HBW |
| **Repeatability** | ±5%HBW |
| **Measuring microscope** | 20X, graduation 0.01mm |
| **Dimension** | 200×50×100mm |
| **Weight** | 0.8kg |

### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø7.26mm indenter** | 1 pc |
| **Hardness test block** | 1 pc |
| **Pin** | 250 pcs |
| **Pin removal tool** | 1 pc |
| **Measuring microscope** | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| **Ø4mm indenter** | **ISHB-P101-INDENTER** |
| **Pin (250 pcs)** | **ISHB-P101-PIN** |



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VIDEO

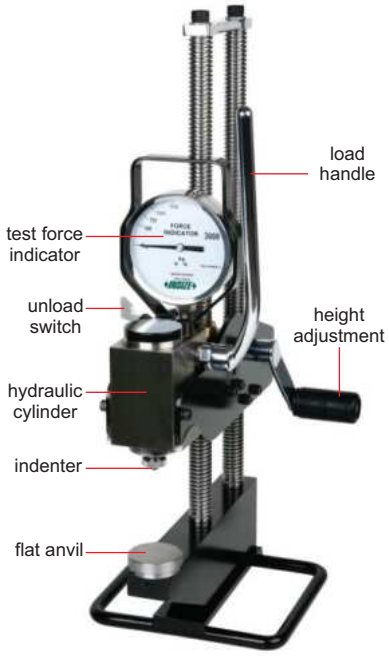
# HYDRAULIC BRINELL HARDNESS TESTER
# CODE ISHB-H131


V-type anvil
(included)


spherical anvil
(included)


measuring microscope
(included)

- According to ISO 6506, ASTM E10




**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | 16~650HBW |
| **Test force** | 3000kg |
| **Indenter** | Ø10mm carbide ball |
| **Measuring microscope** | 20X, graduation 0.01mm |
| **Max. workpiece height** | 350mm |
| **Max. testing width** | 90mm (from the center of indenter to the column) |
| **Dimension** | 270×225×570mm |
| **Weight** | 13.8kg |

**STANDARD DELIVERY**

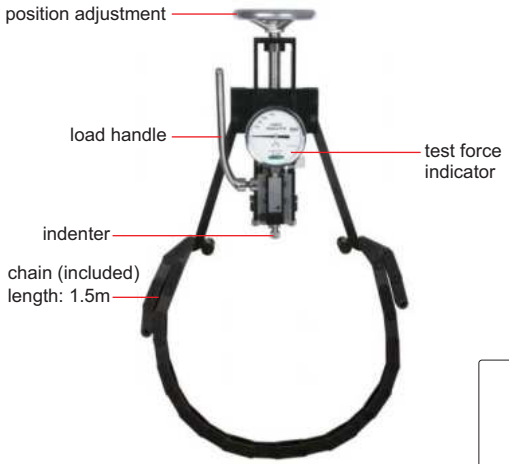
| | |
|---|---|
| **Main unit** | 1 pc |
| **Flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Spherical anvil** | 1 pc |
| **Ø10mm carbide ball** | 2 pcs |
| **Brinell test block** | 2 pcs |
| **Measuring microscope** | 1 pc |

VIDEO

# CHAIN TYPE HYDRAULIC BRINELL HARDNESS TESTER
# CODE ISHB-C161



- To measure the hardness of cylinders or tubes
- According to ISO 6506, ASTM E10




**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | 32~650HBW |
| **Workpiece diameter range** | Ø150~Ø500mm |
| **Test force** | 3000kg |
| **Indenter** | Ø10mm carbide ball |
| **Measuring microscope** | 20X, graduation 0.01mm |
| **Dimension** | 270×225×570mm |
| **Weight** | 14.5kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **1.5m chain** | 1 pc |
| **Ø10mm carbide ball** | 2 pcs |
| **Brinell test block** | 2 pcs |
| **Measuring microscope** | 1 pc |


measuring microscope
(included)

# ALUMINUM HARDNESS TESTERS




**ISHW-L20B**

- To measure the hardness of soft metals such as aluminum alloy, copper, brass, soft steel, etc.
- According to ASTM B647-84 (2000)

**SPECIFICATION**

| Code | ISHW-L20 | ISHW-L20A | ISHW-L20B | ISHW-B70 | ISHW-B75 | ISHW-B92 |
|---|---|---|---|---|---|---|
| Application | for aluminum alloy general use | for aluminum alloy thick workpiece | for aluminum alloy small tube | for hard aluminum alloy and hard brass | for soft brass and copper | for soft steel and cold-rolled steel |
| Thickness requirement of flat workpiece | 0.6~6mm | 0.6~13mm | 0.6~8mm | 0.6~6mm | 0.6~6mm | 0.6~6mm |
| Internal diameter requirement of tube workpiece | >Ø10mm | >Ø10mm | >Ø6mm | >Ø10mm | >Ø10mm | >Ø10mm |
| Wall thickness requirement of tube workpiece | 0.6~6mm | 6~13mm (internal diameter Ø10~23.3mm) 0.6~6mm (internal diameter >Ø23.3mm) | 0.6~8mm | 0.6~6mm | 0.6~6mm | 0.6~6mm |
| Hardness range | 0~20HW | | | | | |
| Min. reading | 1HW | | | | | |
| Accuracy | ±0.5HW (at 5~17HW) | | | | | |
| Dimension | 205×30×85mm | | | | | |
| Weight | 500g | | | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Spare indenter | 1 pc |
| Hardness test block | 1 pc |
| Wrench | 1 pc |

## ALUMINUM HARDNESS TESTERS (BASIC TYPE)

VIDEO

- To measure the hardness of soft metals such as aluminum alloy, copper, brass, soft steel, etc.
- According to ASTM B647-10 (2016)



ISHW-H10

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Spare indenter | 1 pc |
| Hardness test block | 1 pc |
| Wrench | 1 pc |

**SPECIFICATION**

| Code | ISHW-H10 | ISHW-H11 | ISHW-H12 | ISHW-H13 | ISHW-H14 | ISHW-H15 |
|---|---|---|---|---|---|---|
| Application | for aluminum alloy general use | for aluminum alloy thick workpiece | for aluminum alloy small tube | for hard aluminum alloy and hard brass | for soft brass and copper | for soft steel and cold-rolled steel |
| Thickness requirement of flat workpiece | 0.6~6mm | 0.6~13mm | 0.6~8mm | 0.6~6mm | 0.6~6mm | 0.6~6mm |
| Internal diameter requirement of tube workpiece | >Ø10mm | >Ø10mm | >Ø6mm | >Ø10mm | >Ø10mm | >Ø10mm |
| Wall thickness requirement of tube workpiece | 0.6~6mm | 6~13mm (internal diameter Ø10~23.3mm) 0.6~6mm (internal diameter>Ø23.3mm) | 0.6~8mm | 0.6~6mm | 0.6~6mm | 0.6~6mm |
| Hardness range | 0~20HW | | | | | |
| Min. reading | 1HW | | | | | |
| Accuracy | ±0.5HW (at 5~17HW) | | | | | |
| Dimension | 205×30×95mm | | | | | |
| Weight | 500g | | | | | |

## DIGITAL ALUMINUM HARDNESS TESTERS

VIDEO

- To measure the hardness of soft metals such as aluminum profiles, tubes, plates, aluminum parts and other soft metals
- Easy to read, with peak hold function
- According to ASTM B647-2023



ISHW-D20

**SPECIFICATION**

| Code | ISHW-D20 | ISHW-D21 | ISHW-D22 |
|---|---|---|---|
| Application | for aluminum alloy general use | for aluminum alloy thick workpieces | for aluminum alloy small tubes |
| Thickness requirement of flat workpieces | 1~6mm | 1~13mm | 1~6mm |
| Internal diameter requirement of tube workpieces | >Ø10mm | >Ø10mm | >Ø6mm |
| Wall thickness requirement of tube workpieces | 1~6mm | 6~13mm (internal diameter Ø10mm~24mm) 1~6mm (internal diameter >Ø24mm) | 1~6mm |
| Hardness range | 0~20HW | | |
| Min. reading | 0.1HW | | |
| Accuracy | ±0.5HW (at 5~18HW) | | |
| Dimension | 203×44×105mm | | |
| Weight | 500g | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Spare indenter | 1 pc |
| Hardness test block | 1 pc |
| Wrench | 1 pc |
| Lithium battery | 2 pcs |
| Lithium battery charger | 1 pc |

## ALUMINUM HARDNESS TESTER
## CODE ISHB-B300

VIDEO

- To measure the hardness of workpieces made of pure aluminum, aluminum alloy, fiber reinforced plastic, hard plastic, etc.
- According to ASTM B648-00, ASTM D2853-07




**SPECIFICATION**

| | |
|---|---|
| Hardness range | 0~100HBa |
| Effective range | 35~90HBa (equal to 25~150HBW) |
| Min. reading | 1HBa |
| Accuracy | ±2HBa (at 42~52HBa)<br>±1HBa (at 84~88HBa) |
| Min. workpiece thickness | 0.8mm |
| Dimension | 142×65×90mm |
| Weight | 500g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Spare indenter | 2 pcs |
| Hardness test block | 2 pcs |
| Wrench | 1 pc |

## DIGITAL ALUMINUM HARDNESS TESTER
## CODE HDT-DB337

INSPECTION CERTIFICATE

VIDEO

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- To measure the hardness of workpieces made of pure aluminum, aluminum alloy, fiber reinforced plastic, hard plastic, etc.
- The support can be rotated, no need to disassemble
- Can be converted to HW, HRE, HRF, HV, HB values
- Full scale one key reset, no need to disassemble for external calibration
- According to ASTM B648, ASTM HD2583-2007




**SPECIFICATION**

| | |
|---|---|
| Hardness range | 0~100HBa |
| Effective range | 40~90HBa (equal to 25~135HBW) |
| Min. reading | 0.1HBa |
| Accuracy | ±2HBa (at 42~52HBa)<br>±1HBa (at 84~88HBa) |
| Repeatability | ±2.5HBa (at 42~52HBa)<br>±1.5HBa (at 84~88HBa) |
| Min. workpiece thickness | 1.5mm |
| Dimension | 143×40×87mm |
| Weight | 260g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Full scale calibration block | 1 pc |
| Hardness test block | 2 pcs |
| Spare pin | 1 pc |
| Wrench | 1 pc |
| Power adapter | 1 pc |

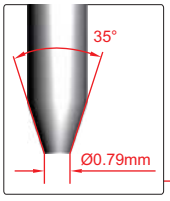
# DIGITAL SHORE DUROMETERS

INSPECTION CERTIFICATE

VIDEO

- With time hold function, the time can be set from 0 to 30 seconds
- 1.5 inch OLED display
- Meet the requirements of force measurement forward and reverse in the verification regulations
- Digital displacement sensor, high test accuracy
- Zero point calibration function, calibration block is not required
- With average function, to have average values from 0 to 9 times
- Can be used with test stand (**optional**) for high accuracy and stable measurement
- According to ISO 48, ISO 7619, ISO 21509

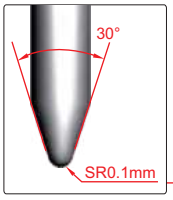



blunt taper indenter

**HDT-ESA**




sharp point indenter

**HDT-ESD**

**SPECIFICATION**

| Code | HDT-ESA | HDT-ESD |
|---|---|---|
| Unit | shore A | shore D |
| Test material | medium hardness vulcanized rubber and thermoplastic rubber, etc. | high hardness vulcanized rubber and thermoplastic rubber, etc. |
| Measuring range | 0~100HA * | 0~100HD * |
| Resolution | 0.2HA | 0.2HD |
| Accuracy | ±1HA | ±1HD |
| Indenter protrusion | 2.5mm | |
| Output | USB | |
| Power supply | built-in rechargeable battery | |
| Dimension | 150×60×50mm | |
| Weight | 300g | |

* Use **HDT-ESD** when measuring result is higher than 90HA
use **HDT-ESA** when measuring result is lower than 20HD

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Software and USB cable | 1 pc |
| Power adapter | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Test stand for digital shore durometers | HDT-ES-STD |

# TEST STAND FOR DIGITAL SHORE DUROMETERS CODE HDT-ES-STD



VIDEO

INSPECTION CERTIFICATE




- For digital shore durometers **HDT-ESA** and **HDT-ESD**
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- Special structure for stable loading
- Weight block A (included) is for **HDT-ESA** weight block D (**optional**) is for **HDT-ESD**



weight block D (**optional**) for **HDT-ESD**

**SPECIFICATION**

| | |
|---|---|
| Stage diameter | Ø95mm |
| Max. workpiece height | 90mm |
| Max. testing width | 55mm (from test point to the column) |
| Dimension | 200×160×440mm |
| Weight | 13kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Test stand | 1 pc |
| Weight block A (for HDT-ESA) | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Weight block D (for HDT-ESD) | HDT-ES-W5 |

# DIGITAL SHORE DUROMETERS

VIDEO




blunt taper indenter

**ISH-DSA**




sharp point indenter

**ISH-DSD**




ball indenter

**ISH-DSOO**

- According to ISO868, ISO7619, ASTM D 2240
- Average and peak (max.) mode
- Dwell time is adjustable
- Tolerance testing
- 500 memories
- Wireless connection to printer
- Handhold use or work with test stand (code **ISH-DS-STANDA**)
- Automatic power off



software flash disk (included)



calibration block (included)



printer (**optional**)

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## SPECIFICATION

| Code | ISH-DSA | ISH-DSD | ISH-DSOO |
|---|---|---|---|
| Unit | Shore A | Shore D | Shore OO |
| Test material | soft plastic, soft rubber, etc. | hard plastic, hard rubber, etc. | very soft plastic, rubber, sponge, textile, etc. |
| Measuring range | 0~100HA* | 0~100HD* | 0~100HOO |
| Resolution | 0.1HA | 0.1HD | 0.1HOO |
| Accuracy | ±1HA | ±1HD | ±1HOO |
| Indenter protrusion | 2.5mm | | |
| Output | wireless and USB | | |
| Power supply | built-in rechargeable battery | | |
| Dimension | 153×50×29mm | | |
| Weight | 170g | | |

* Use **ISH-DSD** when measuring result is higher than 90HA
Use **ISH-DSA** when measuring result is lower than 20HD

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Calibration block | 1 pc |
| Software and USB cable | 1 pc |
| AC/DC adapter | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Printer | ISH-DS-PRINTER |
| Test stand | ISH-DS-STANDA |



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VIDEO

# TEST STAND FOR DIGITAL SHORE DUROMETERS CODE ISH-DS-STANDA

- For digital shore durometers (code **ISH-DSA**, **ISH-DSD** and **ISH-DSOO**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- Special structure for stable loading
- Weight block A (included) is for **ISH-DSA**, weight block D (**optional**) is for **ISH-DSD**, remove weight block for **ISH-DSOO**



weight block D (**optional**) for **ISH-DSD**




**SPECIFICATION**

| | |
|---|---|
| **Stage diameter** | Ø115mm |
| **Max. workpiece height** | 45mm |
| **Max. testing width** | 63mm (from test point to the column) |
| **Dimension** | Ø195×370mm |
| **Weight** | 5.61kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Test stand** | 1 pc |
| **Weight block A (for ISH-DSA)** | 1 pc |

**OPTIONAL ACCESSORY**

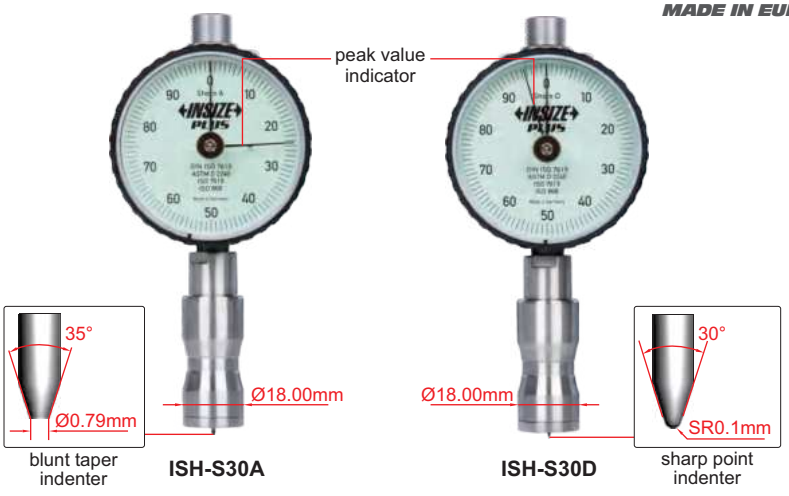
| | |
|---|---|
| **Weight block D (for ISH-DSD)** | **ISH-DS-W4** |

VIDEO

# SHORE DUROMETERS

INSIZE PLUS MADE IN EUROPE

- According to ISO868, ISO7619, ASTM D 2240
- With peak value indicator
- Handhold use or work with test stand (code **ISH-OS2**)




**SPECIFICATION**

| **Code** | **ISH-S30A** | **ISH-S30D** |
|---|---|---|
| **Scale** | Shore A | Shore D |
| **Test material** | soft plastic, soft rubber, etc. | hard plastic, hard rubber, etc. |
| **Measuring range** * | 0~100HA | 0~100HD |
| **Graduation** | 1HA | 1HD |
| **Accuracy** | ±0.5HA | ±0.5HD |
| **Indenter protrusion** | 2.5mm | |
| **Weight** | 184g | |

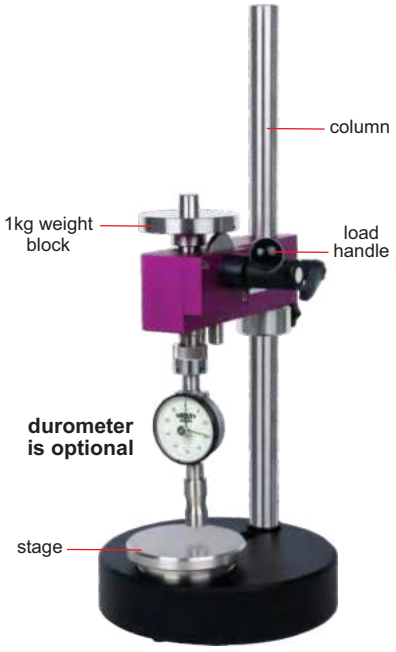
* Use **ISH-S30D** when measuring result is higher than 90HA
Use **ISH-S30A** when measuring result is lower than 20HD

# TEST STAND FOR SHORE DUROMETERS
# CODE ISH-OS2

INSIZE PLUS
MADE IN EUROPE

VIDEO

- For shore durometers (code **ISH-S30A** and **ISH-S30D**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- Special structure for stable loading
- 1kg weight block (included) is for **ISH-S30A**, 4kg weight block **(optional)** is for **ISH-S30D**





calibration block (included)


4kg weight block (**optional**) for **ISH-S30D**

**SPECIFICATION**

| | |
|---|---|
| **Stage diameter** | Ø98mm |
| **Max. workpiece height** | 180mm |
| **Max. testing width** | 115mm (from test point to the column) |
| **Dimension** | Ø200×500mm |
| **Weight** | 18kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Test stand** | 1 pc |
| **1kg weight block (for ISH-S30A)** | 1 pc |
| **Calibration block** | 1 pc |

**OPTIONAL ACCESSORY**

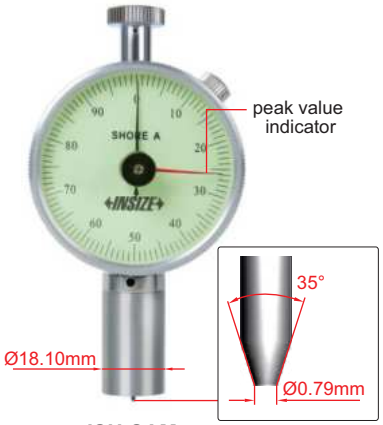
| | |
|---|---|
| **4kg weight block (for ISH-S30D)** | **ISH-OS2-W4** |

# SHORE DUROMETERS

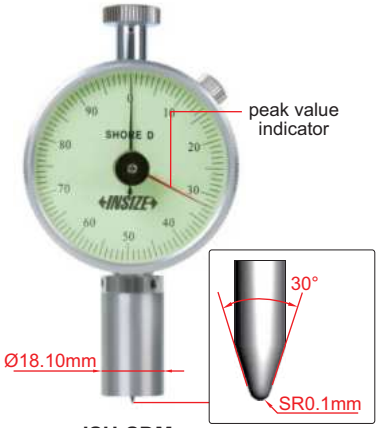

calibration block (**optional**)

VIDEO

- According to ISO868, ISO7619, ASTM D 2240
- With peak value indicator
- Optional accessory: test stand **ISH-STAC** and **ISH-STD**



**ISH-SAM**
blunt taper indenter



**ISH-SDM**
sharp point indenter

**SPECIFICATION**

| **Code** | **ISH-SAM** | **ISH-SDM** |
|---|---|---|
| **Scale** | Shore A | Shore D |
| **Application** | nature rubber, soft elastomer, etc. | hard rubber, plastic, hard elastomer, etc. |
| **Measuring range*** | 10~90HA | 20~90HD |
| **Graduation** | 1HA | 1HD |
| **Indenter protrusion** | 2.5mm | |
| **Dimension** | 115×60×25mm | |
| **Weight** | 160g | |

* Use **ISH-SDM** when measuring result is higher than 90HA
Use **ISH-SAM** when measuring result is lower than 20HD

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Calibration block** | **ISH-DS-BLOCK** |





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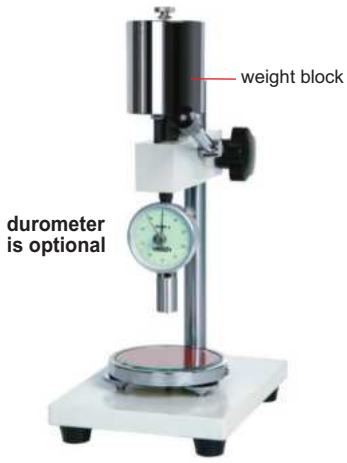
## TEST STANDS FOR SHORE DUROMETERS

VIDEO

- For shore durometers (code **ISH-SAM** and **ISH-SDM**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations




ISH-STAC




ISH-STD

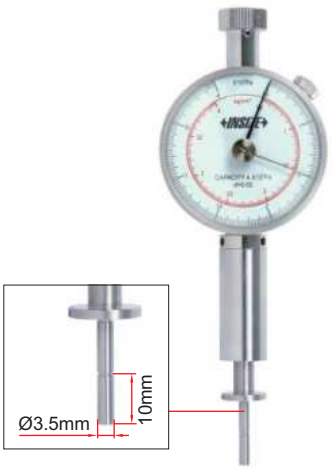
**SPECIFICATION**

| Code | ISH-STAC | ISH-STD |
|---|---|---|
| Applicable durometer | ISH-SAM | ISH-SDM |
| Stage diameter | Ø100mm | Ø100mm |
| Max. workpiece height | 75mm | 75mm |
| Max. testing width | 65mm (from test point to the column) | 65mm (from test point to the column) |
| Weight block | 1kg | 5kg |

## FRUIT HARDNESS TESTER



- Measure the hardness of apples, pears, strawberries and grapes, etc.
- The degree of ripeness can be judged by measuring the hardness of the fruit




9643-4

**SPECIFICATION**

| Code | Range | Graduation | Accuracy | Probe diameter | Probe depth | Dimension | Weight |
|---|---|---|---|---|---|---|---|
| 9643-4 | 0.5-4kg/cm² (0.5-4×10⁵Pa) | 0.02kg/cm² (0.02×10⁵Pa) | ±2% | Ø3.5mm | 10mm | 151×55×30mm | 0.2kg |

# HARDNESS TEST BLOCKS

INSPECTION CERTIFICATE


Rockwell


Vickers

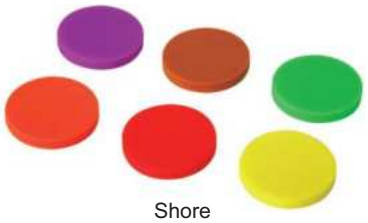

Brinell


Leeb


Micro-Vickers


Knoop


Ultrasonic


Shore

- Supplied with manufacturer inspection certificate

**Rockwell hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HRA | HRA | 80-84 | diameter: (60±1) mm<br>thickness: (11±1) mm |
| HDT-B-HRB | HRB | 88-100 | |
| HDT-B-HRC1 | HRC | 20-30 | |
| HDT-B-HRC2 | HRC | 35-55 | |
| HDT-B-HRC3 | HRC | 60-70 | |
| HDT-B-HRD1 | HRD | 40-47 | |
| HDT-B-HRD2 | HRD | 55-63 | |
| HDT-B-HRD3 | HRD | 70-75 | |
| HDT-B-HRE | HRE | 107-114 | |
| HDT-B-HRF | HRF | 105-114 | |
| HDT-B-HRG1 | HRG | 57-82 | |
| HDT-B-HRG2 | HRG | 80-94 | |

**Rockwell superficial hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HR15N1 | HR15N | 70-77 | diameter: (60±1) mm<br>thickness: (11±1) mm |
| HDT-B-HR15N2 | HR15N | 78-88 | |
| HDT-B-HR15N3 | HR15N | 89-91 | |
| HDT-B-HR30N1 | HR30N | 42-54 | |
| HDT-B-HR30N2 | HR30N | 55-73 | |
| HDT-B-HR30N3 | HR30N | 74-80 | |
| HDT-B-HR45N1 | HR45N | 20-31 | |
| HDT-B-HR45N2 | HR45N | 32-61 | |
| HDT-B-HR45N3 | HR45N | 63-70 | |
| HDT-B-HR15T | HR15T | 88-93 | |
| HDT-B-HR30T | HR30T | 73-82 | |
| HDT-B-HR45T | HR45T | 58-72 | |

**Leeb hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HLD1 | HLD | 490-570 | diameter: (90±1) mm<br>thickness: (55±1) mm |
| HDT-B-HLD2 | HLD | 590-670 | |
| HDT-B-HLD3 | HLD | 750-830 | |
| HDT-B-HLG1 | HLG | 460-540 | diameter: (120±1) mm<br>thickness: (70±1) mm |
| HDT-B-HLG2 | HLG | 550-630 | |

**Vickers hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HV5A | HV5 | 175-200 | diameter: (60±1) mm<br>thickness: (11±1) mm |
| HDT-B-HV5B | HV5 | 200-300 | |
| HDT-B-HV5C | HV5 | 300-400 | |
| HDT-B-HV5D | HV5 | 400-500 | |
| HDT-B-HV5E | HV5 | 500-600 | |
| HDT-B-HV5F | HV5 | 600-700 | |
| HDT-B-HV5G | HV5 | 700-750 | |
| HDT-B-HV10A | HV10 | 175-200 | |
| HDT-B-HV10B | HV10 | 200-300 | |
| HDT-B-HV10C | HV10 | 300-400 | |
| HDT-B-HV10D | HV10 | 400-500 | |
| HDT-B-HV10E | HV10 | 500-600 | |
| HDT-B-HV10F | HV10 | 600-700 | |
| HDT-B-HV10G | HV10 | 700-750 | |
| HDT-B-HV30A | HV30 | 175-200 | |
| HDT-B-HV30B | HV30 | 200-300 | |
| HDT-B-HV30C | HV30 | 300-400 | |
| HDT-B-HV30D | HV30 | 400-500 | |
| HDT-B-HV30E | HV30 | 500-600 | |
| HDT-B-HV30F | HV30 | 600-700 | |
| HDT-B-HV30G | HV30 | 700-750 | |
| HDT-B-HV50A | HV50 | 175-200 | |
| HDT-B-HV50B | HV50 | 200-300 | |
| HDT-B-HV50C | HV50 | 300-400 | |
| HDT-B-HV50D | HV50 | 400-500 | |
| HDT-B-HV50E | HV50 | 500-600 | |
| HDT-B-HV50F | HV50 | 600-700 | |
| HDT-B-HV50G | HV50 | 700-750 | |
| HDT-B-HV100A | HV100 | 175-200 | |
| HDT-B-HV100B | HV100 | 200-300 | |
| HDT-B-HV100C | HV100 | 300-400 | |
| HDT-B-HV100D | HV100 | 400-500 | |
| HDT-B-HV100E | HV100 | 500-600 | |
| HDT-B-HV100F | HV100 | 600-700 | |
| HDT-B-HV100G | HV100 | 700-750 | |

To be continued



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Continued from previous page

**Micro-Vickers hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HV005A | HV0.05 | 200-300 | diameter: (25±1) mm<br>thickness: (6±2)mm |
| HDT-B-HV005B | HV0.05 | 300-400 | |
| HDT-B-HV005C | HV0.05 | 400-500 | |
| HDT-B-HV005D | HV0.05 | 500-600 | |
| HDT-B-HV005E | HV0.05 | 600-700 | |
| HDT-B-HV005F | HV0.05 | 700-750 | |
| HDT-B-HV01A | HV0.1 | 200-300 | |
| HDT-B-HV01B | HV0.1 | 300-400 | |
| HDT-B-HV01C | HV0.1 | 400-500 | |
| HDT-B-HV01D | HV0.1 | 500-600 | |
| HDT-B-HV01E | HV0.1 | 600-700 | |
| HDT-B-HV01F | HV0.1 | 700-750 | |
| HDT-B-HV02A | HV0.2 | 200-300 | |
| HDT-B-HV02B | HV0.2 | 300-400 | |
| HDT-B-HV02C | HV0.2 | 400-500 | |
| HDT-B-HV02D | HV0.2 | 500-600 | |
| HDT-B-HV02E | HV0.2 | 600-700 | |
| HDT-B-HV02F | HV0.2 | 700-750 | |
| HDT-B-HV03A | HV0.3 | 200-300 | |
| HDT-B-HV03B | HV0.3 | 300-400 | |
| HDT-B-HV03C | HV0.3 | 400-500 | |
| HDT-B-HV03D | HV0.3 | 500-600 | |
| HDT-B-HV03E | HV0.3 | 600-700 | |
| HDT-B-HV03F | HV0.3 | 700-750 | |
| HDT-B-HV05A | HV0.5 | 200-300 | |
| HDT-B-HV05B | HV0.5 | 300-400 | |
| HDT-B-HV05C | HV0.5 | 400-500 | |
| HDT-B-HV05D | HV0.5 | 500-600 | |
| HDT-B-HV05E | HV0.5 | 600-700 | |
| HDT-B-HV05F | HV0.5 | 700-750 | |
| HDT-B-HV1A | HV1 | 200-300 | |
| HDT-B-HV1B | HV1 | 300-400 | |
| HDT-B-HV1C | HV1 | 400-500 | |
| HDT-B-HV1D | HV1 | 500-600 | |
| HDT-B-HV1E | HV1 | 600-700 | |
| HDT-B-HV1F | HV1 | 700-750 | |

**Knoop hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HK005A | HK0.05 | 200-300 | diameter: (25±1) mm<br>thickness: (6±2)mm |
| HDT-B-HK005B | HK0.05 | 400-500 | |
| HDT-B-HK005C | HK0.05 | 700-800 | |
| HDT-B-HK01A | HK0.1 | 200-300 | |
| HDT-B-HK01B | HK0.1 | 400-500 | |
| HDT-B-HK01C | HK0.1 | 700-800 | |
| HDT-B-HK02A | HK0.2 | 200-300 | |
| HDT-B-HK02B | HK0.2 | 400-500 | |
| HDT-B-HK02C | HK0.2 | 700-800 | |
| HDT-B-HK03A | HK0.3 | 200-300 | |
| HDT-B-HK03B | HK0.3 | 400-500 | |
| HDT-B-HK03C | HK0.3 | 700-800 | |
| HDT-B-HK05A | HK0.5 | 200-300 | |
| HDT-B-HK05B | HK0.5 | 400-500 | |
| HDT-B-HK05C | HK0.5 | 700-800 | |
| HDT-B-HK1A | HK1 | 200-300 | |
| HDT-B-HK1B | HK1 | 400-500 | |
| HDT-B-HK1C | HK1 | 700-800 | |

*The above dimensions are for reference only, subject to actual supply

**Brinell hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HB10A1 | HBW10/3000 | 100-200 | diameter: (100±1) mm<br>thickness: >16mm |
| HDT-B-HB10A2 | HBW10/3000 | 200-300 | |
| HDT-B-HB10A3 | HBW10/3000 | 300-400 | |
| HDT-B-HB10A4 | HBW10/3000 | 400-500 | |
| HDT-B-HB10A5 | HBW10/3000 | 500-600 | |
| HDT-B-HB10A6 | HBW10/3000 | 600-650 | |
| HDT-B-HB10B1 | HBW10/1500 | 100-200 | |
| HDT-B-HB10B2 | HBW10/1500 | 200-300 | |
| HDT-B-HB10B3 | HBW10/1500 | 300-400 | |
| HDT-B-HB10B4 | HBW10/1500 | 400-500 | |
| HDT-B-HB10B5 | HBW10/1500 | 500-600 | |
| HDT-B-HB10B6 | HBW10/1500 | 600-650 | |
| HDT-B-HB10C1 | HBW10/1000 | 90-200 | |
| HDT-B-HB10C2 | HBW10/1000 | 200-300 | |
| HDT-B-HB10C3 | HBW10/1000 | 300-400 | |
| HDT-B-HB10C4 | HBW10/1000 | 400-450 | |
| HDT-B-HB10D1 | HBW10/500 | 90-200 | |
| HDT-B-HB10D2 | HBW10/500 | 200-300 | |
| HDT-B-HB10D3 | HBW10/500 | 300-400 | |
| HDT-B-HB10D4 | HBW10/500 | 400-450 | |
| HDT-B-HB25A1 | HBW2.5/187.5 | 100-200 | diameter: (64±1) mm<br>thickness: >6mm |
| HDT-B-HB25A2 | HBW2.5/187.5 | 200-300 | |
| HDT-B-HB25A3 | HBW2.5/187.5 | 300-400 | |
| HDT-B-HB25A4 | HBW2.5/187.5 | 400-500 | |
| HDT-B-HB25A5 | HBW2.5/187.5 | 500-600 | |
| HDT-B-HB25A6 | HBW2.5/187.5 | 600-650 | |
| HDT-B-HB25B1 | HBW2.5/62.5 | 90-200 | |
| HDT-B-HB25B2 | HBW2.5/62.5 | 200-300 | |
| HDT-B-HB25B3 | HBW2.5/62.5 | 300-400 | |
| HDT-B-HB25B4 | HBW2.5/62.5 | 400-450 | |
| HDT-B-HB5A1 | HBW5/750 | 100-200 | diameter: (100±1) mm<br>thickness: >12mm |
| HDT-B-HB5A2 | HBW5/750 | 200-300 | |
| HDT-B-HB5A3 | HBW5/750 | 300-400 | |
| HDT-B-HB5A4 | HBW5/750 | 400-500 | |
| HDT-B-HB5A5 | HBW5/750 | 500-600 | |
| HDT-B-HB5A6 | HBW5/750 | 600-650 | |
| HDT-B-HB5B1 | HBW5/250 | 90-200 | diameter: (64±1) mm<br>thickness: >6mm |
| HDT-B-HB5B2 | HBW5/250 | 200-300 | |
| HDT-B-HB5B3 | HBW5/250 | 300-400 | |
| HDT-B-HB5B4 | HBW5/250 | 400-450 | |

**Shore hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-SA | SA | 6pcs/set (30, 40, 50, 60, 70, 80) | Ø50×7mm |
| HDT-B-SD | SD | 3pcs/set (15, 30, 90) | 50×50×7mm |

**Ultrasonic hardness test blocks**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HRCU1 | HRC | 20-30 | diameter: (90±1) mm<br>thickness: >16mm |
| HDT-B-HRCU2 | HRC | 35-55 | |
| HDT-B-HRCU3 | HRC | 60-70 | |
| HDT-B-HV5U1 | HV5 | 200-300 | |
| HDT-B-HV5U2 | HV5 | 400-500 | |
| HDT-B-HV5U3 | HV5 | 700-750 | |
| HDT-B-HB10U1 | HBW10/1000 | 90-200 | |
| HDT-B-HB10U2 | HBW10/3000 | 200-300 | |
| HDT-B-HB10U3 | HBW10/3000 | 400-500 | |

**Hammer impact brinell hardness bar**

| Code | Type | Hardness | Dimension* |
|---|---|---|---|
| HDT-B-HB5C1 | HBS5/750 | 177-217 | 12×12×150mm |

# CONCRETE STRENGTH TESTERS

DATA OUTPUT

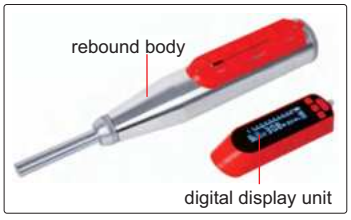
VIDEO



CST-D101

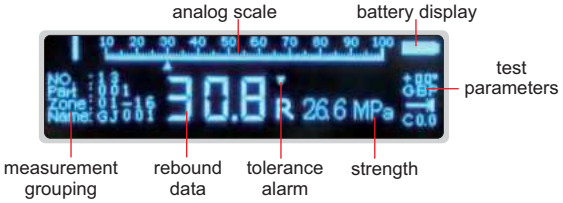


CST-D102




**CST-D102** seperable

- Measure the strength of general building components, bridges and various concrete components (slabs, beams, columns, bridges, etc.)
- Angle, test surface, pumping, carbonization depth and other parameters can be customized according to the requirements
- The rebound body can be used for 2000 times
- USB data transmission
- The software can automatically generate the test report, and the strength curve can be customized and stored in the tester
- Storage and reading of 1000 test data




## SPECIFICATION

| Code | CST-D101 | CST-D102 |
|---|---|---|
| Display | OLED display | |
| Range | 10~60N/mm² | |
| Rebound value on anvil | 80±2 | |
| Parameter | MPa, N/mm², Kgf/mm² | |
| Impact energy | 2.207J, for testing common buildings or bridge structures | |
| Output | USB | |
| Structure | one body, non-seperable | separable, the digital display unit can be reused |
| Memory | 1000 data | |
| Operation temperature | -40°C~40°C | |
| Power supply | built-in rechargeable battery | |
| Dimension | 280×75×60mm | |
| Weight | 1.1kg | |



software flash disk (included)



abrasive stone (included)



reference anvil (**optional**)

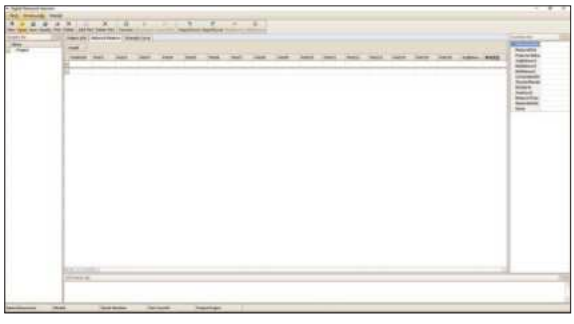
## STANDARD DELIVERY

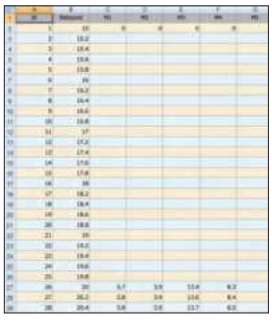
| | |
|---|---|
| Main unit | 1 pc |
| Abrasive stone | 1 pc |
| Power adapter | 1 pc |
| Software and USB cable | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Rebound body (for CST-D102) | CST-D102-REBOUND |
| Digital display unit (for CST-D102) | CST-D102-DISPLAY |
| Reference anvil | CST-D-BLOCK |

software (included) for uploading and storing data, printing and importing/exporting strength curves









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Cutting Machines
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Grinders And Polishers
Page 883-888



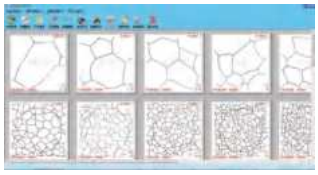
Automatic Liquid Droppers
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Mounting Presses
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Metallurgical Microscopes
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Metallurgical Analysis Softwares
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Cutting Machine Accessories
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Grinder And Polisher Accessories
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Mounting Press Accessories
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# AUTOMATIC SPECIMEN CUTTING MACHINE (ADVANCED TYPE) CODE MLP-ACM160

TOUCH SCREEN OPERATION

CUSTOMIZED CUTTING PROGRAM

VIDEO






diamond blade
(**optional**)



cutting blade
(included)



cutting coolant
(**optional**)



- Touch screen operation, high precision stepper motor control
- Suitable for cutting all kinds of metal and non-metallic materials, in order to observe the metallographic and petrographic organization of materials
- Automated cutting process, low noise, easy to operate, safe and reliable

## SPECIFICATION

| | |
|---|---|
| **Maximum cutting diameter** | Ø160mm |
| **Cutting speed** | 0.03~1mm/s |
| **Maximum travel** | Z-axis: 0~220mm, Y-axis: 0~200mm, X-axis: 0~240mm |
| **Feed method** | continuous feed, pulse feed |
| **Rotation speed range** | 500~2300r/min |
| **Cutting method** | chopping cutting, flat push cutting |
| **Cutting chamber size** | 1240×780mm |
| **Cutting power** | 7.5kW |
| **Power supply** | AC 380V, 50Hz |
| **Dimension (W×H×D)** | 1675×1560×1880mm |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Cutting blade** | 5 pcs, 450×3.2×32mm |
| **Cutting blade chuck** | 1 set, 2 pcs |
| **Cutting coolant** | 1 barrel, 6L |
| **Tank assembly** | 1 set |
| **Clamping station** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Cutting coolant** | **MLP-OL4** |
| **Cutting blade** | **MLP-10R** series* |
| **Diamond blade** | **MLP-DQ4** |

*Optionally available with a cutting blade with an inner diameter of Ø32mm



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# AUTOMATIC CUTTING MACHINE (ADVANCED TYPE)
# CODE MLP-HCM102




- Suitable for cylinder workpieces (diameter≤100mm) and rectangular samples (height≤70mm, width≤100mm)
- Cooling system avoids overheating and destroying sample structure
- Three cutting modes (manual, pulse, continuous cutting), the cutting feed speed and cutting stroke can be programed

## SPECIFICATION

| | |
|---|---|
| **Maximum cutting diameter** | Ø100mm |
| **Cutting blade** | Ø350×2.5×Ø32mm |
| **Rotation speed** | 2200r/min |
| **Spindle travel** | 145mm |
| **Table travel** | 300mm |
| **Illumination** | LED ceiling light |
| **Noise** | ≤85dB |
| **Cooling tank** | 60L |
| **Removable baffle** | contain |
| **Table dimension** | 330×280mm |
| **Power** | 3kW |
| **Power supply** | AC 380V, 50Hz |
| **Dimension** | 900×860×620mm |
| **Weight** | 285kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Cutting blade** | 5 pcs |
| **Cutting blade chuck** | 2 pcs |
| **Coolant** | 1 barrel (4L) |
| **Water tank** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Coolant (4L, 1:20 diluted with water)** | **MLP-OL3** |
| **Cutting blade (Ø350×2.5×Ø32mm, 40 pcs/box)** | **MLP-50Z4** |
| | **MLP-60Y4*** |
| **Cutting blade chuck (for Ø32mm cutting blade)** | **MLP-HCM102-CHUCK** |

* Special cutting blade for high hardness



coolant (included)



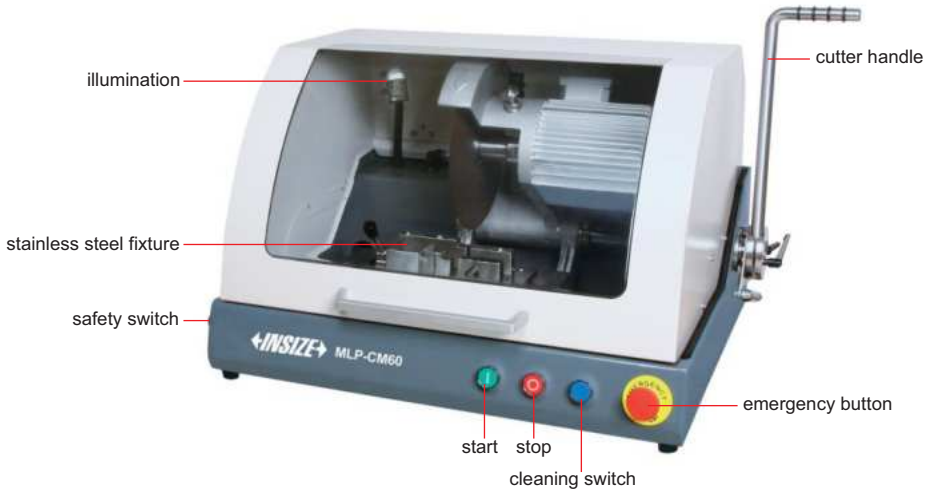
cutting blade **MLP-50Z4** (included)



cutting blade **MLP-60Y4** (**optional**)

# CUTTING MACHINE (STANDARD TYPE)
# CODE MLP-CM60

VIDEO




- For metal and non-metal materials
- Cooling device avoids overheating and destroying sample structure
- With safety switch, the machine will automatically stop when the cover is opened

water tank





## SPECIFICATION

| | |
|---|---|
| **Maximum cutting diameter** | Ø60mm |
| **Cutting blade** | Ø250×1.5×Ø25.4mm |
| **Rotation speed** | 2800r/min |
| **Motor power** | 2.2kW |
| **Power supply** | AC 380V, 50Hz |
| **Dimension** | 830×620×450mm |
| **Weight** | 82kg |



cutting blade **MLP-CM60-CUT2** (included)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Cutting blade** | 2 pcs |
| **Coolant** | 1 barrel (4L) |
| **Water tank** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Coolant (4L, 1:20 diluted with water)** | **MLP-OL3** |
| **Cutting blade (Ø250×1.5×Ø25.4mm, 60 pcs/box)** | **MLP-CM60-CUT2** |
| **Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)** | **MLP-50Z2** * |
| **Cutting blade chuck (for Ø32mm cutting blade)** | **MLP-CM60-CHUCK** |



coolant (**optional**)

* When use **MLP-50Z2**, please purchase **MLP-CM60-CHUCK**



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# CUTTING MACHINE (BASIC TYPE)
# CODE MLP-CM86




- For metal and non-metal materials
- Cooling device avoids overheating and destroying sample structure



coolant (included)



cutting blade **MLP-50Z2** (included)



cutting blade **MLP-60Y2** (**optional**)

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## SPECIFICATION

| | |
|---|---|
| **Maximum cutting diameter** | Ø80mm |
| **Cutting blade** | Ø250×2×Ø32mm |
| **Rotation speed** | 2800r/min |
| **Power** | 3kW |
| **Power supply** | AC 380V, 50Hz |
| **Dimension** | 690×790×670mm |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Cutting blade** | 2 pcs |
| **Coolant** | 1 barrel (4L) |
| **Water tank** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Coolant (4L, 1:20 diluted with water)** | **MLP-OL3** |
| **Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)** | **MLP-60Y2*** |
| | **MLP-50Z2** |
| **Cutting blade chuck (for Ø32mm cutting blade)** | **MLP-CM86-CHUCK** |

*Special cutting blade for high hardness

# AUTOMATIC GRINDER AND POLISHER (ADVANCED TYPE) CODE MLP-GP406

VIDEO

AUTOMATIC DISPENSING OF ABRASIVES | CUSTOMIZED GRINDING AND POLISHING PROGRAMS | TOUCHSCREEN OPERATION



- ABS shell and stainless steel parts, anti-corrosion, easy to clean
- Can hold up to 6 samples (4 holes are optional)
- Smooth rotation, low noise
- Adjustable speed
- Intuitive pressure and time setting, 256 sets of grinding and polishing programs can be stored
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- Replaceable platen, platen rotation direction can be selected
- Centre loading and single point loading, automatic abrasive distribution



polishing cloth (included)



anti-stick disc (included)



magnetic pad (included)



silicon carbide paper (included)



dripping system (**optional**)

## SPECIFICATION

| | | |
|---|---|---|
| **Wheel diameter** | | Ø250mm (customizable) |
| **Wheel rotation speed** | | 0~1000r/min (adjustment step 20rpm), 150r/min, 300r/min, 600r/min, 1000r/min (four fixed speeds) |
| **Wheel rotation direction** | | clockwise or counterclockwise |
| **Grinding head speed** | | 50~150r/min (stepless adjustable) |
| **Pressure range** | | 5~60N (single point loading), 20~200N (centre loading) |
| **Operation** | **number** | 6 |
| | **time** | 0~12h |
| **Sample diameter** | | Ø30mm (customizable) |
| **Air pressure** | | >0.35MPa |
| **Programmable quantity** | | 256 sets of grinding programs can be stored |
| **Power supply** | | AC 220V, 50Hz, 3.1kW |
| **Dimension (W×H×D)** | | 760×706×717mm |
| **Weight** | | 126kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Silicon carbide paper** | 20 pcs each (240, 400, 800, 1200), 80 pcs in total |
| **Polishing cloth** | 3 pcs each (velvet silk, woolen fabric), 6 pcs in total |
| **Polishing agent** | 1 pc (W2.5, 500ml) |
| **Spray polish agent** | 1 pc (W2.5, 500ml) |
| **Anti-stick disc** | 2 pcs (Ø250mm) |
| **Magnetic pad** | 5 pcs (Ø250mm) |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Silicon carbide paper** | **MLP-SZ□□*** | diameter: Ø250mm<br>120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000 |
| **Polishing cloth** | **MLP-CT□□*** | Ø250mm |
| **Diamond polishing liquid** | **MLP-DLA□□*** | 500ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Diamond spray polish agent** | **MLP-DSA□□*** | 350ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Magnetic pad** | **MLP-AD2** | Ø250mm |
| **Anti-stick disc** | **MLP-DC2** | Ø250mm |

*□□ is granularity specification, for example, code **MLP-DLA40** stands for 40μm



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TOUCHSCREEN OPERATION | AUTOMATIC DISPENSING OF ABRASIVES | CUSTOMIZED GRINDING AND POLISHING PROGRAMS

VIDEO

# AUTOMATIC GRINDER AND POLISHER (ADVANCED TYPE)
# CODE MLP-GP505



- ABS shell and stainless steel parts, anti-corrosion, easy to clean
- Can hold up to 6 samples (4 holes are optional)
- Smooth rotation, low noise
- Adjustable speed
- Intuitive pressure and time setting, 256 sets of grinding and polishing programs can be stored
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- Replaceable platen, platen rotation direction can be selected
- Centre loading and single point loading, automatic abrasive distribution



polishing cloth (included)



anti-stick disc (included)



magnetic pad (included)



silicon carbide paper (included)



dripping system (**optional**)

## SPECIFICATION

| | | |
|---|---|---|
| **Wheel diameter** | | Ø250mm (customizable) |
| **Wheel rotation speed** | | 0~1000r/min (adjustment step 20rpm), 150r/min, 300r/min, 600r/min, 1000r/min (four fixed speeds) |
| **Wheel rotation direction** | | clockwise or counterclockwise |
| **Grinding head speed** | | 50~150r/min (stepless adjustable) |
| **Pressure range** | | 5~60N (single point loading), 20~200N (centre loading) |
| **Operation** | **number** | 6 |
| | **time** | 0~12h |
| **Sample diameter** | | Ø30mm (customizable) |
| **Air pressure** | | >0.35MPa |
| **Programmable quantity** | | 256 sets of grinding programs can be stored |
| **Power supply** | | AC 220V, 50Hz, 2.1kW |
| **Dimension (W×H×D)** | | 596×714×707mm |
| **Weight** | | 102kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Silicon carbide paper** | 20 pcs each (240, 400, 800, 1200), 80 pcs in total |
| **Polishing cloth** | 3 pcs each (velvet silk, woolen fabric), 6 pcs in total |
| **Polishing agent** | 1 pc (W2.5, 500ml) |
| **Spray polish agent** | 1 pc (W2.5, 500ml) |
| **Anti-stick disc** | 1 pc (Ø250mm) |
| **Magnetic pad** | 5 pcs (Ø250mm) |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Silicon carbide paper** | **MLP-SZ□□*** | diameter: Ø250mm<br>120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000 |
| **Polishing cloth** | **MLP-CT□□*** | Ø250mm |
| **Diamond polishing liquid** | **MLP-DLA□□*** | 500ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Diamond spray polish agent** | **MLP-DSA□□*** | 350ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Magnetic pad** | **MLP-AD2** | Ø250mm |
| **Anti-stick disc** | **MLP-DC2** | Ø250mm |

*□□ is granularity specification, for example, code **MLP-DLA40** stands for 40μm





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# AUTOMATIC GRINDER AND POLISHER (STANDARD TYPE) CODE MLP-GP305

VIDEO




- Replaceable double wheels, rotation direction can be selected
- Multi sample holder, pneumatic single point loading, automatic abrasive distribution
- Adjustable speed
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Metallographic samples can be roughly ground, finely ground, roughly polished and finely polished


silicon carbide paper (included)


polishing cloth (included)


anti-stick disc (included)


magnetic pad (included)

## SPECIFICATION

| | |
|---|---|
| **Wheel diameter** | Ø250mm (customizable Ø300mm) |
| **Wheel rotation speed** | 50~1000r/min (stepless adjustable), 150r/min, 300r/min (two fixed speeds) |
| **Wheel rotation direction** | clockwise or counterclockwise |
| **Grinding head speed** | 50~150r/min (stepless adjustable) |
| **Pressure range** | 5~60N |
| **Operation number** | 6 |
| **Operation time** | 0~995s |
| **Sample diameter** | Ø30mm (customizable Ø22mm, Ø25mm, Ø30mm, Ø40mm, Ø45mm, Ø50mm) |
| **Air pressure** | 0.6~0.9MPa |
| **Power supply** | AC220V, 50Hz |
| **Input power** | 1.1kW |
| **Dimension** | 758×785×680mm |
| **Weight** | 125kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Silicon carbide paper** | 20 pcs each (240, 250, 400, 800, 1200), 100 pcs in total |
| **Polishing cloth** | 3 pcs each (velvet silk, woolen fabric), 6 pcs in total |
| **Polishing agent** | 1 pc (W2.5, 500ml) |
| **Spray polish agent** | 1 pc (W2.5, 350ml) |
| **Magnetic pad** | 2 pcs (Ø250mm) |
| **Anti-stick disc** | 3 pcs (Ø250mm) |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Silicon carbide paper** | **MLP-SZ□□*** | diameter: Ø250mm<br>120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000 |
| **Polishing cloth** | **MLP-CT□□*** | Ø250mm |
| **Diamond polishing liquid** | **MLP-DLA□□*** | 500ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Diamond spray polish agent** | **MLP-DSA□□*** | 350ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Magnetic pad** | **MLP-AD2** | Ø250mm |
| **Anti-stick disc** | **MLP-DC2** | Ø250mm |

*□□ is granularity specification, for example, code **MLP-DLA40** stands for 40μm





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# AUTOMATIC GRINDER AND POLISHER (STANDARD TYPE) CODE MLP-GP260

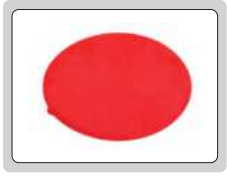



- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Can hold up to 4 samples (6 holes are optional and can hold up to 6 samples)
- Smooth rotation, low noise
- Adjustable speed
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- Wheel rotation direction can be selected
- Replaceable wheel


anti-stick disc (included)


magnetic pad (included)


silicon carbide paper (included)


polishing cloth (included)

## SPECIFICATION

| | |
|---|---|
| **Wheel diameter** | Ø250mm |
| **Wheel rotation speed** | 50~999r/min (stepless adjustable), 150 or 300r/min (two fixed speeds) |
| **Wheel rotation direction** | clockwise or counterclockwise |
| **Grinding head speed** | 50~150r/min (stepless adjustable) |
| **Pressure range** | 5~60N |
| **Operation time** | 5~995s |
| **Sample diameter** | Ø30mm (can be customized) |
| **Air pressure** | 0.6~0.9MPa |
| **Power supply** | AC 220V, 50Hz |
| **Input power** | 1.1kW |
| **Dimension** | 594×795×687mm |
| **Weight** | 98kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Silicon carbide paper** | 20 pcs each (240, 400, 800, 1200), 80 pcs in total |
| **Polishing cloth** | 3 pcs each (velvet silk, woolen fabric), 6 pcs in total |
| **Polishing agent** | 1 pc (W2.5, 500ml) |
| **Spray polish agent** | 1 pc (W2.5, 500ml) |
| **Anti-stick disc** | 1 pc (Ø250mm) |
| **Magnetic pad** | 5 pcs (Ø250mm) |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Silicon carbide paper** | **MLP-SZ□□*** | diameter: Ø250mm<br>120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000 |
| **Polishing cloth** | **MLP-CT□□*** | Ø250mm |
| **Diamond polishing liquid** | **MLP-DLA□□*** | 500ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Diamond spray polish agent** | **MLP-DSA□□*** | 350ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Magnetic pad** | **MLP-AD2** | Ø250mm |
| **Anti-stick disc** | **MLP-DC2** | Ø250mm |

*□□ is granularity specification, for example, code **MLP-DLA40** stands for 40μm





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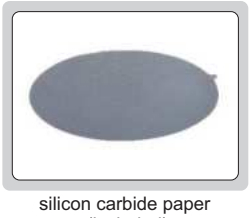
# MANUAL GRINDERS AND POLISHERS (STANDARD TYPE)

VIDEO

- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Replaceable double wheel, wheel can be controlled independently, rotation direction can be selected
- Smooth rotation, low noise
- Four fixed speeds/stepless adjustable speed
- Water cooling device, prevent samples from overheating and destroying structure
- Metallographic samples can be roughly ground, finely ground, roughly polished and finely polished




**MLP-GP280**



silicon carbide paper (included)



polishing cloth (included)



magnetic pad (**optional**)



anti-stick disc (**optional**)

## SPECIFICATION

| Code | MLP-GP270 | MLP-GP280 |
|---|---|---|
| Wheel diameter | Ø203mm | Ø250mm |
| Wheel rotation speed | 0-1400r/min (stepless adjustable) | 0-1000r/min (stepless adjustable) |
| Wheel rotation direction | clockwise or counterclockwise | |
| Fixed speed | 150r/min, 300r/min, 600r/min, 1000r/min | |
| Power supply | AC 220V, 50Hz | |
| Input power | 1.5kW | |
| Dimension | 758×785×310mm | |
| Weight | 50kg | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Silicon carbide paper | 5 pcs each (240, 400, 800, 1200), 20 pcs in total |
| Polishing cloth | 3 pcs |
| Polishing agent | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| Silicon carbide paper | **MLP-SZ□□*** (for **MLP-GP270**) | diameter: Ø200mm<br>120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 3000 |
| | **MLP-SZ□□*** (for **MLP-GP280**) | diameter: Ø250mm<br>120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 3000 |
| Polishing cloth | **MLP-CT□□*** (for **MLP-GP270**) | diameter: Ø200mm |
| | **MLP-CT□□*** (for **MLP-GP280**) | diameter: Ø250mm |
| Diamond polishing liquid | **MLP-DLA□□*** | 500ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| Diamond spray polish agent | **MLP-DSA□□*** | 350ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| Magentic pad | **MLP-AD1** (for **MLP-GP270**) | Ø203mm |
| | **MLP-AD2** (for **MLP-GP280**) | Ø250mm |
| Anti-stick disc | **MLP-DC1** (for **MLP-GP270**) | Ø203mm |
| | **MLP-DC2** (for **MLP-GP280**) | Ø250mm |

* □□ is granularity specification, for example, code **MLP-SZB120** indicates 120 grit Ø200mm sandpaper without adhesive backing



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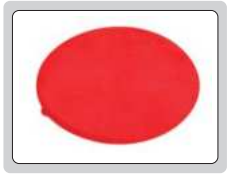
VIDEO

# MANUAL GRINDER AND POLISHER (BASIC TYPE)
# CODE MLP-GP314




- Double wheels, rotation direction can be selected
- Smooth rotation, low noise
- Water cooling device, prevent samples from overheating and destroying structure
- Replaceable silicon carbide paper and polishing cloth for grinding and polishing process


silicon carbide paper (included)


polishing cloth (included)


anti-stick disc (**optional**)


magnetic pad (**optional**)

## SPECIFICATION

| | |
|---|---|
| **Wheel diameter** | Ø203mm |
| **Wheel rotation speed** | 0~1400r/min (stepless adjustable) |
| **Wheel rotation direction** | clockwise or counterclockwise |
| **Power supply** | AC 220V, 50Hz |
| **Input power** | 0.75kW |
| **Dimension** | 755×700×310mm |
| **Weight** | 50kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Silicon carbide paper** | 5 pcs each (240, 400, 800, 1200), 20 pcs in total |
| **Polishing cloth** | 4 pcs |
| **Polishing agent** | 1 pc (W2.5, 500ml) |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Silicon carbide paper** | **MLP-SZ□□*** | diameter: Ø200mm<br>120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000, 2500, 3000 |
| **Polishing cloth** | **MLP-CT□□*** | Ø200mm |
| **Diamond polishing liquid** | **MLP-DLA□□*** | 500ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Diamond spray polish agent** | **MLP-DSA□□*** | 350ml, select granularity (μm):<br>W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |
| **Magnetic pad** | **MLP-AD1** | Ø203mm |
| **Anti-stick disc** | **MLP-DC1** | Ø203mm |

* □□ is granularity specification, for example, code **MLP-SZB120** indicates 120 grit Ø200mm sandpaper without adhesive backing

# AUTOMATIC LIQUID DROPPERS



MLP-PLD101



MLP-PLD101S

- Adopting advanced micro-controller, compact structure, reliable operation, strong anti-interference ability
- Suitable for various types of grinding and polishing machines, the polishing liquid is automatically dripped between the abrasive disk and the sample tray to achieve the purpose of polishing
- Reduced polishing time, increased polishing efficiency



polishing fluid (**Optional**)



## SPECIFICATION

| Code | **MLP-PLD101** (single type) | **MLP-PLD101S** (combination type) |
|---|---|---|
| Dropping rate | 0.3~10ml/min | |
| Number of steps | 10-speed | |
| Tank volume | 750ml | |
| Power supply | AC 220V, 50Hz | |
| Dimension (W×H×D) | 144×231×197mm | 580×235×212mm |
| Weight | 2.95kg | 19.5kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Diamond polishing liquid | 1 pc (W2.5, 500ml) |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Diamond polishing liquid | **MLP-DLA□□*, MLP-DLB□□*, MLP-DLC□□*, MLP-DLD□□*, MLP-DLE□□*, MLP-DLF□□*** |
| Aluminum oxide polishing liquid | **MLP-LXA□□*, MLP-LXB□□*** |
| Silicon dioxide polishing liquid | **MLP-GF1, MLP-GF2, MLP-GF3** |
| Polishing lubricant | **MLP-RH1, MLP-RH2, MLP-RH3** |

*□□ is granularity specification, for example, code **MLP-DLA40** stands for 40μm



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# MOUNTING PRESSES (ADVANCED TYPE)

VIDEO




MLP-MP43




MLP-MP53

- Built-in heating and cooling structure reduces the mounting time to 6 minutes
- The programmed control system reserves 10 customized preparation schemes to meet different mounting requirements
- The thickness of the middle mold is up to 15mm, and 2 samples can be mounted at the same time at one station
- Can accurately control the pressure size, adjustment range: 1~20MPa



hot mounting resin (included)



**SPECIFICATION**

| Code | MLP-MP43 | MLP-MP53 |
|---|---|---|
| Station number | 1 | 2 |
| Power | 1100W+heating power * | 1200W+heating power×2 |
| Mounting diameter | Ø30mm (customizable Ø25, Ø40, Ø50mm) | |
| System pressure | 1~20MPa, optional increase or decrease 1MPa | |
| Pressure mode | automatic electro-hydraulic | |
| Cooling mode | automatic water cooling ** | |
| Heating range | 90~200°C | |
| Holding time | 0~10min | |
| Cooling temperature/time | 40~90°C/0~10min | |
| Power supply | AC 220V, 50Hz | |
| Dimension | 530×485×463mm | 671×485×463mm |
| Weight | 44kg | 77kg |

* Heating power of mounting sleeve: 1800W (mounting diameter≤31.8mm), 2400W (mounting diameter≥38.1mm)
** Cooling water pressure should not be higher than 1MPa, must be filtered through 40μm filter

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Hot mounting resin | 1 bottle (250g) |
| Funnel | 1 pc |
| Filter | 1 pc |
| Vacuum cleaner tip | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Hot mounting resin (black, 4kg) | MLP-DR3 |

## MOUNTING PRESS (STANDARD TYPE)
## CODE MLP-MP30

VIDEO

- Automatic heating, pressuring, cooling and pressure relief
- Water cooling system



hot mounting resin (**optional**)




**SPECIFICATION**

| | |
|---|---|
| Diameter of workpiece | Ø30mm |
| Heating temperature range | 100~200°C |
| Delay range | 0~999s |
| Hold time | 0~999s |
| Cooling temperature | 20~90°C |
| Heating power | 600W |
| Power supply | AC 220V, 50Hz |
| Dimension | 350×450×470mm |
| Weight | 45kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Hot mounting resin | 1 bottle (250g) |
| Funnel | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Hot mounting resin (black, 4kg) | MLP-DR3 |

## MOUNTING PRESS (BASIC TYPE)
## CODE MLP-MP62

VIDEO

- Suitable for tiny, difficult to handle or irregular metallographic and petrographic samples
- The sample preparation program has three modes: bakelite powder, electric jade powder and user-defined
- The sample preparation program controls the sample preparation time and realizes unattended sample preparation



hot mounting resin (included)




**SPECIFICATION**

| | |
|---|---|
| Mounting diameter | Ø30mm (customizable Ø22mm, Ø45mm) |
| Heating range | room temperature~200°C |
| Timing range | 0~30min |
| Power | ≤800W |
| Power supply | AC220V, 50Hz |
| Dimension | 440×253×310mm |
| Weight | 32kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Hot mounting resin | 1 bottle (60g) |
| Funnel | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Hot mounting resin (black, 4kg) | MLP-DR3 |

VIDEO

## VACUUM MOUNTING PRESS CODE MLP-MP25

- Suitable for epoxy resins and cold mosaic compound of polyester castable
- High efficiency, simple and reliable



cold mounting compound (**optional**)



### SPECIFICATION

| | |
|---|---|
| Maximum vacuum | -58kPa |
| Vacuum chamber size | Ø260×125mm |
| Transposition speed | 5r/min |
| Input power | 6W |
| Power supply | 220/110V |
| Dimension | 460×400×403mm |
| Weight | 30kg |

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Vacuum pump | 1 pc |
| Ø25mm mold | 1 pc |
| Ø30mm mold | 1 pc |
| Ø40mm mold | 1 pc |
| Ø50mm mold | 1 pc |
| Epoxy resin (400g) | 1 pc |
| Curing agent (200g) | 1 pc |
| Waxed paper tray | 10 pcs |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Cold mounting compound | MLP-CM1, MLP-CM6 |
| Epoxy resin | MLP-CM3, MLP-CM4 |

REFER TO PAGE 736~740 FOR DETAILS

## METALLURGICAL MICROSCOPES





5102-M600



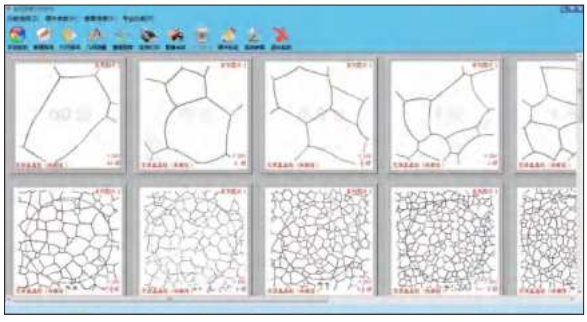
5108-M3000



5103-M1000

## METALLURGICAL ANALYSIS SOFTWARE AND CAMERA

REFER TO PAGE 761~762 FOR DETAILS





ISM-MAS100

## DIAMOND BLADES

- Specially for precision cutting of carbide, ceramic materials, optical glass and other brittle metal materials

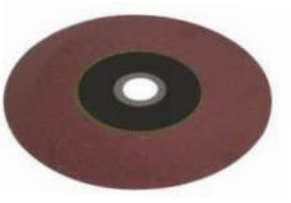


| Code | Description | Specification (mm) |
|---|---|---|
| MLP-DQ1 | 1. saw blade is made of edge electroplating<br>2. used for small workpieces made of crystal, ceramic, glass and alloy materials | Ø100×0.4×12.7 |
| MLP-DQ2 | | Ø150×0.5×12.7 |
| MLP-DQ3 | 1. saw blade is made of edge sintering technology<br>2. used for hard alloy, ceramic, optical glass and other brittle metal materials | Ø100×0.5×20 |
| MLP-DQ4 | | Ø200×1×32 |

## CUTTING BLADES



MLP-50Z1



MLP-60Y1

| Code | Application | Cutting blade size | Package (pcs/box) |
|---|---|---|---|
| MLP-10R1 | 1. light non-ferrous metal<br>2. high toughness metal (Ti)<br>3. HV hardness value: 0~250 | Ø250×1.5×32mm | 60 |
| MLP-10R2 | | Ø250×2×32mm | 50 |
| MLP-10R3 | | Ø300×2×32mm | 50 |
| MLP-10R4 | | Ø350×2.5×32mm | 40 |
| MLP-20R1 | 1. soft ferrous metal<br>2. HV hardness value: 50~300 | Ø250×1.5×32mm | 60 |
| MLP-20R2 | | Ø250×2×32mm | 50 |
| MLP-20R3 | | Ø300×2×32mm | 50 |
| MLP-20R4 | | Ø350×2.5×32mm | 40 |
| MLP-30R1 | 1. medium soft ferrous metal<br>2. HV hardness value: 120~500 | Ø250×1.5×32mm | 60 |
| MLP-30R2 | | Ø250×2×32mm | 50 |
| MLP-30R3 | | Ø300×2×32mm | 50 |
| MLP-30R4 | | Ø350×2.5×32mm | 40 |
| MLP-40Z1 | 1. medium hardness ferrous metal<br>2. HV hardness value: 180~600 | Ø250×1.5×32mm | 60 |
| MLP-40Z2 | | Ø250×2×32mm | 50 |
| MLP-40Z3 | | Ø300×2×32mm | 50 |
| MLP-40Z4 | | Ø350×2.5×32mm | 40 |
| MLP-50Z1 | 1. hard ferrous metal<br>2. HV harndess value: 180~700 | Ø250×1.5×32mm | 60 |
| MLP-50Z2 | | Ø250×2×32mm | 50 |
| MLP-50Z3 | | Ø300×2×32mm | 50 |
| MLP-50Z4 | | Ø350×2.5×32mm | 40 |
| MLP-50Z5 | | Ø400×3×32mm | 25 |
| MLP-50Z6 | | Ø450×3.2×32mm | 25 |
| MLP-50Z7 | | Ø509×4×38.1mm | 10 |
| MLP-50Z8 | | Ø610×4×38.1mm | 10 |
| MLP-60Y1 | 1. high hardness ferrous metal<br>2. HV harndess value: 250~900 | Ø250×1.5×32mm | 60 |
| MLP-60Y2 | | Ø250×2×32mm | 50 |
| MLP-60Y3 | | Ø300×2×32mm | 50 |
| MLP-60Y4 | | Ø350×2.5×32mm | 40 |

- Cutting surfaces are bright and smooth without burning





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## CUTTING COOLANT

- Free of mineral oil and sodium nitrite, suitable for all kinds of metallographic cutting machines
- Harmless to human health and environment



| Code | Description | Specification |
|---|---|---|
| MLP-OL1 | 1. fully synthetic concentrate, used for various types of cutting machines, specially for built-in cooling circulatory system models<br>2. concentrate, dilute 1:20 with water<br>3. replace regularly, recommended once a month | 1L |
| MLP-OL2 | | 2L |
| MLP-OL3 | | 4L |
| MLP-OL4 | | 6L |
| MLP-OL5 | | 10L |
| MLP-OL6 | 1. oily mixture, use directly<br>2. cut water sensitive materials at low speed (high speed cutting machine is prohibited)<br>3. replace regularly, recommended once a month | 1L |
| MLP-OL7 | | 4L |

## HOT MOUNTING RESIN

- Suitable for small sample preparation



| Code | Color | Description | Package (barrel) |
|---|---|---|---|
| MLP-DR1 | black | for common sample preparation, fast grinding speed | 0.5kg |
| MLP-DR2 | | | 1kg |
| MLP-DR3 | | | 4kg |
| MLP-DR4 | black | edge protection type, low shrinkage, sample binding, high hardness, good wear resistance, slow grinding speed | 0.5kg |
| MLP-DR5 | | | 1kg |
| MLP-DR6 | | | 4kg |
| MLP-DR7 | black | carbon phenolic polymer, used in highly conductive fields, medium grinding speed | 0.5kg |
| MLP-DR8 | | | 1kg |
| MLP-DR9 | red | for common sample preparation, fast grinding speed | 0.5kg |
| MLP-DR10 | | | 1kg |
| MLP-DR11 | white | for common sample preparation, fast grinding speed | 0.5kg |
| MLP-DR12 | | | 1kg |
| MLP-DR13 | | | 4kg |
| MLP-DR14 | green | for common sample preparation, fast grinding speed | 0.5kg |
| MLP-DR15 | | | 1kg |
| MLP-DR16 | | | 4kg |
| MLP-DR17 | transparent | transparent, soluble, for sample with size, position, depth and other requirements | 0.5kg |
| MLP-DR18 | | | 1kg |
| MLP-DR19 | | | 4kg |

## COLD MOUNTING CONSUMABLES



cold mounting resin



curing agent

| Code | Description | Package |
|---|---|---|
| MLP-CM1 | 1. cold mounting compound, fast speed/good transparency/low viscosity/high strength<br>2. for metal processing without heating, pressure and mounting press<br>3. curing time: 25°C, 25min<br>4. usage: cold mounting resin 3:curing agent 2 | 1. cold mounting resin 1000g<br>2. curing agent 800ml<br>3. Ø30mm cold mounting mold 1pc<br>4. plastic cup 20pcs<br>5. stirring rod 40pcs, spoon 1pc |
| MLP-CM2 | 1. epoxy resin, low viscosity, good permeability, completely transparent<br>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples<br>3. curing time: 25°C, 5~6h<br>4. usage: resin liquid 2:curing agent 1 | 1. resin liquid 1000ml<br>2. curing agent 500ml<br>3. Ø30mm cold mounting mold 1pc<br>4. plastic cup 20pcs<br>5. stirring rod 40pcs |
| MLP-CM3 | 1. fast epoxy, fast curing products, completely transparent<br>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples<br>3. curing time: 25°C, 1h<br>4. usage: resin liquid 2:curing agent 1 | 1. resin liquid 1000ml<br>2. curing agent 500ml<br>3. Ø30mm cold mounting mold 1pc<br>4. plastic cup 20pcs<br>5. stirring rod 40pcs |
| MLP-CM4 | 1. low viscosity epoxy, good permeability, completely transparent<br>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples<br>3. curing time: 25°C, 3~4h<br>4. usage: resin liquid 2:curing agent 1 | 1. resin liquid 1000ml<br>2. curing agent 500ml<br>3. Ø30mm cold mounting mold 1pc<br>4. plastic cup 20pcs<br>5. stirring rod 40pcs |
| MLP-CM5 | 1. low heat release epoxy, small, shrink, completely transparent<br>2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples<br>3. curing time: 25°C, 20~24h<br>4. usage: resin liquid 3:curing agent 1 | 1. resin liquid 1000ml,<br>2. curing agent 300ml<br>3. Ø30mm cold mounting mold 1pc<br>4. plastic cup 20pcs<br>5. stirring rod 40pcs |
| MLP-CM6 | 1. cold mounting compound, fast speed/ceramics white/low viscosity/high strength<br>2. for metal processing without heating, pressure and mounting press<br>3. curing time: 25°C, 25min<br>4. usage: cold mounting resin 3:curing agent 2 | 1. cold mounting resin 1000g<br>2. curing agent 800ml<br>3. Ø30mm cold mounting mold 1pc<br>4. plastic cup 20pcs<br>5. stirring rod 40pcs, spoon 1pc |

## COLD MOUNTING MOLDS

| Code | Description | Specification (mm) |
|---|---|---|
| MLP-QM1 | round soft mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens | Ø20×18 |
| MLP-QM2 | | Ø25×18 |
| MLP-QM3 | | Ø30×18 |
| MLP-QM4 | | Ø40×23 |
| MLP-QM5 | | Ø50×23 |
| MLP-QM6 | square soft mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens | 55×20×22 |
| MLP-QM7 | | 70×40×22 |
| MLP-QM8 | round hard mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens | Ø25×23 |
| MLP-QM9 | | Ø30×27 |
| MLP-QM10 | | Ø32×27 |
| MLP-QM11 | | Ø40×29 |



## MOUNTING DISCHARGING AGENT



| Code | Description | Specifications |
|---|---|---|
| MLP-RA | for hot mounting press and cold mounting mold discharging | 200ml/bottle |

## SLICE CLIPS



MLP-QP1



MLP-QP2

| Code | Description | Specifications |
|---|---|---|
| MLP-QP1 | stainless steel roll slice clip, for hot and cold mounting fixing | 100 pieces/pack |
| MLP-QP2 | PET roll slice clip, for hot and cold mounting fixing | 100 pieces/pack |

## DIAMOND POLISHING LIQUID

- For surface grinding and polishing of metallographic, lithographic, ferrous and non-ferrous metals, ceramics, composite materials, gems, instruments, optical glass of high finish
- Compared with ordinary polishing agent, under the same grinding and polishing quality, consumption is saved 30%, time is saved 60%



| Code | Description | Granularity (μm) | Package/Bottle |
|---|---|---|---|
| MLP-DLA□□* | 1. single crystal, water-based, ethylene glycol-based polishing lubricant formulation<br>2. for general metallographic preparation | 40, 30, 28, 20, 14, 10, 9, 7, 6, 5, 3.5, 3, 2.5, 1.5, 1.0, 0.5, 0.25 | 500ml |
| MLP-DLB□□* | 1. single crystal, water-based, propylene glycol-based polishing lubricant formulation<br>2. for grinding and polishing of soft and ductile materials | 30, 20, 15, 14, 9, 7, 6, 5, 3, 2.5, 1.5, 1.0, 0.5, 0.25 | 500ml |
| MLP-DLC□□* | 1. single crystal, water-based, propylene glycol-based polishing lubricant formulation<br>2. for ultra-precision polishing | 0.05 | 500ml |
| MLP-DLD□□* | 1. single crystal, oil-based, solvent-based polishing lubricant formulation<br>2. for grinding and polishing of soft materials and materials which cannot touch water | 20, 14, 9, 7, 5, 3.5, 2.5, 1.5, 1.0, 0.5, 0.25 | 500ml |
| MLP-DLE□□* | 1. polycrystalline, water-based, propylene glycol based polishing lubricant formula<br>2. for grinding and polishing of different materials and hardness components | 9, 6, 3, 1.0, 0.5, 0.25 | 500ml |
| MLP-DLF□□* | 1. polycrystalline, water-based, denatured ethanol based polishing lubricant formula<br>2. for grinding and polishing of materials which cannot touch water | 9, 6, 3, 1.0, 0.5, 0.25 | 500ml |

*□□ is granularity specification, for example, code **MLP-DLA40** stands for diamond polishing liquid 40μm granularity





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# 29 FLAW DETECTORS



Portable Eddy Current Flaw Detectors
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Ultrasonic Flaw Detectors
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Standard Test Blocks For Ultrasonic Flaw Detection
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Portable Magnetic Powder Flaw Detectors
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Fluorescent Magnetic Powder Flaw Detectors
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Magnetic Powder Test Blocks
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UV Flaw Detection Lights
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Penetration Standard Test Blocks
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Supplementary Materials
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Industrial Viewing Lamps
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Black And White Densitometers
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Wire Rope Flaw Detectors
Page 912-913



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# PORTABLE EDDY CURRENT FLAW DETECTOR
# CODE ECT-S610

VIDEO



- Real-time impedance plane and time base sweep display modes available
- Easy to operate menu interface, with universal knob operation is more convenient and fast
- Analyzes the signal waveform of the entire detection process, automatically measuring phase and amplitude
- With amplitude and phase alarms and settable boundaries
- 5.7" industrial-grade TFT display, can work in outdoor and direct sunlight environment
- 500 sets of data, 500 sets of parameters, or 40 minutes of video storage
- Applicable to all kinds of metal materials and parts, such as weld cracks, copper pipe, seamless steel pipe, stainless steel pipe, folding, scars, pits, cracks, delamination and other defects, with high sensitivity

## SPECIFICATION

| | |
|---|---|
| **Detection channel** | channel 1 (X1-Y1), channel 2 (X2-Y2), mixing channel |
| **Detection frequency** | 2 |
| **Transmission frequency** | 50Hz~10MHz |
| **Driving voltage** | 8 adjustable steps |
| **Phase adjustment** | 360° (1° step) |
| **Gain adjustment** | 0~90dB (step 0.1dB) |
| **Sampling frequency** | 40MHz, 12-bit data acquisition |
| **Digital filtering** | high pass: 1Hz-1950Hz, low pass: 3Hz-2000Hz |
| **Alarm mode** | amplitude and phase alarm |
| **Alarm box** | alarm frame modes: off, amplitude phase, half-amplitude phase, square box |
| **Probe Type** | bridge |
| **Display** | time base, impedance plane |
| **Auxiliary measurements** | automatic/manual measurement of amplitude and phase |
| **Balance mode** | digital balance |
| **Display modes** | dot, line, fade mode |
| **Interface** | Q9 interface, USB HOST, Mini HDMI |
| **Environmental temperature** | -10~50°C |
| **Relative humidity** | 20~95%RH |
| **Power supply** | rechargeable lithium battery, working time 6~8h |
| **Dimensions (L×W×H)** | 251×171×52mm |
| **Weight** | 1.5kg |



right angle probe (included)



pen probe (included)



aluminum alloy flat test block (included)



stainless steel plate test block (included)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Pen probe 50K~500KHz** | 1 pc |
| **Pen probe 500K~3MHz** | 1 pc |
| **Right angle probe 50K~500KHz** | 1 pc |
| **Right angle probe 500K~3MHz** | 1 pc |
| **Aluminum alloy flat test block** | 1 pc |
| **Stainless steel plate test block** | 1 pc |
| **Hexagon bar wrench** | 1 pc |
| **Probe connecting cable** | 1 pc |
| **Mainframe backpack** | 1 pc |
| **USB disk** | 1 pc |
| **Power adapter** | 1 pc |

# DIGITAL ULTRASONIC FLAW DETECTOR (ADVANCED TYPE)
# CODE UFD-P710

VIDEO



external wireless phased array module (**optional**)



- With fast, accurate display and analysis of defective echo signals, a variety of weak signal changes and details can respond in a timely manner, the real-time echo signal and authenticity can be effectively guaranteed
- For the detection of high attenuation materials or thick workpiece has excellent penetration and letter ratio; sharp wave excitation technology and adjustable pulse width, pulse voltage, emission anisotropic square wave technology in the detection of thin workpiece and composite materials have a high resolution
- FIR digital filtering technology better signal-to-noise ratio; probe frequency harmonic analysis, can better analyze the probe performance information
- Automatic calibration of material speed of sound, probe delay, probe K value; convenient DAC, AVG curve creation and application
- USB HOST interface, can be connected to an external U disk to achieve data transmission; can be connected to an external WIFI module to achieve communication with other wireless devices
- HDMI video output for flaw detection and teaching presentations
- Ultra-large capacity storage space for continuous dynamic recording data storage
- Wireless phased array module can be connected, so that the conventional ultrasonic flaw detector has the same detection function as phased array instrument



single-element straight probe (included)



single-element angle probe (included)



wireless phased array module (**optional**)



phased array probe (**optional**)

**FUNCTIONS**

| | |
|---|---|
| **Flaw detection standard** | built-in common flaw detection standards, direct call, convenient and fast |
| **Auto calibration** | automatic calibration of probe zero offset, probe angle (K value) and material velocity |
| **Peak hold** | compare frozen peak waveforms to live A-Scans to easily interpret test results |
| **Flaw locating** | live display sound-path, projection (surface distance), depth, amplitude |
| **Flaw discrimination** | automatic flaw sizing using AVG or DAC, speeds reporting of defect acceptance or rejection |
| **Flaw sizing** | the equivalent dB value of defects or equivalent size of defects are displayed in real time |
| **Curved surface correction** | used for flaw detection of curved workpiece, it can display the circumferential position of defects in real time |
| **DAC/AVG** | the curve is automatically generated, and the sampling points can be compensated and corrected. The curve automatically floats with the gain, automatically expands with the detection distance, and automatically moves with the delay time. It can display the AVG curve of any aperture |
| **AWS D1.1/1.5** | choosing this standard can reduce manual calculations and improve detection efficiency |
| **Automatic rating** | select different AWS standards, automatically calculate the rating of defects and display |
| **Crack height** | the crack height is measured and calculated automatically by the diffracted wave at the end |
| **Gate magnify** | spreading of the gate range over the entire screen width |
| **Continuous record** | video recording and playback |
| **Echo coding** | display 1~9 echo display area in different colors, used to analyze the defect position |
| **Scan freeze** | display freeze holds waveform and test distance data |
| **Peak mark** | capture and mark the peak in real time |
| **B scan** | intuitively display the defect shape of the workpiece and the detection result is more intuitive |

To be continued



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## SPECIFICATION

| | |
|---|---|
| Measuring range | 0~10000mm |
| Working frequency | 0.5~20MHz |
| Material velocity | 1000~15000m/s, adjustable in continuity; 30 pre-set nominated velocities for common materials |
| Repetition frequency | 25~1600Hz |
| Dynamic range | ≥32dB |
| Gain range | 0.0~110dB (steps: 0.1dB, 1.0dB, 2.0dB, 6.0dB) |
| Vertical linearity | ≤3.0% |
| Horizontal linearity | ≤0.4% |
| Resolving power | >26dB (2.5P20) |
| Sensitivity leavings | >62dB (200Ø2 flat bottom hole, narrow band) |
| Attenuator | 12dB±1dB |
| Suppression | 0~99% |
| Noise | ≤10% |
| Display screen | 5.7"TFT color LCD, resolution 640x480 |
| Pulse type | sharp wave, negative square wave, bipolar square wave; transmit voltage 50~250V adjustable, step 50V |
| Pulse shift | -7.5~3000us |
| Probe zeroing | 0~200us |
| Rectification | positive, negative, full-play, RF |
| Gates and alarms | two-way gate, optional: into the wave alarm, lost wave alarm, DAV curve alarm, alarm signal for sound and light alarms<br>measurement mode: peak, frontal |
| Interface | Q9 (BNC), USB HOST, Mini HDMI |
| Damping | 400Ω, 80Ω |
| Power supply | rechargeable lithium-ion battery, working time 6~8h |
| Storage temperature | -30~50°C |
| Relative humidity | 20~95%RH |
| Size | 246×166×50mm |
| Weight | 1.3kg |



## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Single-element straight probe UFD-P70 | 1 pc |
| Single-element angle probe UFD-P71 | 1 pc |
| Probe connecting cable | 2 pcs |
| Mainframe backpack | 1 pc |
| USB disk | 1 pc |
| Power adapter | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Probe | refer to specification of transducers |
| Wireless phased array module | UFD-PA11 |
| Phased array probe | UFD-PA06 |

## SPECIFICATION OF PROBES

| Code | Frequency | Size | Probe type | Probe transducer angle |
|---|---|---|---|---|
| UFD-P70 (included) | 2.5MHz | Ø20mm | single-element straight probe | 90° |
| UFD-P71 (included) | 2.5MHz | 13×13mm | single-element angle probe | 45° |
| UFD-P72 (optional) | 2.5MHz | Ø14mm | dual-element straight probe | 90° |
| UFD-P73 (optional) | 5.0MHz | Ø20mm | single-element straight probe | 90° |
| UFD-P74 (optional) | 2.5MHz | 13×13mm | single-element angle probe | 63.4° |
| UFD-P75 (optional) | 5.0MHz | 8×12mm | single-element angle probe | 68.2° |

Note: Other probes can be customized according to customer requirements

## SPECIFICATION OF PHASED ARRAY PROBE (OPTIONAL)

| Code | Frequency | E-Nos | Pitch (mm) | Elev (mm) | Ptd. angle | Ptd. material |
|---|---|---|---|---|---|---|
| UFD-PA06 (optional) | 2.5MHz | 16 | 1.0 | 10 | 55° | plexiglass |



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# DIGITAL ULTRASONIC FLAW DETECTOR (ECONOMIC TYPE)
# CODE UFD-T680

VIDEO

- The all-aluminum metal shell is strong and durable, and the electromagnetic shielding performance is very good
- Tempered glass panel, extremely hard, wear-resistant and scratch-resistant
- Full-digital multi-color high resolution (640×480 pixels) TFT LCD display
- 4 operation interface styles can be selected according to the environment
- Real-time screenshots of all pages and flaw detection reports, and save them as BMP pictures to U disk
- Export the flaw detection report as a PDF file
- Unique Fn multifunction key design
- There is no limit of the number and duration of video recording through U disk
- Memory of 500 channel files to store calibration setups and probe parameter
- Memory of 1000 wave report files to store A-Scan wave and settings
- Two fully independent gates offer a range of measurement options for signal height or distance using peak triggering
- Can choose to set the incoming wave alarm or lost wave alarm, accompanied by LED light display
- Selectable frequency ranges (automatically set by the instrument) to match probe for optimum performance
- The unique automatic gain adjustment and gain scanning function make flaw detection fast and accurate





straight-beam probe (included)



angle-beam probe (included)



USB disk (included)



couplant (included)



**FUNCTIONS**

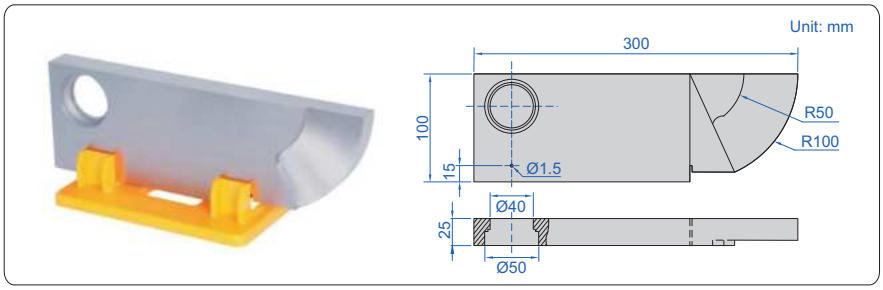
| | |
|---|---|
| **Flaw detection standard** | built-in common flaw detection standards, direct call, convenient and fast |
| **Auto calibration** | automatic calibration of probe zero offset, probe angle (K value) and material velocity |
| **Peak hold** | compare frozen peak waveforms to live A-Scans to easily interpret test result |
| **Flaw locating** | live display sound-path, projection (surface distance), depth, amplitude |
| **Flaw discrimination** | automatic flaw sizing using AVG or DAC, speeds reporting of defect acceptance or rejection |
| **Flaw sizing** | the equivalent dB value of defects or equivalent size of defects are displayed in real time |
| **Curved surface correction** | used for flaw detection of curved workpiece, it can display the circumferential position of defects in real time |
| **DAC/AVG** | the curve is automatically generated, and the sampling points can be compensated and corrected. The curve automatically floats with the gain, automatically expands with the detection distance, and automatically moves with the delay time. It can display the AVG curve of any aperture |
| **AWS D1.1** | choosing this standard can reduce manual calculations and improve detection efficiency |
| **Weld diagram** | support V type, T type, L type and other weld types, acoustic path navigation real-time display, weld and defect location real-time display, scaling, easy to locate defects |
| **Automatic rating** | select different AWS standards, automatically calculate the rating of defects and display |
| **Crack height** | the crack height is measured and calculated automatically by the diffracted wave at the end |
| **Gate magnify** | spreading of the gate range over the entire screen width |
| **Continuous record** | video recording and playback |
| **Echo coding** | display 1~9 echo display area in different colors, used to analyze the defect position |
| **Scan freeze** | display freeze holds waveform and test distance data |
| **Peak mark** | capture and mark the peak in real time |
| **B scan** | intuitively display the defect shape of the workpiece and the detection result is more intuitive |

To be continued



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calibration block (**optional**)

## SPECIFICATION

| | |
|---|---|
| **Measuring range** | 0~15000mm |
| **Working frequency** | 0.2~20MHz |
| **Material velocity** | 100~20000m/s |
| **Repetition frequency** | 20~2000Hz |
| **Dynamic range** | ≥36dB |
| **Vertical linearity** | ≤1.5% |
| **Horizontal linearity** | ≤0.1% |
| **Resolving power** | >42dB |
| **Sensitivity leavings** | >65dB |
| **Suppression** | 0~80% |
| **Noise** | ≤10% |
| **Probe selection** | single crystal probe, dual crystal probe, penetrating probe, climbing probe |
| **Pulse energy** | 100V, 200V, 250V, 300V, 350V, 400V, 450V, 500V (selectable) |
| **Pulse width** | 30ns-510ns |
| **Probe damping** | 50Ω, 150Ω, 250Ω, 500Ω (selectable) |
| **Rectification** | positive half wave, negative half wave, full wave, RF |
| **Gates** | two independent gates controllable over entire sweep range |
| **Interface** | USB 2.0 |
| **Operation temperature** | -10~50°C |
| **Relative humidity** | 20~95%RH |
| **Power supply** | build-in rechargeable battery |
| **Size** | 263×170×61mm |
| **Weight** | 1.92kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Single-element straight probe UFD-T60** | 1 pc |
| **Single-element angle probe UFD-T61** | 1 pc |
| **USB cable** | 1 pc |
| **Couplant** | 1 bottle |
| **Probe connecting cable** | 1 pc |
| **USB disk** | 1 pc |
| **Power adapter** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Calibration block** | **UFD-CSK1** |

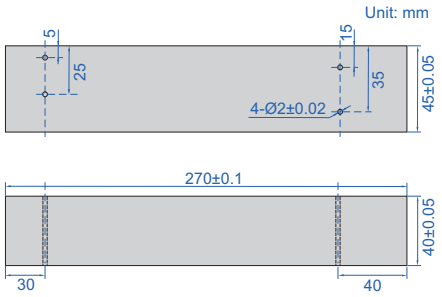
## SPECIFICATION OF PROBE

| Code | Frequency | Size | Probe type | Transducer sensor angle |
|---|---|---|---|---|
| **UFD-T60 (included)** | 2.5MHz | Ø20mm | single-element straight probe | 90° |
| **UFD-T61 (included)** | 4.0MHz | 8×9mm | single-element angle probe | 60° |
| **UFD-T62 (optional)** | 5.0MHz | Ø10mm | dual-element straight probe | 90° |
| **UFD-T63 (optional)** | 5.0MHz | Ø10mm | single-element straight probe | 90° |
| **UFD-T64 (optional)** | 4.0MHz | 8×9mm | single-element angle probe | 45° |
| **UFD-T65 (optional)** | 4.0MHz | 8×9mm | single-element angle probe | 70° |

Note: Other types of the probes are available

## STANDARD TEST BLOCK FOR ULTRASONIC FLAW DETECTION






- Conforms to standard NB/T47013
- The test block is designed according to ultrasonic testing requirements on pressure-bearing welded joints (Type I)
- Applicable to tests on welded joints (Type I) by oblique probe and straight probe with work piece thickness range from 6mm to 40mm

**SPECIFICATION** **(mm)**

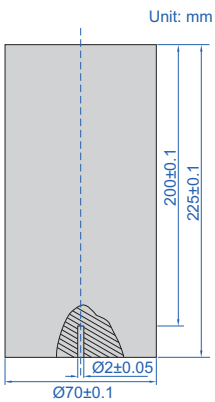
| Code | Material | Measuring range | Transverse hole depth (transverse wave detection) | Transverse hole depth (longitudinal wave detection) |
|---|---|---|---|---|
| UFD-CSK-2A | 20# | ≥6~40 | 5、10、15、25、35 | 5、10、15、20、30、40 |



## STANDARD TEST BLOCK FOR ULTRASONIC FLAW DETECTION

- The test block is used to determine sensitivity margins of straight probe and instrument's comprehensive performances, to adjust sensitivity of flaw detection, to determine sizes of defects and to determine performances indicators and their shapes, e. g. vertical linearity of instrument






**SPECIFICATION** **(mm)**

| Code | Material | Diameter | Length | Aperture (hole depth) |
|---|---|---|---|---|
| UFD-CS1-5 | 45# | Ø70 | 225 | Ø2 (25) |



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# PORTABLE MAGNETIC POWDER FLAW DETECTORS

VIDEO

- Conformity to standards JB/T7411-2012 ASTM E1444-05 ASTM E709 EN10228-1:1999 ISO 9934 ASTM E3024
- Multiple power supply modes available



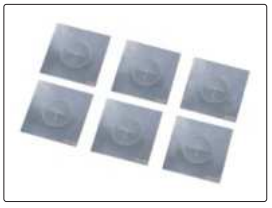
**MPI-P110**



DC battery pack 4400mAh **(optional)**



AC battery pack 6600mAh **(optional)**



A1 standard sensitivity test piece **(optional)**



45N lifting force test block **(optional)**



177N lifting force test block **(optional)**



magnetic pole slope angle A **(optional)**



magnetic pole slope angle B **(optional)**



bag **(optional)**

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## SPECIFICATION

| Code | | MPI-P110 | MPI-P220 | MPI-P330 |
|---|---|---|---|---|
| Magnetic field strength | | >2KA/m | | |
| Sensitivity | | 15/50 engraved groove clearly displayed on A1 standard sensitivity test piece | | |
| Illumination | | — | white light ≥2320Lux | UV lamp ≥5220μW/cm² |
| Duty cycle | | >50% maximum excitation time 90 seconds | | >30% |
| Lifting power | AC | ≥4.5kg (44N) | | |
| | DC | ≥18.1kg (177N) | | |
| Magnetic pole spacing | | 0-230mm | | |
| Magnetic pole size | | 22×22mm | | |
| Power supply | | AC220V, 50/60Hz (DC battery pack or AC battery pack are optional) | | |
| Power cord | | european power cord | | |
| Operation temperature | | -10~40°C | | |
| Relative humidity | | <80% (no condensation) | | |
| Dimension (L×W×H) | | 235×50×195mm | | |
| Weight | | 2.3kg | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| DC battery pack 4400mAh | MPI-PDC440 |
| AC battery pack 6600mAh | MPI-PAC660 |
| A1 standard sensitivity test piece | MPI-PA1 |
| 45N lifting force test block | MPI-P45N |
| 177N lifting force test block | MPI-P177N |
| Magnetic pole slope angle A | MPI-PMA |
| Magnetic pole slope angle B | MPI-PMB |
| Bag | MPI-PBG |
| British power cord | MPI-POWER-K |
| Brazilian power cord | MPI-POWER-B |

## PORTABLE AC MAGNETIC POWDER FLAW DETECTOR (ADVANCED TYPE)

VIDEO

IP54 WATERPROOF



- Conformity to standards JB/T7411-2012 ASTM E709-08 ASTM E1444 EN10228-1:1999 ISO 9934
- Light weight ergonomic design reduces operator muscle fatigue
- Magnetic pole feet of the movable joints can make good contact with any shape of parts

**SPECIFICATION**

| Code | MPI-M510-P | MPI-M510-K | MPI-M510-B |
|---|---|---|---|
| Amps | AC 2.5A | | |
| Sensitivity | 15/100 engraved groove clearly displayed on A1 standard sensitivity test piece | | |
| Duty cycle | >50% maximum excitation time 30 seconds | | |
| Lifting Power | ≥4.5kg (44N) | | |
| Magnetic pole spacing | 50-195mm | | |
| Power supply | AC220V, 50Hz | | |
| Power cord | european type | british type | brazilian type |
| Operation temperature | -10-40°C | | |
| Dimension (L×W×H) | 220×42×175mm | | |
| Weight | 2.3kg | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |

## ADJUSTABLE FREQUENCY MAGNETIC POWDER FLAW DETECTOR CODE MPI-CX50

VIDEO



- Deep penetration of the magnetic field, which allows the detection of artificial cracks from the surface up to a depth of about 8 mm from the surface
- For workpieces made of ferromagnetic materials with thin paint, plating, or other coverings on the surface, flaw detection can be performed without any treatment
- Magnetization current using digital MCU to regulate phase inverter current, no demagnetization is required after flaw detection
- Low standby energy consumption, high efficiency, adjustable frequency
- Compact size, light weight, portable type



**SPECIFICATION**

| | | |
|---|---|---|
| Frequency | | 3Hz, 10Hz, 20Hz (adjustable) |
| Sensitivity | | 15/100 clearly displayed on A1 sensitivity test piece (20Hz) |
| Lifting power | | ≥44N (20Hz) |
| White light power | | 2W |
| Magnetic pole spacing | | 40~180mm |
| Lithium battery | voltage | 12V |
| | current | 1~2.4A |
| | capacity | 10000mAh |
| | life | 4~6h |
| | charging time | <6h |
| Operation temperature | | -10~40°C |
| Dimension (L×W×H) | | 200×45×160mm |
| Weight | | 2kg |



test block (included)

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Lithium battery | 1 pc |
| Power adapter | 1 pc |
| Test block | 1 pc |
| Fuse | 2 pcs |



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CAN BE CUSTOMIZED ACCORDING TO CUSTOMER NEEDS

# FLUORESCENT MAGNETIC POWDER FLAW DETECTOR
# CODE MPI-FX□□□

VIDEO



- Conform to standards GB/T15822.1~3 GB3721-83, JB/T8290-2011 ASTM E1444-2016
- Specialized in non-destructive testing of the whole surface of ferrous materials
- With automatic program, it can realize a series of semi-automatic actions such as workpiece clamping, spraying, 360°rotation, compound magnetization, demagnetization, and releasing
- It has high inspection efficiency, low labor intensity of operators, and reliable practicality
- Touch screen
- With magnetization abnormality alarm, to prevent the leakage of detection
- With independent stirring pump, to ensure that the magnetic powder does not precipitate
- Suitable for non-destructive testing of various parts in aviation, aerospace, military, railroad, automobile, metallurgy, petrochemical, shipbuilding, pressure vessel and other industries



## SPECIFICATION

| | |
|---|---|
| Circumferential magnetizing current | AC: 0~2000A |
| Longitudinal magnetization potential | AC: 0~12000AT |
| Electrode spacing | 100~600mm adjustable (manual) |
| Magnetization sensitivity | 15/50 clearly displayed on A sensitivity test piece |
| Duty cycle | ≥25%, continuous magnetization time maximium 3s |
| Magnetization method | circumferential magnetization, longitudinal magnetization, compound magnetization |
| Clamping method | pneumatic clamping |
| Running mode | pneumatic/manual |
| Electrode plate | Ø160mm |
| Magnetizing coil | coil inner diameter Ø200mm two, coil turns 6 turns |
| Demagnetization | automatic attenuating demagnetization, residual magnetism≤0.3mT |
| UV (light) Lux | ≥2000uW/cm$^2$ (calibration at a distance of 381mm) |
| Power supply | 380V three-phase alternating current, 50Hz |
| Air supply | 0.4~0.7MPa |
| Operation environment | temperature:-5~45°C, relative humidity: ≤90% |
| Dimension (L×W×H) | main unit: 2600×850×1700mm<br>including darkroom dimension: 2800×1600×2200mm |
| Weight | 700kg |

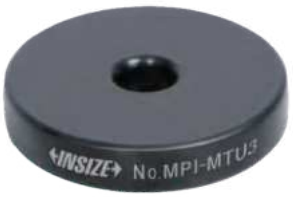
## STANDARD DELIVERY

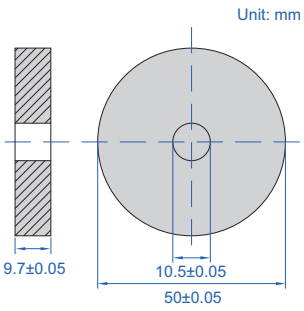
| | |
|---|---|
| Electrical control system | 1 pc |
| Magnetized power system | 2 pcs |
| Spray system | 1 pc |
| Magnetic suspension recovery device | 1 pc |
| Ultraviolet flaw detection lamp | 1 pc |
| Demagnetization system | 1 pc |



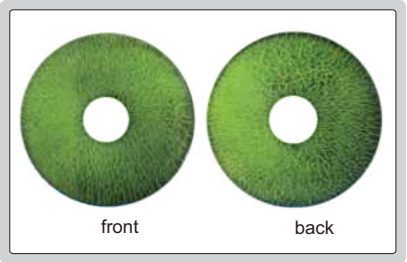
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## MAGNETIC POWDER TYPE I TEST BLOCK
## CODE MPI-MTU3




- Conform to standard ISO 9934-2: 2002
- The test block is a disc with natural cracks in the surface, it contains coarse cracks and fine cracks produced by grinding and stress corrosion
- The test block is permanently magnetized by a central conductor through the hole, evaluation of a detection media is made by visual or other methods




**SPECIFICATION**

| | |
|---|---|
| **Material** | 90MnCrV8 |
| **Surface hardness** | 63HRC~70HRC |
| **Magnetization method** | 1000A magnetization of DC center conductor |



## UV FLAW DETECTION LIGHT
## CODE MPI-HD130



- UV-B content is 0
- No need to wait, instantly reaches 100% power
- Supplied with glass filter
- External surface temperature increase <5K (5°C) for continuous working

**SPECIFICATION**

| | |
|---|---|
| **UV (light) Lux** | 6000~11000μW/cm² |
| **UV light power** | UV LED-3W |
| **FLUX error** | ±10% (at 0°C~40°C) |
| **Lighting characteristics** | center lighting |
| **Wavelength** | 365nm±3nm (UVA), at temperature 25°C |
| **Power supply** | 3.7V rechargeable lithium battery |
| **Battery capacity** | 2600mAh |
| **Charging time** | 2h~3h |
| **Battery life** | UV LED 3h~4h |
| **Dimension** | 180×47mm |
| **Weight** | 260g (including battery) |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 2 pcs |
| **Charger** | 1 pc |



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## RECHARGEABLE UV FLAW DETECTION LIGHT
## CODE MPI-HF360

goggles (included)





- UV-B content is 0
- Without preheating, instant start, instant on/off, no need to wait
- Supplied with glass filter
- External surface temperature increase <8K (8°C) for continuous working

**SPECIFICATION**

| | |
|---|---|
| **UV (light) Lux** | about 6000μW/cm² |
| **UV light power** | UV LED-12VA |
| **Covering area** | diameter approximately 300mm (calibrated at 381mm distance) |
| **FLUX error** | ±10% (at 0°C~40°C) |
| **White light content** | ≤20LUX |
| **Lighting characteristics** | center lighting |
| **Wavelength** | 365nm±3nm (UVA), at temperature 25°C |
| **Power supply** | 12V rechargeable lithium battery |
| **Battery capacity** | 3500mAh |
| **Charging time** | 3~4h |
| **Battery life** | UV LED 5~6h |
| **Dimension** | 175×75×170mm |
| **Weight** | 750g (including battery) |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 2 pcs |
| **Charger** | 1 pc |
| **Goggles** | 1 pc |

## RECHARGEABLE UV/WHITE LIGHT FLAW DETECTION LIGHT
## CODE MPI-HW369



goggles (included)






- UV-B content is 0
- With UV and white light dual function, one hand switching
- Without preheating, instant start, instant on/off, no need to wait
- Supplied with glass filter
- External surface temperature increase <8K (8°C) for continuous working

**SPECIFICATION**

| | |
|---|---|
| **UV (light) Lux** | >6000μW/cm² |
| **White light brightness** | >1000LUX |
| **Lamp power** | UV LED-9VA, white light-3VA |
| **Covering area** | 300mm (at 381mm distance) |
| **FLUX error** | ±10% (at 0°C~40°C) |
| **White light content** | ≤20LUX |
| **Lighting characteristics** | center lighting |
| **Wavelength** | 365nm±3nm (UVA), at temperature 25°C |
| **Power supply** | 12V rechargeable lithium battery |
| **Battery capacity** | 3500mAh |
| **Charging time** | 3h~4h |
| **Battery life** | UV LED 5h~6h, white light 7h |
| **Dimension** | 175×75×170mm |
| **Weight** | 750g (including battery) |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 2 pcs |
| **Charger** | 1 pc |
| **Goggles** | 1 pc |



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# INTELLIGENT IMAGE UV FLAW DETECTION LIGHT
# CODE MPI-SC608

VIDEO

- UV-B/C content is 0
- Without preheating, instant start, instant on/off, no need to wait
- Continuous irradiation surface spot uniform, no dark areas, no point-like strong light source
- 13M UV-resistant specialized lens for high-definition photos and videos
- Precise measurement of small defects
- High-definition defects can be freely magnified up to 12 times (3 times optical magnification, 4 times electronic magnification)
- Android system, free to download applications
- Support WIFI, USB, Bluetooth data transmission function, and can realize real-time synchronization between light interface and computer screen
- Languages: Chinese, English, French, German, Japanese




measuring camera **(optional)**




goggles (included)



imaging



29

## SPECIFICATION

| | |
|---|---|
| **UV (light) Lux** | about 4000μW/cm² |
| **Light source** | 3 UV LED's, 1 white LED |
| **Covering area** | Ø180mm (at 381mm distance) |
| **White light content** | <5LUX |
| **Minimum working distance** | ≤13cm |
| **Camera pixels** | 13M |
| **Display** | 3" touch LCD |
| **Display resolution** | 720×720 |
| **Camera focus** | auto focus or manual focus |
| **White balance** | adjust white balance automatically |
| **Internal storage** | 32GB |
| **Data transmission** | USB, WIFI, Bluetooth |
| **Operation system** | Android 6.0 |
| **Power supply** | rechargeable lithium battery ≥4hours, power adapter (for continuous use) |
| **Dimension** | 175×80×180mm |
| **Weight** | 880g (including battery) |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 2 pcs |
| **Charger** | 1 pc |
| **Power adapter** | 1 pc |
| **Data cable** | 1 pc |
| **Goggles** | 1 pc |
| **4G USB flash disk** | 1 pc |
| **Scerwdriver** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Measuring camera** | **MPI-SC608-AW** |

## SPECIFICATION (OPTIONAL)

| Product | Code | Defect measurement range | Camera pixels | UV light | White light |
|---|---|---|---|---|---|
| measuring camera | **MPI-SC608-AW** | 0.01-7mm | 2M | about 14000μW/cm² | about 2200LUX |



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## PENETRATION STANDARD TEST BLOCK CODE ISU-PB3



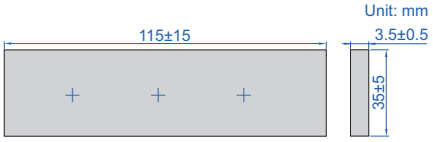

- Comply with ASME standard requirements
- The test block shows the number and clarity of lines of radiating cracks to determine the sensitivity level
- Suitable for verifying the sensitivity and operational accuracy of penetrants, as well as for testing the corrosion of stainless steel materials by penetrants

**SPECIFICATION**

| | |
|---|---|
| **Type** | JB/T6064 B3 type |
| **Surface treatment** | chrome plating |
| **Material** | stainless steel |

**STANDARD DELIVERY**

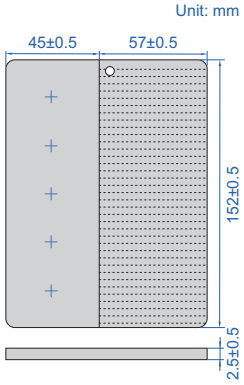
| | |
|---|---|
| **B3 test block** | 1 pc |
| **B3 test block display image** | 1 pc |




## PENETRATION STANDARD TEST BLOCK CODE ISU-PB5

- Meets NB/47013.5 and ASME standards
- This test block is a means of verifying the sensitivity and operational accuracy of the penetrant, and has a rough surface in the sandblasting area to verify the cleaning performance of the penetrant and the accuracy of the cleaning method. Its sensitivity is determined by the number of defects displayed and the diameter of each point in the radial domain. It is a functional standard test block




**SPECIFICATION**

| | |
|---|---|
| **Type** | JB/T6064 B5 type |
| **Surface treatment** | chrome plating |
| **Material** | stainless steel |

**STANDARD DELIVERY**

| | |
|---|---|
| **B5 test block** | 1 pc |
| **B5 test block display image** | 1 pc |

## FLUORESCENT PENETRANT FLUID

- Conformity to standards AMS 2644, ASTM E1417
- Level 3 sensitivity, washable, high brightness, high contrast defect indication
- High water tolerance, high thermal stability, high UV stability
- High flash point, low toxicity, low volatility, low odor
- Low biological and environmental load




| Code | Description | Sensitivity | Package/barrel |
|---|---|---|---|
| **IPT-ZP1300** | 1. Fast drying, no residue, not easy to cause over-cleaning<br>2. Suitable for aerospace parts, turbine blades, welded parts and ceramics, glass, plastic and other surface defects inspection<br>3. Can be used in conjunction with imaging agents | Level 3 | 18L |

## FLUORESCENT MAGNETIC POWDER CONCENTRATE

- Good storage stability, can be used immediately after slight shaking
- Dilution with water is all that is needed to prepare the magnetic suspension, no additional dispersant is required
- Good wettability, even dispersion of the suspension, high inspection accuracy
- Good dispersion stability, small change in the concentration of the suspension, can reduce the amount of use




| Code | Description | Package/bottle |
|---|---|---|
| MPI-CC20 | 1.Suitable for surface and near-surface inspection of magnetizable parts (especially for on-line automatic inspection)<br>2.Usage: dilute the suspension to the recommended concentration (0.5~1.0g/L) to formulate a high-performance magnetic suspension | 500ml |

## COMPOSITE MAGNETIC POWDER

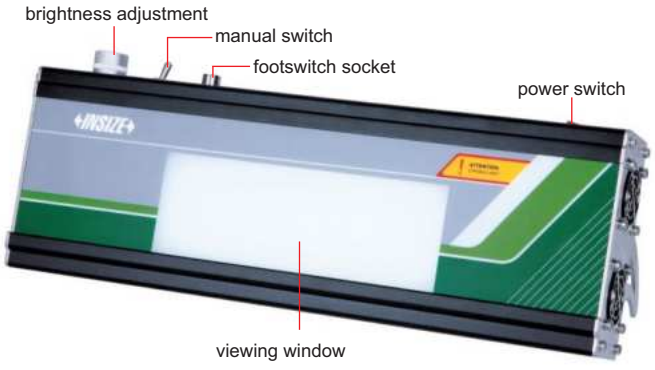
- High sensitivity
- Composite magnetic particle eliminates the need for additional rust inhibitors, defoamers, and dispersants
- Clear, visible defect indication under UV light
- Excellent powder flowability
- Good dispersion stability
- Excellent surface wettability




| Code | Description | Package/cans |
|---|---|---|
| MPI-CP30 | 1. Suitable for surface and near-surface inspection of magnetizable parts<br>2. Usage: simply mix and dilute the magnetic powder to the recommended concentration (3-7g/L) to form a high performance magnetic suspension | 1kg |



## INDUSTRIAL VIEWING LAMP CODE RXT-F290




- LED light source, high brightness, uniform light emission, long life use
- Stepless adjustable brightness, 2%-100% wide range dimming
- Aluminum alloy case, good heat dissipation, low heat generation without damaging the film
- Bearing fan, high RPM, low noise, fast heat discharge
- No need to warm up, suitable for frequent switching of the occasions for film evaluation

**SPECIFICATION**

| | |
|---|---|
| Brightness | 170000cd/m² (500000LUX) |
| LED quantity | 280pcs |
| Observable blackness | 4.2D |
| Maximum area of viewing window | 220×75mm |
| Power consumption | 100W |
| Power supply | 100~240V, 50/60Hz |
| Dimension | 456×154×68mm |
| Weight | 3.5kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Light barrier | 1 pc |
| Fuse | 2 pcs |
| Wired footswitch | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Wireless footswitch | RXT-F290-WF |



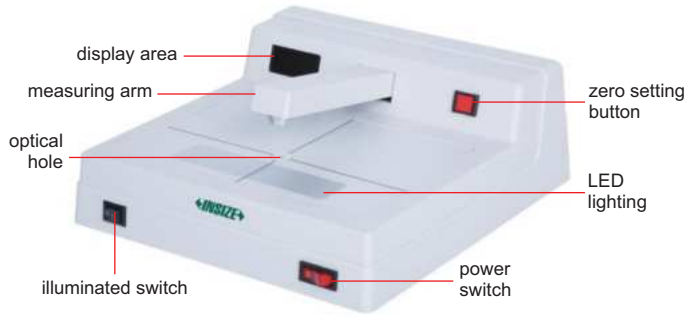
wireless footswitch (**optional**)



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VIDEO

# BLACK AND WHITE DENSITOMETER
# CODE RXT-BM301




- With accurate reading, good stability, easy to operate
- Small size, light weight, 27 LED lighting source, good shock resistance
- Comes with calibration software and standard black and white density film, allowing self calibration of instruments
- Suitable for industries such as non-destructive testing, photosensitive materials, printing, etc.



black and white density film (0.0~5.0, included)

**SPECIFICATION**

| | |
|---|---|
| **Blackness range** | D=0.00~5.00 |
| **Reading stability** | ±0.02 |
| **Accuracy** | ±0.02 (0.0<D≤2.0)<br>±1% (2.0<D≤4.0)<br>±0.05 (4.0<D≤5.0) |
| **Optical aperture** | Ø2mm |
| **Sampling time** | 0.8s |
| **Display form** | three-digit display |
| **Interface** | RS232 (optional accessory USB cable) |
| **Operation environment** | 0°C~40°C, relative humidity≤85% |
| **Power supply** | 220V, 50/60Hz |
| **Dimension** | 260×265×110mm |
| **Weight** | 2.1kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Black and white density film (0.0~5.0)** | 1 pc |
| **USB flash disk** | 1 pc |
| **RS232 cable** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **USB cable** | **RXT-BM301-CA** |



CAN BE CUSTOMIZED ACCORDING TO CUSTOMER NEEDS

VIDEO

# WIRE ROPE FLAW DETECTOR
# CODE EST

**computer is not included**



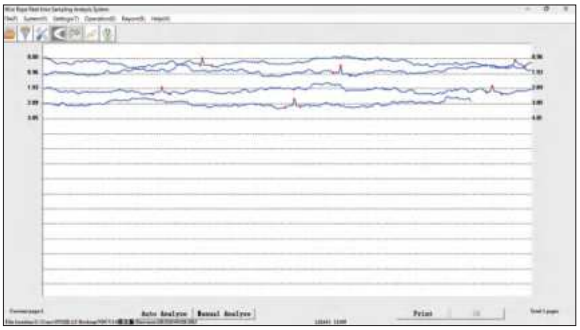

To be continued

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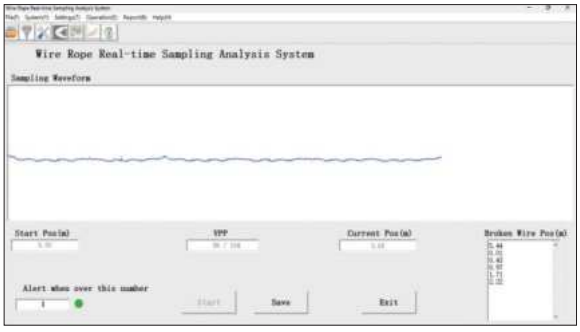
- On-line detection of wire rope internal and external wire breakage, abrasion, corrosion, deformation, loose strands, jumping wire, material changes and other defects
- The test results report can meet the standards of different industries at the same time with the number of broken wires and broken wires broken area and the ratio of the total area of broken wires in the form of display
- The use of computer USB interface direct sampling processing analysis, with online sound and light alarms and real-time display of the results of the function
- The sensor's circular structure, circumferential encirclement, and axial magnetization instantly magnetize the wire rope to saturation
- Stable work, reliable performance, high detection precision, strong anti-interference performance, accurate data
- Suitable for use in mines, ropeways, lifting equipment, elevators, port machinery, cable-stayed bridges, etc.



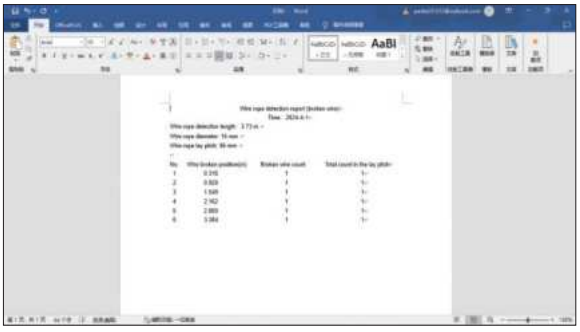
parameter setting



sampling analysis




real-time detection alarm



test report



## SPECIFICATION

| | |
|---|---|
| **Detection range** | Ø1.5~300mm (can be customized according to customer needs) |
| **Detection efficiency** | 0.0~6.0m/s (relative speed between sensor and wire rope) |
| **Optimal detection efficiency** | 0.3~1.0m/s |
| **Allowable interval** | 0~15mm (allowable interval between guide sleeve and wire rope) |
| **Optimal interval** | 2~6mm |
| **Qualitative accuracy of wire breakage** | 99.99% |
| **Tolerance on the number of broken wires** | allow one root or one equivalent of algorithmic differences |
| **Sensitivity error** | ±0.055% |
| **Accuracy error** | ±0.2% |
| **Length error** | ±0.2% |
| **Power supply** | power adapter |
| **Operation condition** | temperature: -20~50°C<br>humidity: ≤85%<br>pressure: 86kPa~106kPa |
| **Weight** | <10kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit (transducer)** | 1 pc |
| **Real-time alarm** | 1 pc |
| **9355 signal connection line** | 1 pc |
| **USB transmission cable** | 1 pc |
| **Flexible traction safety rope** | 1 pc |
| **Software USB flash disk** | 1 pc |



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Handheld XRF Alloy Analyzers
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Handheld LIBS Spectrometers
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Handheld Raman Spectrometers
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Spark Direct Reading Spectrometers
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X-Ray Fluorescence Spectrometers/
Plating Thickness Instruments
Page 931-933



Standard Sheets For XRF Plating
Thickness Instruments
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Standard Samples For Spectral
Analysis
Page 935-936



Spectral Sample Grinders
Page 936



Fourier Transform Infrared
Spectrometers
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Carbon And Sulfur Analyzers
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Gas Chromatographies
Page 939-941



Liquid Chromatographies
Page 942-944



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# INSTRUMENT SELECTION TABLE

| Application | Name | Code | Analysis material | Analysis range | Non-destructive | Desktop | Handhold |
|---|---|---|---|---|---|---|---|
| Component analysis | spark direct reading spectrometer | **OES-T350** | metal | content of Li to U element | | √ | |
| | | **OES-R420** | | | | √ | |
| | | **OES-P200** | | | | √ | |
| | LIBS spectrometer | **HLS-B410** | | content of Mg to U element | | | √ |
| | carbon and sulfur analyze | **CSA-R300** | solid materials | content of C and S in metal, ore, ceramic, etc. | | √ | |
| | XRF spectrometer | **HSM-A310** | metal | content of Ti to U element | √ | | √ |
| | | **XRF-PT230** | | content of S to U element | √ | √ | |
| | | **XRF-B210** | metal and organic materials | content of Ti to U element in metal, plastic, rubber, etc. | √ | √ | |
| | | **XRF-VF300** | | content of Na to U element in metal, plastic, rubber, etc. | √ | √ | |
| Oil analysis | Oil spectrometer | **OES-OL800** | oil | analyse of metal impurities in oil during use to judge its pollution level | | √ | |
| Plating measurement | XRF spectrometer | **XRF-B210** | metal plating | thickness of Ti to U metal plating on metal or non-metal substrates | √ | √ | |
| | | **XRF-PT230** | | thickness of Li to U metal plating on metal or non-metal substrates | √ | √ | |
| | | **XRF-VF300** | | | √ | √ | |
| Compound qualitative analysis | Raman spectrometer | **HHL-R240** | solid materials and liquid | content of drug, compound, biomolecule, jewellery, etc. | √ | | √ |
| | | **HHL-S360** | | content of plastics, drug, compound, biomolecule | √ | | √ |
| | infrared spectrometer | **FTI-A170** | | content of compound, biomolecule, polymer, etc. | √ | √ | |
| Compound quantitative analysis | gas chromatography | **GCT-2400** | organic materials | 4 o-benzenes in RoHS 2.0 (DEBP, BBP, DBP, DIBP) | | √ | |
| | | **GCT-3600** | liquid and gas | compound of small molecule, volatile, good thermal stability | | √ | |
| | liquid chromatography | **HLC-3000** | liquid | compound of macromolecule, non-volatile, poor thermal stability | | √ | |
| | ion chromatography | **HLZ-1000** | | cation: $Li^+$, $Na^+$, etc. anion: $NO_{3^-}$, $Cl^-$, etc. | | √ | |



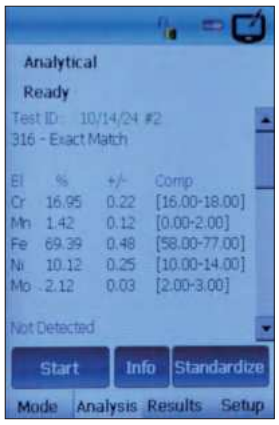
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VIDEO

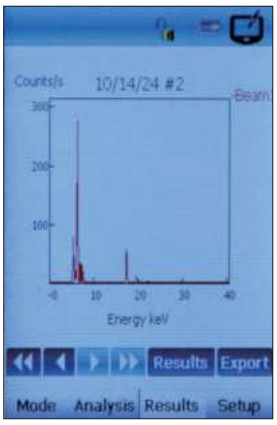
POPULAR MODEL

# HANDHELD XRF ALLOY ANALYZER
# CODE HSM-A310

test interface




spectral analysis






- Fast and non-destructive test to identify alloy grade and composition
- For iron-based alloys (stainless steels, chromium/molybdenum alloys, low alloy steels, tool steels, seamless steels), nickel-based alloys, cobalt-based alloys, titanium-based alloys, copper-based alloys, high-temperature alloys (molybdenum/tungsten alloys), aluminium-based alloys

30

## SPECIFICATION

| | |
|---|---|
| **Excitation source** | 35kV/200μA, Ag target, integrated end window, micro X-ray tube and high voltage, power supply matching power ≥4W |
| **Detector** | Si-PIN, window area 25mm² |
| **Elemental analysis range** | K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Rb, Sr, Zr, Nb, Mo, Ru, Rh, Pd, Ag, Cd, Sn, Sb, Ba, Ta, Hf, W, Re, Ir, Pt, Au, Hg, Pb, Bi |
| **Alloy analysis mode** | 1. iron-based alloys (stainless steels, chromium/molybdenum alloys, low alloy steels, tool steels, seamless steels), nickel-based alloys, cobalt-based alloys, titanium-based alloys, copper-based alloys, molybdenum/tungsten-based alloys, aluminium-based alloys<br>2. comes with 288 commonly used alloy grades<br>3. can create your own grade database |
| **Display** | 3.5-inch LCD touch screen, clearly visible in all light conditions |
| **Memory** | built-in 8G, storage data, >40000 groups |
| **Data transmission** | data transmission via mobile phone shared WIFI with mobile phone app |
| **Battery** | 6600mAh lithium battery, for 4 hours working time |
| **System** | Windows |
| **Security protection** | air-test protection against untargeted operation |
| **Work environment** | temperature: -20~40°C, relative humidity: 10%~80% |
| **Dimension** | 250×265×85mm |
| **Weight** | 1.3kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Power adapter** | 1 pc |
| **Charger** | 1 pc |
| **Battery** | 2 pcs |
| **Window protection film** | 5 pcs |
| **316 stainless steel standard block** | 1 pc |



316 stainless steel standard block (included)



window protection film (included)

# HANDHELD LIBS SPECTROMETER
# CODE HLS-B410

test interface






POPULAR MODEL

EYE SAFE LASER

LASER CLASS CLASS I

NO RADIATION

IP54 WATERPROOF

VIDEO

- Widely used in metallurgy, casting, steel, non-ferrous metals and scrap metal recycling, etc.
- LIBS is a technique that uses laser light on the sample's surface to excite outer electrons and generate a plasma, analyzing its elemental composition
- Ability to quickly analyze the metal elements of materials for quantitative characterization and grade differentiation
- Ability to accurately analyse light elements such as Al, Si, Mg, etc.
- No radiation, faster, more accurate, eye-safe handheld spectrometer
- The instrument includes standard metal grade database, ability to create user-owned metal grade database
- Compact size, lightweight, replaceable batteries, long battery life
- IP54 dust/waterproof



**SPECIFICATION**

| | | |
|---|---|---|
| **Application** | **alloy analysis** | can be used for almost all alloys, including scrap metal, high temperature alloys, alloy steel, stainless steel, tool steel, chromium molybdenum steel, aluminum alloys, nickel alloys, titanium alloys, cobalt alloys, cupric alloys, precious metals, zinc alloys, anomalous alloys, au-zirconium alloys, mixed alloys, etc. |
| | **material properties identification (PMI)** | can be used for quality control in the metal fabrication and processing industry to analyze material composition and identify alloy grades for a wide range of materials including critical missing pieces, raw materials, and welded seams |
| **Operative system** | | android |
| **Touch panel** | | 5", 720×1280, Multi-Touch, adjustable brightness |
| **Light source** | | pulsed laser |
| **Wavelength** | | 1535nm |
| **Laser life** | | 1 billion times |
| **Laser class** | | class I |
| **Detection limit** | | 0.05% |
| **Repeatability** | | major element RSD<1%, nonmajor element RSD<5% |
| **Analysis time** | | <5s |
| **Work distance** | | fit to probe plane |
| **Analysis environment** | | no protective gas required, direct analysis in ambient air |
| **View window material** | | sapphire |
| **Memory** | | 16G |
| **Data export format** | | PDF, xlsx (photos available) |
| **Data transmission** | | USB, flash drive (type C) |
| **Protection class** | | IP54 |
| **Battery** | | 3300mAh lithium battery |
| **Work time** | | 8h |
| **Work power** | | 10W |
| **Operation temperature** | | -10~40°C |
| **Dimension (L×W×H)** | | 290×300×90mm |
| **Weight** | | 1750g |

To be continued



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Continued from previous page

### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 2 pcs |
| **Charger** | 1 pc |
| **Sanding paper (HLS-B410-SP30)** | 20 pcs |
| **Iron base calibration foil** | 2 pcs |
| **Aluminum base calibration foil** | 2 pcs |
| **Copper base calibration foil** | 2 pcs |
| **Wavelength base calibration foil** | 1 pc |

### STANDARD DATABASE

| Alloy type | Elemental range |
|---|---|
| Iron Alloy | Fe, Cr, Ni, Mn, Cu, V, Mo, Si, Ti, Co, etc. |
| Aluminum Alloy | Al, Cr, Ni, Si, Mg, Ti, Fe, Cu, Sn, Pb, Zn, Zr, Be, Sr, Sc, etc. |
| Copper Alloy | Cu, Fe, Al, Mn, Sn, Pb, Zn, Ni, etc. |

### OPTIONAL DATABASE

| Alloy type | Database number | Elemental range |
|---|---|---|
| Nickel Alloy | **A1** | Ni, Cr, Fe, Nb, Mo, Ti, Al, Mn, Cu, etc. |
| Titanium Alloy | **A2** | Ti, Al, V, Fe, Cr, Mo, Sn, Mn, Zr, Nb, Si, Cu, etc. |
| Magnesium Alloy | **A3** | Mg, Si, Cu, Mn, Zn, Zr, Al, Y, Be, Ni, Fe, etc. |
| Au | **A4** | Au, Ag, Zn, Ni, Pd, Cu, Co, In, etc. |
| Ag | **A5** | Ag, Cu, Zn, Cd, Ni, etc. |
| Pt | **A6** | Pt, Pd, Ag, Cu, Ni, Zn, Co, Ru, Pb, Cr, Au, etc. |
| Pd | **A7** | Pd, Cu, Ni, Zn, Fe, Co, Ag, As, Pb, Cr, etc. |



wavelength calibration foil (included)



iron base calibration foils (included)



aluminum base calibration foils (included)



copper base calibration foils (included)



## COMPARISON TABLE

| HANDHELD XRF ALLOY ANALYZER<br>HSM-A310 | HANDHELD LIBS SPECTROMETER<br>HLS-B410 |
|---|---|
|  |  |
| non-destructive testing | microdestructive testing, generates a spark point of 1mm² |
| suitable for detection of high atomic number elements such as Mn, Fe, Cu, Mo, etc. | suitable for detection of low atomic number elements such as Mg, Al, Si, etc. |
| suitable for detection of stainless steels, high-temperature alloy steels, nickel-based alloys, cobalt-based alloys and special alloys made of zirconium, tungsten or tantalum | suitable for detection of aluminium alloys, magnesium alloys and low alloy steels |
| samples can be analyzed directly | samples need to be grinded to remove the oxide layer |
| meets radiation safety standards | without radiation |

# HANDHELD RAMAN SPECTROMETER (BASIC TYPE)
# CODE HHL-R240

VIDEO



- One-touch operation, non-destructive, fast detection and identification
- Equipped with raman spectral recognition algorithms, including standard spectra of up to 10,000 kinds of substances
- Supports analysis of pure substances and mixtures, with the ability to create user-owned database
- 5.5" screen and dual cameras to record the inspection site at all times
- Test results support export PDF reports
- Ultra-light weight, suitable for one-handed operation, easy to carry, built-in lithium battery
- 4-6 hours of long battery life



**SPECIFICATION**

| | |
|---|---|
| **Operative system** | Android |
| **Excitation wavelength** | 785±0.5nm |
| **Wavenumber range** | 200~4000cm$^{-1}$ |
| **Resolution** | 10cm$^{-1}$ |
| **Touch panel** | 5.5", 1920×1080, Multi-Touch |
| **Communication Interface** | USB type-C |
| **Fields of application** | drugs: heroin, virus, cocaine, ketamine, etc. |
| | predisposition to manufacture:<br>ephedrine, trichloromethane, ether, etc. |
| | explosives: TNT, RDX, TATP, ammonium nitrate, etc. |
| | hazardous chemicals: sulphuric acid, petrol, nitric acid, toluene, etc. |
| | food and drugs: pesticide residues, illegal additives,<br>pharmaceutical excipients, etc. |
| | jewellery: diamonds, onyx, jade, etc. |
| **Report output** | supports export of multi-information test reports<br>(test results, mapping information, photo forensics, etc.) |
| **Battery** | 5200mAh lithium battery |
| **Work hours** | 4-6h |
| **Operation temperature** | -20~50°C |
| **Dimension** | 172×85×30mm |
| **Weight** | 500g |

**STANDARD DELIVERY**

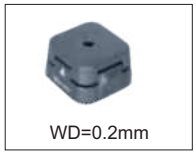
| | |
|---|---|
| **Main unit** | 1 pc |
| **Power cable** | 1 pc |
| **Solid probe** | 1 pc |
| **Liquid cuvette** | 1 pc |

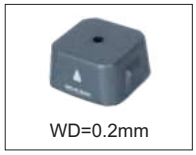


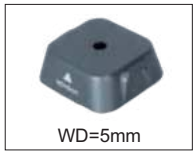
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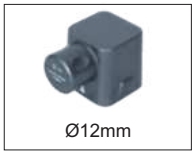
# HANDHELD RAMAN SPECTROMETER (ADVANCED TYPE)
# CODE HHL-S360

VIDEO


WD=0.2mm
push probe (included)


WD=0.2mm
probe for solid material (included)


WD=5mm
probe for solid material (included)


Ø12mm
vertical liquid cuvette (included)


Ø12mm
horizontal liquid cuvette (included)

interchangeable probe



- Widely used in industry, medicine, environmental protection, food, public security, defense, etc.
- For the qualitative identification of inorganic and organic substances in various forms
- The 1064nm wavelength has the unique advantage of avoiding fluorescence interference
- Plastic types can be clearly distinguished, with the ability to create user-owned database
- Different sizes of probes and lenses to meet the testing of various samples
- Account privileges can be set to prevent unauthorized disclosure of data
- Compact size, lightweight, replaceable batteries, long battery life

## SPECIFICATION

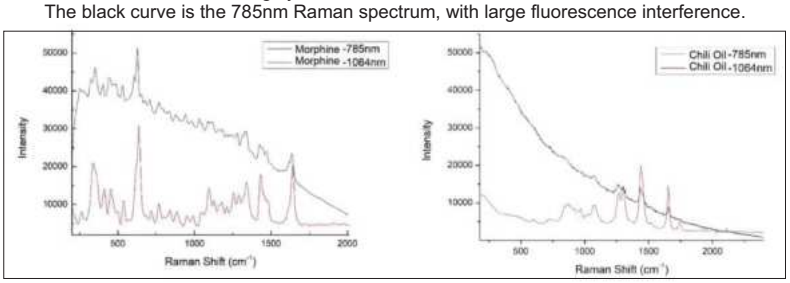
| | |
|---|---|
| **Operative system** | android |
| **Wavelength** | 1064nm |
| **Wavenumber range** | 200~2500cm$^{-1}$ |
| **Laser power** | 0~500mW adjustable |
| **Resolution** | 14cm$^{-1}$ |
| **Focus length** | f=10mm* |
| **Touch panel** | 6.3", 1920×1080, multi-touch |
| **Laser class** | class 3B |
| **Fields of application** | plastics: PP, PS, PVC, PA, ABS, etc. |
| | drugs: heroin, methamphetamine, cocaine, ketamine, fentanyl, alprazolam, etc. |
| | food safety: food additives, pesticide and veterinary drug residues, illegal additives, etc. |
| | gemstones and minerals: authenticity of gemstones, color identification, inclusions analysis, etc. |
| | petrochemicals: oil quality analysis, chemical raw materials, intermediate by-products, etc. |
| | pharmaceutical industry: identification of raw materials and excipients, identification of Chinese medicine additives, qualitative identification of drugs, etc. |
| | others: scientific archaeology, biomedical diagnostics, environmental protection, etc. |
| **Report output** | supports export of multi-information test reports (test results, mapping information, photo forensics, etc.) |
| **Communication Interface** | bluetooth, WIFI |
| **Battery** | 5800mAh lithium battery |
| **Work hours** | 4-6h |
| **Operation temperature** | -20~50°C |
| **Dimension (L×W×H)** | 209×95×55mm |
| **Weight** | 1350g |

*Interchangeable focus lens with a focal length of 15mm

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 2 pc |
| **Charger** | 1 pc |
| **Sample spoon** | 1 pc |
| **Disposable droppers** | 5 pcs |
| **Focus lens (f=15mm)** | 1 pc |
| **Vertical liquid cuvette (Ø12mm)** | 1 pc |
| **Horizontal liquid cuvette (Ø12mm)** | 1 pc |
| **Push probe (WD=0.2mm)** | 1 pc |
| **Probe for solid material (WD=0.2mm)** | 1 pc |
| **Probe for solid material (WD=5mm)** | 1 pc |

The red curve is the 1064nm Raman spectrum, the peaks are clearly visible, and it is highly resistant to fluorescence interference.
The black curve is the 785nm Raman spectrum, with large fluorescence interference.



# SPARK DIRECT READING SPECTROMETER (STANDARD TYPE)
# CODE OES-R420

VIDEO



- Widely used in metallurgy, casting, machinery, iron and steel and non-ferrous metal industries, etc.
- Can be used for sample analysis of metals and their alloys such as Fe, Al, Cu, Ni, Co, Mg, Ti, Zn, Pb, Sn, Mn, etc.
- It can automatically calibrate the pixel drift to ensure the stability of the optical system
- Fractional exposure is used to lower the detection limit of trace elements
- Equipped with a coaxial spinning air excitation stage, pressurized self-purge, excitation for thousands of times without cleaning
- Supports intelligent grade recognition, automatic carbon equivalent calculation, etc.
- The software is available in multiple languages (Chinese, English, German, Spanish)



**SPECIFICATION**

| | | |
|---|---|---|
| **Curves** | **standard curve** | carbon steel/low and medium alloy steel (**A1**), plain stainless steel (**A2**), Al-Si-Cu alloy (**B1**) |
| | **customized curve** | curves can be added or customized for special base materials (Mg, Ti, Pb, Sn, Mn, etc.) |
| **Optical system** | **detector** | multiple CCD detectors, unlimited maximum number of detection channels |
| | **optical system construction** | paschen-runge construction, grating focal length 500mm, roland circle diameter: 500mm |
| | **raster scribing** | 2700 lines/mm |
| | **spectral range** | 160~500nm |
| | **resolution** | better than 0.01nm (line resolution 0.7407nm/mm, pixel resolution 0.005926nm) |
| | **pixel dimension** | 8μm |
| | **dispersion** | class I: 0.74nm/mm, class II: 0.37nm/mm |
| **Excitation source** | **excitation frequency** | 20~1000Hz |
| | **excitation current** | 90A |
| | **excitation voltage** | 190V |
| **Spark stand** | **discharge parameter** | inductance: 120μH, resistance: 3.5Ω, capacitance: 5μF, voltage: 380V |
| | **dimension** | 125×95mm, max. load 50kg |
| | **lens** | one-piece lens isolation valve |
| | **excitation electrode** | tungsten electrode |
| **Gas supply** | **argon quality** | purity: 99.999%, pressure: ≥0.6MPa |
| | **flow rate** | tidal flushing mode, excitation: 8L/min, standby: 60ml/min |
| **General analysis time** | | <40s |
| **Data processing** | | after instrument excitation, acquisition and countback to independently control the integration exposure time of different CCDs |
| **Work environment** | | 20~25°C, <70%RH |
| **Power supply** | | AC220V, 50Hz, 1Ø, 16A, 2.5KW, ground resistance <4Ω |
| **Dimension (L×W×H)** | | 545×380×435mm |
| **Weight** | | 70kg |

To be continued

Continued from previous page

### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 set |
| **Printer** | 1 pc |
| **Voltage regulator** | 1 pc |
| **Standardized sample** | 1 set |
| **Electrode brush (OES-T350-BR)** | 1 set |
| **Analysis and calibration software** | 1 set |
| **Consumable and spare parts** | 1 set * |

*Including polarimeter, pressure reducing valve, electrode brush and other consumable and spare parts



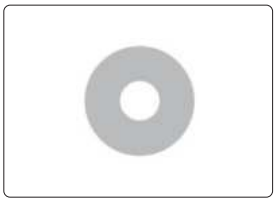
spectral sample grinder (**optional**)



lathe (**optional**)



small sample fixture (**optional**)



gasket (**optional**)

### OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Spectral sample grinder** | **OES-MY100** | Ø350mm, 380V |
| **Lathe** | **OES-R420-LATHE** | 220×300mm, 220V |
| **Small sample fixture** | **OES-R420-RODLIKE** | Ø3.1~7mm regular bar sample |
| | **OES-R420-FILIFORM** | Ø0.5~3mm filament sample |
| **Gasket** | **OES-R420-GASKET1** | copper, ID6mm |
| | **OES-R420-GASKET2** | copper, ID8mm |
| | **OES-R420-GASKET3** | boron nitride, ID4mm |
| | **OES-R420-GASKET4** | boron nitride, ID6mm |



### IRON BASE CURVES

| **Curve number** | **A1** | **A2** | **A3** | **A4** | **A5** |
|---|---|---|---|---|---|
| **Elemental content (%)** | Medium and low alloy steel * | Plain stainless steel | High speed tool steel | Cr-Mn stainless steel | Nodular iron** |
| **C** | 0.0015-1.5 | 0.005-2.0 | 0.08-2.5 | 0.006-2.0 | 0.9-4.5 |
| **Si** | 0.005-2.0 | 0.005-2.0 | 0.005-2.0 | 0.003-2.0 | 0.1-5.5 |
| **Mn** | 0.005-2.5 | 0.002-2.5 | 0.005-2.0 | 2.0-25 | 0.005-2.5 |
| **P** | 0.001-0.1 | 0.002-0.1 | 0.003-0.1 | 0.003-0.2 | 0.003-1.0 |
| **S** | 0.001-0.1 | 0.001-0.1 | 0.001-0.1 | 0.003-0.1 | 0.003-0.2 |
| **Cr** | 0.001-5.0 | 5-35 | 0.01-7.9 | 0.005-30 | 0.005-5.0 |
| **Ni** | 0.002-5.0 | 0.004-30*** | 0.005-2.5 | 0.005-7 | 0.002-5.0 |
| **Mo** | 0.003-2.0 | 0.005-4.0 | 0.01-10.0 | 0.006-2.5 | 0.003-2.0 |
| **Cu** | 0.002-1.5 | 0.005-4.0 | 0.005-1.5 | 0.006-2.0 | 0.005-2.0 |
| **W** | 0.001-2.0 | 0.002-1.0 | 1.0-20.0 | 0.006-0.5 | 0.006-1.0 |
| **V** | 0.002-1.5 | 0.002-0.5 | 0.01-6.0 | 0.006-1.5 | 0.001-1.0 |
| **Ti** | 0.001-1.0 | 0.003-1.0 | 0.004-0.5 | 0.003-1.0 | 0.001-0.5 |
| **Nb** | 0.001-0.5 | 0.005-3.0 | 0.002-1.0 | 0.006-3.0 | 0.002-1.0 |
| **Al** | 0.001-1.5 | 0.004-1.5 | 0.005-0.2 | 0.004-0.5 | 0.001-0.4 |
| **Mg** | – | – | – | – | 0.001-0.1 |
| **Ce** | – | – | – | – | 0.001-0.1 |
| **Zr** | 0.004-0.5 | – | – | – | 0.003-0.1 |
| **Co** | 0.001-0.5 | 0.003-0.5 | 0.006-10 | 0.003-0.5 | 0.001-0.2 |
| **B** | 0.0008-0.02 | 0.002-0.02 | – | 0.002-0.02 | 0.003-0.2 |
| **Fe** | REF | REF | REF | REF | REF |
| **Description** | La, As, Pb, Sn, Sb, Bi, Ca, Zn, Se, etc. in iron base can be customized | | | | |

* Including carbon steel curve
** Nodular iron samples are required to be whitening treated samples
*** Stainless steel in the nickel content of the standard configuration for the 0.004-30%, can be extended up to 40% according to requirements

To be continued

Continued from previous page

### ALUMINUM BASE CURVES

| Curve number | B1 | B2 | B3 | B4 |
|---|---|---|---|---|
| Elemental content (%) | Al-Si-Cu | Low-Al | Al-Mg-Si | Al-Zn |
| Cd | 0.002-0.25 | 0.001-0.2 | 0.002-0.2 | 0.002-0.2 |
| Cr | 0.002-0.5 | 0.002-0.4 | 0.002-0.5 | 0.005-0.5 |
| Cu | 0.5-8.0 | 0.002-1.0 | 0.002-2.0 | 0.01-3.0 |
| Fe | 0.005-2.0 | 0.002-1.5 | 0.005-1.5 | 0.03-1.5 |
| Mg | 0.005-2.0 | 0.002-1.5 | 0.005-15.0 | 0.01-4.5 |
| Mn | 0.005-1.0 | 0.001-0.5 | 0.005-1.0 | 0.01-1.0 |
| Ni | 0.005-1.5 | 0.003-0.5 | 0.005-1.0 | 0.01-1.0 |
| P | 0.005-0.02 | 0.005-0.02 | 0.005-0.02 | 0.005-0.02 |
| Pb | 0.005-0.4 | 0.002-0.2 | 0.005-0.5 | 0.005-0.2 |
| Si | 1.0-16.0 | 0.005-1.5 | 0.01-25.0 | 0.01-1.0 |
| Sn | 0.0005-1.0 | 0.003-0.2 | 0.005-0.5 | 0.005-0.2 |
| Ti | 0.003-0.5 | 0.003-0.3 | 0.003-0.5 | 0.003-0.5 |
| Zn | 0.005-3.0 | 0.005-1.5 | 0.01-3.0 | 0.01-10.0 |
| Al | REF | REF | REF | REF |
| Description | Sb, Sr, V, Zr, Ag, As, B, Be, Ca, Ce,Ga, Co, etc. in aluminum base can be customized | | | |

### NICKEL BASE CURVES

| Curve number | D1 | D2 | D3 | D4 |
|---|---|---|---|---|
| Elemental content (%) | Nimonic alloy | Inconel alloy | Monel alloy | Hartz alloy |
| Al | 0.005-6.0 | 0.005-6.0 | 0.005-4.5 | 0.005-1.0 |
| C | 0.005-0.3 | 0.005-0.2 | 0.005-0.5 | 0.005-0.25 |
| Co | 0.01-20.0 | 0.005-1.0 | 0.005-0.5 | 0.005-3.0 |
| Cr | 8.0-25.0 | 10.0-25.0 | 0.005-0.5 | 15.0-25.0 |
| Cu | 0.005-0.5 | 0.005-0.5 | 20.0-32.0 | 0.005-1.5 |
| Fe | 0.015-3.5 | 0.01-20.0 | 0.005-4.0 | 0.5-20.0 |
| Mg | 0.005-0.05 | 0.005-0.05 | 0.005-0.1 | – |
| Mn | 0.005-1.2 | 0.005-1.2 | 0.005-3.0 | 0.005-1.5 |
| Mo | 0.01-10.0 | 0.01-10.0 | 0.005-0.1 | 5.0-23.0 |
| Nb | 0.005-0.5 | 0.005-7.0 | 0.005-0.5 | – |
| Si | 0.005-1.0 | 0.005-0.5 | 0.005-4.5 | 0.005-1.3 |
| Ti | 0.005-6.0 | 0.005-3.0 | 0.005-1.5 | 0.005-0.5 |
| V | 0.005-0.6 | 0.005-0.5 | – | 0.005-0.5 |
| W | 0.002-4.5 | 0.005-0.5 | – | 0.5-6.0 |
| Zr | 0.005-0.15 | 0.005-0.05 | 0.005-0.1 | – |
| Ni | REF | REF | REF | REF |
| Description | P, S, Pb, Ce, B, etc. in nickel base can be customized | | | |

### COPPER BASE CURVES

| Curve number | C1 | C2 | C3 | C4 | C5 | C6 | C7 |
|---|---|---|---|---|---|---|---|
| Elemental content (%) | Zn-Brass | Pb-Brass | Sn-Bronze | P-Bronze | Al-Bronze | Cu-Ni alloy | Cu-Ni-Zn alloy |
| Al | 0.001-0.5 | 0.05-1.0 | 0.001-0.2 | 0.001-0.1 | 0.5-12.0 | 0.001-0.5 | 0.001-0.1 |
| As | 0.003-0.2 | 0.003-0.3 | 0.003-0.2 | 0.003-0.2 | 0.003-0.1 | 0.003-0.05 | 0.003-0.1 |
| Bi | 0.002-0.01 | 0.002-0.01 | 0.002-0.1 | – | – | 0.001-0.02 | 0.001-0.01 |
| Cd | 0.001-0.15 | – | 0.001-0.01 | – | – | – | – |
| Co | – | – | 0.003-0.15 | – | – | 0.006-0.2 | 0.006-0.25 |
| Fe | 0.003-0.5 | 0.003-1.0 | 0.003-0.35 | 0.003-0.35 | 0.005-6.5 | 0.03-1.0 | 0.03-1.0 |
| Mg | – | – | – | 0.005-0.01 | 0.005-0.1 | 0.003-0.15 | 0.003-0.15 |
| Mn | – | 0.001-0.2 | 0.003-0.2 | 0.005-0.5 | 0.005-3.0 | 0.005-1.5 | 0.005-1.0 |
| Ni | 0.005-0.5 | 0.01-1.0 | 0.005-2.0 | 0.005-1.5 | 0.01-7.0 | 0.5-35.0 | 5.0-20.0 |
| P | 0.003-0.05 | 0.003-0.1 | 0.003-0.6 | 0.01-1.0 | 0.003-0.05 | 0.003-0.05 | 0.01-0.1 |
| Pb | 0.005-0.5 | 0.2-5.0 | 0.005-10.0 | 0.005-1.5 | 0.002-0.2 | 0.002-0.05 | 0.002-2.0 |
| S | 0.001-0.01 | 0.001-0.01 | – | 0.002-0.1 | – | 0.002-0.1 | 0.002-0.1 |
| Sb | 0.001-0.1 | 0.001-0.1 | 0.001-0.6 | 0.001-0.5 | – | 0.001-0.02 | 0.001-0.02 |
| Si | 0.001-0.2 | 0.001-0.2 | 0.004-0.15 | 0.004-0.15 | 0.004-0.5 | 0.002-0.2 | 0.002-1.0 |
| Sn | 0.005-0.1 | 0.005-1.0 | 0.01-12.0 | 0.1-12.0 | 0.005-0.3 | 0.005-0.1 | 0.005-0.2 |
| Zn | 0.5-42.0 | 0.5-42.0 | 0.005-12.0 | 0.002-1.5 | 0.003-2.0 | 0.005-1.0 | 10.0-35.0 |
| Cr | – | – | – | – | 0.001-0.1 | – | – |
| Cu | REF | REF | REF | REF | REF | REF | REF |
| Description | Be, Ti, Te, Se, C, B, Au, Ag, etc. in copper base can be customized | | | | | | |

### COBALT BASE CURVES

| Curve number | E1 | E2 | E3 | E4 |
|---|---|---|---|---|
| Elemental content (%) | Co-Cr-W alloy | Co-Cr-Ni-W alloy | Co-Ni-Cr-Mo alloy | Co-Cr-Mo alloy |
| Al | 0.005-0.48 | 0.005-0.48 | 0.005-0.48 | 0.005-0.48 |
| C | 0.005-1.0 | 0.005-1.0 | 0.005-0.5 | 0.005-0.5 |
| Cr | 18.0-31.0 | 18.0-31.0 | 18.0-31.0 | 18.0-31.0 |
| Cu | 0.005-0.3 | 0.005-0.3 | 0.005-0.05 | 0.005-0.05 |
| Fe | 0.005-9.0 | 0.005-3.0 | 0.03-1.0 | 0.005-3.0 |
| Mn | 0.005-2.0 | 0.005-2.0 | 0.005-0.3 | 0.005-1.0 |
| Mo | 0.005-1.5 | 0.005-1.0 | 1.0-10.0 | 1.0-8.5 |
| Nb | 0.005-4.2 | 0.005-0.5 | 0.005-0.5 | 0.005-0.5 |
| Ni | 0.005-3.0 | 8.0-25.0 | 10.0-36.0 | 0.005-5.0 |
| Si | 0.005-1.0 | 0.005-1.0 | 0.005-1.0 | 0.005-1.0 |
| Ti | 0.005-3.0 | 0.005-0.05 | – | 0.005-0.05 |
| W | 3.0-16.0 | 3.0-16.0 | 0.005-0.1 | 0.005-0.1 |
| Co | REF | REF | REF | REF |
| Description | V, P, S, Ta, Sn, B, etc. in cobalt base can be customized | | | |

### ZINC BASE CURVES

| Curve number | F1 | F2 |
|---|---|---|
| Elemental content (%) | Die-casting zinc alloy | Zinc-Aluminum alloy |
| Al | 0.05-6.0 | 6.0-30.0 |
| Cd | 0.005-0.04 | 0.005-0.04 |
| Cu | 0.005-3.0 | 0.005-3.0 |
| Fe | 0.005-0.1 | 0.005-0.1 |
| Mg | 0.005-0.1 | 0.005-0.1 |
| Ni | 0.005-0.05 | 0.005-0.05 |
| Pb | 0.005-0.03 | 0.005-0.03 |
| Si | 0.005-0.05 | 0.005-0.05 |
| Sn | 0.005-0.01 | 0.005-0.02 |
| Ti | 0.005-0.3 | 0.005-0.3 |
| Zn | REF | REF |
| Description | Sb, etc. in zinc base can be customized | |

# SPARK DIRECT READING SPECTROMETER (BASIC TYPE)
# CODE OES-T350

VIDEO





printer (included)


filter element (included)


AC voltage regulator (included)


calibration sample (included)


electrode brush (included)


pressure valve (included)


gray iron control sample (**optional**)


15# steel control sample (**optional**)

- Widely used in metallurgy, casting, scientific research, commodity inspection, automobile, shipbuilding, aviation, nuclear power, etc.
- Ability to analyze trace elements such as carbon (C), phosphorus (P), sulfur (S), etc.
- The analysis speed is fast, and the element composition of all channels is measured within 20 seconds
- Paschen-Runge structure with full wavelength coverage, the most concise and stable optical system structure
- Perfect aberration correction, so that the spectrometer has excellent resolution, minimize the cross interference of different elements
- Argon-filled optical chamber, effectively reducing the attenuation of P and S rays in the far ultraviolet region
- The software has automatic spectrum correction technology, can store database, trace historical data, output and print reports
- Report format can be customized, data can be sent out

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |
| **Printer** | 1 pc |
| **Calibration sample** | 1 pc |
| **Electrode brush (OES-T350-BR)** | 2 pcs |
| **Filter element** | 2 pcs |
| **AC voltage regulator** | 1 pc |
| **Pressure valve** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **15# steel control sample** | **OES-KY235** |
| **Gray iron control sample** | **OES-KY282** |
| **Spectroscopic grinder** | **OES-MY100** |
| **Argon purifier** | **OES-T350-PURIFIER** |

To be continued

Continued from previous page

## SPECIFICATION

| | | |
|---|---|---|
| **Curves** | **standard curve** | low alloy steel (**A1**), cast iron (**A2**), plain stainless steel (**A3**) |
| | **customized curve** | curves can be added or customized for special base materials (Ti, Pb, Sn, Co, etc.) |
| **Optical system** | **optical structure** | paschen-runge structure |
| | **rowland circle of diameter** | 350mm |
| | **wavelength range** | 160~510nm |
| | **detector** | multi high resolution CCD detectors |
| | **pixel resolution** | 20pm |
| | **full spectrum** | cover the full range of element analysis |
| | **light room temperature** | 34±0.5°C (be controlled automatically) |
| **Spark source** | **type** | digital arc and spark source/new plasma generator |
| | **spark frequency** | 100~1000Hz |
| | **plasma current** | 1~80A |
| | **Ignition voltage** | >7000V |
| **Spark stand** | | spray discharge electrode technology reduces argon consumption and improves argon use efficiency |
| | | good heat dissipation, continuous excitation for 100 times, the temperature of the excitation table does not rise more than 5°C |
| **Operation temperature** | | 10~30°C, 23±2°C is recommended |
| **Argon quality** | | 99.999% high purity argon, argon pressure≥4MPa |
| **Argon consumption** | | 5L/min during spark mode |
| **Operation humidity** | | 20%~80%RH |
| **Power supply** | | AC220V, 50Hz |
| **Power consumption** | | excitation: 300W, stand by: 40W |
| **Dimension (L×W×H)** | | 700×660×340mm |
| **Weight** | | 30kg |



## IRON BASE CURVES

| Curve number | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|
| Elemental content (%) | Low alloy steel | Cast iron* | stainless steels | High Mn steel | High Cr * cast iron | High speed tool steel | High Ni * cast iron |
| C | 0.006-1.19 | 1.75-4.04 | 0.0035-1.0 | 0.0085-2.38 | 1.16-3.43 | 0.003-2.94 | 1.75-4.04 |
| Si | 0.013-3.86 | 0.2-3.88 | 0.095-2.41 | 0.091-1.69 | 0.055-2.48 | 0.014-0.967 | 0.2-3.88 |
| Mn | 0.034-2.2 | 0.08-1.67 | 0.131-16.13 | 5.3-22.96 | 0.201-1.95 | 0.018-0.846 | 0.08-6.72 |
| P | 0.0019-0.13 | 0.021-0.699 | 0.0057-0.065 | 0.0064-0.188 | 0.024-0.369 | 0.0038-0.098 | 0.0067-0.699 |
| S | 0.0009-0.364 | 0.003-0.22 | 0.0006-0.095 | 0.0047-0.108 | 0.0047-0.123 | 0.0005-0.076 | 0.003-0.22 |
| Cr | 0.016-4.83 | 0.021-2.48 | 6.8-32.58 | 0.084-29.22 | 1.17-33.9 | 0.023-14.16 | 0.021-2.56 |
| Ni | 0.0082-4.4 | 0.013-1.89 | 0.09-32.3 | 0.045-15.34 | 0.129-2.57 | 0.07-0.436 | 0.013-21.26 |
| Mo | 0.004-4.19 | 0.0018-1.08 | 0.026-6.09 | 0.0095-3.15 | 0.086-3.53 | 0.022-8 | 0.0011-1.08 |
| Al | 0.0021-1.27 | 0.0073-0.214 | 0.0057-0.403 | 0.009-0.403 | - | 0.032-0.128 | 0.0073-0.214 |
| Cu | 0.0032-0.8 | 0.018-1.83 | 0.014-4.22 | 0.025-1.9 | 0.154-1.57 | 0.018-0.364 | 0.018-7.46 |
| Co | 0.004-0.504 | 0.008-0.034 | 0.0067-0.69 | 0.007-0.107 | - | 0.014-12.3 | 0.0063-0.034 |
| Ti | 0.001-1.18 | 0.024-0.51 | 0.002-2.11 | 0.0041-0.545 | 0.08-0.3 | 0.003-1.47 | 0.024-0.51 |
| Nb | 0.004-1.04 | 0.023-0.576 | 0.024-2.41 | 0.0006-0.613 | 0.01-0.686 | 0.003-2.33 | 0.0006-0.576 |
| V | 0.0082-0.9 | 0.014-0.701 | 0.015-1.4 | 0.024-0.837 | 0.059-1.01 | 0.01-7.54 | 0.0085-0.701 |
| W | 0.005-2.07 | 0.023-0.574 | 0.0065-2.2 | 0.002-1.45 | 0.015-1.99 | 0.01-18.68 | 0.0002-0.574 |
| Pb | 0.003-0.26 | 0.002-0.105 | 0.0001-0.0037 | 0.0005-0.002 | - | - | 0.0022-0.105 |
| Mg | - | 0.0006-0.104 | - | - | - | - | 0.0006-0.104 |
| B | 0.0003-0.019 | 0.012-0.086 | 0.0007-0.016 | 0.0007-0.017 | 0.015-0.177 | - | 0.012-0.086 |
| Sn | 0.0016-0.039 | 0.0018-0.3 | 0.0007-0.054 | 0.0007-0.023 | - | 0.001-0.005 | 0.0003-0.3 |
| Zn | - | 0.0009-0.0045 | 0.0011-0.0084 | - | - | - | 0.0009-0.0045 |
| As | 0.007-0.174 | 0.0021-0.035 | 0.0013-0.03 | 0.0013-0.0116 | - | - | 0.0021-0.035 |
| Bi | 0.0019-0.021 | - | 0.00004-0.0029 | 0.0013-0.0029 | - | - | - |
| Zr | 0.004-0.57 | - | - | - | - | 0.003-0.01 | - |
| Ca | 0.0004-0.0015 | - | 0.0004-0.0010 | 0.0004-0.001 | - | - | 0.00035-0.2 |
| Fe | REF | REF | REF | REF | REF | REF | REF |

*Cast iron samples need to be whitened samples

To be continued



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**ALUMINUM BASE CURVES**

| Curve number | B1 | B2 | B3 | B4 | B5 |
|---|---|---|---|---|---|
| Elemental content (%) | Al low alloy | Al-Si alloy | Al-Zn alloy | Al-Cu alloy | Al-Mg alloy |
| Si | 0.0084-1.58 | 3.69-20.5 | 0.027-8.23 | 0.029-1.57 | 0.021-0.885 |
| Fe | 0.0066-1.26 | 0.026-1.9 | 0.049-0.749 | 0.066-1.61 | 0.074-0.718 |
| Cu | 0.0041-0.99 | 0.01-8.04 | 0.005-2.71 | 0.465-6.57 | 0.0078-0.308 |
| Mn | 0.011-2.38 | 0.019-0.967 | 0.047-0.821 | 0.05-1.5 | 0.0085-0.865 |
| Mg | 0.004-1.5 | 0.049-1.8 | 0.01-3.96 | 0.0079-2.68 | 0.624-10.32 |
| Cr | 0.043-0.36 | 0.004-0.28 | 0.087-0.349 | 0.0099-0.272 | 0.0093-0.349 |
| Ni | 0.0084-0.152 | 0.0051-1.77 | 0.012-0.188 | 0.0084-1.55 | 0.0015-0.239 |
| Zn | 0.003-0.367 | 0.0064-2.93 | 0.955-16.5 | 0.0028-0.728 | 0.0071-0.571 |
| Ti | 0.0021-0.175 | 0.0071-0.31 | 0.0059-0.205 | 0.006-0.415 | 0.006-0.3 |
| Pb | 0.0011-0.0192 | 0.0025-0.31 | - | - | - |
| Bi | - | - | - | - | - |
| Ca | - | 0.0006-0.034 | - | - | - |
| Cd | - | 0.0013-0.12 | 0.003-0.04 | 0.062-0.245 | - |
| Co | - | 0.003-0.043 | - | - | - |
| Ga | 0.012-0.045 | 0.0054-0.2 | - | - | - |
| Sn | - | 0.0024-0.5 | - | - | - |
| Sr | - | 0.0002-0.167 | - | - | - |
| V | - | 0.005-0.175 | - | 0.017-0.253 | - |
| Zr | - | 0.0043-0.193 | 0.0084-0.241 | 0.0058-0.301 | - |
| Ag | - | - | - | - | - |
| Be | - | 0.0047-0.21 | - | - | 0.00056-0.013 |
| In | - | - | 0.014-0.084 | - | - |
| p | - | 0.0018-0.0074 | - | - | - |
| B | - | - | - | 0.0076-0.056 | - |
| Al | REF | REF | REF | REF | REF |

**COBALT BASE CURVES**

| Curve number | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 |
|---|---|---|---|---|---|---|---|---|
| Elemental content (%) | Brass | Aluminum Bronze | Sn-Pb-Cu Alloy | Red Copper/ Pure Copper | Chromium Bronze | Beryllium Bronze | Silicon Bronze | Mn Brass |
| Zn | 3.06-41.76 | 0.18-1.46 | 0.064-13.79 | 0.0006-0.0138 | 0.0068-0.111 | 0.0068-0.111 | 0.04-2.2 | 25.97-41.06 |
| Pb | 0.0082-4.48 | 0.013-0.094 | 0.159-21.42 | 0.0005-0.0426 | 0.0046-0.0718 | 0.0016-0.0718 | 0.01-0.2 | 0.054-0.51 |
| Sn | 0.032-1.02 | 0.025-0.22 | 2.33-18.96 | 0.00026-0.133 | 0.0072-0.0324 | 0.0072-0.0324 | 0.086-2.45 | - |
| Mn | 0.0046-0.464 | 0.31-1.8 | 0.001-0.067 | 0.001-0.0056 | - | - | 0.086-2.45 | 0.33-3.08 |
| Fe | 0.016-0.579 | 0.62-5.62 | 0.0014-0.467 | 0.0017-0.0782 | 0.033-0.124 | 0.014-0.124 | 0.065-0.51 | 0.69-3.28 |
| Ni | 0.0019-0.421 | 0.56-5.95 | 0.061-1.931 | 0.0011-0.05 | 0.014-0.192 | 0.0066-0.314 | 0.1-3.96 | - |
| Si | 0.0012-0.0938 | 0.032-0.26 | 0.0008-0.04 | 0.00088-0.0272 | 0.0066-0.153 | 0.0066-0.153 | 0.25-4.21 | - |
| Mg | - | - | - | - | 0.0014-0.126 | 0.0014-0.126 | - | - |
| Cr | - | - | - | 0.74-0.79 | 0.424-1.5 | 0.0074-1.5 | 0.021-0.37 | - |
| As | 0.0053-0.1 | - | 0.0111-1.07 | 0.0003-0.0376 | 0.0048-0.066 | 0.0048-0.066 | - | - |
| Sb | 0.0017-0.029 | - | 0.001-0.589 | 0.0001-0.0182 | - | - | - | - |
| Cd | - | - | - | 0.001-0.0272 | - | - | - | - |
| Bi | 0.00076-0.0122 | - | 0.0119-0.13 | 0.001-0.0095 | - | - | - | - |
| Ag | - | - | 0.0016-0.495 | 0.003-0.199 | - | - | - | - |
| Co | - | - | 0.0051-0.443 | - | - | 0.01-2.36 | - | - |
| Al | 0.015-0.81 | 7.8-11.88 | 0.001-0.052 | 0.0009-0.0023 | 0.0017-0.0223 | 0.0017-0.093 | 0.003-0.1 | - |
| P | 0.0018-0.044 | 0.011-0.1 | 0.002-1.208 | 0.00092-0.0695 | - | - | - | - |
| S | - | - | 0.0012-0.091 | 0.0034-0.127 | - | - | - | - |
| Zr | - | - | - | 0.113-0.203 | - | - | - | - |
| Be | - | - | - | - | - | 0.583-2 | - | - |
| Cu | REF | REF | REF | REF | REF | REF | REF | REF |

To be continued

Continued from previous page

**NICKEL BASE CURVES**

| Curve number | D1 | D2 | D3 | D4 | D5 | D6 |
|---|---|---|---|---|---|---|
| Elemental content (%) | Monel Alloy | Inconel Alloy | Hastelloy Alloy | GH30 Alloy | GH4169 Alloy | DZ125 Alloy |
| C | 0.0494-0.13 | 0.01-0.169 | 0.01-0.169 | 0.137-0.241 | - | 0.0322-0.152 |
| Si | 0.146-2.52 | 0.036-0.85 | 0.2-0.85 | 0.311-0.895 | - | 0.016-0.042 |
| Mn | 0.993-1.437 | 0.05-1.19 | 0.249-1.19 | 0.156-0.777 | - | 0.0022-0.024 |
| P | 0.0106-0.019 | 0.0004-0.038 | 0.007-0.038 | 0.001-0.0152 | - | 0.0023-0.0024 |
| S | 0.0006-0.023 | 0.0002-0.034 | 0.0086-0.034 | 0.0034-0.0145 | - | 0.0005-0.0006 |
| Cr | 0.0057-0.2 | 14.86-29.5 | 15.42-19.71 | 16.81-20.56 | 14.87-22.21 | 6.57-19.62 |
| Mo | 0.0024-0.102 | 0.0025-20.91 | 15.59-20.91 | - | 2.29-4.03 | 0.63-4.32 |
| Fe | 1.053-2 | 1.2-18.51 | 2.6-7.3 | 0.229-1.780 | - | 0.022-1.023 |
| W | - | 0.0011-12.7 | 0.09-0.498 | - | - | 0.041-8.8 |
| V | - | 0.005-0.498 | 0.03-0.72 | - | - | - |
| Al | 0.0231-1.399 | 0.03-0.72 | 0.159-2.6 | 0.065-0.267 | 0.14-0.68 | 1.476-6.13 |
| Co | 0.032-0.156 | 0.0056-2.6 | 0.046-0.642 | - | 1.02-1.04 | 0.024-14.79 |
| Cu | 21.53-33 | 0.0072-0.642 | - | 0.082-0.245 | 0.0015-0.002 | - |
| Nb | - | 0.0039-5.16 | - | - | 3.85-6.79 | 0.028-2.04 |
| Sn | - | - | - | - | - | - |
| Ta | - | - | - | - | - | 2.74-4.82 |
| Ti | 0.064-1.005 | 0.017-0.93 | 0.06-0.264 | - | 0.59-1.42 | 0.62-5.1 |
| B | - | 0.0001-0.01 | - | - | - | 0.0062-0.0242 |
| Mg | 0.0026-0.0217 | 0.0021-0.022 | - | - | - | - |
| Zr | - | 0.0018-0.004 | - | - | - | 0.014-0.06 |
| Pb | 0.0004-0.02 | - | - | - | - | - |
| Ni | REF | REF | REF | REF | 43.89-60 | REF |



**ZINC BASE CURVES**

| Curve number | E1 | E2 |
|---|---|---|
| Elemental content (%) | Pure Zn | Zn-Al Alloy |
| Al | 0.00036-0.007 | 0.00036-27.4 |
| Cd | 0.00044-0.0132 | 0.00044-0.3 |
| Cu | 0.00012-0.004 | 0.00012-6.05 |
| Fe | 0.00012-0.004 | 0.00053-0.1 |
| Mg | - | 0.0014-0.179 |
| Mn | - | 0.001-1.39 |
| Ni | - | 0.0019-0.06 |
| Pb | 0.00045-0.0152 | 0.00045-2.87 |
| Sb | - | 0.0012-0.309 |
| Sn | 0.0004-0.0033 | 0.0004-2.38 |
| Ti | - | 0.0008-0.278 |
| Si | - | 0.0013-0.0191 |
| Cr | - | 0.0007-0.142 |
| Ag | - | - |
| Bi | - | 0.0027-0.027 |
| Fe | REF | REF |

**MAGNESIUM BASE CURVES**

| Curve number | F1 | F2 |
|---|---|---|
| Elemental content (%) | Pure Mg | Mg/Al/Mn/ Zn Alloy |
| Al | 0.005-1.06 | 1.09-11.02 |
| Zn | 0.00044-0.0132 | 0.0068-4.1 |
| Mn | 0.017-0.148 | 0.02-0.61 |
| Si | 0.012-0.062 | 0.019-1.83 |
| Fe | 0.0069-0.027 | 0.0012-0.033 |
| Cu | 0.00097-0.025 | 0.00072-0.291 |
| Ni | 0.00026-0.0052 | 0.00042-0.02 |
| Be | - | 0.00011-0.0029 |
| Ti | 0.0001-0.0025 | - |
| Pb | 0.0011-0.037 | - |
| Mg | REF | REF |

VIDEO

# PORTABLE SPARK DIRECT READING SPECTROMETER
# CODE OES-P200






- Widely used in metallurgy, foundry, machining, automobile manufacturing, metal processing, furnace testing, etc.
- Ability to accurately analyze the elemental content of metallic materials such as C, P, S, B, etc.
- Automatically eliminates spectral drift due to temperature and pressure changes for accurate measurements
- Ability to add desired measurement curves without adding hardware
- Unique jet electrode technology, can save the use of argon gas, reduce the use of costs
- Replaceable lithium batteries, long battery life, hundreds of consecutive excitation times, to ensure the integrity of the field work
- The instrument is easy to carry, analysis is not limited, more convenient to complete outdoor work

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Analysis software** | 1 pc |
| **Battery** | 2 pcs |
| **Electrode brush (OES-T350-BR)** | 2 pcs |
| **Pressure valve** | 1 pc |
| **Mobile cart** | 1 pc |
| **Charger** | 1 pc |
| **Consumable and spare parts** | 1 set * |

* Including quartz mirror, mirror paper, wrench, air connection line and other common consumables



spectral sample grinder
(**optional**)

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Spectral sample grinder** | **OES-MY100** |

To be continued

Continued from previous page

**SPECIFICATION**

| | | |
|---|---|---|
| **Curves** | **standard curve** | low and medium alloy steel (**A1**), chrome/nickel stainless steel (**A2**) |
| | **customized curve** | curves can be added or customized for special base materials (Ni, Mg, Zn, etc.) |
| **Optical system** | **detector** | high performance CMOS |
| | **optical system construction** | paschen-runge double optical chamber structure |
| | **visible room temperature** | 34°C±0.5°C |
| | **UV room temperature** | 34°C±0.5°C |
| | **raster scribing** | 3600 lines/mm |
| | **spectral range** | 165~580nm |
| | **average resolution** | ≤10pm/pixel |
| | **visible focal length** | 300mm |
| | **ultraviolet focal length** | 298mm |
| **Excitation source** | **light source** | high energy excitation light source |
| | **frequency** | 100~1000Hz |
| | **excitation voltage** | 300V |
| | **excitation current** | 400A |
| **Excitation stand** | **gas supply** | argon (purity≥99.9995%, pressure: ≥0.3MPa) |
| | **flow rate** | excitation: 3L/min, standby: 0.3L/min |
| | **electrode** | tungsten electrode |
| | **purge** | automatic cleaning |
| | **design** | self-compensating thermal deformation design |
| | **analysis interval** | 2.8mm |
| **Analysis software** | | 1. automatic calibration control according to the given deviation and number of excitations<br>2. the analyzed results show the percentage, light intensity values, intensity ratios<br>3. electrode cleaning according to set data, display and corresponding deviation<br>4. ability to store and print test element results |
| **Transmission** | | DM9000A-based ethernet data transmission |
| **Work hours** | | standby: 10h, continuous excitation: 160~180 times |
| **Work environment** | | 5~35°C |
| **Power supply** | | replaceable lithium battery, 24V |
| **Dimension (L×W×H)** | | 840×700×1050mm |
| **Weight** | | 50kg |

**IRON BASE CURVES**

| Curve number | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|
| Elemental content (%) | Low alloy steel | Cr/Ni stainless steel | High speed tool steel | High Mn steel | High Cr cast** iron | High Ni cast** iron | Cast iron** |
| C | 0.006-1.3 | 0.008-2.5 | 0.08-2.2 | 0.5-2.4 | 0.9-3.4 | 1.2-3.8 | 1.8-4.5 |
| Si | 0.01-2.9 | 0.09-4.0 | 0.04-1.5 | 0.3-1.7 | 0.2-2.5 | 0.04-3.5 | 0.2-4.2 |
| Mn | 0.03-14 | 0.12-16 | 0.04-1.7 | 5.3-23 | 0.1-2.4 | 0.001-6.8 | 0.06-4.7 |
| P | 0.002-0.12 | 0.003-0.3 | 0.004-0.007 | 0.01-0.2 | 0.01-0.3 | 0.0015-0.56 | 0.02-0.8 |
| S | 0.002-0.46 | 0.001-0.4 | 0.001-0.06 | 0.006-0.11 | 0.01-0.15 | 0.0015-0.24 | 0.003-0.2 |
| Cr | 0.01-12.5 | 7.4-32 | 1.8-8.1 | 0.08-3.8 | 0.4-34 | 0.0015-9.1 | 0.03-2.8 |
| Ni | 0.004-4.4 | 0.8-40 | 0.07-0.55 | 0.04-3.5 | 0.05-2.75 | 0.9-36.6 | 0.05-5.1 |
| Mo | 0.004-1.76 | 0.08-4.2 | 0.02-9.4 | 0.1-2.0 | 0.1-4 | 0.0015-1.5 | 0.01-2.1 |
| Al | 0.003-0.5 | 0.005-1.7 | 0.005-1.6 | 0.008-0.12 | – | – | 0.002-0.25 |
| Cu | 0.002-0.7 | 0.05-4.5 | 0.04-0.5 | 0.02-0.6 | 0.06-1.5 | 0.005-0.3 | 0.06-2.0 |
| Co | 0.001-0.5 | 0.008-0.62 | 0.008-16 | 0.007-0.1 | – | – | 0.008-0.03 |
| Ti | 0.002-0.5 | 0.005-1.1 | – | 0.004-0.4 | 0.01-0.14 | – | 0.007-0.7 |
| Nb | 0.002-0.53 | 0.02-2.0 | – | 0.08-0.42 | 0.1-0.7 | 0.003-0.38 | 0.002-0.7 |
| V | 0.003-0.9 | 0.02-0.58 | 0.03-2.5 | 0.01-0.84 | 0.02-1.2 | – | 0.01-0.7 |
| Ca | – | – | – | – | – | – | – |
| B | 0.006-0.02 | 0.007-0.02 | – | – | – | – | 0.002-0.3 |
| Sn | 0.001-0.09 | 0.003-0.05 | – | – | – | – | 0.003-0.3 |
| As | 0.001-0.1 | 0.004-0.04 | – | – | – | – | 0.008-0.09 |
| Sb | 0.002-0.02 | – | – | – | – | – | 0.004-0.2 |
| Fe | REF | REF | REF | REF | REF | REF | REF |

**Cast iron samples need to be whitened samples

To be continued



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Continued from previous page

**ALUMINUM BASE CURVES**

| Curve number | B1 | B2 | B3 | B4 | B5 |
|---|---|---|---|---|---|
| Elemental content (%) | Al low alloy | Al-Si alloy | Al-Zn alloy | Al-Cu alloy | Al-Mg-Si alloy |
| Si | 0.01-1.63 | 0.02-24 | 0.02-9.4 | 0.02-7 | 0.02-2.3 |
| Fe | 0.01-1.65 | 0.02-4 | 0.03-1 | 0.05-1.9 | 0.07-0.80 |
| Cu | 0.002-1 | 0.005-6 | 0.01-4.3 | 0.01-13 | 0.07-1 |
| Mn | 0.001-1 | 0.005-1 | 0.02-1 | 0.05-1 | 0.03-2.4 |
| Mg | 0.002-1 | 0.01-1.5 | 0.01-4 | 0.01-2.7 | 0.006-10.2 |
| Cr | 0.001-0.15 | 0.005-0.5 | 0.01-0.4 | 0.01-0.14 | 0.01-0.4 |
| Ni | 0.001-0.16 | 0.02-2.5 | 0.01-0.2 | 0.01-2.3 | 0.005-0.25 |
| Zn | 0.002-0.5 | 0.005-3.5 | 0.01-12 | 0.05-3.5 | 0.01-1 |
| Ti | 0.001-0.15 | 0.005-0.4 | 0.005-0.3 | 0.001-0.2 | 0.007-0.3 |
| Ca | – | 0.002-0.03 | – | – | – |
| Cd | 0.01-0.3 | 0.001-0.3 | 0.002-0.3 | 0.01-0.3 | 0.01-0.3 |
| Ga | 0.002-0.06 | 0.005-0.2 | – | – | 0.009-0.02 |
| Pb | 0.02-0.5 | 0.005-0.5 | 0.005-0.5 | 0.01-0.5 | 0.001-0.5 |
| Sb | – | 0.005-0.4 | – | – | – |
| Sn | 0.01-0.2 | 0.003-0.5 | 0.005-0.2 | 0.02-0.3 | 0.007-0.2 |
| V | 0.004-0.05 | 0.005-0.2 | 0.005-0.03 | 0.01-0.03 | 0.002-0.03 |
| Zr | 0.001-0.12 | 0.005-0.2 | 0.01-0.3 | 0.001-0.2 | 0.003-0.12 |
| P | – | 0.002-0.005 | – | – | – |
| Al | REF | REF | REF | REF | REF |



**COBALT BASE CURVES**

| Curve number | C1 | C2 | C3 | C4 | C5 | C6 | C7 |
|---|---|---|---|---|---|---|---|
| Elemental content (%) | Brass | Copper | Al-Cu alloy | Beryllium bronze | Sn-Pb-Cu alloy | Pure copper | Si-Bronze |
| Zn | 0.5-43.0 | 0.01-23.0 | 0.04-2.2 | 0.005-0.23 | 0.003-0.7 | 0.001-0.3 | 0.2-6.0 |
| Pb | 0.01-6.0 | 0.002-0.13 | 0.002-0.068 | 0.005-0.3 | 0.001-21 | 0.001-1.5 | 0.01-0.8 |
| Sn | 0.009-4.8 | 0.009-0.13 | 0.003-0.35 | 0.005-0.18 | 0.005-11.2 | 0.001-0.3 | 0.05-0.7 |
| P | 0.002-0.14 | 0.003-0.07 | – | – | 0.001-0.42 | 0.001-0.078 | 0.005-0.08 |
| Mn | 0.001-5.3 | 0.009-1.1 | 0.001-3.1 | – | 0.001-0.4 | 0.001-0.1 | 0.2-1.8 |
| Fe | 0.02-3.0 | 0.03-1.03 | 0.005-6.0 | 0.02-0.28 | 0.003-0.028 | 0.001-0.2 | 0.1-1.7 |
| Ni | 0.009-1.8 | 5.5-32.5 | 0.005-6.0 | 0.005-0.35 | 0.001-1.0 | 0.001-0.5 | 0.05-1.0 |
| Si | 0.001-4.6 | 0.009-0.46 | 0.004-0.3 | 0.02-0.3 | 0.002-0.009 | 0.001-0.055 | 1.5-5.0 |
| Mg | 0.001-0.01 | 0.003-0.14 | – | 0.003-0.7 | – | 0.001-0.01 | – |
| Cr | 0.001-0.2 | – | – | – | – | 0.001-0.081 | – |
| As | 0.001-0.2 | 0.003-0.05 | – | – | 0.004-0.2 | 0.005-0.3 | – |
| Sb | 0.001-0.4 | 0.001-0.012 | – | – | 0.001-0.6 | 0.005-0.35 | 0.005-0.07 |
| Ag | – | – | – | – | 0.001-0.14 | 0.006-0.13 | – |
| Co | 0.004-0.1 | – | – | – | 0.001-0.1 | – | – |
| Al | 0.001-6.7 | – | 3.0-12.9 | 0.02-0.2 | 0.01-0.1 | – | – |
| S | 0.001-0.15 | 0.004-0.06 | – | – | 0.001-0.14 | 0.001-0.05 | – |
| Cu | REF | REF | REF | REF | REF | REF | REF |

# X-RAY FLUORESCENCE SPECTROMETER/PLATING THICKNESS INSTRUMENT (ADVANCED TYPE)
# CODE XRF-PT230

VIDEO

MANUAL ZOOM



- Application fields: electroplating coating thickness analysis, inspection of electronic components such as connectors, fastener industry, automotive parts, hardware industry (household equipment and accessories, such as Cr/Ni/CuZn(ABS)), new energy industry (photovoltaic welding wire, etc.), thickness analysis of accessories, NI/Cu/Ni/FendB on rubidium iron boron magnets, metal cation detection in electroplating solution, etc.
- It can detect 90 coating elements and analyze 77 elements in alloys
- Equipped with a micro-focus X-ray generator and an advanced light path conversion focusing system, the minimum measurable area is up to 0.03mm²
- It has non-destructive manual zoom detection technology, which can perform non-destructive testing on various shaped and irregular grooved parts from 0 to 30mm
- Equipped with Si-Pin semiconductor detector, high resolution, fast testing speed, stable data, equipped with micro-light focusing technology, ranging spot diffusion less than 10%
- The core EFP algorithm allows for the simultaneous analysis of 23 coating and 24 elements. It can quickly, accurately, and stably analyze multiple layers and multiple elements, including the same element in different layers
- User-friendly closed software, automatically identifies faults, provides calibration and operation steps, and avoids misoperations

## SPECIFICATION

| | | |
|---|---|---|
| Coating layer analysis | elemental analysis range | Li(3)-U(92) |
| | detection limit | 0.005μm (detection limit for different elements is different) |
| | analysis thickness | 0.01-80μm (detection limit for different elements is different) |
| Composition analysis | elemental analysis range | S(16)-U(92) |
| | detection limit | 2ppm (detection limit for different elements is different) |
| | content analysis range | 0.1%~99% (detection limit for different elements is different) |
| EFP alaorithm | | standard configuration |
| Measuring time | | 5~300s |
| Detector | | Si-Pin semiconductor detector |
| X-ray source | | micro-focusing X-ray tube |
| Collimator | | standard: Ø0.3mm (Ø0.5mm, Ø0.3mm, Ø0.2mm, 0.1×0.3mm) four collimators optional, customized acceptable |
| Nearest ranging spot diffusion | | <10% |
| Camera | | 1/2.7" color CCD, zoom function |
| Measuring distance | | zoom lens 0~30mm |
| Focus method | | high-sensitivity lens, manual focus |
| Max. sample height | | 180mm |
| XY stage | | manual high-precision XY stage |
| Available moving range | | 45mm×45mm |
| Operation environment | | 15~30°C, <70%RH |
| Power supply | | AC220V, 50Hz, 95W |
| Dimension (L×W×H) | | 545×380×435mm |
| Weight | | 41kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Computer | 1 pc |
| Printer | 1 pc |
| Accessory box | 1 pc |
| Twelve element plate | 1 set |
| Ni standard tablet | 1 pc |
| Ag standard tablet | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Electroplating solution measuring cup | XRF-PT230-MC |
| Solution test membrane | XRF-PT230-SF |
| Au standard tablet | MSS-P01 |
| Cr standard tablet | MSS-P02 |
| Cu standard tablet | MSS-P03 |
| Zn standard tablet | MSS-P04 |



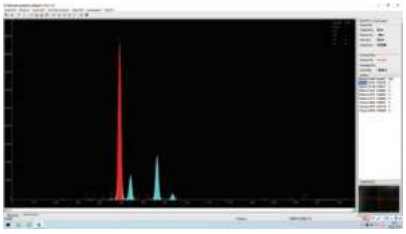
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CALIBRATION CURVE CAN BE CUSTOMIZED ACCORDING TO CUSTOMER REQUIREMENTS

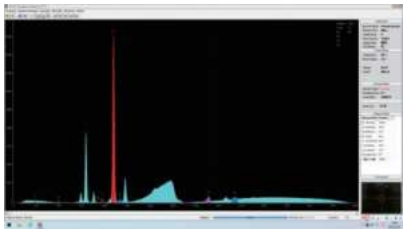
# X-RAY FLUORESCENCE SPECTROMETER (RoHS DETECTOR/ALLOY ANALYZER /PLATING THICKNESS INSTRUMENT) CODE XRF-B210

VIDEO





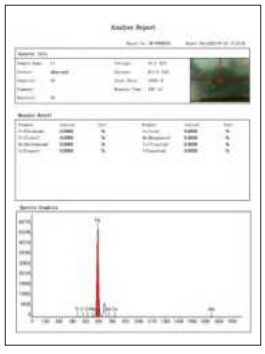
alloy composition analysis software (included)



RoHS test software (included)



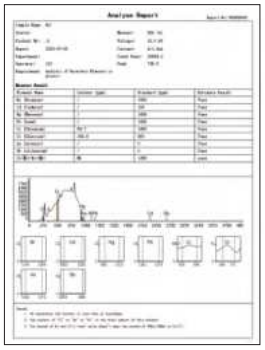
plating thickness detection software (included)



alloy composition analysis report (included)



plating thickness test report (included)



RoHS test report (included)

- Used for RoHS detection, alloy element analysis, coating thickness measurement
- Using SI-PIN detector with electric cooling, small size, accurate data analysis and low maintenance cost
- Seven optical path correction and collimation system, automatically switch according to different samples
- Multiple radiation leakage prevention design
- The temperature monitoring technology ensures the safe and reliable operation of the X-ray source
- Dedicated software, standard window design, friendly interface, easy to operate
- Can display multiple spectrograms at the same time and print multiple report forms
- USB3.0 interface to ensure accurate, high-speed and efficient data transmission

To be continued

Continued from previous page

## SPECIFICATION

| | | |
|---|---|---|
| Detector | type | Si-PIN electrical refrigeration semiconductor detector |
| | resolution | 149±5eV |
| | amplifier circuit module | detect the sample characteristic X-ray, further enlarge the information collected by detection |
| X ray excitation device | maximum output current | 1mA |
| | power | 50W, air cooling |
| High and low voltage power | maximum output voltage | 50kV, built-in voltage overload protection |
| | minimum output voltage | 5kV |
| Multi-channel pulse amplitude analyzer | | maximum channel number: 4096 |
| Optical path filter module | | reduce interference light path in the process of sending x-rays, guarantee the accuracy of the detector signal |
| | | integrate the collimator with the filter |
| Collimator automatic switching module | | 7 kinds, Ø0.5~Ø8mm |
| Filter automatic switching module | | 5 kinds (free to choose and switch) |
| RoHS analysis software | elemental analysis range | S~U |
| | harmful element analysis | Cd, Pb, Hg, Br, Cr, Cl, As, Sb |
| | test time | 60~200s |
| | detection limit | 2PPM |
| | content analysis range | 2PPM~99.9% |
| Alloy analysis software | elemental analysis range | Ti~U |
| | detection limit | 100PPM |
| | content analysis range | 100PPM~99.9% |
| | repeatability | 0.1% |
| | stability | 0.1% |
| Metal coating analysis software | elemental analysis range | Ti~U |
| | detection limit | 0.01μm |
| | analysis thickness | single layer thickness 0.01~30μm |
| | | 3 layer thickness≤10μm |
| | repeatability | 0.1μm (for outside coating less than 1μm) |
| | stability | 0.1μm (for outside coating less than 1μm) |
| | light spot | within 0.2mm |
| Operation temperature | | 10~30°C |
| Relative humidity | | 10%~90% |
| Power supply | | AC 220V±5V |
| Dimension (L×W×H) | | 700×460×370mm |
| Weight | | 49kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Standard sample | 1 pc |
| Silver calibration | 1 pc |
| Sample cup | 2 pcs |
| Test film | 50 pcs |
| Computer | 1 pc |
| Printer | 1 pc |
| Collimator (built-in) | 7 pcs |
| Softerware | RoHS test software, alloy composition analysis software, plating thickness detection software |

CAN BE CUSTOMIZED

# STANDARD SHEETS FOR XRF PLATING THICKNESS INSTRUMENTS

INSPECTION CERTIFICATE




MSS-P01




MSS-P08




MSS-P14

- Can be used for standardised calibration of XRF plating thickness instruments
- Can be used to create plating measurement curves of XRF plating thickness instruments
- Supplied with manufacturer inspection certificate

### STANDARD SHEETS (WITHOUT SUBSTRATE)

| Code | Material | Thickness* |
|---|---|---|
| **MSS-P01** | Au | 0.04-6μm |
| **MSS-P02** | Ni | 0.1-20μm |
| **MSS-PO3** | Cu | 1-18μm |
| **MSS-P04** | Zn | 1-18μm |
| **MSS-PO5** | Al | 10-75μm |
| **MSS-P06** | Cr | 0.05-7.5μm |
| **MSS-P07** | Ag | 0.2-20μm |

* The thickness of the product is shown in the inspection certificate

### SINGLE PLATING STANDARD SHEETS (WITH SUBSTRATE)

| Code | Plating/Substrate | Plating thickness** |
|---|---|---|
| **MSS-P08** | Ni/Fe | 2-18μm |
| **MSS-P09** | Cu/Fe | 1-6.5μm |
| **MSS-P10** | Cu/Zn | 12-24μm |
| **MSS-P11** | Ni/Cu | 2-11μm |
| **MSS-P12** | Zn/Fe | 1-40μm |

### MULTI-PLATING STANDARD SHEETS (WITH SUBSTRATE)

| Code | Plating/Plating/Substrate | Plating thickness** |
|---|---|---|
| **MSS-P13** | Cu/Ni/Fe | 3-8μm/2-6μm |
| **MSS-P14** | Sn/Ni/Cu | 2-10μm/0.8-4μm |
| **MSS-P15** | Sn/Cu/Fe | 2-6.5μm/0.6-4.5μm |
| **MSS-P16** | Sn/Ni/Al | 4-6μm/0.1-10μm |
| **MSS-P17** | Sn/Ni/Fe | 4-11μm/0.1-10μm |

** The plating thickness of the product is shown in the inspection certificate

# STANDARD SAMPLES FOR SPECTRAL ANALYSIS

CAN BE CUSTOMIZED

INSPECTION CERTIFICATE



MSS-FE01



MSS-AL01



MSS-CU01

- Can be used for calibration and quality control of spectrograph measurement curves
- Can be customized based on the required range of element content
- Supplied with manufacturer inspection certificate

**IRON-BASED STANDARD**

**(ELEMENTAL CONTENT*: %)**

| Alloy type | Carbon steel | Low alloy steel | Medium alloy steel | Stainless steel | High Cr cast iron | Cast iron | Pig iron |
|---|---|---|---|---|---|---|---|
| Code | MSS-FE01 | MSS-FE02 | MSS-FE03 | MSS-FE04 | MSS-FE05 | MSS-FE06 | MSS-FE07 |
| C | 0.066 | 0.436 | 0.322 | 0.044 | 1.63 | 3.59 | 0.0025 |
| Si | 0.136 | 0.208 | 0.613 | 0.392 | 1.76 | 3.01 | 0.021 |
| Mn | 0.464 | 0.495 | 0.83 | 1.24 | 0.722 | 0.622 | 0.143 |
| P | 0.032 | 0.016 | 0.018 | 0.032 | 0.041 | 0.075 | 0.0084 |
| S | 0.017 | 0.026 | 0.017 | 0.0018 | 0.076 | 0.0094 | 0.006 |
| Cr | 0.013 | 1.51 | 8.63 | 18.15 | 33.9 | 0.213 | 0.019 |
| Ni | 0.0075 | 0.127 | 0.148 | 8.21 | 0.366 | 0.204 | 0.009 |
| Mo | – | 0.182 | 0.016 | 0.043 | 0.332 | – | 0.002 |
| V | – | 0.0037 | 0.014 | 0.122 | 0.417 | 0.102 | 0.001 |
| Als | – | 1.06 | 0.023 | 0.014 | – | – | – |
| Alt | – | 1.1 | 0.027 | 0.016 | – | – | – |
| Cu | 0.001 | 0.096 | 0.47 | 0.197 | 0.223 | 0.246 | 0.0041 |
| Co | – | 0.0085 | 0.019 | 0.222 | – | – | 0.0016 |
| W | – | 0.0026 | 0.004 | 0.0091 | – | – | 0.0019 |
| Ti | – | 0.0023 | 0.076 | 0.0023 | 0.055 | 0.036 | 0.0005 |
| As | – | – | 0.0054 | – | – | 0.0025 | 0.0024 |
| B | – | – | 0.0002 | – | – | – | 0.001 |
| Sn | – | – | 0.0037 | – | – | – | – |
| Sb | 0.0013 | – | 0.0018 | – | – | – | – |
| Zn | – | – | 0.0034 | – | – | – | – |
| Nb | – | – | – | 0.002 | 0.161 | – | 0.001 |

**ALUMINUM-BASED STANDARD**

**(ELEMENTAL CONTENT*: %)**

| Alloy type | Pure aluminum | Al-Cu alloy | Al-Mn alloy | Al-Si alloy | Al-Mg alloy | Al-Mg-Si alloy | Al-Zn-Mg-Cu alloy |
|---|---|---|---|---|---|---|---|
| Code | MSS-AL01 | MSS-AL02 | MSS-AL03 | MSS-AL04 | MSS-AL05 | MSS-AL06 | MSS-AL07 |
| Si | 0.09 | 0.036 | 0.224 | 7.29 | 0.102 | 1.09 | 0.03 |
| Fe | 0.119 | 0.052 | 0.395 | 0.123 | 0.282 | 0.206 | 0.068 |
| Cu | 0.0029 | 4.2 | 0.19 | 0.039 | 0.052 | 0.045 | 1.62 |
| Mn | 0.0023 | 0.589 | 1.04 | 0.045 | 0.371 | 0.775 | 0.034 |
| Mg | 0.012 | 1.34 | 1.16 | 0.414 | 4.68 | 1.07 | 1.39 |
| Cr | – | 0.034 | – | 0.039 | 0.041 | 0.114 | – |
| Ni | – | 0.032 | 0.044 | 0.035 | 0.028 | 0.055 | 0.031 |
| Zn | 0.0063 | 0.115 | 0.106 | 0.041 | 0.142 | 0.123 | 7.26 |
| Ti | 0.0044 | 0.086 | 0.036 | 0.147 | 0.019 | 0.05 | 0.035 |
| Zr | – | – | – | – | – | – | 0.117 |
| Pb | 0.0013 | – | – | 0.039 | – | – | – |

To be continued



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Continued from previous page

**COPPER-BASED STANDARD** (ELEMENTAL CONTENT*: %)

| Alloy type | Pure copper | Brass | Beryllium bronze | Cu-Sn alloy | Cu-Zn-Si alloy | Cu-Al alloy |
|---|---|---|---|---|---|---|
| Code | MSS-CU01 | MSS-CU02 | MSS-CU03 | MSS-CU04 | MSS-CU05 | MSS-CU06 |
| Cu | 99.97 | 61.88 | 97.27 | 92.69 | 80.34 | 81.47 |
| Pb | 0.0002 | 0.108 | 0.012 | 0.01 | 0.0005 | 0.0003 |
| Zn | 0.0002 | 37.53 | 0.034 | 0.44 | 15.94 | 0.014 |
| P | 0.00003 | 0.039 | 0.013 | 0.109 | 0.005 | 0.0014 |
| Fe | 0.0009 | 0.116 | 0.096 | 0.071 | 0.022 | 3.82 |
| Sn | 0.0002 | 0.0051 | 0.059 | 6.00 | 0.0011 | 0.0012 |
| Sb | 0.00002 | 0.0046 | – | 0.0016 | 0.0002 | 0.0002 |
| As | 0.00011 | 0.0038 | – | – | 0.00014 | 0.0003 |
| Ni | 0.00016 | 0.0032 | 0.108 | 0.475 | 0.0011 | 4.48 |
| Si | 0.0002 | 0.0029 | 0.086 | 0.0008 | 3.56 | 0.081 |
| Bi | 0.00004 | 0.0028 | – | 0.0009 | 0.0003 | – |
| S | 0.0013 | – | – | 0.0065 | – | 0.0009 |
| Al | 0.0003 | – | 0.071 | 0.0001 | 0.001 | 9.82 |
| Ag | – | – | – | 0.0073 | 0.001 | 0.067 |
| Be | – | – | 1.94 | – | – | – |
| Mn | – | – | 0.003 | – | 0.0005 | – |
| Co | – | – | 0.292 | – | 0.0003 | – |
| Cd | – | – | – | – | 0.0001 | – |

*The actual value of the content may be slightly different when delivered, it is detailed in the inspection certificate



aluminum oxide sanding disc (included)



silicon carbide sanding disc (included)

## SPECTRAL SAMPLE GRINDER CODE OES-MY100



VIDEO



- Widely used for making specimens for spectral analysis and grinding of metal, ceramic, glass and other devices
- Compact machine structure, single disc with two speeds, can be equipped with different grits and hardnesses of grinding wheels for grinding
- The machine has smooth rotation, low noise, convenient operation and high working efficiency, and is suitable for factories and laboratories of scientific research units

**SPECIFICATION**

| | |
|---|---|
| Disc diameter | 350mm |
| Rotation speed | level 1: 1400r/min, level 2: 2800r/min (two fixed speed) |
| Power supply | AC380V, 50Hz, 2kW |
| Dimensions (L×W×H) | 480×450×900mm |
| Weight | 77kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 set |
| Silicon carbide sanding disc | 1 pc (60mesh) |
| Aluminum oxide sanding disc | 1 pc (30mesh) |

**OPTIONAL ACCESSORY**

| Code | Material | Application | Granularity (mesh) | Diameter | Package (pcs/box) |
|---|---|---|---|---|---|
| OES-SCG60 | silicon carbide | cast iron and non-ferrous metals | 60 | 350mm | 25 |
| OES-ALG30 | aluminium oxide | ferrous metals (non-cast iron) | 30 | 350mm | 30 |

# FOURIER TRANSFORM INFRARED SPECTROMETER
# CODE FTI-A170

NO SAMPLE PREPARATION REQUIRED

VIDEO





ZnSe crystals ATR attachment
(included)

- Widely used in medicine, chemical industry, petroleum, environmental protection, food industry, materials, public security, national defense, semiconductor, optical and other fields
- Qualitative identification of human and veterinary drugs, polymer materials, adhesives and binders, rubber, polyurethane, acrylic resins, concrete admixtures and so on
- Quantitative testing of mineral insulating oils, structural groups in lubricating oils, trans fatty acids in food and grease, atypical additives in petrol, petroleum hydrocarbons in solid waste, oils in water, etc.
- Versatile accessory options, easy replacement and installation, large sample compartment for easy expansion of other infrared accessories, such as ATR accessories, liquid test set, etc.
- With over 200,000 standard infrared spectra

## SPECIFICATION

| | |
|---|---|
| **Spectral range** | 7800~350cm$^{-1}$ |
| **Resolution** | better than 1.0cm$^{-1}$ |
| **Signal-to-noise ratio** | better than 30000:1 |
| **Detector** | infrared detector |
| **Beam splitter** | multi-coated potassium bromide, with humidity resistant coating |
| **Scanning speed** | microcomputer control and selection of different scanning speeds, gear continuously adjustable |
| **Source of infrared light** | long-life, high-intensity air-cooled infrared light source |
| **Wavenumber precise** | 0.01cm$^{-1}$ |
| **Software function** | 1. with spectrum annotation function<br>2. with spectrum search and comparison function<br>3. spectrogram self-addition function, spectrogram matching analysis function<br>4. with tools for peak labeling/differential spectra (quadratic operation of spectra)/smoothing, etc.<br>5. with peak height/peak area measurement tools<br>6. export report<br>7. provide at least 200,000 infrared spectra of commonly used compounds |
| **Working environment** | 20%~50%RH |
| **Weight** | 14kg |
| **Dimension (L×W×H)** | 450×350×210mm |
| **Power supply** | AC220V, 50Hz |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |
| **ZnSe crystals ATR attachment** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Diamond crystal ATR attachment** | **FTI-A170-ATRND** |
| **Solid powder tablet press machine** | **FTI-A170-TPM-1** |
| **Tablet press moulds** | **FTI-A170-TPM-2** |
| **KBr (SP grade)** | **FTI-A170-KBR-1** |
| **KBr mortar** | **FTI-A170-KBR-2** |
| **Removable liquid test set** | **FTI-A170-FLU** |
| **Electronic moisture-proof box** | **FTI-A170-MPB** |



removable liquid test set
(**optional**)



electronic moisture-proof box
(**optional**)





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CAN BE CUSTOMIZED FOR HIGH SULPHUR CHANNEL ACCORDING TO REQUIREMENTS

# CARBON AND SULFUR ANALYZER
# CODE CSA-R300

VIDEO



- Widely used in iron and steel metallurgy, powder metallurgy, magnetic materials, new energy, third-party testing, research institutes, etc.
- Analysis of carbon and sulfur in steel, cast iron, alloys, cement, sand, glass, lime, rubber, catalysts, soil, semiconductors, electronic materials, metal ores, ceramics and other solid materials
- Adoption of high-end infrared detection system and the core components of the air circuit system ensures the stability and accuracy of detection
- The high-frequency heating system adopts special high-frequency capacitors to ensure the long-term reliability of high-frequency work
- Adopt German imported special external metal dust filter, easy to dismantle, easy to clean
- Electronic balance for accurate weighing, auto-matic tare of crucible mass, auto-matic input of sample weight
- The software can monitor solenoid status, signal acquisition status, high frequency status, baseline status, etc.
- With data management and storage, query and statistics, printing projects, generating reports

## SPECIFICATION

| | |
|---|---|
| **Detector** | pyroelectric solid state infrared detectors |
| **Light source** | infrared light source |
| **Channel configuration** | standard with high carbon, low carbon, low sulfur |
| **Thermostatic** | gas chamber thermostat control |
| **Analysis range** | low carbon: 0.6ppm~0.1%, high carbon: 0.1%~50%, low sulfur: 0.6ppm~0.3%* |
| **Analysis accuracy** | carbon: 1ppm or RSD≤0.5%, Sulfur: 1ppm or RSD≤1.0% |
| **Sensitivity** | 0.01ppm |
| **Analysis time** | 30s~40s |
| **Sample weighing** | recommended range 0.1g~0.5g, can be changed according to the sample content |
| **Combustion furnace** | 18MHz, 2.7KVA |
| **Carrier gas** | oxygen concentration ≥99.5% |
| **Motive gas** | nitrogen concentration ≥99.5% |
| **Power supply** | AC220V±10%, 50Hz, 16A |
| **Dimensions (L×W×H)** | 545×380×435mm |
| **Weight** | 70kg |

*Changing the weighing volume can extend the analysis range up to 100%, can be customized for high sulfur channel with 0.3-30% analysis range

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |
| **Dust catcher** | 1 pc |
| **Electronic balance** | 1 pc |
| **Printer** | 1 pc |
| **Pressure valve** | 1 pc |
| **Standard sample** | 3 pcs |
| **Soda lime (CSA-R300-SL)** | 1 pc |
| **Tungsten flux (CSA-R300-TF)** | 1 pc |
| **Desiccant (CSA-R300-DE)** | 1 pc |
| **Crucible (CSA-R300-CR)** | 1000 pcs |
| **Toolkit*** | 1 set |

*Including allen wrench, crucible tweezer, tungsten grain spoon, sample spoon, cotton wool and vacuum silicone grease, etc.

# GAS CHROMATOGRAPHY
# (RoHS2.0 O-BENZENE FAST SIFTER)
# CODE GCT-2400

VIDEO




thermal cracker
(included)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Computer** | 1 pc |
| **Thermal cracker** | 1 pc |
| **Software** | 1 pc |
| **Standard sample** | 2 pcs |
| **Air generator** | 1 set |
| **Hydrogen generator** | 1 set |
| **Consumable and spare parts** | 1 set * |

* Including injection needles, injection pads, graphite pads, gas connection lines and other common consumables and tools

- Easy to operate and requires just 20 minutes for sample analysis
- No need to handle samples during use, no chemical reagents are used, and no waste liquid or gas is generated
- The instrument adopts a microcomputer system to control temperature with high precision, high reliability, and anti-interference
- The instrument has a network remote control function with ethernet communication interface to analyze the data

30

## SPECIFICATION

| | |
|---|---|
| **Analysis material** | Di (2-ethylhexyl) phthalate (DEHP), Benzyl butyl phthalate (DBP), Dibutyl phthalate (BBP), Diisobutyl phthalate (DIBP) |
| **Temperature control area** | 8 signals |
| **Temperature control range** | above room temperature 4-450°C, incremental 1°C, accurate: ±0.1°C |
| **Program temperature rise step** | 20th step |
| **Program temperature rise rate** | 0.1-60°C/min |
| **Measurement range** | 0-0.25Mpa (pressure), 0-1000ml/min (flow rate) |
| **Injection valve** | automation |
| **Sampler type** | capillary injection |
| **Capillary column** | Ø0.53mm×30m×0.50μm (shunt) |
| **Detector** | hydrogen flame Ionization detector (FID) |
| **Detection limit** | $\leq 3\times10^{-12}$g/S (n-hexadecane) |
| **Baseline noise** | $\leq 1\times10^{-14}$A (after 2 hours of instrument stabilization) |
| **Baseline drift** | $\leq 1\times10^{-13}$A/30min (after 2 hours of instrument stabilization) |
| **Linear range** | $\geq 10^6$ |
| **Carrier gas** | $N_2 \geq 99.9995\%$ |
| **Natural gas** | $H_2 \geq 99.9995\%$ |
| **Combustion gas** | dry oil-free air |
| **Data processing** | 1. can simultaneously process data from up to 5000 chromatographys<br>2. can automatically generate chromatograph files<br>3. can name chromatograph folders by time and shift sequence |
| **Communication interface** | ethernet: IEEE802.3 |
| **Working environment** | 5~35°C, 0~85%RH |
| **Power supply** | AC220V±10%, 50Hz (±0.5Hz), 3kW |
| **Dimension (L×W×H)** | 600×560×500mm |
| **Weight** | 55kg |



hydrogen generator
(included)



air generator
(included)

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Electronic balance** | **8304-120** | maximum weighing capacity 120g, resolution 0.1mg |
| | **8304-220** | maximum weighing capacity 220g, resolution 0.1mg |
| **Capillary column** | **GCT-2400-CC** | Ø0.53mm×30m×0.50μm |
| **Standard sample** | **GCT-2400-BY** | mixed standard of 4 phthalates (1000μg/mL) |

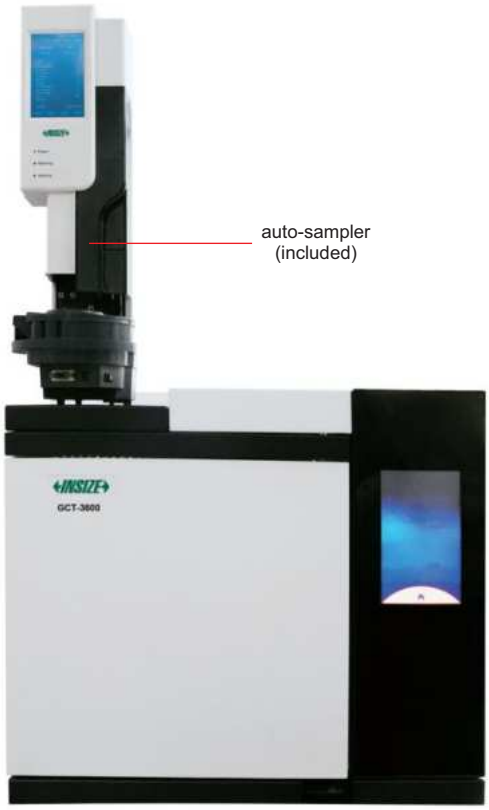


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VIDEO

ANALYSIS METHODS AND CONFIGURATIONS CAN BE CUSTOMIZED ACCORDING TO INSPECTION REQUIREMENTS

# GAS CHROMATOGRAPHY (ADVANCED TYPE) CODE GCT-3600






hydrogen generator
(included)



air generator
(included)



electronic balance
(**optional**)



**DETECTORS**

| | | |
|---|---|---|
| **Thermal conductivity detector (TCD)** | **code** | **GCT-D-TCD** |
| | **sensitivity** | ≥10000mv · mL/mg (Benzene/Toluene) |
| | **baseline noise** | ≤20μv |
| | **baseline drift** | ≤20μv/30min |
| | **TC bridge road** | air break protection: protects the tungsten filament from damage |
| | **analysis material** | purity of industrial gases such as oxygen, nitrogen, helium, etc. and VOCs |
| **Flame photometric detector (FPD)** | **code** | **GCT-D-FPD** |
| | **detection limit** | (S) ≤$5\times10^{-11}$g/s (Thiophene/Ethanol), (P) ≤$1\times10^{-12}$g/s (Methyl Parathion/Ethanol) |
| | **baseline noise** | ≤$3\times10^{-13}$A |
| | **baseline drift** | ≤$2\times10^{-12}$A/30min |
| | **linear range** | S≥$10^2$, P≥$10^3$ |
| | **analysis material** | sulfur and phosphorus containing compounds |
| **Electron capture detector (ECD)** | **code** | **GCT-D-ECD** |
| | **detection limit** | ≤$1\times10^{-14}$g/mL (Propyl Hexahydroxy/Isooctane) |
| | **baseline noise** | ≤0.03mV |
| | **baseline drift** | ≤0.2mV/30min |
| | **radiation source** | $Ni^{63}$ |
| | **analysis material** | halogenated compounds, peroxides, nitro compounds, metal-organic compounds, steroidal compounds, polycyclic aromatic compounds, etc. |
| **Nitrogen phosphorus detector (NPD)** | **code** | **GCT-D-NPD** |
| | **detection limit** | (P) ≤$5\times10^{-13}$g/s (Malathion/Isooctane), (N) ≤$7\times10^{-13}$g/s (Azobenzene/Isooctane) |
| | **baseline noise** | ≤$3\times10^{-13}$A |
| | **baseline drift** | ≤$2\times10^{-12}$A/30min |
| | **linear range** | ≥$10^3$ |
| | **analysis material** | organic compounds containing nitrogen and phosphorus |

To be continued

Continued from previous page

- Widely used in petrochemical, environmental analysis, food analysis, drug analysis, polymer analysis, etc.
- The instrument is equipped with a 7" screen, supports hot-swappable, can be used as a handheld controller
- The instrument adopts a microcomputer system to control temperature with high precision, high reliability, and anti-interference
- The instrument is equipped with an electronic flow control unit (EFC) and an electronic pressure control unit (EPC) to improve stability and repeatability
- Chromatography microcomputer system with MODBUS/TCP standard protocol, can be interfaced with DCS system

**SPECIFICATION**

| | | |
|---|---|---|
| **Analysis material** | | hydrocarbons, carbonaceous organic matter (COC), volatile organic compound (VOCs), etc. |
| **Control system** | **temperature control area** | 8 signals |
| | **temperature control range** | above room temperature 4-450°C, incremental 1°C, accurate: ±0.1°C |
| | **program temperature rise rate** | 0.1-120ºC/min |
| | **air circuit control** | full electronic pressure flow control |
| | **measurement range** | 0-100Psi (pressure), 0-1000mL/min (flow rate) |
| | **resolution** | 0-0.1Psi (pressure), 0-1mL/min (flow rate) |
| | **external control** | 8 signals, auxiliary control output 2 signals |
| | **program temperature rise step** | 16 steps |
| **Detector** | **type** | hydrogen flame ionization detector (FID) |
| | **detection limit** | ≤$3\times10^{-12}$g/S (n-hexadecane) |
| | **baseline noise** | ≤$1\times10^{-14}$A (after 2 hours of instrument stabilization) |
| | **baseline drift** | ≤$1\times10^{-13}$A/30min (after 2 hours of instrument stabilization) |
| **Auto-sampler** | **syringe specifications** | 1, 5, 10, 25, 50, 100, 250, 500 (μL) |
| | **vial position** | 24 bits (customizable expansion to 160 bits) |
| | **solvent bottle position** | 2 bits (customizable expansion to 11 bits) |
| | **vial volume** | 2mL |
| | **injection volume** | 0.1-250μL |
| | **feed rate** | fast, slow, user-defined |
| | **feed mode** | general, continuous, PTV, user-defined |
| **Gas supply** | **carrier gas** | $N_2$≥99.999% |
| | **natural gas** | $H_2$≥99.999% |
| | **combustion gas** | dry oil-free air |
| **Data processing** | | 1. can simultaneously process data from up to 5000 chromatographies<br>2. can automatically generate chromatography files<br>3. can name chromatography folders by time and shift sequence |
| **Communication interface** | | ethernet: IEEE802.3 |
| **Working environment** | | 15~30°C, ≤85%RH |
| **Power supply** | | AC 220V, 50Hz, 3kW |
| **Dimension (L×W×H)** | | 560×530×480mm |
| **Weight** | | 60kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Auto-sampler** | 1 pc |
| **Computer** | 1 pc |
| **Software** | 1 pc |
| **Detector (FID)** | 1 pc |
| **Hydrogen generator** | 1 pc |
| **Air generator** | 1 pc |
| **Gas purifier** | 1 pc |
| **Column(SE-54)** | 1 pc |
| **Consumable and spare parts** | 1 set * |

* Including injection needles, injection pads, graphite pads, gas connection lines and other common consumables and tools

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Electronic balance** | **8304-220** |
| **Thermal conductivity detector** ** | **GCT-D-TCD** |
| **Flame photometric detector** ** | **GCT-D-FPD** |
| **Electron capture detector** ** | **GCT-D-ECD** |
| **Nitrogen phosphorus detector** ** | **GCT-D-NPD** |

** The detector needs to be ordered with the main unit together, up to two detectors can be ordered

VIDEO

ANALYSIS METHODS AND CONFIGURATIONS CAN BE CUSTOMIZED ACCORDING TO INSPECTION REQUIREMENTS

# LIQUID CHROMATOGRAPHY
# CODE HLC-3000




column oven
(included)

Ultraviolet-Visible detector (included)

- Highly accurate, self-calibrating analog-to-digital converter and optical path system improves the signal-to-noise ratio of the detector
- With automatic wavelength calibration and the ability to optimize the deuterium lamp energy
- Digital and analog signal output at the same time, more practical
- Dual wavelength simultaneous detection for more accurate results

Auto-sampler (included)

- The patented inlet design and unique cleaning method ensure ultra-low sample residue
- The cooling function of the sample tray makes the sample analysis process more stable
- Support high-speed sampling mode, the fastest can be realized within 1s

High pressure pump (included)

- Patented low-pulsation, high-precision, tandem, dual-plunger, high-pressure, constant-current pump designed to minimize pulsation
- The special seal design makes the maximum pressure resistance of the pump up to 90 MPa, which meets the requirements of many kinds of analytical experiments
- Multi-stage microporous mixing with labyrinth design mixer for more uniform mixing and lower pulsation



evaporative light-scattering detector
(**optional**)



fluorescence detector
(**optional**)



photo-diode array detector
(**optional**)



refractive index detector
(**optional**)

- Widely used in drug discovery, food safety, environmental testing, life sciences, etc.
- Various temperature control modes of the column temperature chamber make the temperature more accurate
- The auto-sampler has a high-speed injection mode that makes the analysis process faster
- The cooling function ensures the stability of the analysis process even for biological samples
- EMC electromagnetic compatibility function can avoid other electromagnetic interference, and makes the instrument more stable

To be continued

Continued from previous page

**SPECIFICATION**

| | | |
|---|---|---|
| Detector | analysis material | organic compounds, inorganic ions, biomolecules (such as DNA, proteins) with UV-visible absorption properties |
| | type | Ultraviolet-Visible detector |
| | wavelength range | 190~800nm |
| | baseline noise | ≤1.5×10$^{-5}$AU |
| | baseline drift | ≤2.0×10$^{-4}$AU/h |
| | light source | deuterium lamp, tungsten lamp |
| | bandwidth | 8nm |
| | minimum detection concentration | ≤1.0×10$^{-9}$g/mL |
| | linear range | ≥2.5AU |
| | wavelength accuracy | ±1nm |
| | wavelength repeatability | ≤±0.2nm |
| | detection cell temperature contro | 5-55°C, setting step 0.1°C |
| | detection cell optical range | 10nm |
| | detection cell pressure | ≤0.1Mpa |
| High pressure pump | pump type | binary high pressure constant current pump |
| | gradient mixing accuracy | ±0.5% |
| | gradient mixing precision | ≤0.1% |
| | flow range | 0.001~10.000mL/min |
| | maximum working pressure | 90Mpa |
| | flow stability | ≤0.06% |
| | gradient composition ratio | 0~100%, programmable range |
| | pressure pulsation | ≤0.1Mpa |
| Auto-sampler | temperature control range | 4~40°C |
| | special function | empty bottle detection and false tie alarm |
| | injection method | full loop injection, lossy injection, lossless injection |
| | input range | 0~100μL |
| | vial quantity and specification | 210th (1mL vial)<br>120th (2mL vial)<br>72th (4mL vial)<br>double 96-well plate (support base magnetic plate option) |
| | input residue | <0.002% |
| | sample repeatability | <0.03% |
| | feed rate | support high-speed sampling mode, the fastest can realize 1s sampling |
| Column oven | temperature range | heating mode: 10~85°C<br>cooling mode: 4~35°C<br>smart mode: 4~85°C |
| | heating method | pall paste element plus air circulation for temperature control |
| | temperature accuracy | ±0.1°C |
| | optional valves | optional 2 six-position seven-way valves<br>or 2-position 6-way valve or 2-position 10-way valve |
| | temperature control accuracy | ≤0.1°C |
| Power supply | | 110~220V, 50/60Hz, 1400W |
| Dimensions (L×W×H) | | 600×540×540mm |
| Weight | | 75kg |

**STANDARD DELIVERY**

| | |
|---|---|
| High pressure pump | 1 pc |
| Auto-sampler | 1 pc |
| Column oven | 1 pc |
| Ultraviolet-Visible detector | 1 pc |
| Solvent bottle tray | 1 pc |
| Sample cell | 1 pc |
| Chromatography data workstation | 1 set |
| Column (5μm 4.6×250mm) | 1 pc |
| Mobile phase solvent bottles | 2 pcs |
| Computer | 1 pc |
| Consumables and spare parts | 1 set * |

* Including common consumable tools such as connecting pipes and pipe joints

To be continued

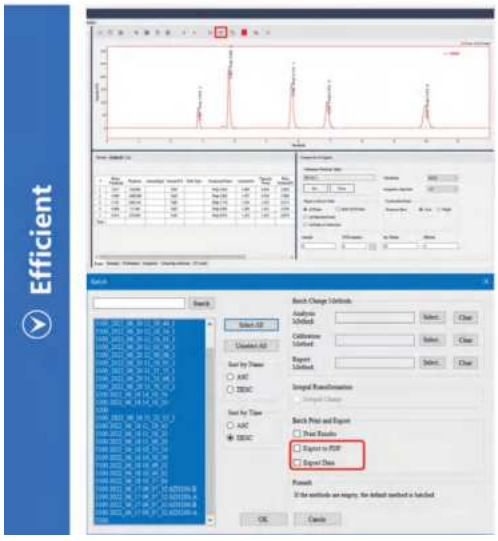
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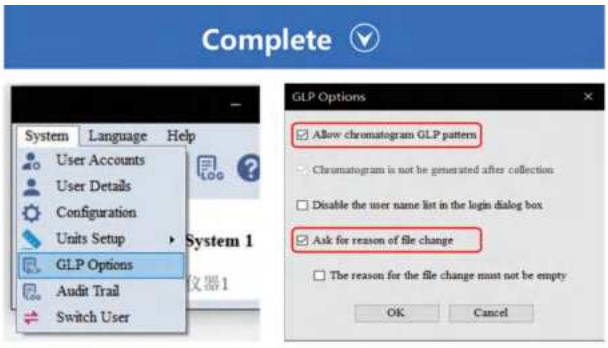
**OPTIONAL ACCESSORY**

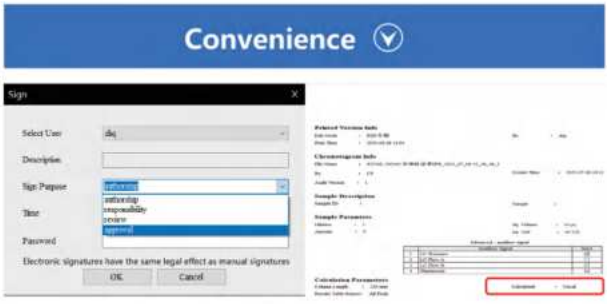
| Name | Code | Analysis material |
|---|---|---|
| Evaporative light-scattering detector (ELSD) | HLC-D-ELSD | sugars, alcohols, amino acids, etc. |
| Fluorescence detector (FLD) | HLC-D-FLD | analysis of compounds with fluorescent properties, such as pesticide residues, veterinary drug residues, certain biomolecules, etc. |
| Photo-diode array detector (PDA) | HLC-D-PDA | proteins, nucleic acids and other biomolecules |
| Refractive index detector (RID) | HLC-D-RID | sugars, polymers, etc. |

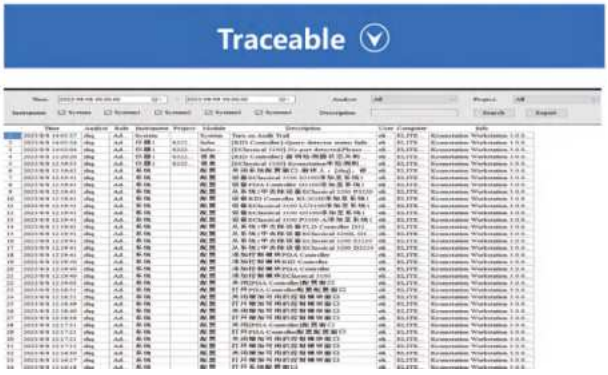
**SOFTWARE (INCLUDED)**



# 31 TESTING MACHINES, FORCE GAUGES, TENSION METERS



Universal Testing Machines
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High And Low Temperature Test Chambers For Electronic Universal Testing Machines
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Extensometers
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Video Extensometers
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Impact Testing Machines
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Impact Standard Samples
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Impact Specimen Notch Broaching Machines
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Impact Broaches
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Friction And Wear Testing Machines
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Friction/Peel Testers
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Pneumatic Key Life Testers
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Tensile And Compression Testing Machines
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# TESTING MACHINES, FORCE GAUGES, TENSION METERS

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Digital Spring Testers
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Force Gauges
Page 971-974/979



Test Stands For Force Gauges
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Tensile/Compression Sensors
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Tube Force Gauges
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Dial Tension Gauges
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Wire Tension Meters
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Belt Tension Meters
Page 983

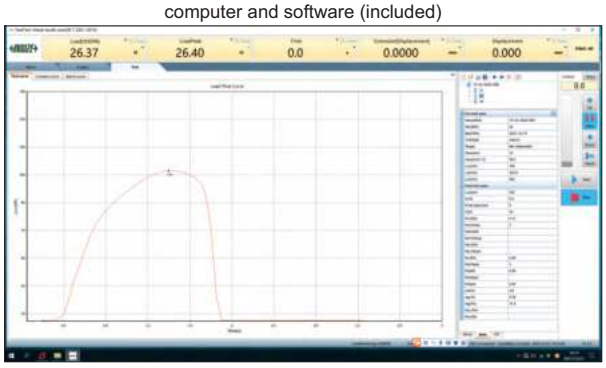


Spindle Tension Meters
Page 984-985

# ELECTRONIC UNIVERSAL TESTING MACHINES

VIDEO

computer and software (included)





flat jaws (included)



V-shaped jaws (included)



**UTM-E50**



- For testing and researching the mechanical properties of metals, ceramics, plastics, rubber and composite materials
- For research and quality control of mechanical properties of materials for a wide range of products such as mechanical components, electronic components, food packaging materials, chemical fibres, films and new energy batteries

**SPECIFICATION**

| Code | UTM-E10 | UTM-E20 | UTM-E30 | UTM-E50 |
|---|---|---|---|---|
| Max. test force | 10kN | 20kN | 30kN | 50kN |
| Accuracy class | class 0.5 | | | |
| Accuracy of test force | ±0.5% of indicated value | | | |
| Range of test force | 0.2%~100%FS | | | |
| Resolution of test force | 1/500000FS | | | |
| Crossbeam displacement accuracy | ±0.5% of indicated value | | | |
| Crossbeam displacement resolution | 0.025μm | | | |
| Range of speed adjustment | 0.001~500mm/min | | | |
| Accuracy of crossbeam speed | ±1% of the set value (speed<0.5mm/min)<br>±0.1% of the set value (speed≥0.5mm/min) | | | |
| Range of force control speed | 0.005~5%FS/s | | | |
| Accuracy of crossbeam speed | ±1% of the set value (speed<0.05%FS/s)<br>±0.5% of the set value (speed≥0.05%FS/s) | | | |
| Compression fixture | Ø100mm | Ø100mm | Ø100mm | Ø100mm |
| Wedge tension fixture | flat jaw: 0~7mm | flat jaw: 0~7mm<br>V-jaw: Ø4~Ø9mm | flat jaw: 0~7mm<br>V-jaw: Ø4~Ø9mm | flat jaw: 0~14mm<br>V-jaw: Ø4~Ø14mm |
| Effective test width* | 400mm | 440mm | 440mm | 440mm |
| Vertical test space* | 1030mm | 970mm | 970mm | 970mm |
| Effective compression height* | 800mm | 700mm | 700mm | 700mm |
| Dimension (W×D×H) | 715×500×1680mm | 820×620×1880mm | 820×620×1880mm | 820×620×1880mm |
| Weight | 230kg | 350kg | 350kg | 350kg |
| Power supply | AC 220V, 50Hz, 0.4kW~1kW | | | |

*Can be customized according to test requirements

To be continued



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Continued from previous page

## SPECIFICATION

| Code | UTM-E100 | UTM-E200 | UTM-E300 | UTM-E600 |
|---|---|---|---|---|
| Max. test force | 100kN | 200kN | 300kN | 600kN |
| Accuracy class | class 0.5 | | | |
| Accuracy of test force | ±0.5% of indicated value | | | |
| Range of test force | 0.2%~100%FS | | | |
| Resolution of test force | 1/500000FS | | | |
| Crossbeam displacement accuracy | ±0.5% of indicated value | | | |
| Crossbeam displacement resolution | 0.025μm | | | |
| Range of speed adjustment | 0.001~500mm/min | | | 0.001~250mm/min |
| Accuracy of crossbeam speed | ±1% of the set value (speed<0.5mm/min)<br>±0.1% of the set value (speed≥0.5mm/min) | | | |
| Range of force control speed | 0.005~5%FS/s | | | |
| Accuracy of crossbeam speed | ±1% of the set value (speed<0.05%FS/s)<br>±0.5% of the set value (speed≥0.05%FS/s) | | | |
| Compression fixture | Ø160mm | Ø150mm | Ø150mm | Ø200mm |
| Wedge tension fixture | flat jaw: 0~20mm<br>V-jaw: Ø8~Ø26mm | flat jaw: 0~30mm<br>V-jaw: Ø8~Ø36mm | flat jaw: 0~30mm<br>V-jaw: Ø8~Ø36mm | flat jaw: 0~30mm<br>V-jaw: Ø8~Ø46mm |
| Effective test width * | 600mm | 600mm | 600mm | 750mm |
| Vertical test space * | 1250mm | 1000mm | 1000mm | 1100mm |
| Effective compression height * | 700mm | 600mm | 600mm | 650mm |
| Dimension (W×D×H) | 1070×855×2180mm | 1070×920×2550mm | 1070×920×2550mm | 1140×1580×2980mm |
| Weight | 1000kg | 1500kg | 1500kg | 5000kg |
| Power supply | AC380V, 3Ø, 50Hz, 2kW~5kW | | | |

*Can be customized according to test requirements

## SPECIFICATION OF LARGE DEFORMATION EXTENSOMETER (OPTIONAL)

| Code | UTM-EY1 | UTM-EY2 |
|---|---|---|
| Range of deformation | 10~800mm | |
| Accuracy of deformation | ±1% | |
| Resolution of deformation | 0.01mm | 0.004mm |
| Type of blade | flat blade | |
| Range of clamp | thicknesses<10mm, width<30mm | |



large deformation extensometer (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Control box | 1 pc |
| Measuring software | 1 pc |
| Computer | 1 pc |
| Printer | 1 pc |
| Compression fixture | 1 set |
| Wedge tension fixture | 1 set |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Fixture | **UTM-F** series (customized, selection of specifications according to test requirements) |
| Extensometer | **UTM-EX** series (customizable) |
| Video extensometer | **UTM-M** series |
| Large deformation extensometer | **UTM-EY** series (customizable) |
| Security door | customized, available in plexiglass or wire mesh |

# HIGH AND LOW TEMPERATURE TEST CHAMBERS FOR ELECTRONIC UNIVERSAL TESTING MACHINES

VIDEO



electronic universal testing machine is optional

**UTT-M63-E50**

- For **UTM-E□□□** electronic universal testing machines
- For tensile, compression, bend, shear tests in high and low temperature environment

**SPECIFICATION**

| | | | | |
|---|---|---|---|---|
| **Code** | **for UTM-E10** | **UTT-M03-E10** | **UTT-M33-E10** | **UTT-M63-E10** |
| | **for UTM-E50** | **UTT-M03-E50** | **UTT-M33-E50** | **UTT-M63-E50** |
| | **for UTM-E100** | **UTT-M03-E100** | **UTT-M33-E100** | **UTT-M63-E100** |
| **Temperature range** | | (room temperature+10)~300°C | -30~300°C | -60~300°C |
| **Temperature accuracy*** | | ±1°C | | |
| **Temperature fluctuation*** | | ±0.5°C | | |
| **Temperature uniformity*** | | ≤2°C | | |
| **Temperature resolution** | | 0.1°C | | |
| **Cooling system** | | no | cormpressor or liquid nitrogen | |
| **Cooling time (room temperature@25°C)** | | | 1~2°C/min (no-load) | |
| **Warming up time** | | 1~3°C/min (no-load) | | |
| **Temperature control** | | PID automatic temperature control | | |
| **Heating system** | | magnesium powder heating tube | | |
| **Aperture size** | | Ø50mm | | |
| **Chamber dimension**** | | 240×430×530mm (suitable for electronic universal testing machines with column spacing of 400mm and above) | | |
| **Power supply** | | AC 220V, 60Hz | | |
| **Total power** | | 1.8kW | 2.2kW | 2.8kW |

*The applicable range of temperature accuracy, uniformity and fluctuation is Ø100×200mm

**Customized according to **UTM-E□□□** electronic universal testing machine and customer requirements

# ELECTRONIC UNIVERSAL TESTING MACHINES (ADVANCED TYPE)



**UTM-X010**

wired hand control box (included)





- Equipped with a variety of test software, can be for metal, ceramics, plastics, rubber and composite materials and other related mechanical properties of the test and research
- Can be used for research and quality control of mechanical properties of various products such as mechanical parts, electronic parts, food packaging materials, chemical fibres, films, new energy batteries and so on
- The rigidity of the host, loading speed and load, deformation measurement accuracy, data reliability, adoption rate and closed-loop control rate are excellent

test interface




test and calibration interface






fully automatic extensometer (**optional**) (class 0.5 high-precision fully-automatic extensometer with a wide measuring range for automatic testing and full strain measurement)



security door (**optional**)



compression fixture (**optional**)



tensile fixture (**optional**)

To be continued

Continued from previous page



high and low temperature environment box (**optional**)



constant temperature and humidity box (**optional**)



high temperature furnace (**optional**)



high precision axial extensometer (**optional**) (a variety of scales can be selected to fully meet the requirements of variety of materials, the accuracy meets class 0.5)



width gauge (**optional**) (widely used for r-value and poisson's ratio measurements, meets the requirements of ASTM E517 and IS010113)

**SPECIFICATION**

| Code | | UTM-X001 | UTM-X005 | UTM-X010 | UTM-X050 | UTM-X100 | UTM-X300 |
|---|---|---|---|---|---|---|---|
| Max. test force | | 1kN | 5kN | 10kN | 50kN | 100kN | 300kN |
| Accuracy class | | class 0.5 | | | | | |
| Accuracy of test force | | ±0.5% of indicated value | | | | | |
| Range of test force | | 0.2%~100%FS | | | | | |
| Test force resolution | | 0.002N | 0.02N | 0.02N | 0.2N | 0.2N | 0.5N |
| Crossbeam displacement accuracy | | ±0.1% of indicated value | | | | | |
| Crossbeam displacement resolution | | 0.1μm | | | | | |
| Velocity accuracy | | ±0.1% of indicated value | | | | | |
| Range of speed adjustment | | 0.001~1000mm/min | | | 0.001~800mm/min | | 0.001~500mm/min |
| Effective test width | | 420mm | | | 600mm | | |
| Vertical test space | standard model | 1200mm | | | 1255mm | | 1450mm |
| | heightened 250mm (optional) | 1450mm | | | 1505mm | | 1700mm |
| | heightened 500mm (optional) | 1700mm | | | — | | |
| Dimension (W×D×H) | standard model | 748×582×1600mm | | | 1100×724×2160mm | | 1180×756×2440mm |
| | heightened 250mm (optional) | 748×582×1850mm | | | 1100×724×2410mm | | 1180×756×2690mm |
| | heightened 500mm (optional) | 748×582×2100mm | | | — | | |
| Weight | standard model | 160kg | | | 610kg | | 965kg |
| | heightened 250mm (optional) | 185kg | | | 660kg | | 1015kg |
| | heightened 500mm (optional) | 210kg | | | — | | |
| Power supply | | AC220V, 50Hz, 1kW | | | AC380V, 3Ø, 50Hz, 4kW | AC380V, 3Ø, 50Hz, 4.5kW | AC380V, 3Ø, 50Hz, 6kW |
| Environment requirements | | temp: 5~40°C, humidity level: 5~85%RH, non-condensing no vibration | | | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Control box | 1 pc |
| Computer | 1 pc |
| Software | 1 pc |
| Printer | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Security door * | customizable |
| Fixture * | |
| Extensometer * | |
| Width gauge * | |
| High temperature furnace * | |
| Constant temperature and humidity box * | |
| High and low temperature environment box * | |

*Selection of specifications according to test requirements



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# ELECTRONIC UNIVERSAL TESTING MACHINES

VIDEO

computer and software (included)





**UTM-Z500**

- Applicable to metal, non-metal and composite materials for tensile, compression, bending and other mechanical properties test analysis and analytical research
- Automatically obtain the maximum force, breaking force, yield strength, upper and lower yield strength, tensile strength, compressive strength, elongation at break, tensile modulus of elasticity, bending modulus of elasticity and other test data
- Test standards and test parameters can be managed and imported or exported test standards
- Overload emergency shutdown protection device, up and down travel limit protection device
- Crossbeam movement collision mitigation function



**SPECIFICATION**

| Code | UTM-Z50 | UTM-Z500 | UTM-Z1000 | UTM-Z2000 | UTM-Z5000 |
|---|---|---|---|---|---|
| Max. test force* | 50N | 500N | 1000N | 2000N | 5000N |
| Accuracy class | class 0.5 | | | | |
| Range of test force | 0.4%~100%FS | | | | |
| Accuracy of test force | ±0.5% of indicating value | | | | |
| Resolution of test force | 1/300000FS | | | | |
| Accuracy of displacement | ±0.5% of indicating value | | | | |
| Resolution of displacement | 0.2μm | | | | |
| Range of crossbeam speed | 0.001~1000mm/min | | | | |
| Accuracy of crossbeam speed | ±0.5% of indicating value | | | | |
| Range of force control speed | 0.05%~10%FS/s | | | | |
| Accuracy of force control speed | ±0.5% of indicating value | | | | |
| Effective tensile travel* | 550mm | | | | |
| Effective compression travel* | 700mm | | | | |
| Dimension (W×D×H) | 500×380×1150mm | | | | |
| Power supply | AC 220V, 50Hz | | | | |
| Weight | 100kg | | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Computer | 1 set |
| Software | 1 set |
| Control box | 1 pc |
| Tensile fixture | 1 set |

**OPTIONAL ACCESSORY**

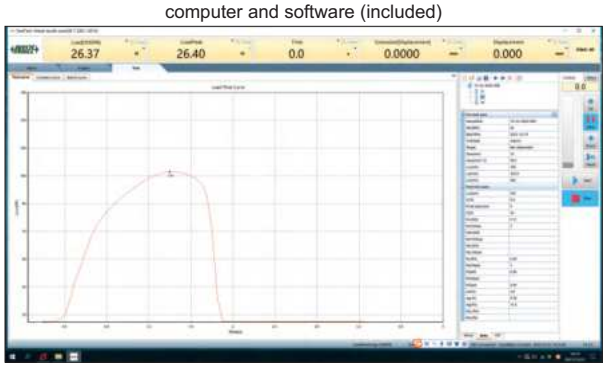
| | |
|---|---|
| Fixture* | customized |
| Extensometer* | |
| Large deformation extensometer* | |
| Security cover* | |

*Can be customized according to test requirements

# ELECTRONIC UNIVERSAL TESTING MACHINES

VIDEO

computer and software (included)





UTM-S5KA

- For testing and researching the mechanical properties of metals, ceramics, plastics, rubber and composite materials
- For research and quality control of mechanical properties of materials for a wide range of products such as mechanical components, electronic components, food packaging materials, chemical fibres, films and new energy batteries

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**SPECIFICATION**

| Code | UTM-S200A | UTM-S500A | UTM-S1KA | UTM-S2KA | UTM-S5KA |
|---|---|---|---|---|---|
| Max. test force | 200N | 500N | 1kN | 2kN | 5kN |
| Accuracy class | class 0.5 | | | | |
| Accuracy of test force | ±0.5% of indicated value | | | | |
| Range of test force | 0.2%~100%FS | | | | |
| Resolution of test force | 1/500000FS | | | | |
| Crossbeam displacement accuracy | ±0.5% of indicated value | | | | |
| Crossbeam displacement resolution | 0.025μm | | | | |
| Range of speed adjustment | 0.001~500mm/min | | | | |
| Accuracy of crossbeam speed | ±1% of the set value (speed<0.5mm/min)<br>±0.1% of the set value (speed≥0.5mm/min) | | | | |
| Range of force control speed | 0.005~5%FS/s | | | | |
| Accuracy of constant load force | ±1% of the set value (speed<0.05%FS/s)<br>±0.5% of the set value (speed≥0.05%FS/s) | | | | |
| Vertical test space * | 1120mm | | | | |
| Effective compression height * | 800mm | | | | |
| Dimension (W×D×H) | 510×510×1580mm | | | | |
| Weight | 150kg | | | | |
| Power supply | AC220V, 50Hz, 0.4kW | | | | |

*Can be customized according to test requirements

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Control box | 1 pc |
| Measuring software | 1 pc |
| Computer | 1 pc |
| Printer | 1 pc |
| Compression fixture (except UTM-S200A) | 1 set |
| Tension fixture | 1 set |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Fixture | **UTM-F** series (customized, selection of specifications according to test requirements) |
| Extensometer | **UTM-EX** series (customizable) |
| Video extensometer | **UTM-M** series |
| Large deformation extensometer | **UTM-EY** series (customizable, page 948) |
| Security door | customized |



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# HYDRAULIC UNIVERSAL TESTING MACHINES

VIDEO




**UTM-H300B**



- For tensile, compression, bend, shear tests of metal and non-metal materials

**SPECIFICATION**

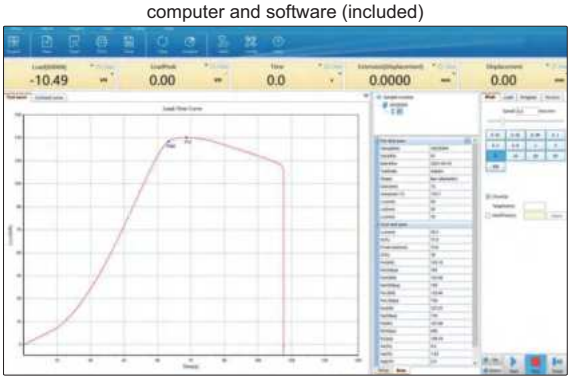
| Code | | UTM-H300B | UTM-H600B | UTM-H1000B | UTM-H2000B | UTM-H3000B |
|---|---|---|---|---|---|---|
| Max. test force | | 300kN | 600kN | 1000kN | 2000kN | 3000kN |
| Accuracy | | ±1% | | | | |
| Test force measurement range | | 2%~100%FS | | | | |
| Resolution of test force measurement | | 1/300000 of Max. test force (same resolution all the way) | | | | |
| Deformation measurement device | | extensomet | | | | |
| Deformation measurement range | | 1%~100%FS | | | | |
| Deformation measurement accuracy | | ±1% | | | | |
| Deformation measurement resolution | | 1/300000 | | | | |
| Displacement accuracy | | ±1% | | | | |
| Displacement resolution | | 0.01mm | | | | |
| Displacement travel | | 200mm | | | | |
| Max tensile space (including piston stroke) | | 600mm | 600mm | 680mm | 600mm | 900mm |
| Max compression space (including piston stroke) | | 500mm | 500mm | 560mm | 500mm | 800mm |
| Transmission mode | | chain drive | | | | |
| Safety protection device | | software protection and mechanical limit protection | | | | |
| Control function | | special software, closed-loop of stress, strain and velocity | | | | |
| Clamping range of round sample | | Ø10~32mm | Ø13~40mm | Ø13~60mm | Ø20~70mm | Ø25~80mm |
| Clamping range of flat sample | | 0~15mm | 0~15mm* | 0~20mm** | 0~40mm | 0~80mm |
| Upper and lower pressure plate size | | Ø188mm | Ø188mm | Ø208mm | Ø208mm | Ø208mm |
| Bending branch roll width | | 140mm | | | | |
| Total power | | 2.5kW | 3.0kW | 3.0kW | 3.75kW | 5.5kW |
| Power supply | | 380V, 50Hz | | | | |
| Dimension (mm) | host | 800×620×1900 | 820×650×2000 | 940×780×2250 | 1100×760×3000 | 1250×930×3550 |
| | oil source | 1140×600×855 | | | | |
| Weight | | 2T | 2.2T | 3T | 7.5T | 12.6T |

*Customizable 0~30mm **Customizable 0~40mm

To be continued

Continued from previous page

computer and software (included)





acrylic safety shield (**optional**)



steel wire safety shield (**optional**)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Electro hydraulic servo oil source** | 1 pc |
| **Electro hydraulic servo valve** | 1 pc |
| **High pressure oil pump** | 1 pc |
| **Oil pressure sensor** | 1 pc |
| **Control box** | 1 pc |
| **Extensometer** | 1 pc |
| **Computer** | 1 pc |
| **Measuring software** | 1 set |
| **Printer** | 1 pc |
| **Tensile fixture** | 1 set |
| **Compression fixture** | 1 set |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Acrylic safety shield** | **UTM-H-COVER1** |
| **Steel wire safety shield** | **UTM-H-COVER2** |

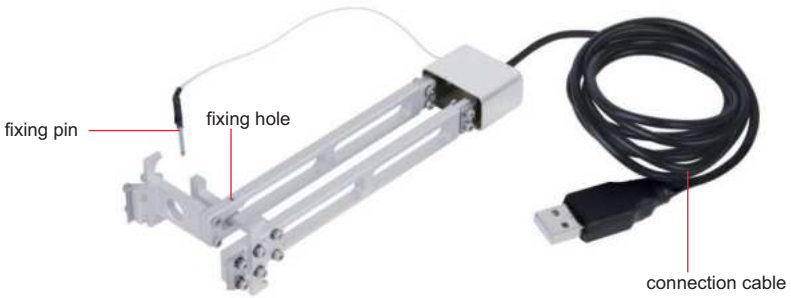


## EXTENSOMETERS

- For universal testing machines

**SPECIFICATION**

| Code | Gauge length | Deformation |
|---|---|---|
| **UTM-EX25-5** | 25mm | 5mm |
| **UTM-EX25-10** | 25mm | 10mm |
| **UTM-EX25-25** | 25mm | 25mm |
| **UTM-EX50-5** | 50mm | 5mm |
| **UTM-EX50-10** | 50mm | 10mm |
| **UTM-EX50-25** | 50mm | 25mm |
| **UTM-EX100-5** | 100mm | 5mm |
| **UTM-EX100-10** | 100mm | 10mm |
| **UTM-EX100-25** | 100mm | 25mm |
| **UTM-EX200-5** | 200mm | 5mm |
| **UTM-EX200-10** | 200mm | 10mm |
| **UTM-EX200-25** | 200mm | 25mm |
| **UTM-EX-B** | large deformation, customized according to the workpieces | |




**UTM-EX50-10**

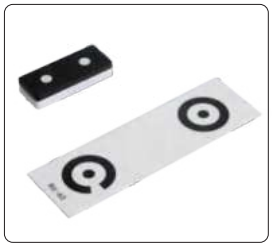
# VIDEO EXTENSOMETERS



software (included)



application



calibration card (included)



UTM-MB1

- Video extensometer is a non-contact, high-precision real-time measurement system, based on vision and image-related algorithms, which realizes real-time measurement of displacement and strain by photographing and analyzing the changes in the image characteristics of the specimen during the loading process. It has the advantages of high precision, wide measurement range, and visualization of the results
- It is used for testing and analyzing the performance of specimens in tension, compression, bending, creep, fatigue, etc. It includes strain (elongation) measurement, tensile/compressive strength measurement, modulus of elasticity measurement and Poisson's ratio measurement
- According to ISO 9513

**SPECIFICATION**

| Code | UTM-MA1 | UTM-MA2 | UTM-MA3 | UTM-MB1 | UTM-MB2 | UTM-MB3 | UTM-MC1 | UTM-MC2 | UTM-MC3 |
|---|---|---|---|---|---|---|---|---|---|
| Accuracy | ±1.5μm or ±0.5% of indicated value | | | ±1.0μm or ±0.5% of indicated value | | | ±0.5μm or ±0.5% of indicated value | | |
| Resolution | 0.1μm | | | | | | | | |
| Range of deformation | standard: 60~100mm<br>extensions: 100~500mm (±1%) | | | standard: 60~150mm<br>extensions: 150~1000mm (±1%) | | | standard: 60~240mm<br>extensions: 240~1500mm (±1%) | | |
| Range of scale | ≤500mm | | | ≤1000mm | | | ≤1500mm | | |
| Number of scales | ≤2 | ≤10 | ≤10 | ≤2 | ≤10 | ≤10 | ≤2 | ≤10 | ≤10 |
| Frame rate | ≤100fps | | | ≤200fps | | | | | |

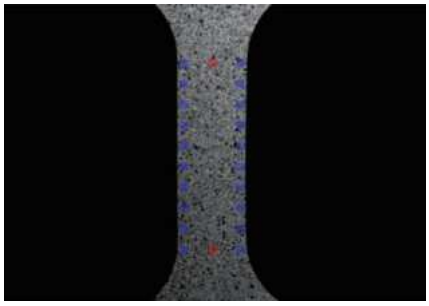
**STANDARD DELIVERY**

| Code | UTM-MA1 | UTM-MA2 | UTM-MA3 | UTM-MB1 | UTM-MB2 | UTM-MB3 | UTM-MC1 | UTM-MC2 | UTM-MC3 |
|---|---|---|---|---|---|---|---|---|---|
| Main unit | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc |
| Computer | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc |
| Control box | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc |
| Tripod | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc |
| Box | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc | 1 pc |
| Video extensometer module | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| 2D-DIC module | | √ | √ | | √ | √ | | √ | √ |
| Video strain module | | | √ | | | √ | | | √ |
| Video displacement module | | | √ | | | √ | | | √ |
| Video angle module | | | √ | | | √ | | | √ |
| Fatigue extensometer module | | | √ | | | √ | | | √ |

To be continued

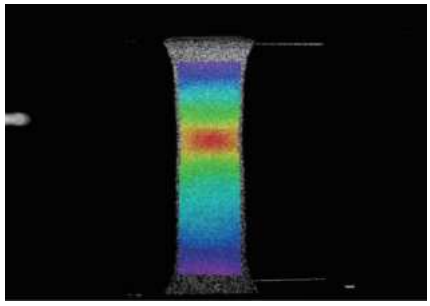
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video extensometer module



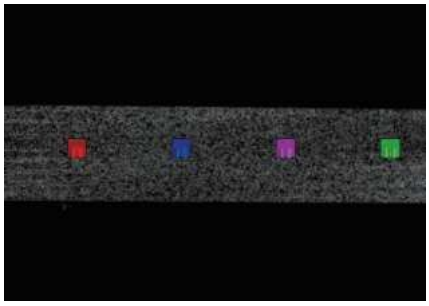
- It is suitable for a wide range of samples, including specimens, parts and machine deformations.
- It can measure different sizes of specimens, customizable from microns to around ten metres.
- It has a wide strain range, customizable from 0.002% to 1000%.
- It has high measurement accuracy and its core algorithms are accurate to sub-pixel level (0.01 pixels).
- Its distance can be customized, it has a wide range of distances to choose from, and the distance within the field of view can be set arbitrarily.
- It enables full-process tracking without downtime and without damaging the measuring device when the sample breaks.
- Its environment is very versatile. It can customize high and low temperature, high pressure, radiation and other scenarios.

2D-DIC module



- It can measure over the entire area, which is equivalent to hundreds of virtual strain gauges.
- It is a single-phase frame, which can effectively save the hardware cost.
- It offers high measurement accuracy, with a maximum strain accuracy of better than 0.002%.
- It can measure specimens of different sizes, from a few millimeters to several meters.
- Its processes are traceable and it is possible to analyse the measurement process repeatedly.
- It is possible to select any measurement area for specific analysis of different areas.

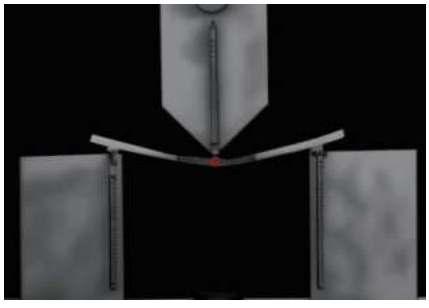
video strain module



- It is a virtual strain gauge, it is non-contact measurement, it does not require a high material surface.
- It is adjustable in size, it can be set to adjust the size of different strain gauges.
- It has a large measuring range, its strain range is 0.002%~1000%.
- It can be used to measure small samples to solve the problem of conventional strain gauges pasting small samples.
- It can measure multiple data, strain X/Y/XY, maximum/small principal strain, etc.
- It can be used in high and low temperatures to replace the traditional strain gauge testing.
- It is very easy to use, no sanding, gluing, processing to use, it does not need to be set up.
- Its test procedure is traceable, and the measurement process can be repeated and analyzed retrospectively.

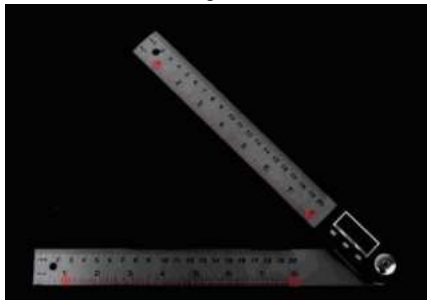


video displacement module



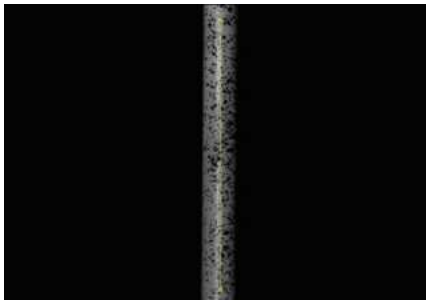
- It is a video sensor that can be adapted to non-contact displacement measurement and monitoring scenarios.
- It is a deflection meter, it can meet the various environments and various scales of deflection testing.
- It is a motion sensor, it can meet the needs of speed and acceleration testing.
- It can test deformable bodies. It is suitable for both rigid and deformable body testing.
- There is no limit to the number of test scenarios it can cover from microns to meters.
- It can perform high-precision testing, it can realize sub-pixel calculation accuracy, it is better than traditional vision.
- It can realize multiple data acquisition, it supports multiple measurement points and displacement X/Y/E test.

video angle module



- It allows for non-contact measurements, it requires no hardware connection to the measuring device, and it is easy to use.
- It can perform dynamic angle measurement, it can provide real-time feedback on the change of angle during dynamic testing.
- It can perform single line angle measurement, it can realize the angle measurement in the dynamic change of single line mechanism.
- It can carry out double line angle measurement, it can realize the angle measurement in the dynamic change of double line angle.
- It can perform linearity measurements, which is used to characterize the linearity of the motion of the mechanism in the dynamic test.

fatigue extensometer module



- It can perform non-contact measurements, it can avoid slipping of the jaws and so on.
- It can perform full-cycle testing, it can be a key to deal with low-week fatigue.
- It can run at high frame rates, and it can collect dozens of times the fatigue cycle.
- It can transmit for a long time, and it can realize stable output of large data.
- It can participate in the control, it can through the data on the test machine for the control of related actions.



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CUSTOM-MADE

# FIXTURES FOR ELECTRONIC UNIVERSAL TESTING MACHINES

- For **UTM-E** series and **UTM-S** series electronic universal testing machines

**UTM-F001**

- Wedge tensile fixture
- For tensile testing of non-metallic materials and thin metal specimens



**UTM-F002**

- Hydraulic tensile fixture
- For tensile testing of metallic materials, round bar specimens



**UTM-F003**

- 10kN wedge tensile fixture
- For tensile testing of metal specimens



**UTM-F004**

- Pneumatic tensile fixture
- For tensile testing of non-metallic material specimens



**UTM-F005**

- Insulation profile longitudinal shearing fixture
- Longitudinal shear test for insulation type materials



**UTM-F006**

- Insulation profile transverse tensile fixture
- For transverse tensile testing of insulation-type materials



**UTM-F007**

- Filament winding fixture
- For tensile testing of data wires, textile fabric wires, plastic wires



**UTM-F008**

- Filament opposite fixture
- For tensile testing of wire specimens



**UTM-F009**

- Pneumatic threadlet tensile fixture
- For tensile testing of non-metallic wire specimens



**UTM-F010**

- Steel wire tensile fixture
- For tensile testing of fine steel wires and iron wires



**UTM-F011**

- Threadlet winding fixture
- For tensile testing of filamentary metal specimens



**UTM-F012**

- Fabric belt winding tensile fixture
- For tensile testing of non-metallic material specimens



**UTM-F013**

- Film tensile fixture
- For tensile testing of paper, film and non-metallic materials



**UTM-F014**

- Film tensile fixture
- For tensile testing of paper, film and non-metallic materials



**UTM-F015**

- Thin film opposite fixture
- For tensile testing of paper, film and non-metallic materials



To be continued

Continued from previous page

**UTM-F016**

- Thin plate opposite fixture
- For tensile testing of thin plates of non-metallic materials



**UTM-F017**

- Annule tensile fixture
- For tensile testing of non-metallic annular material specimens



**UTM-F018**

- Adhesive tensile shearing fixture
- For tensile shear testing of different adhesive specimens



**UTM-F019**

- Surface bonding strength fixture
- Tensile testing for adhesive properties



**UTM-F020**

- Leverage tensile fixture
- For tensile testing of rubber, silicone and other elastomers



**UTM-F021**

- Rubber tensile fixture
- Specialized for tensile testing of rubber material specimens



**UTM-F022**

- 90° rubber peel fixture
- Peel test for adhesion of rubber materials



**UTM-F023**

- PCB plate 90° peel fixture
- Peel-off test for adhesion of sticky materials on PCBs



**UTM-F024**

- Plastic bending fixture
- Specialized for flexural testing of plastic specimens



**UTM-F025**

- Three-point bending fixture
- For bending test of various material specimens



**UTM-F026**

- Waving fxiture
- For tensile testing of non-metallic specimens



**UTM-F027**

- Butt fixture
- For tensile testing of different materials



**UTM-F028**

- Shear fixture
- For shear testing of different materials



**UTM-F029**

- Ceramic shearing fixture
- Specialized for shear testing of ceramic materials



**UTM-F030**

- Compressive fixture
- For compression testing of different materials



**UTM-F031**

- Puncture fixture
- For film puncture testing



# IMPACT TESTING MACHINES

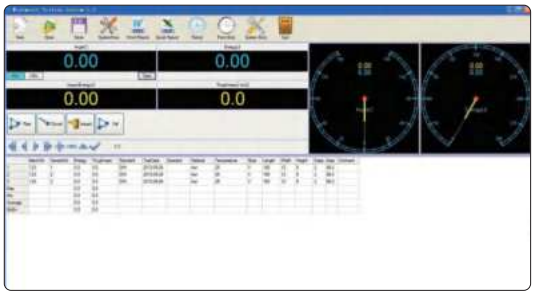
VIDEO



ITM-S300J



low-temperature chamber (**optional**)



software (included)



- According to GB/T 3808, GB/T 229, JJG 145, ASTM E23 (with American standard blade), ISO 148.1, ISO 148.2, ISO 148.3, ISO R83
- For testing the anti-impact performance of metal materials under dynamic load
- Capable of performing metal impact tests in large quantities on a continuous basis

**SPECIFICATION**

| Code | ITM-S150J | ITM-S300J | ITM-S450J | ITM-S600J | ITM-S750J |
|---|---|---|---|---|---|
| Impact energy | 150J | 300J | 450J | 600J | 750J |
| Dial range | 0~150J | 0~300J | 0~450J | 0~600J | 0~750J |
| Dial graduation | 1J | 2J | 3J | 4J | 5J |
| Pendulum moment | M=80.3848N·m | M=160.7695N·m | M=241.1543N·m | M=321.5390N·m | M=401.9238N·m |
| Pendulum preparing angle | 150° | | | | |
| Distance between pendulum shaft center and specimen center | 750mm | | | | |
| Impact speed | 5.24m/s | | | | |
| Span of specimen seat | 40mm | | | | |
| End face radius of specimen seat | R (1.0~1.5)mm | | | | |
| Radius of impact blade | R (2.0~2.5)mm | | | | |
| Inclination angle of support surface of specimen seat | 11°±1° | | | | |
| Angle of impact blade | 30°±1° | | | | |
| Thickness of impact blade | 16mm | | | | |
| Range of measuring angle | 0~360° | | | | |
| Angle resolution | ≤0.06° | | | | |
| Specimen size | 10×10×55mm | | | | |
| Base size | 800×500mm | | 960×650mm | | |
| Dimension of main body | 2050×690×2015mm | | 2100×835×2200mm | | |
| Weight | 450kg | | 900kg | | |
| Power supply | AC 380V, 3Ø, 50Hz | | | | |
| Power | 400W | | 1.5kW | | |

To be continued

Continued from previous page

## SPECIFICATION OF LOW-TEMPERATURE CHAMBER (OPTIONAL)

| Code | ITM-S-40 | ITM-S-60 | ITM-S-80 | ITM-S-80S | ITM-S-100 | ITM-S-196* |
|---|---|---|---|---|---|---|
| Range of temperature | room temperature ~-40°C | room temperature ~-60°C | room temperature ~-80°C | room temperature ~-80°C | room temperature ~-100°C | -20°C~-196°C |
| Accuracy of temperature control | ±0.5°C | | | | | ±2°C |
| Evenness | ≤1.0°C | | | | | ≤2.0°C |
| Resolution | 0.1°C | | | | | 0.1°C |
| Method of refrigeration | compressor refrigeration | | | | | liquid nitrogen refrigeration |
| Cooling medium | ethanol or other unfrozen liquid | | | | | liquid nitrogen |
| Number of specimen | ≥60 pcs | | | | | |
| Cooling speed | +25°C~0°C about 1.5°C/min, 0°C~-20°C about 1.2°C/min, -20°C~-40°C about 1.0°C/min | +25°C~0°C about 1.8°C/min, 0°C~-20°C about 1.5°C/min, -20°C~-40°C about 1.3˚C/min, -40°C~-60°C about 1.0°C/min | +25°C~0°C about 1.5°C/min, 0°C~-20°C about 1.3°C/min, -20°C~-60°C about 1.0°C/min, -60°C~-80°C about 0.8°C/min | | +25°C~0°C about 2.0°C/min, 0°C~-40°C about 1.5°C/min, -40°C~-80°C about 1.3°C/min, -80°C~-100°C about 0.8°C/min | 1˚C~-3˚C |
| Heating speed | 3°C/min | | | | | |
| Timekeeping device | 1min~9999min, resolution: 1min | | | | | |
| Volume of refrigeration room (W×D×H) | 275×160×120mm | | | | | |
| Effective volume of refrigeration room (W×D×H) | 150×140×110mm | | | | | |
| External dimension (W×D×H) | 910×510×920mm | | | 755×555 ×950mm | 1105×705 ×1110mm | 710×600 ×740mm |
| Material of the case | Iron shell spraying moulding | | | stainless steels | Iron shell spraying moulding | stainless steels |
| Power supply | AC220V, 3Ø, 50Hz, 1.8kW | AC220V,3Ø, 50Hz, 2.3kW | AC220V, 3Ø, 50Hz, 2.5kW | AC220V, 3Ø, 50Hz, 2.5kW | AC 220V, 3Ø, 50Hz, 3.0kW | AC 220V, 3Ø, 50Hz, 100W |

*For test >-20°C, **ITM-T80** is recommended

## STANDARD DELIVERY

| | | |
|---|---|---|
| Main unit | | 1 pc |
| Control cabinet | | 1 pc |
| Simply supported beam fixture (including jaws, anvil) | | 1 set |
| Pendulum | ITM-S150J | 150J pendulum |
| | ITM-S300J | 300J pendulum and 150J pendulum |
| | ITM-S450J | 450J pendulum and 150J pendulum |
| | ITM-S600J | 600J pendulum and 150J pendulum |
| | ITM-S750J | 750J pendulum and 150J pendulum |
| Span aligner | | 1 pc |
| Tongs | | 1 pc |
| Safety cover | | 1 set |
| Software | | 1 set |
| Computer | | 1 pc |
| Printer | | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Workbench | 7911-15 |
| 150J pendulum | ITM-S-PE150J |
| 300J pendulum | ITM-S-PE300J |
| 450J pendulum | ITM-S-PE450J |
| 600J pendulum | ITM-S-PE600J |
| 750J pendulum | ITM-S-PE750J |
| ASTM standard impact blade | ITM-S-ASTM-IB |
| Sample recovery device | ITM-S-RD |
| Digital display screen | ITM-S-DDS |
| Impact specimen notch projector (GB/T 229, ASTM E23) | ITM-S-1 |
| Low-temperature chamber | ITM-S-40 |
| | ITM-S-60 |
| | ITM-S-80 |
| | ITM-S-80S |
| | ITM-S-100 |
| | ITM-S-196 |
| Impact specimen notch broaching machine (double broaches) | ITM-U32 |
| Impact standard sample | ITM-BR series |

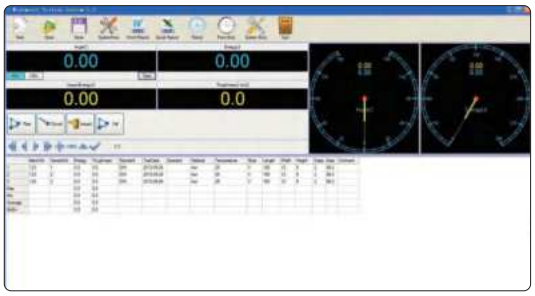
# LOW TEMPERATURE AUTOMATIC IMPACT TESTING MACHINES

VIDEO



ITM-T300J

software (included)





sample feeding and positioning device (included)



low-temperature chamber (**optional**)

- According to GB/T 3808, GB/T 229, JJG 145, ASTM E23 (with American standard blade), ISO 148.1, ISO 148.2, ISO 148.3, ISO R83
- For testing the anti-impact performance of metal materials under dynamic load
- Capable of performing metal impact tests in large quantities on a continuous basis
- Automatic sample feeding and positioning



**SPECIFICATION**

| Code | ITM-T150J | ITM-T300J | ITM-T450J | ITM-T600J | ITM-T750J |
|---|---|---|---|---|---|
| Impact energy | 150J | 300J | 450J | 600J | 750J |
| Dial range | 0~150J | 0~300J | 0~450J | 0~600J | 0~750J |
| Dial graduation | 1J | 2J | 3J | 4J | 5J |
| Pendulum moment | M=80.3848N·m | M=160.7695N·m | M=241.1543N·m | M=321.5390N·m | M=401.9238N·m |
| Pendulum preparing angle | 150° | | | | |
| Distance between pendulum shaft center and specimen center | 750mm | | | | |
| Impact speed | 5.24m/s | | | | |
| Span of specimen seat | 40mm | | | | |
| End face radius of specimen seat | R (1.0~1.5)mm | | | | |
| Radius of impact blade | R (2.0~2.5)mm | | | | |
| Inclination angle of support surface of specimen seat | 11°±1° | | | | |
| Angle of impact blade | 30°±1° | | | | |
| Thickness of impact blade | 16mm | | | | |
| Range of measuring angle | 0~360° | | | | |
| Angle resolution | ≤0.06° | | | | |
| Specimen size | 10×10×55mm | | | | |
| Base size | 960×650mm | | | | |
| Dimension of main body | 2100×835×2200mm | | | | |
| Weight | 900kg | | | | |
| Power supply | AC380V, 3Ø, 50Hz | | | | |
| Power | 1.5kW | | | | |

To be continued

Continued from previous page

### SPECIFICATION OF LOW-TEMPERATURE CHAMBER (OPTIONAL)

| Code | ITM-T-60 | ITM-T-180 | ITM-T-196 |
|---|---|---|---|
| Range of temperature | room temperature~-60°C | -20°C~-180°C | room temperature~-196°C |
| Accuracy of temperature control | ±0.5°C | ±2°C | room temperature~-80°C: ±0.5°C,<br>-80°C~-196°C: ±2°C |
| Evenness | ≤1.0°C | ≤2.0°C | room temperature~-80°C: ≤1.0°C,<br>-80°C~-196°C: ≤2.0°C |
| Resolution | 0.1°C | 0.1°C | room temperature~-80°C: 0.1°C,<br>-80°C~-196°C: 0.1°C |
| Method of refrigeration | compressor refrigeration | liquid nitrogen refrigeration | room temperature~-80°C:<br>compressor refrigeration<br>-80°C~-196°C:<br>liquid nitrogen refrigeration |
| Cooling medium | ethanol or other unfrozen liquid | liquid nitrogen | room temperature~-80°C:<br>compressor refrigeration<br>-80°C~-196°C:<br>liquid nitrogen refrigeration |
| Cooling speed | +25°C~0°C, about 1.8°C/min<br>0°C~-20°C, about 1.5°C/min<br>-20°C~-40°C, about 1.3°C/min<br>-40°C~-60°C, about 1.0°C/min | 1°C~-3°C | +25°C~0°C, about 2.0°C/min<br>0°C~-40°C, about 1.5°C/min<br>-40°C~-80°C, about 1.3°C/min<br>-80°C~-196°C, 1°C~-3°C |
| Heating speed | 3°C/min | | |
| Timekeeping device | 1min~999min, resolution: 1min | | |



### STANDARD DELIVERY

| | | |
|---|---|---|
| Main unit | | 1 pc |
| Control cabinet | | 1 pc |
| Digital display screen | | 1 pc |
| Sample feeding and positioning device | | 1 pc |
| Sample recovery device | | 1 pc |
| Simply supported beam fixture (including jaws, anvil) | | 1 set |
| Pendulum | ITM-T150J | 150J pendulum |
| | ITM-T300J | 300J pendulum and 150J pendulum |
| | ITM-T450J | 450J pendulum and 150J pendulum |
| | ITM-T600J | 600J pendulum and 150J pendulum |
| | ITM-T750J | 750J pendulum and 150J pendulum |
| Span aligner | | 1 pc |
| Tongs | | 1 pc |
| Safety cover | | 1 set |
| Software | | 1 set |
| Computer | | 1 pc |
| Printer | | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| 150J pendulum | ITM-T-PE150J |
| 300J pendulum | ITM-T-PE300J |
| 450J pendulum | ITM-T-PE450J |
| 600J pendulum | ITM-T-PE600J |
| 750J pendulum | ITM-T-PE750J |
| ASTM standard impact blade | ITM-T-1 |
| Impact specimen notch projector (GB/T 229, ASTM E23) | ITM-T-2 |
| Low-temperature chamber | ITM-T-60, ITM-T-180, ITM-T-196 |
| Workbench | 7911-15 |
| Impact specimen notch broaching machine (double broaches) | ITM-U32 |
| Impact standard sample | ITM-BR series |



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INSPECTION CERTIFICATE

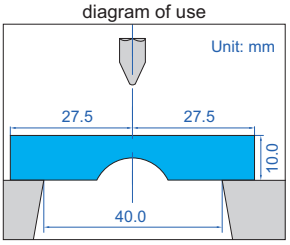
# IMPACT STANDARD SAMPLES



arc standard samples

- It can avoid the defects of the direct test method that cannot accurately evaluate the measurement accuracy of the impact testing machine
- It can comprehensively verify the measurement characteristics of the impact test machine
- It can quantitatively verify the accuracy of the measured value of the impact testing machine
- Ability to evaluate the uncertainty of the test machine
- It has two specifications, national standard R2 and American standard R8, with a size of 55×10×10mm
- Supplied with manufacturer inspection certificate

diagram of use






**SPECIFICATION**

| Code | Type of notch | Energy level | Impact blade (mm) | Impact value* | Application temperature |
|---|---|---|---|---|---|
| **ITM-BR1** | arc notch | low: L | R2 | 28.6J | normal temperature |
| **ITM-BR2** | arc notch | medium: M | R2 | 81.9J | normal temperature |
| **ITM-BR3** | arc notch | high: H | R2 | 127J | normal temperature |
| **ITM-BR5** | arc notch | ultra-high: UH | R2 | 232J | normal temperature |
| **ITM-BR6** | arc notch | low: L | R8 | 29.6J | normal temperature |
| **ITM-BR7** | arc notch | medium: M | R8 | 93J | normal temperature |
| **ITM-BR8** | arc notch | high: H | R8 | 142J | normal temperature |
| **ITM-BR10** | arc notch | ultra-high: UH | R8 | 266J | normal temperature |
| **ITM-BR11** | V-notch | low: L | R2 | 20.7J | normal temperature |
| **ITM-BR12** | V-notch | medium: M | R2 | 107.8J | normal temperature |
| **ITM-BR13** | V-notch | high: H | R2 | 155.9J | normal temperature |
| **ITM-BR14** | V-notch | low: L | R8 | 13.6J | normal temperature |
| **ITM-BR15** | V-notch | medium: M | R8 | 106.1J | normal temperature |
| **ITM-BR16** | V-notch | high: H | R8 | 160J | normal temperature |
| **ITM-BR17** | V-notch | low: L | R2 | 28.6J | -30°C±1°C |
| **ITM-BR18** | V-notch | medium: M | R2 | 81.9J | -30°C±1°C |
| **ITM-BR19** | V-notch | high: H | R2 | 127J | -30°C±1°C |
| **ITM-BR20** | V-notch | low: L | R8 | 29.6J | -30°C±1°C |
| **ITM-BR21** | V-notch | medium: M | R8 | 93J | -30°C±1°C |
| **ITM-BR22** | V-notch | high: H | R8 | 142J | -30°C±1°C |

*The actual value may be slightly different when delivered, please refer to the manufacturer inspection certificate

# IMPACT SPECIMEN NOTCH BROACHING MACHINE (DOUBLE BROACHES) CODE ITM-U32

VIDEO

- Conforms with ISO 148, ISO 83 and EN 10045 standards
- One-time broaching forming, hydraulic transmission, special internal lubrication device to avoid damage of the broaches
- Dual-station broach, two specimen notches can be processed at the same time



raised broaches



lowered broaches



ITM-U32

**SPECIFICATION**

| | |
|---|---|
| **Broach stroke** | 350mm (V2, U2, U3 broaches)<br>400mm (U5 broach) |
| **Specimen size (T×W×L)** | 10×10×55mm |
| **Broaching speed** | 0.35-2.5m/min |
| **Driving method** | hydraulic |
| **Power supply** | 380V, 50Hz, 0.4kW |
| **Dimension** | 660×400×1200mm |
| **Weight** | 200kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Broach** | U2 and V2 |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **U3 broach** | **ITM-U32-U3** |
| **U5 broach** | **ITM-U32-U5** |

# IMPACT BROACHES

VIDEO

- The broach is made of special material and special process, with high hardness, good wear resistance and long service life
- The processed V-notch and U-notch (2mm) can meet the relevant national standards of GB/T229-2007
- The processing consistency is excellent, which can ensure that the sample is qualified



ITM-UV2

**SPECIFICATION**

| Code | Type of blade | Depth of notch | Radius of bottom | Material | Hardness of material to be cutted |
|---|---|---|---|---|---|
| **ITM-UV1*** | V-shaped | 2mm | 0.25mm | $W_{18}Cr_4V$ | Below 42HRC |
| **ITM-UV2*** | U-shaped | 2mm | 1mm | $W_{18}Cr_4V$ | Below 42HRC |
| **ITM-UV3**** | U-shaped | 3mm | 1mm | – | – |
| **ITM-UV4**** | U-shaped | 5mm | 1mm | – | – |

*Hardness of **ITM-UV1** and **ITM-UV2** blade can be customized for special requirements

**ITM-UV3** and **ITM-UV4** need to be customized

VIDEO

# FRICTION AND WEAR TESTING MACHINE
# CODE STM-C1

- According to NB/SH/T 0189, ASTM D3702, ASTM G99
- The friction simulation test between different friction parts can be realised under various conditions such as changing temperature, load, speed, friction part material, friction part surface roughness, hardness and lubrication status (oil-free lubrication, oil-drip lubrication or oil-immersion lubrication)
- The machine can simulate rolling, sliding and rolling-sliding compound motion friction form, with a variety of friction sub, such as pin disc (with a large disc and small disc, single needle and three needle) friction sub, four ball friction sub, thrust ring, ball disc and so on
- The machine can complete a variety of point, line and surface friction simulation experiments, can be used to evaluate the lubricant, metal, paint, coatings, rubber, ceramics and other materials friction and wear performance



STM-C1



## SPECIFICATION

| | |
|---|---|
| Maximum axial test force | 1000N |
| Accuracy of axial force | ±1% |
| Load rate of axial test force | 400N/min |
| Retention capacity of axial test force | ±1% |
| Range of friction sensor | 200N |
| Length of friction arm | 50mm |
| Maximum friction torque | 2.5N·m |
| Accuracy friction torque | ±2% |
| Range of spindle speed | 5~2000r/min |
| Accuracy of spindle speed | ±1% |
| Taper of tester spindle | 1:7 |
| Maximum distance between spindle and lower sub-disc | >75mm |
| Timekeeping device | 10s~9999min |
| Range of RPM counter | (1~99)×$10^5$ times |
| Dimension of main body | 860×740×1560mm |
| Weight | 550kg |
| Power supply | AC 220V, 50Hz |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Pin and disc friction vice | 1 set |
| Computer | 1 pc |
| Printer | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Ball and disc friction vice | STM-CF1 |
| Disc and disc friction vice | STM-CF2 |
| Tube heater | STM-CF3 |
| Special accessories | customized |

# FRICTION/PEEL TESTERS

VIDEO



**STM-A10**

- According to GB/T 10006, GB/T 2790, GB/T 2791, GB/T 2792, ISO 8295, ISO 8510-2, ASTM D1894, ASTM D4917
- Suitable for plastic film, foil, paper, cardboard, fabrics, communication cables and cables with metal materials composite belt, conveyor belt, paper and other related materials, dynamic and static coefficient of friction and adhesive composite products, medical patches, paper, protective film and other products, peel strength determination
- Seven-inch industrial touch screen, man-machine interface stylish, convenient
- Wide-range, high-precision temperature control device easily realises testing of specimens at different temperatures
- Infinitely variable speed, multi-speed adjustable, to meet the different needs of customers
- The standard test bench and test slider are demagnetised and tested for residual magnetism, effectively reducing systematic testing errors
- The system is controlled by a computer and a microprocessor, making it easy for the user to carry out the test quickly
- Equipped with USB interface, professional measurement and control software, you can control the instrument through the software to complete the test



slider (200g) (included)



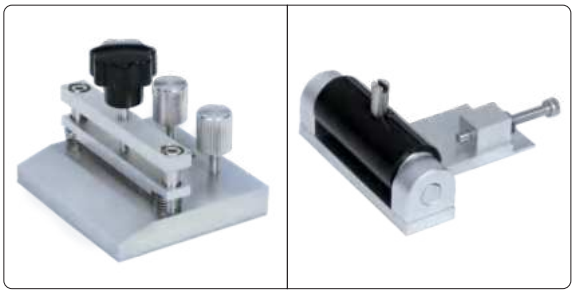
connector (included)



weight (300g) (included)



retainer block (included)



peel fixture (included)

## SPECIFICATION

| Code | STM-A05 | STM-A10 | STM-A30 |
|---|---|---|---|
| Max. test force | 5N | 10N | 30N |
| Accuracy of test force | ±0.5% | | |
| Resolution of test force | 0.001N | | |
| Range of test force | 0.5%~100%FS | | |
| Range of speed adjustment | 1~600mm/min | | |
| Weight of slider | 200g | | |
| Dimension (W×D×H) | 850×350×290mm | | |
| Weight | 30kg | | |
| Power supply | AC 220V, 50Hz | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Slider (200g) | 1 pc |
| Connector | 1 pc |
| Weight (300g) | 1 pc |
| Retainer block | 1 pc |
| Peel fixture | 1 set |
| Ø6 polyurethane tube (5m) | 1 pc |
| Fuse | 3 pcs |
| Test board (50×125mm) | 3 pcs |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| Professional software* | | STM-AF1 |
| Communication cable | | STM-AF2 |
| Standard press roller | | STM-AF3 |
| Slider (100g) | | STM-AF4 |
| Weight (800g) | | STM-AF5 |
| Weight (1614g) | | STM-AF6 |
| Weight (1800g) | | STM-AF7 |
| Test board (40×180mm) | | STM-AF8 |
| Stainless steel sampling knives | 10mm | STM-AF9 |
| | 15mm | STM-AF10 |
| | 20mm | STM-AF11 |
| | 25mm | STM-AF12 |
| | 25.4mm | STM-AF13 |
| Stainless steel sampling blade (10pcs) | | STM-AF14 |
| Non-standard fixture | | customized, selection of specifications according to test requirements |

***STM-AF2** is required when purchasing **STM-AF1**

VIDEO

# PNEUMATIC KEY LIFE TESTER
# CODE STM-B1



STM-B1



- Suitable for the life fatigue test of different types of keys such as computer keyboards, mice, mobile phones, calculators, e-books, electronic dictionaries, gamepads, remote controls, conductive rubber keys, and so on
- Multiple products can be tested at the same time, and each product can be tested with multiple points
- Individual switch for each probe
- Alarm at end of test and conductive failure

## SPECIFICATION

| | |
|---|---|
| **Test stroke*** | 30mm |
| **Lifting range of working table*** | 0~300mm |
| **Number of probes*** | 40 pcs |
| **Pressure*** | 100~1000g (controlled by adjusting air pressure) |
| **Minimum distance between two probes of X axis*** | 15mm |
| **Minimum distance between two probes of Y axis*** | 40mm |
| **Duration of upward stay** | 0.1~99.9s |
| **Duration of downward stay** | 0.1~99.9s |
| **Number of tests** | 999999999 times |
| **Dimension of main body** | 600×530×1200mm |
| **Weight** | 110kg |
| **Power supply** | AC 110~220V, 50/60Hz |

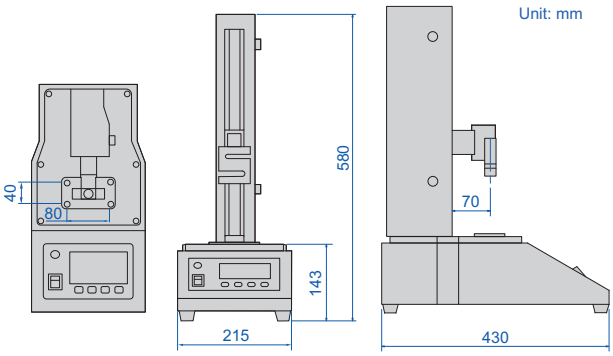
*Customizable

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Plastic air tube** | 1 pc |

# ELECTRONIC TENSILE AND COMPRESSION TESTING MACHINES

VIDEO






**UTM-SC1000**



compression fixture (included)



tensile fixture (included)

- Suitable for tensile, peeling and tearing tests of metal wires, metal foils, plastics, food packaging, textile fibres, wires and cables, adhesives, connectors and other industries
- Fixed force test, fixed displacement test, fixed deformation test and cycle test can be realised
- Automatically obtain the maximum force, tensile strength, compressive strength, elongation at break, average peeling strength, average peeling force and other test data
- Overload emergency shutdown protection device, up and down travel limit protection device
- Leakage automatic power-off system, automatic breakpoint stop function

test interface



**SPECIFICATION**

| Code | UTM-SC100 | UTM-SC200 | UTM-SC500 | UTM-SC1000 |
|---|---|---|---|---|
| Max. test force | 100N | 200N | 500N | 1000N |
| Accuracy class | class 0.5 | | | |
| Test force measurement range | 0.4%~100%FS | | | |
| Test force measurement accuracy | ±0.5% of indicating value | | | |
| Test force measurement resolution | 0.01N | | | |
| Deformation measurement range | 0.2%~100%FS | | | |
| Deformation measurement accuracy | ±0.5% of indicating value | | | |
| Deformation measurement resolution | 0.001mm | | | |
| Displacement range * | 0~300mm | | | |
| Displacement accuracy | ±0.5% of indicating value | | | |
| Displacement resolution | 0.001mm | | | |
| Displacement speed adjustment range | 0.1~500mm/min | | | |
| Effective tensile travel * | 150mm | | | |
| Power supply | AC110~220V, 50/60Hz | | | |
| Dimension | 430×215×580mm | | | |
| Weight | 15kg | | | |

*Can be customized according to test requirements

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Tensile fixture | 1 set |
| Compression fixture | 1 set |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Fixture | customized, selection of specifications according to test requirements |



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VIDEO

DATA OUTPUT

# DIGITAL SPRING TESTERS

- Peak hold and automatic release function
- Set upper and lower limits, red and green indicator and buzzer alarm
- Automatic conversion of three units: N, kgf, lbf
- Built in printer
- Automatic power off



ISF-S10



ISF-S500



ISF-S1000



## SPECIFICATION

| Code | ISF-S10 | ISF-S20 | ISF-S30 | ISF-S50 | ISF-S100 | ISF-S200 |
|---|---|---|---|---|---|---|
| Maximum load | 10N | 20N | 30N | 50N | 100N | 200N |
| Resolution | 0.001N | 0.002N | 0.01N | 0.01N | 0.02N | 0.05N |
| Range of digital scale | 65mm | 65mm | 65mm | 95mm | 95mm | 95mm |
| Resolution of digital scale | 0.01mm | 0.01mm | 0.01mm | 0.01mm | 0.01mm | 0.01mm |
| Disk diameter | Ø30mm | Ø30mm | Ø30mm | Ø49mm | Ø49mm | Ø49mm |
| Maximum free length of spring | 65mm | 65mm | 65mm | 95mm | 95mm | 95mm |
| Measuring range of force | 5%~100% (maximum load) | | | | | |
| Accuracy of force | ±1% (maximum load) | | | | | |
| Data output | RS232 | | | | | |
| Power supply | 220V, 50/60Hz | | | | | |
| Dimension | 300×235×600mm | 300×235×600mm | 300×235×600mm | 300×235×620mm | 300×235×620mm | 300×235×620mm |
| Weight | 13.2kg | 13.2kg | 13.2kg | 17.3kg | 19.1kg | 19.1kg |

| Code | ISF-S300 | ISF-S500 | ISF-S1000 | ISF-S2000 | ISF-S5000 |
|---|---|---|---|---|---|
| Maximum load | 300N | 500N | 1000N | 2000N | 5000N |
| Resolution | 0.1N | 0.1N | 0.2N | 0.5N | 1N |
| Range of digital scale | 95mm | 95mm | 150mm | 150mm | 150mm |
| Resolution of digital scale | 0.01mm | 0.01mm | 0.01mm | 0.01mm | 0.01mm |
| Disk diameter | Ø49mm | Ø49mm | Ø108mm | Ø108mm | Ø108mm |
| Maximum free length of spring | 95mm | 95mm | 200mm | 200mm | 200mm |
| Measuring range of force | 5%~100% (maximum load) | | | | |
| Accuracy of force | ±1% (maximum load) | | | | |
| Data output | RS232 | | | | |
| Power supply | 220V, 50/60Hz | | | | |
| Dimension | 300×235×620mm | 300×235×620mm | 490×300×920mm | 490×300×920mm | 490×300×920mm |
| Weight | 19.1kg | 20.8kg | 47.5kg | 47.5kg | 47.5kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |



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# DIGITAL FORCE GAUGES (HIGH ACCURACY)

DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO



software flash disk (included)

printer (**optional**)






**ISF-DF100A**
**type A**




**ISF-DF5KA**
**type B**



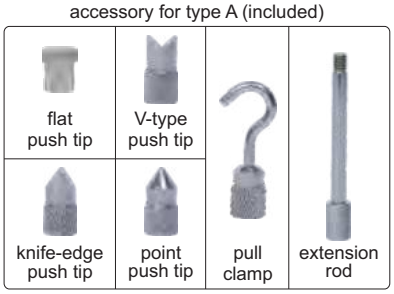

**ISF-DF10KC**
**type C**

- Type A and B can be used for tension and pressure tests, type C is only used for pressure tests
- Peak (max.) and tracking mode
- Units for type A: mN, N, gf, kgf, ozf, lbf,
  type B: N, kgf, lbf, kN, MPa,
  type C: N, kgf, lbf, kN, tf, MPa
- Tolerance testing
- 1000 memories
- Automatic power off
- Metal case, touch buttons
- LCD display with backlight
- The display flips over when the bottom faces up
- Overload alarm
- Keyboard signal, can be transmitted to Excel

accessory for type B (included)




accessory for type A (included)






## SPECIFICATION

| Code | ISF-DF5A | ISF-DF10A | ISF-DF20A | ISF-DF50A | ISF-DF100A | ISF-DF200A | ISF-DF500A | ISF-DF1KA |
|---|---|---|---|---|---|---|---|---|
| Type | A (internal sensor) | | | | | | | |
| Load capacity (N) | 5 | 10 | 20 | 50 | 100 | 200 | 500 | 1000 |
| Resolution (N) | 0.0005 | 0.001 | 0.005 | 0.005 | 0.01 | 0.05 | 0.05 | 0.1 |
| Accuracy | ±0.2% (of load capacity) | | | | | | | |
| Power supply | built-in rechargeable battery | | | | | | | |

| Code | ISF-DF1KB | ISF-DF2KA | ISF-DF5KA | ISF-DF10KA | ISF-DF20KA |
|---|---|---|---|---|---|
| Type | B (external sensor) | | | | |
| Load capacity (N) | 1000 | 2000 | 5000 | 10000 | 20000 |
| Resolution (N) | 0.1 | 0.5 | 0.5 | 1 | 5 |
| Accuracy | ±0.2% (of load capacity) | | | | |
| Power supply | built-in rechargeable battery | | | | |

| Code | ISF-DF10KC | ISF-DF20KC | ISF-DF50KC | ISF-DF100KC | ISF-DF200KC |
|---|---|---|---|---|---|
| Type | C (external sensor) | | | | |
| Load capacity (kN) | 10 | 20 | 50 | 100 | 200 |
| Resolution (kN) | 0.001 | 0.005 | 0.005 | 0.01 | 0.05 |
| Accuracy | ±0.2% (of load capacity) | | | | |
| Power supply | built-in rechargeable battery | | | | |

## STANDARD DELIVERY

| | | |
|---|---|---|
| Main unit | | 1 pc |
| AC/DC adapter | | 1 pc |
| Software and USB cable | | 1 pc |
| Push/pull accessory | type A | 6 pcs (flat push tip, V-type push tip, knife-edge push tip, point push tip, pull clamp, extension rod) |
| | type B | 4 pcs (flat push tip, adapter, pull clamps) |

## OPTIONAL ACCESSORY

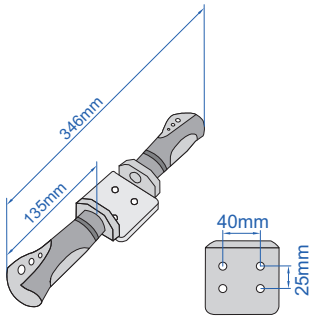
| | |
|---|---|
| Printer | ISF-DF-PRINTER |
| Test stand | ISF-MT1K |



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## FORCE GAUGE HANDLES
## CODE ISF-DFAT1






- For digital force gauges (code **ISF-DF□□□**)
- Push and pull test
- Maximum range 1000N

push test with single handle



pull test with two handles



**STANDARD DELIVERY**

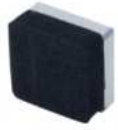
| | |
|---|---|
| **Handle** | 2 pcs |
| **Base** | 1 pc |



## SOFT PROBES FOR HUMAN BODY



**ISF-DFAT2-C1**



**ISF-DFAT2-C2**



**ISF-DFAT2-C3**



**ISF-DFAT2-C4**

- To measure muscle force
- For press test with digital force gauges (code **ISF-DF□□□**) and force gauge handles (code **ISF-DFAT1**)
- Maximum range 1000N

application



| Code | Specification |
|---|---|
| **ISF-DFAT2-C1** | rectangle, 90×25mm, M6 |
| **ISF-DFAT2-C2** | square, 25×25mm, M6 |
| **ISF-DFAT2-C3** | arc-shaped, 90×25mm, R80mm, M6 |
| **ISF-DFAT2-C4** | M6 |

# DIGITAL FORCE GAUGES

POPULAR MODEL | VIDEO | DATA OUTPUT | INSPECTION CERTIFICATE



software flash disk (included)

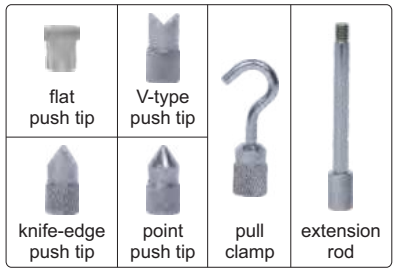


**ISF-1DF100**

printer (**optional**)



accessory (included)




- Push and pull test
- Units: N, gf, kgf, ozf, lbf
- 500 memories
- Automatic power off
- Metal case
- LCD display with backlight
- The display flips over when the bottom faces up
- Overload alarm

**SPECIFICATION**

| Code | ISF-1DF10 | ISF-1DF50 | ISF-1DF100 | ISF-1DF500 | ISF-1DF1000 |
|---|---|---|---|---|---|
| Load capacity (N) | 10 | 50 | 100 | 500 | 1000 |
| Resolution (N) | 0.01 | 0.01 | 0.1 | 0.1 | 1 |
| Accuracy | ±0.3% (of load capacity) | | | | |
| Measuring mode | tracking, peak (max.), tolerance testing | | | | |
| Power supply | built-in rechargeable battery | | | | |
| Dimension | 150×73×33mm | | | | |
| Weight | 450g | | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| AC/DC adapter | 1 pc |
| Software and USB cable | 1 pc |
| Push/pull accessory | 6 pcs (flat push tip, V-type push tip, knife-edge push tip, point push tip, pull clamp, extension rod) |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Printer | ISF-DF-PRINTER |
| Test stand | ISF-MT1K |

# TEST STAND FOR DIGITAL FORCE GAUGES CODE ISF-MT1K

VIDEO

- For digital force gauges (code **ISF-1DF□□□** and **ISF-DF□□□**)
- To be used in vertical and horizontal orientation



**force gauge is optional**



digital scale (**optional**)



horizontal orientation test

**SPECIFICATION**

| | |
|---|---|
| Load capacity | 1000N |
| Travel | 200mm (3mm vertical movement per revolution of handwheel) |
| Dimension | 196×250×446mm |
| Weight | 13kg |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Digital scale (range: 200mm, resolution: 0.01mm/0.0005") | ISF-MT1K-SCALE |



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# FORCE GAUGES

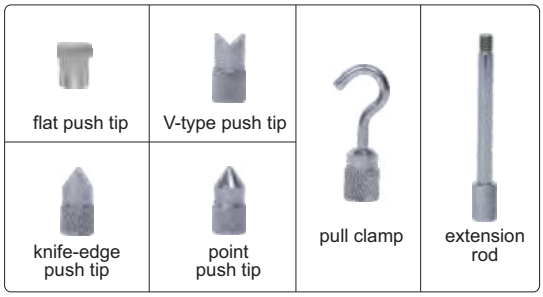
VIDEO



ISF-F500

- Push and pull test
- Peak (max.) or tracking mode

accessory (included)




**SPECIFICATION**

| Code | | ISF-F10 | ISF-F20 | ISF-F30 | ISF-F50 | ISF-F100 | ISF-F200 | ISF-F300 | ISF-F500 |
|---|---|---|---|---|---|---|---|---|---|
| Capacity | N | 10 | 20 | 30 | 50 | 100 | 200 | 300 | 500 |
| | kgf | 1 | 2 | 3 | 5 | 10 | 20 | 30 | 50 |
| Graduation | N | 0.05 | 0.1 | 0.2 | 0.25 | 0.5 | 1 | 2 | 2.5 |
| Accuracy | | ±1% (of load capacity) | | | | | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Push tip | 4 pcs (flat, V-type, knife-edge, point) |
| Pull clamp | 1 pc |
| Extension rod | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Test stand | ISF-MT500 |



VIDEO

# TEST STAND FOR FORCE GAUGE CODE ISF-MT500

- For force gauges (code **ISF-F□□□**)
- To be used in vertical and horizontal orientation



**force gauge is optional**

**SPECIFICATION**

| | |
|---|---|
| Load capacity | 500N |
| Travel | 150mm (3mm vertical movement per revolution of handwheel) |
| Dimension | 160×240×460mm |
| Weight | 12kg |

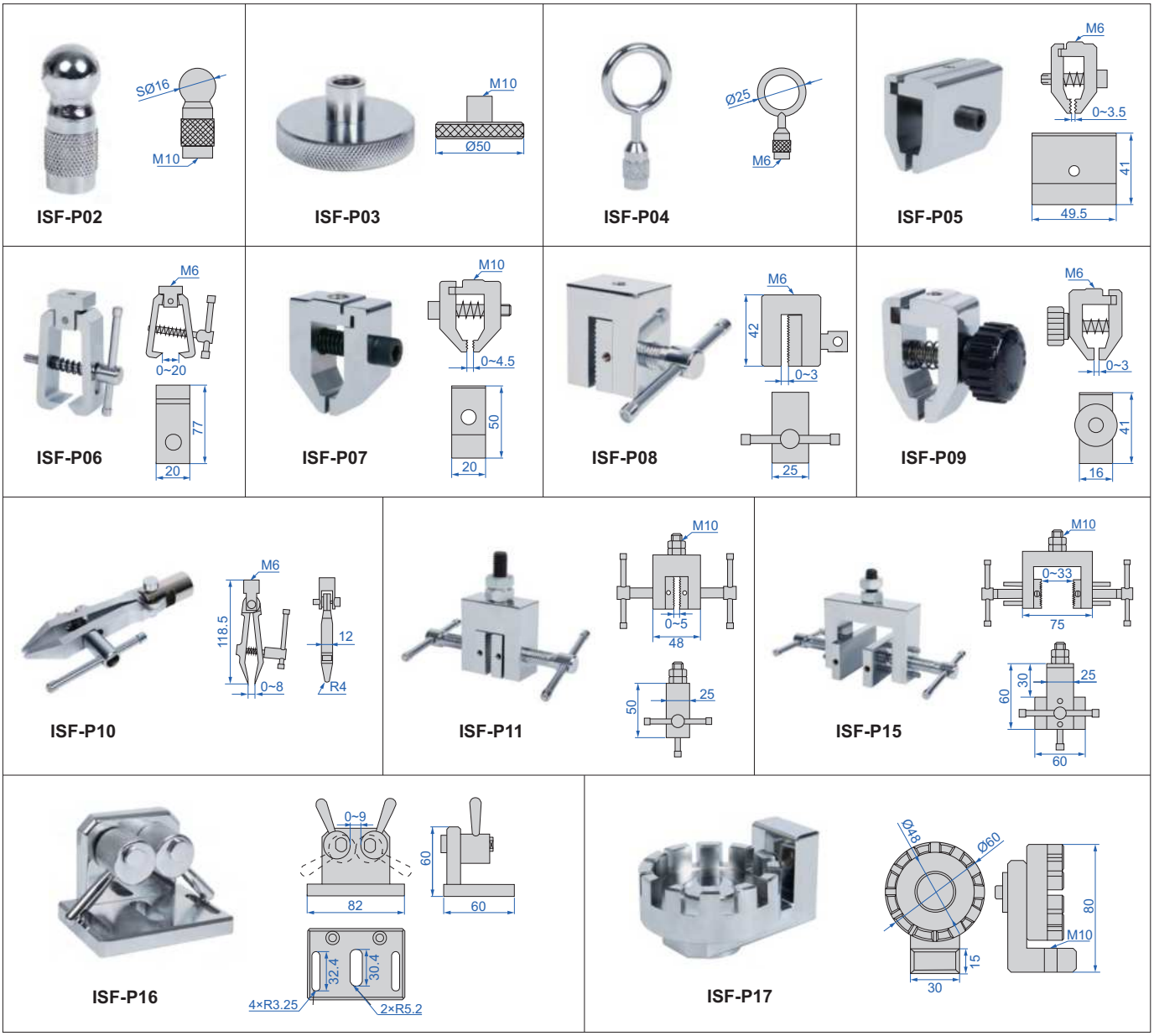


horizontal orientation test

# PUSH TIPS AND PULL CLAMPS FOR FORCE GAUGES

- For force gauges (code **ISF-DF□□□**, **ISF-1DF□□□** and **ISF-F□□□**)

Unit: mm




**Push tips**

| Code | Max. load | Diameter | Weight |
|---|---|---|---|
| ISF-P02 | 5000N | 16mm | 33g |
| ISF-P03 | 3000N | 50mm | 17g |

**Pull ring**

| Code | Max. load | Diameter | Weight |
|---|---|---|---|
| ISF-P04 | 500N | 25mm | 158g |

**Pull clamps**

| Code | Max. load | Jaw opening | Jaw width | Weight |
|---|---|---|---|---|
| ISF-P05 | 1100N | 0~3.5mm | 49.5mm | 241g |
| ISF-P06 | 1000N | 0~20mm | 20mm | 217g |
| ISF-P07 | 500N | 0~4.5mm | 20mm | 190g |
| ISF-P08 | 500N | 0~3mm | 25mm | 274g |
| ISF-P09 | 140N | 0~3mm | 16mm | 87g |
| ISF-P10 | 230N | 0~8mm | 4mm | 173g |
| ISF-P11 | 1500N | 0~5mm | 25mm | 484g |
| ISF-P15 | 2000N | 0~33mm | 60mm | 742g |

**Special pull clamps**

| Code | Max. load | Opening size | Application | Weight |
|---|---|---|---|---|
| ISF-P16 | 2400N | 0~9mm | for wire pull test | 803g |
| ISF-P17 | 5000N | 1.8~8.4mm | for wire terminal pull test | 620g |





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VIDEO

## MOTORIZED VERTICAL TEST STAND
## CODE ISF-RV61

- For digital force gauges (code **ISF-1DF□□□** and **ISF-DF□□□**)
- Push and pull test
- Automatic and manual test
- Programmable automatic operation (automatic cycle)
- Four operation modes: displacement cycle (D cycle), force cycle (F cycle), demo (teaching & playback) mode and positioning mode
- Alarm indications: stroke overrange alarm, force overrange alarm, motor block alarm

**digital force gauge is optional**



**SPECIFICATION**

| | |
|---|---|
| **Load capacity** | 650N (250lbf, 65kg) |
| **Max. travel** | 220mm |
| **Resolution of displacement** | 0.01mm |
| **Accuracy of displacement** | ±0.3mm |
| **Range of adjustable speed** | 30~720mm/min |
| **Resolution of speed** | 1mm/min |
| **Accuracy of speed** | ±2% |
| **Data output** | USB, RS232 |
| **Work temperature and relative humidity** | 10~40°C, 10%~80%RH |
| **Power supply** | 100~230V |
| **Dimension** | 340×180×630mm |
| **Weight** | 15.5kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Test stand** | 1 pc |
| **AC/DC adapter** | 1 pc |
| **MD8 cable (for force gauges)** | 1 pc |
| **Software and USB cable** | 1 pc |



VIDEO

## MOTORIZED HORIZONTAL TEST STAND
## CODE ISF-RH62

- For digital force gauges (code **ISF-1DF□□□** and **ISF-DF□□□**)
- Push and pull test
- Automatic and manual test
- Programmable automatic operation (automatic cycle)
- Four operation modes: displacement cycle (D cycle), force cycle (F cycle), demo (teaching & playback) mode and positioning mode
- Alarm indications: stroke overrange alarm, force overrange alarm, motor block alarm

**digital force gauge is optional**



**SPECIFICATION**

| | |
|---|---|
| **Load capacity** | 650N (250lbf, 65kg) |
| **Max. travel** | 220mm |
| **Resolution of displacement** | 0.01mm |
| **Accuracy of displacement** | ±0.3mm |
| **Range of adjustable speed** | 30~720mm/min |
| **Resolution of speed** | 1mm/min |
| **Accuracy of speed** | ±2% |
| **Data output** | USB, RS232 |
| **Work temperature and relative humidity** | 10~40°C, 10%~80%RH |
| **Power supply** | 100~230V |
| **Dimension** | 671×120×278mm |
| **Weight** | 13kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Test stand** | 1 pc |
| **AC/DC adapter** | 1 pc |
| **MD8 cable (for force gauges)** | 1 pc |
| **Software and USB cable** | 1 pc |

## MANUAL VERTICAL TEST STANDS FOR FORCE GAUGES

VIDEO

ATTENTION:
ONLY FOR PRESS TEST

force gauge
is optional



ISF-V10A

- For press test with force gauges

SPECIFICATION

| Code | ISF-V10A | ISF-V10D |
|---|---|---|
| Apply to | dial force gauges (code **ISF-F□□□**) | digital force gauges (code **ISF-1DF□□□** and **ISF-DF□□□**) |
| Load capacity | 500N | |
| Maximum workpiece height | 280mm | |
| Travel | 70mm | |
| Dimension | 152×235×425mm | |
| Weight | 10.7kg | |



## MANUAL HORIZONTAL TEST STANDS FOR FORCE GAUGES

VIDEO

ATTENTION:
ONLY FOR PULL TEST

force gauge
is optional



ISF-H20A

- For pull test with force gauges

SPECIFICATION

| Code | ISF-H20A | ISF-H20D |
|---|---|---|
| Apply to | dial force gauges (code **ISF-F□□□**) | digital force gauges (code **ISF-1DF□□□** and **ISF-DF□□□**) |
| Load capacity | 500N | |
| Travel | 60mm | |
| Dimension | 450×185×170mm | |
| Weight | 9kg | |



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## MANUAL HORIZONTAL TEST STAND FOR FORCE GAUGES
## CODE ISF-MH2

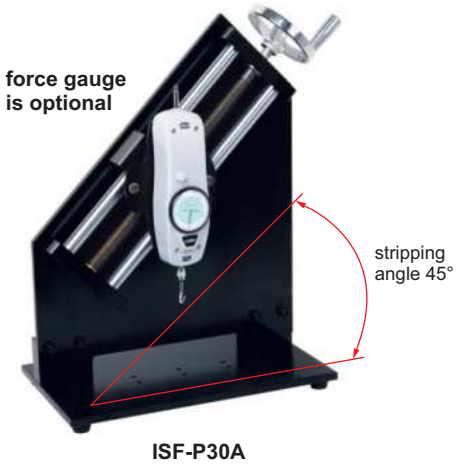



- For force gauges
  (code **ISF-F□□□**, **ISF-DF□□□** and **ISF-1DF□□□**)
- Push and pull test

**SPECIFICATION**

| | |
|---|---|
| **Load capacity** | 1000N |
| **Travel** | 250mm<br>(1.5mm horizontal movement per revolution of handwheel) |
| **Dimension** | 542×189×278mm |
| **Weight** | 21.5kg |

## MANUAL STRIPPING FORCE TEST STANDS




**ISF-P30A**

- For stripping force test with force gauges

**SPECIFICATION**

| **Code** | **ISF-P30A** | **ISF-P30D** |
|---|---|---|
| **Apply to** | dial force gauges<br>(code **ISF-F□□□**) | digital force gauges<br>(code **ISF-1DF□□□** and **ISF-DF□□□**) |
| **Load capacity** | 500N | |
| **Horizontal travel** | 170mm | |
| **Dimension** | 420×215×480mm | |
| **Weight** | 22kg | |

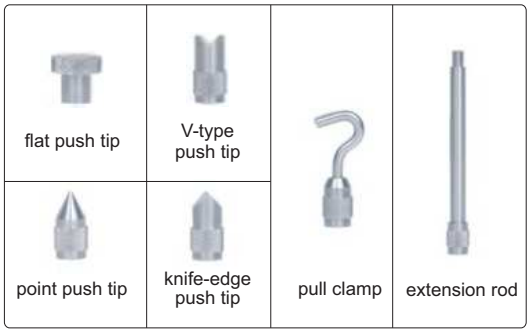
# FORCE GAUGES

VIDEO

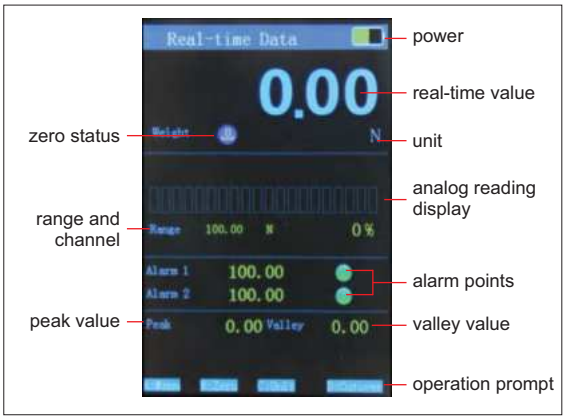



**ISF-YT100**

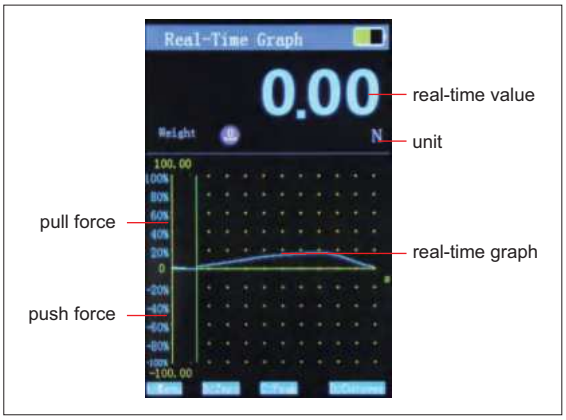
accessory (included)



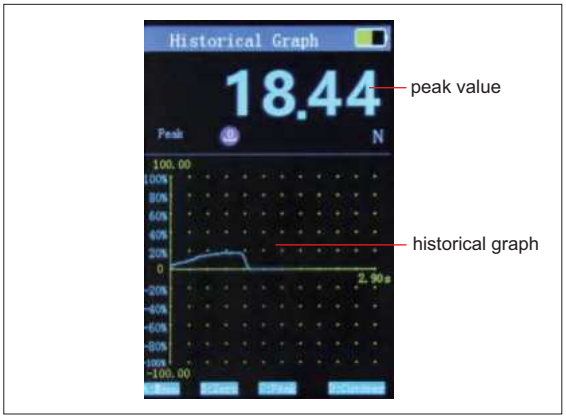

digit mode




real-time graph




historical graph




- Force unit: N, g, kg
- Sampling frequency: 50Hz~3200Hz, four adjustable steps, high sampling rate captures peak value accurately
- Select to display the real-time curve and the last historical curve
- Realtime automatic capture of peak value and valley value
- Parameter backup and restoration, even if the parameters are messed up, you can restore them with a single click
- Weightless calibration, just enter the sensor parameters and you are ready for calibration
- A variety of alarm options: upper limit alarm, lower limit alarm, peak and valley alarm, over 1.2 times of the range alarm
- Power supply 3.5V
- Temperature drift less than 20ppm

**SPECIFICATION**

| Code | ISF-YT10 | ISF-YT20 | ISF-YT30 | ISF-YT50 | ISF-YT100 | ISF-YT200 | ISF-YT300 | ISF-YT500 |
|---|---|---|---|---|---|---|---|---|
| Type | internal sensor | | | | | | | |
| Load capacity | 10N | 20N | 30N | 50N | 100N | 200N | 300N | 500N |
| Resolution | 0.001N | 0.001N | 0.001N | 0.001N | 0.01N | 0.01N | 0.01N | 0.1N |
| Accuracy | ±0.2%FS | | | | | | | |
| Power supply | built-in rechargeable battery | | | | | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Push/pull accessory | 6 pcs (flat push tip, V-type push tip, knife-edge push tip, point push tip, pull clamp, extension rod) |
| Type-C cable | 1 pc |



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# S-TYPE TENSILE/COMPRESSION SENSORS

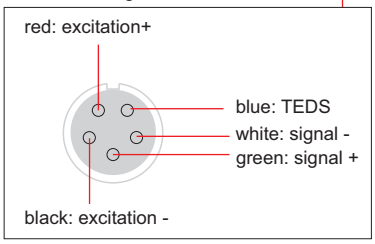
VIDEO

- Characteristic: bi-directional tension and compression, compact structure, high comprehensive precision, good long-term stability and nickel plating on the surface of high-quality alloy steel
- Application fields: universal material testing machines, hopper scales, hook scales, packaging scales, belt scales, plug-in force testers and other tension and pressure testing instruments as well as automation equipments



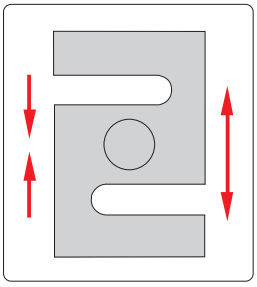
8650-10K

diagram of connector






force diagram of sensor

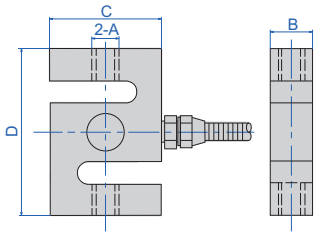


**SPECIFICATION**

| | |
|---|---|
| **Output sensitivity** | 2.0±10%mV/V |
| **Zero output** | ±1%F.S. |
| **Non-linearity** | ±0.03%F.S. |
| **Hysteresis** | ±0.03%F.S. |
| **Repeatability** | ±0.03%F.S. |
| **Creep (30 minutes)** | ±0.03%F.S. |
| **Temperature sensitivity drift** | ±0.03%F.S./10°C |
| **Zero temperature drift** | ±0.05%F.S./10°C |
| **Response frequency** | 10kHz |
| **Material** | alloy steel |
| **Electrical impedance** | 350Ω |
| **Insulation impedance** | ≥5000MΩ/100VDC |
| **Operation voltage** | 5~15V |
| **Working temperature** | -20~80°C |
| **Safety overload** | 150% |
| **Extreme overload** | 200% |
| **Cable specification** | Ø5mm: ≤1T, 2m; >1T, 5m |
| **Extreme cable pulling force** | 10kg |

(mm)

| Code | Maximum range | A | B | C | D |
|---|---|---|---|---|---|
| **8650-50** | 50N/5kg | M18×1.25 | 12.7 | 50.8 | 63.5 |
| **8650-100** | 100N/10kg | | | | |
| **8650-200** | 200N/20kg | | | | |
| **8650-300** | 300N/30kg | | | | |
| **8650-500A** | 500N/50kg | | | | |
| **8650-500B** | 500N/50kg | M12×1.75 | 19 | | 76.2 |
| **8650-1K** | 1000N/100kg | | | | |
| **8650-2K** | 2000N/200kg | | | | |
| **8650-3K** | 3000N/300kg | | | | |
| **8650-5K** | 5000N/500kg | | 25.4 | | |
| **8650-10K** | 10kN/1T | | | | |
| **8650-15K** | 15kN/1.5T | | | | |
| **8650-20K** | 20kN/2T | M18×1.5 | | 76.2 | 108 |
| **8650-30K** | 30kN/3T | | | | |
| **8650-50K** | 50kN/5T | | | | |




connected with handheld indicator

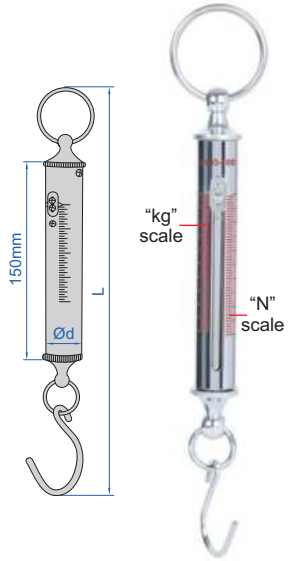



**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Handheld force/torque indicator** | **ISF-DG** series |

## TUBE FORCE GAUGES

- Suitable for measuring weight and tensile forces




8603-100

**SPECIFICATION**

| Code | 8603-10 | 8603-20 | 8603-30 | 8603-50 | 8603-100 | 8603-200 |
|---|---|---|---|---|---|---|
| Max. test force | 10N/1kg | 20N/2kg | 30N/3kg | 50N/5kg | 100N/10kg | 200N/20kg |
| Resolution | 0.2N/0.02kg | 0.4N/0.04kg | 0.5N/0.05kg | 1N/0.1kg | 2N/0.2kg | 4N/0.4kg |
| Unit | kg, N | | | | | |
| Accuracy | ±2%FS | | | | | |
| Tube diameter (Ød) | 22mm | 22mm | 22mm | 22mm | 25mm | 32mm |
| Overall length (L) | 280mm | 280mm | 280mm | 280mm | 340mm | 340mm |
| Weight | 280g | 280g | 280g | 280g | 480g | 700g |
| Operation temperature | -10~40°C | | | | | |
| Operation humidity | 30%~90%RH | | | | | |
| Maximum safe load | 120%FS | | | | | |
| Limited overload | 240%FS | | | | | |

## HANG SCALES

REFER TO PAGE 1179-1180 FOR DETAILS





8206-3T

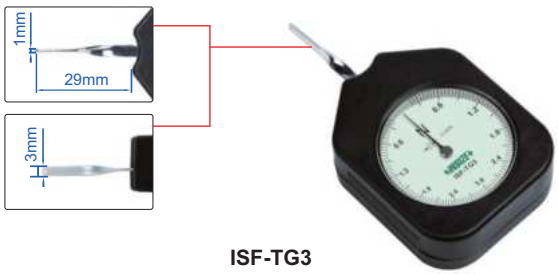


8207-3T

## DIAL TENSION GAUGES

VIDEO

- Clockwise and counter-clockwise use
- For electronic and precision mechanical industry, such as test the contact pressure of relay, adjust the tension or compression of spring




ISF-TG3

**SPECIFICATION (Unit: N)**

| Code | ISF-TGD1 | ISF-TGD3 | ISF-TGD5 | ISF-TG1 | ISF-TG1D5 | ISF-TG3 | ISF-TG5 |
|---|---|---|---|---|---|---|---|
| Range (N) | 0.01~0.1 | 0.03~0.3 | 0.05~0.5 | 0.1~1 | 0.15~1.5 | 0.3~3 | 0.5~5 |
| Graduation (N) | 0.002 | 0.005 | 0.01 | 0.02 | 0.025 | 0.05 | 0.1 |
| Accuracy | ±2% (full scale) | | | | | | |
| Dimension (L×W×H) | 90×47×19mm | | | | | | |
| Weight | 60g | | | | | | |

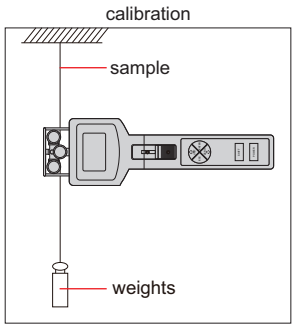
**SPECIFICATION (Unit: gf)**

| Code | ISF-TG10 | ISF-TG30 | ISF-TG50 | ISF-TG100 | ISF-TG150 | ISF-TG300 | ISF-TG500 |
|---|---|---|---|---|---|---|---|
| Range (gf) | 1~10 | 3~30 | 5~50 | 10~100 | 15~150 | 30~300 | 50~500 |
| Graduation (gf) | 0.2 | 0.5 | 1 | 2 | 2.5 | 5 | 10 |
| Accuracy | ±2% (full scale) | | | | | | |
| Dimension (L×W×H) | 90×47×19mm | | | | | | |
| Weight | 60g | | | | | | |



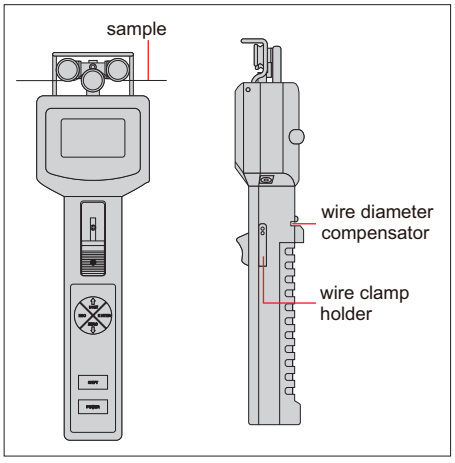
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# WIRE TENSION METERS






ISF-DT1000




- Suitable for testing the tension of stranding machines, winding machines, wire cutting machines, carbon fibre winding equipments, fibre optic winding equipments, fibre optic cable production equipments, glass fibre winding equipments, steel cord production equipments, steel wire rope production equipments and so on
- Automatic zeroing, manual zeroing also possible
- Memory function for recording the current real-time value (up to 10 data), for recording phase data (max., min., average)
- 10 calibration channels, 6 groups of calibration points to choose from
- Fine-tunable compensation, compensation value range ±10%FS, 1% for one component
- Six units g, cN, N, lb, daN, kg are automatically converted
- 3 min no operation auto shutdown

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |

**SPECIFICATION**

| Code | ISF-DT200 | ISF-DT500 | ISF-DT1000 | ISF-DT2000 | ISF-DT2500 | ISF-DT5000 | ISF-DT10K | ISF-DT20K |
|---|---|---|---|---|---|---|---|---|
| Accuracy class | ±2%FS | | | | | | | |
| Range of test force | 2.0~200.0cN | 5.0~500.0cN | 10~1000cN | 20~2000cN | 25~2500cN | 50~5000cN | 1.0~100.0N | 2.0~200.0N |
| Test force resolution | 0.1cN | 0.1cN | 1cN | 1cN | 1cN | 1cN | 0.1N | 0.1N |
| Width of measuring head | 65mm | 65mm | 65mm | 116mm | 116mm | 116mm | 116mm | 216mm |
| Factory calibrated wire diameter | Ø0.2mm | Ø0.2mm | Ø0.4mm | Ø0.4mm | Ø0.4mm | Ø1.2mm | Ø1.2mm | Ø1.8mm |
| Range of diameter | 0.05~0.3mm | 0.05~0.3mm | 0.1~0.5mm | 0.3~0.7mm | 0.3~0.7mm | 0.4~1.0mm | 0.7~1.2mm | 1.0~1.8mm |
| Compensation for diameter | yes | | | | | | | |
| Frequency of display update | 2 times/sec | | | | | | | |
| Maximum line speed | 2000 m/min | | | | | | | |
| Power supply | built-in rechargeable battery | | | | | | | |
| Environmental requirement | temp: 10~45°C humidity: ≤90%RH | | | | | | | |

| Code | ISF-DT30K | ISF-DT50K | ISF-DT60K | ISF-DT100K | ISF-DT200K |
|---|---|---|---|---|---|
| Accuracy class | ±2%FS | | | | |
| Range of test force | 3.0~300.0N | 5.0~500.0N | 6.0~600.0N | 10~1000N | 20~2000N |
| Test force resolution | 0.1N | 0.1N | 0.1N | 1N | 1N |
| Width of measuring head | 216mm | 216mm | 216mm | 216mm | 280mm |
| Factory calibrated wire diameter | Ø2mm wire rope | Ø2mm wire rope | Ø2mm wire rope | Ø2mm wire rope | Ø2mm wire rope |
| Range of diameter | ≤3mm | ≤3mm | ≤3mm | ≤3mm | ≤3mm |
| Compensation for diameter | yes | | | | |
| Frequency of display update | 2 times/sec | | | | |
| Maximum line speed | 2000 m/min | | | | |
| Power supply | built-in rechargeable battery | | | | |
| Environmental requirement | temp: 10~45°C humidity: ≤90%RH | | | | |

## LASER BELT TENSION METER
## CODE 5900-HZ18

- Laser sensor, direct measurement, easy to use
- Two sensors: internal and external, external sensor is suitable for measurement in narrow spaces
- Automatic power off



external sensor



internal sensor

**SPECIFICATION**

| | | |
|---|---|---|
| Measuring range | | 10~800Hz |
| Input parameter range | | maximum free belt length: 99.99m<br>maximum belt weight: 9.999kg/m |
| Accuracy | | ±5% |
| Unit | | N, lbf |
| Measuring distance | | 3~20mm |
| Operation temperature | | 10~50°C |
| Power supply | | 4×1.5V AAA batteries |
| Dimension | main unit | 178×72×34mm |
| | external sensor | 124×21×12mm |
| Weight | | 180g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| External sensor | 1 pc |



## SONIC BELT TENSION METER
## CODE 5910-HZ5K



- The sonic belt tension meter uses a microphone probe to capture the sound waves generated by the belt vibration, and can measure the waveform period, and then calculate the tension value by the frequency of the weekly wave
- Can store 500 sets of measurement data, comes with 48 sets of belt data, no need to manually input every time
- Automatic filtering of noise interference, suitable for measurement in small spaces
- Easy operation, one-handed operation
- Lightweight and portable



hammer (included)

**SPECIFICATION**

| | |
|---|---|
| Frequency range | 10~5000Hz |
| Tension range | 0.01~99900N |
| Input parameter range | belt mass: 0~999.9g/m |
| | belt width: 0~999.9mm/R |
| | belt span: 0~9999mm |
| Unit | N |
| Accuracy | ±1% |
| Operation temperature | 10~50°C |
| Dimension | 160×59×27mm |
| Power supply | 2×1.5V AAA batteries |
| Weight | 150g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Standard sensor | 1 pc |
| Hammer | 1 pc |



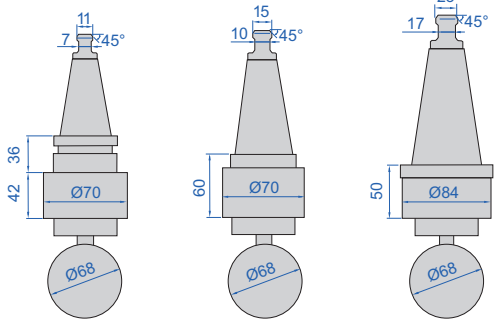
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VIDEO



RFS-BT40

Unit: mm

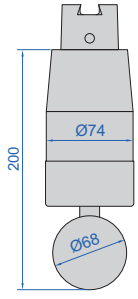



RFS-BT30 RFS-BT40 RFS-BT50



RFS-HSK63A

Unit: mm




RFS-HSK□□□

- Hydraulic mechanical structure, high stability
- To detect the tension of locking device

**RFS-BT□□□ SPECIFICATION**

| Code | Taper | Dial range* | Accuracy | Applicable tension of spindle | Rivet angle** |
|---|---|---|---|---|---|
| **RFS-BT30** | BT30 | 0~100kg/cm² | ±1.6kg/cm² | 200~500kgf | 45° |
| **RFS-BT40** | BT40 | 0~160kg/cm² | ±2.6kg/cm² | 500~1100kgf | |
| **RFS-BT50** | BT50 | 0~250kg/cm² | ±4kg/cm² | 1500~2200kgf | |

**RFS-SK□□□ SPECIFICATION**

| Code | Taper | Dial range* | Accuracy | Applicable tension of spindle |
|---|---|---|---|---|
| **RFS-SK30** | SK30/JT30 | 0~100kg/cm² | ±1.6kg/cm² | 200~500kgf |
| **RFS-SK40** | SK40/JT40 | 0~160kg/cm² | ±2.6kg/cm² | 500~1100kgf |
| **RFS-SK50** | SK50/JT50 | 0~250kg/cm² | ±4kg/cm² | 1500~2200kgf |

To be continued

Continued from previous page

**RFS-CAT□□□ SPECIFICATION**

| Code | Taper | Dial range* | Accuracy | Applicable tension of spindle |
|---|---|---|---|---|
| **RFS-CAT30** | CAT30 | 0~100kg/cm² | ±1.6kg/cm² | 200~500kgf |
| **RFS-CAT40** | CAT40 | 0~160kg/cm² | ±2.6kg/cm² | 500~1100kgf |
| **RFS-CAT50** | CAT50 | 0~250kg/cm² | ±4kg/cm² | 1500~2200kgf |

**RFS-HSK□□□ SPECIFICATION**

| Code | Taper | Dial range* | Accuracy | Applicable tension of spindle |
|---|---|---|---|---|
| **RFS-HSK20A** | HSK20A | 0~100kg/cm² | ±1.6kg/cm² | 50~100kgf |
| **RFS-HSK20C** | HSK20C | | | |
| **RFS-HSK20E** | HSK20E | | | |
| **RFS-HSK25A** | HSK25A | 0~100kg/cm² | ±1.6kg/cm² | 250~500kgf |
| **RFS-HSK25C** | HSK25C | | | |
| **RFS-HSK25E** | HSK25E | | | |
| **RFS-HSK32A** | HSK32A | 0~100kg/cm² | ±1.6kg/cm² | 300~600kgf |
| **RFS-HSK32B** | HSK32B | | | |
| **RFS-HSK32C** | HSK32C | | | |
| **RFS-HSK32D** | HSK32D | | | |
| **RFS-HSK32E** | HSK32E | | | |
| **RFS-HSK32F** | HSK32F | | | |
| **RFS-HSK40A** | HSK40A | 0~250kg/cm² | ±4.0kg/cm² | 750~1500kgf |
| **RFS-HSK40B** | HSK40B | | | |
| **RFS-HSK40C** | HSK40C | | | |
| **RFS-HSK40D** | HSK40D | | | |
| **RFS-HSK40E** | HSK40E | | | |
| **RFS-HSK40F** | HSK40F | | | |
| **RFS-HSK50A** | HSK50A | 0~350kg/cm² | ±5.6kg/cm² | 1000~2000kgf |
| **RFS-HSK50B** | HSK50B | | | |
| **RFS-HSK50C** | HSK50C | | | |
| **RFS-HSK50D** | HSK50D | | | |
| **RFS-HSK50E** | HSK50E | | | |
| **RFS-HSK50F** | HSK50F | | | |
| **RFS-HSK63A** | HSK63A | 0~350kg/cm² | ±5.6kg/cm² | 1500~3000kgf |
| **RFS-HSK63B** | HSK63B | | | |
| **RFS-HSK63C** | HSK63C | | | |
| **RFS-HSK63D** | HSK63D | | | |
| **RFS-HSK63E** | HSK63E | | | |
| **RFS-HSK63F** | HSK63F | | | |
| **RFS-HSK80A** | HSK80A | 0~600kg/cm² | ±9.6kg/cm² | 2000~4000kgf |
| **RFS-HSK80B** | HSK80B | | | |
| **RFS-HSK80C** | HSK80C | | | |
| **RFS-HSK80D** | HSK80D | | | |
| **RFS-HSK80E** | HSK80E | | | |
| **RFS-HSK80F** | HSK80F | | | |
| **RFS-HSK100A** | HSK100A | 0~600kg/cm² | ±9.6kg/cm² | 4000~5500kgf |
| **RFS-HSK100B** | HSK100B | | | |
| **RFS-HSK100C** | HSK100C | | | |
| **RFS-HSK100D** | HSK100D | | | |
| **RFS-HSK100E** | HSK100E | | | |
| **RFS-HSK100F** | HSK100F | | | |

*The actual tension of spindle (kgf) is 10X of dial reading

**Can be customized for 60° and 90°

# TORQUE TESTERS, TORQUE WRENCHES

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Bottle Cap Torque Testers
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# ELECTRONIC TORSION TESTING MACHINES

OPTIONAL ACCURACY CLASS: CLASS 0.5

VIDEO



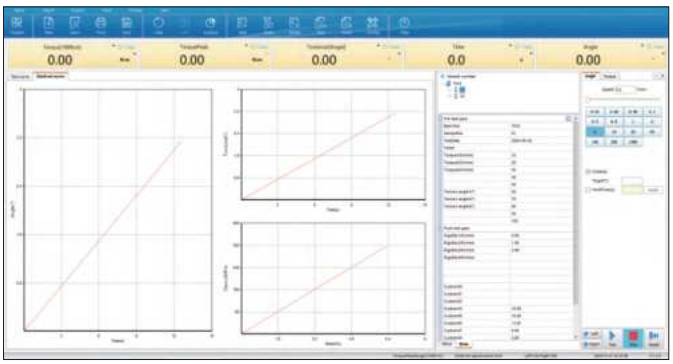

**UTM-TT5**
**Type A**






**UTM-TT500**
**Type B**

computer and software (included)




- Suitable for torsion testing of metallic and non-metallic materials, composite materials and components
- Servomotor drive for constant torsion speed
- Cycloid reducer drive for high efficiency and smoothness of transmission
- Electrical control system for high stability, smooth and reliable operation, fast response and low noise
- High-precision linear guide for the coaxiality and parallelism of the equipment
- Automatic torque and torsion angle tracking measurement, load rate indication, peak hold, etc.
- Efficient and professional control software
- Powerful data and curve analysis

To be continued

Continued from previous page

**SPECIFICATION**

| Code | UTM-TT2 | UTM-TT5 | UTM-TT10 | UTM-TT30 | UTM-TT50 |
|---|---|---|---|---|---|
| Max. test torque | 2N.m | 5N.m | 10N.m | 30N.m | 50N.m |
| Type | A | | | | |
| Accuracy class | class 1 | | | | |
| Accuracy of test torque | ±1% of indicated value | | | | |
| Range of test torque | 2%~100%FS | | | | |
| Min. resolution of test torque | 0.0001N.m | 0.0001N.m | 0.001N.m | 0.001N.m | 0.001N.m |
| Accuracy of torsion angle | ±1% of indicated value | | | | |
| Range of torsion angle | 0~9999° | | | | |
| Resolution of torsion angle | 0.01° | | | | |
| Rated speed of torsion angle | 2160°/min | | | | |
| Accuracy of torsion angle speed | ±1% of the set value | | | | |
| Accuracy of constant load torque | ±1% of the set value | | | | |
| Direction of torsion test | clockwise and count-clockwise operation | | | | |
| Height of spindle center * | 108mm | | | | |
| Max. distance between collets * | 300mm | | | | |
| Dimension (W×D×H) * | 1100×330×450mm | | | | |
| Weight * | 130kg | | | | |
| Power supply | AC 220V, 50Hz | | | | |



| Code | UTM-TT200 | UTM-TT500 | UTM-TT1000 | UTM-TT3000 | UTM-TT5000 |
|---|---|---|---|---|---|
| Max. test torque | 200N.m | 500N.m | 1000N.m | 3000N.m | 5000N.m |
| Type | B | | | | |
| Accuracy class | class 1 | | | | |
| Accuracy of test torque | ±1% of indicated value | | | | |
| Range of test torque | 2%~100%FS | | | | |
| Min. resolution of test torque | 0.01N.m | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Accuracy of torsion angle | ±1% of indicated value | | | | |
| Range of torsion angle | 0~9999° | | | | |
| Resolution of torsion angle | 0.01° | | | | |
| Rated speed of torsion angle | 1080°/min | | | | |
| Accuracy of torsion angle speed | ±1% of the set value | | | | |
| Accuracy of constant load torque | ±1% of the set value | | | | |
| Direction of torsion test | clockwise and count-clockwise operation | | | | |
| Height of spindle center * | 146mm | | | 203mm | |
| Max. distance between collets * | 500mm | | | | |
| Dimension (W×D×H) * | 1620×400×1020mm | | | 2350×740×1390mm | |
| Weight * | 260kg | | | 680kg | |
| Power supply | AC 220V, 50Hz, 0.4kW~1kW | | | AC 380V, 3Ø, 50Hz, 2kW~4kW | |

*Can be customized according to test requirements

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Measuring software | 1 set |
| Computer | 1 pc |
| Printer | 1 pc |
| Security cover | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Torsion fixture | customized according to test requirements |

# DIGITAL TORQUE TESTERS

DATA OUTPUT

VIDEO



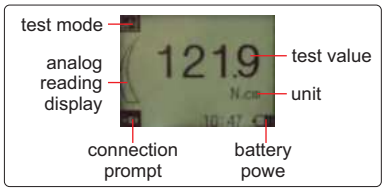

**IST-DTT5**
**type A**




**IST-DTT5S**
**type B**



digit mode



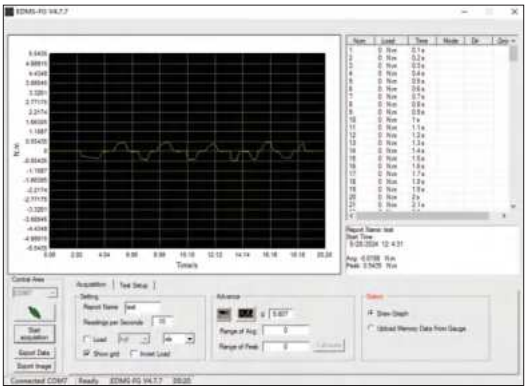

graph mode



printer (**optional**)



software (included)



- External sensor
- Metal case, touch buttons
- Clockwise and counter-clockwise operation
- Test mode: track, peak, first peak, preset tolerance
- Unit: lbf.in, lbf.ft, N.m, N.cm, kgf.cm
- Set tolerance with judgement
- 1000 memories
- LCD display with backlight, can automatically turn 180°
- Overload alarm
- Automatic power off

## SPECIFICATION

| Code | IST-DTT1 | IST-DTT5 | IST-DTT10 | IST-DTT1S | IST-DTT5S | IST-DTT10S |
|---|---|---|---|---|---|---|
| Load capacity | 0.05~1N.m | 0.25~5N.m | 0.5~10N.m | 0.05-1N.m | 0.25-5N.m | 0.5-10N.m |
| Resolution | 0.0001N.m | 0.0005N.m | 0.001N.m | 0.0001N.m | 0.0005N.m | 0.001N.m |
| Max. clamping diameter | Ø10mm | Ø10mm | Ø13mm | Ø50mm | Ø50mm | Ø50mm |
| Type | A | | | B | | |
| Sampling frequency | 2000Hz | | | | | |
| Accuracy | ±0.3% (of load capacity) | | | | | |
| Output | USB, RS232, alarm signal | | | | | |
| Power supply | built-in rechargeable battery | | | | | |
| Dimension | 145×73×34mm | | | | | |
| Weight | 1.4kg | | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| External sensor | 1 pc |
| AC/DC adapter | 1 pc |
| Transmission cable (keyboard signal) | 1 pc |
| Software and USB cable | 1 set |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Printer | ISF-DF-PRINTER |
| RS232 cable | IST-DTT-CABLE |
| Wireless transmitter (receiver is needed) | 7315-ISF-D |



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VIDEO

DATA OUTPUT

# DIGITAL BOTTLE CAP TORQUE TESTERS

two display modes




digit mode



graph mode



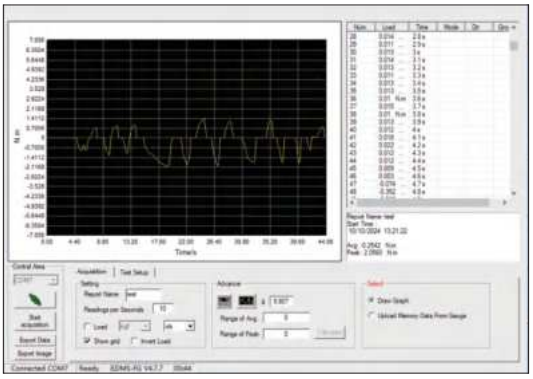

**IST-DCT20**



printer (**optional**)



- Measure the opening and tightening torque of bottle caps
- Unit: N.m, N.cm, kgf.cm, lbf.in, lbf.ft
- Clockwise and counter-clockwise operation
- Upper and lower tolerance limits can be set to determine pass or fail
- LCD display with backlight
- With calibration function
- Overload alarm
- Maximum overload of 120% of range
- Automatic power off



software (included)

**SPECIFICATION**

| Code | IST-DCT2 | IST-DCT5 | IST-DCT10 | IST-DCT20 |
|---|---|---|---|---|
| Load capacity | 2N.m | 5N.m | 10N.m | 20N.m |
| Resolution | 0.0002N.m | 0.0005N.m | 0.001N.m | 0.002N.m |
| Clamping range | Ø19.5~190mm | | | |
| Sampling frequency | 2000Hz | | | |
| Accuracy | ±0.3% (of load capacity) | | | |
| Measuring mode | tracking, peak (max.), first peak, double peak, tolerance testing | | | |
| Output | USB, RS232 | | | |
| Number of memory | 1000 memories | | | |
| Power supply | built-in rechargeable battery | | | |
| Dimension | 200×197×150mm | | | |
| Weight | 2.5kg | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| AC/DC adapter | 1 pc |
| Transmission cable (keyboard signal) | 1 pc |
| Measuring software | 1 set |

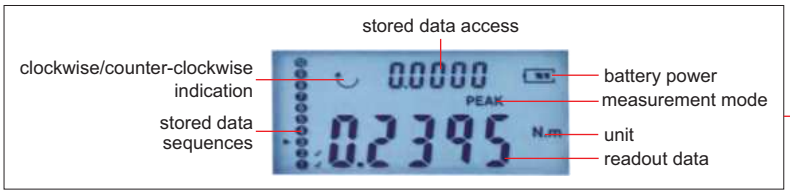
**OPTIONAL ACCESSORY**

| | |
|---|---|
| Printer | ISH-DS-PRINTER |
| Wireless transmitter (receiver is needed) | 7315-ISF-D |

# TORQUE TESTERS

VIDEO

INSPECTION CERTIFICATE





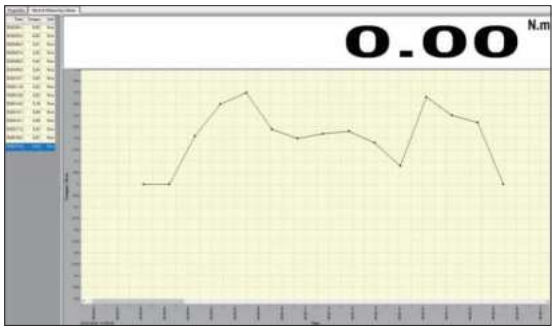


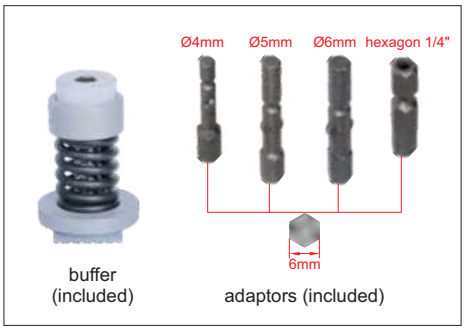
IST-HP1

- For testing electric, pneumatic and manual torque screwdrivers and torque wrenches and other torque tools
- Clockwise and counter-clockwise operation
- Peak and track working modes
- High-definition display, backlighting available
- High sampling frequency for accurate peak capture
- Unit: N.m, lb.in, kgf.cm
- Upper and lower limits can be set, automatic audible and visual alarm with red and green indicator lights and buzzer
- Store 10 sets of data and calculate the average value
- Serial RS232 output, connect to PC to view torque curves by test software
- Automatic zero setting, automatic shutdown



software (included)




buffer (included)

adaptors (included)



buffer test example

## SPECIFICATION

| Code | IST-HP1 | IST-HP2 | IST-HP5 | IST-HP10 | IST-HP20 |
|---|---|---|---|---|---|
| Maximum range | 1N.m | 2N.m | 5N.m | 10N.m | 20N.m |
| Resolution | 0.0005N.m | 0.001N.m | 0.002N.m | 0.005N.m | 0.01N.m |
| Accuracy | ±1% | | | | |
| Maximum test speed | 3000rpm | | | | |
| Number of memory | 10 groups | | | | |
| Power supply | built-in rechargeable battery, can be used for 40 hours | | | | |
| Dimension | 230×110×50mm | | | | |
| Weight | 2.4kg | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Buffer | 1 pc |
| Adaptor | 4 pcs |
| Power adapter | 1 pc |
| Software and RS232 cable | 1 pc |



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# DIGITAL TORQUE TESTERS

**ATTENTION: NOT SUITABLE FOR HIGH SPEED SHOCK TORQUE MEASUREMENT**

VIDEO




**IST-04TT350**
**type A**



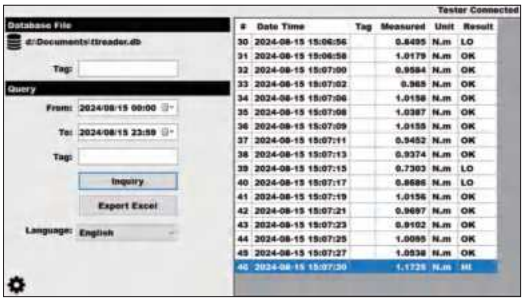
adaptor
(type A included)




**IST-04TT815**
**type B**



- Test torque wrenches, torque screwdrivers and other torque tools
- Clockwise operation
- Peak, track and first peak working modes
- Tolerance testing
- LED indicator for target torque alarm:
  – Green LED light on when the value is within tolerance;
  – Red LED light on when the value is above the high tolerance
- Ability to upload data in real time, save data and export data to EXCEL
- Power off automatically in 2 minutes without any operations




software (included)

**SPECIFICATION**

| Code | IST-04TT5 | IST-04TT28 | IST-04TT68 | IST-04TT350 | IST-04TT815 | IST-04TT1000 | IST-04TT2000 |
|---|---|---|---|---|---|---|---|
| Type | A | | | | B | | |
| Range | 0.5~5N.m | 2.8~28N.m | 6.8~68N.m | 35~350N.m | 81.5~815N.m | 100~1000N.m | 200~2000N.m |
| Accuracy | ±1% (clockwise) | | | | | | |
| Resolution | 0.001N.m | 0.01N.m | 0.01N.m | 0.1N.m | 0.1N.m | 1N.m | 1N.m |
| Unit | N.m, in.lb, ft.lb, kg.cm | | | | N.m, ft.lb | | |
| Square socket/hex driver | 1/4" | 3/8" | 3/8" | 1/2" | 27mm | 27mm | 27mm |
| Adaptor | no | 3/8" to 1/4" | 3/8" to 1/4" | 1/2" to 3/8"<br>3/8" to 1/4" | no | | |
| Power supply | AC 100~240V, 50/60Hz | | | | | | |
| Weight | 0.75kg | 0.75kg | 1.1kg | 1.1kg | 5.1kg | 5.1kg | 5.1kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Software and transmission cable | 1 pc |
| AC/DC adapter | 1 pc |
| Adaptor | refer to details |

# DIGITAL TORQUE TESTERS

VIDEO

**ATTENTION: NOT SUITABLE FOR HIGH SPEED SHOCK TORQUE MEASUREMENT**



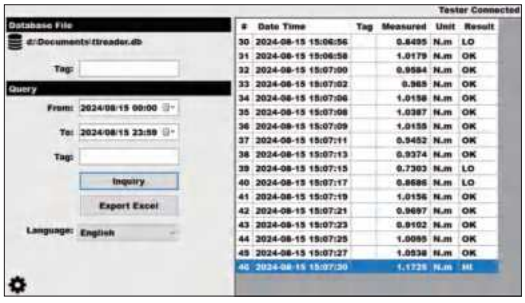

**IST-TT550**


extension cable (included)


adaptor (included)


with 3 mounting holes on the bottom

- With external sensor, to test torque wrenches, torque screwdrivers and other torque tools
- Clockwise and counter-clockwise operation
- Peak, track and first peak working modes
- Tolerance testing
- LED indicator for target torque alarm:
  – Yellow LED light on when the value is below the low tolerance; green LED light on when the value is within tolerance; red LED light on when the value is above the high tolerance
  – The buzzer alarms when the maximum torque value is captured in the first peak mode
- Ability to upload data in real time, save data and export data to EXCEL
- Automatic power off


software (included)



## SPECIFICATION

| Code | IST-TT05 | IST-TT5 | IST-TT30 | IST-TT50 | IST-TT220 | IST-TT550 | IST-TT1000 | IST-TT2200 | IST-TT3000 |
|---|---|---|---|---|---|---|---|---|---|
| Range | 0.1~0.5N.m | 0.5~5N.m | 3~30N.m | 5~50N.m | 22~220N.m | 55~550N.m | 100~1000N.m | 220~2200N.m | 300~3000N.m |
| Accuracy | ±1% (two-way) | ±0.5% (two-way) | | | | | | | |
| Resolution | 0.0001N.m | 0.0001N.m | 0.001N.m | 0.001N.m | 0.01N.m | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Unit | in.lb, ft.lb, kg.cm, N.m | | | | | | N.m, ft.lb | | |
| Square socket (L) | 1/4" | 1/4" | 3/8" | 3/8" | 1/2" | 3/4" | 1" | 1" | 1" |
| Power supply | AC 100~240V, 50/60Hz | | | | | | | | |
| Adaptor | no | no | 3/8" to 1/4" | 3/8" to 1/4" | 1/2" to 3/8" 3/8" to 1/4" | 3/4" to 1/2" 1/2" to 3/8" | 1" to 3/4" 3/4" to 1/2" 1/2" to 3/8" | 1" to 3/4" 3/4" to 1/2" | 1" to 3/4" 3/4" to 1/2" |
| Transducer dimension | 63×63 ×65mm | 63×63 ×65mm | 89×89 ×75mm | 89×89 ×75mm | 109×109 ×83mm | 140×140 ×107mm | 160×160 ×126mm | 160×160 ×126mm | 160×160 ×126mm |
| Weight | 0.75kg | 0.75kg | 1.1kg | 1.1kg | 1.4kg | 2.9kg | 5.0kg | 5.1kg | 5.2kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Transducer with 1.5m cable | 1 pc |
| Software and transmission cable | 1 pc |
| Extension cable (1.2m) | 1 pc |
| AC/DC adapter | 1 pc |
| Adaptor | refer to details |



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# TORQUE WRENCH TEST STANDS

VIDEO



IST-06TS350



digital torque tester (**optional**)



application example




- Rotate the wheel to apply force, rotary speed is adjustable
- Easy operation due to the gear box
- Used with digital torque testers (**IST-TT** series)

**SPECIFICATION**

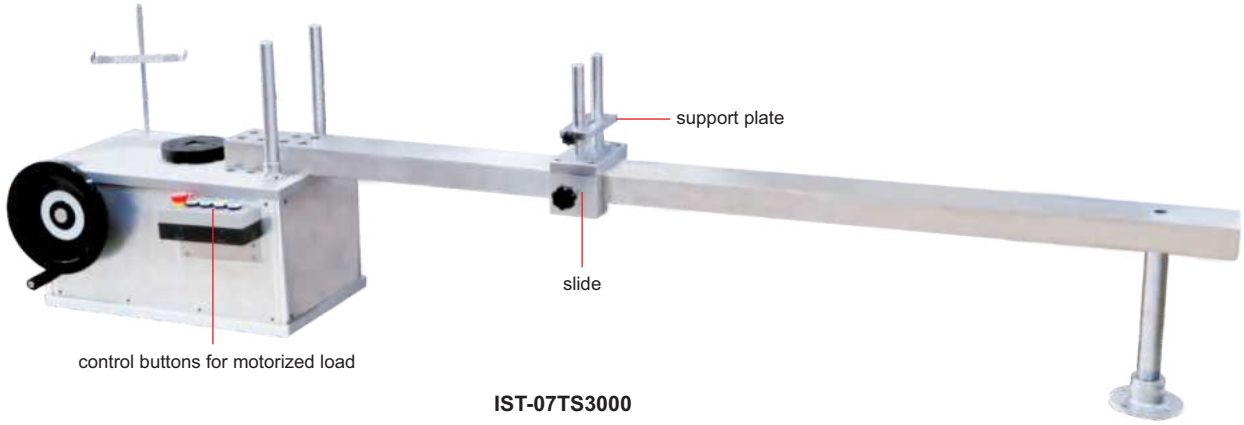
| Code | IST-06TS350 | IST-06TS1100 | IST-06TS2000 |
|---|---|---|---|
| Max. torque value | 350N.m | 1100N.m | 2000N.m |
| Arm length | 197~686mm | 380~1350mm | 420~1690mm |
| Dimension | 860×290×590mm | 1760×350×590mm | 2090×350×590mm |
| Weight | 32.5kg | 76kg | 80kg |

Can be customized according to test requirements

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Digital torque tester | **IST-TT** series |
| Adaptor | **IST-06TS-BLOCK1** (necessary for **IST-TT05**, **IST-TT5**, **IST-TT30**, **IST-TT50** and **IST-TT220**) |
| | **IST-06TS-BLOCK2** (necessary for **IST-TT550**, **IST-TT1000** and **IST-TT2200**) |

# SEMI-AUTOMATIC TORQUE WRENCH TEST STAND
# CODE IST-07TS3000

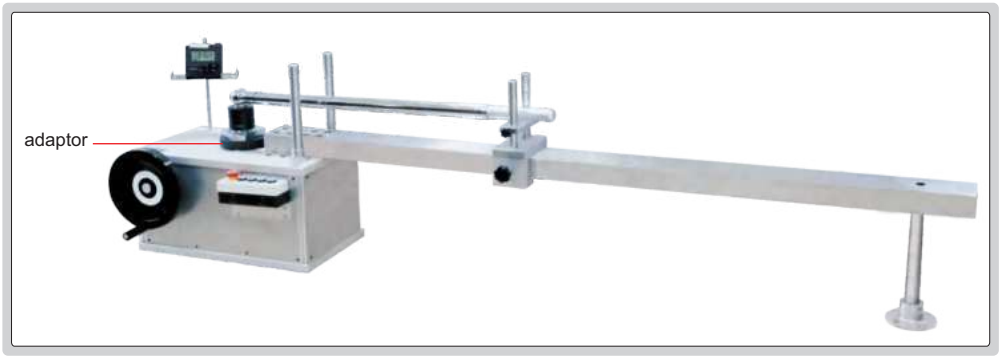



**IST-07TS3000**



- Motorized load (constant speed of applied torque): maximum torque up to 1000N.m for testing torque wrenches and reducing test time
- Manual load (adjustable speed of applied torque): maximum torque up to 3000N.m for testing torque wrenches
- Easy operation due to the gear box
- The slide can be moved to adjust different length of torque wrenches and the support plate can be adjusted to keep the wrench level
- Used with digital torque testers **IST-TT** series (**optional**)

application example




**SPECIFICATION**

| | |
|---|---|
| **Max. torquevalue (manual load)** | 3000N.m |
| **Arm length** | 420~2050mm |
| **Power supply** | 220V, 50Hz |
| **Dimension** | 2400×480×630mm |
| **Weight** | 135kg |

Can be customized according to test requirements

digital torque tester (**optional**)



**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Digital torque tester** | **IST-TT550, IST-TT1000, IST-TT2200, IST-TT3000** |
| **Adaptor** | **IST-07TS-BLOCK** (necessary for **IST-TT550, IST-TT1000, IST-TT2200** and **IST-TT3000**) |



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# DYNAMIC TORQUE SENSORS (COMPACT TYPE)

**ATTENTION: NOT SUITABLE FOR HIGH SPEED SHOCK TORQUE MEASUREMENT**

VIDEO



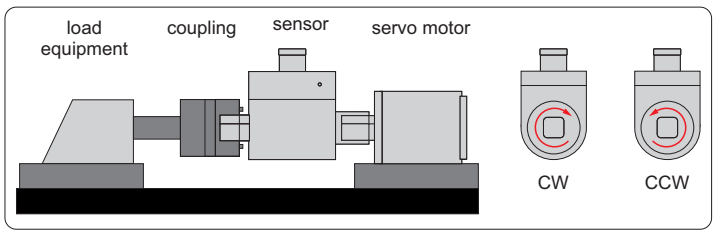

**IST-IR100**

- Wide range of applications, for testing electric, pneumatic and manual torque screwdrivers and torque wrenches and other torque tools and torque monitoring
- Clockwise and counter-clockwise operation
- High overall accuracy, good long-term stability

example of torque test

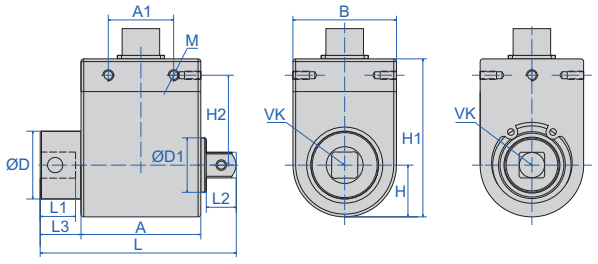



example of torque monitoring




**SPECIFICATION**

| | |
|---|---|
| RPM range | ≤3000rpm |
| Torque signal | <2.0mV/V |
| Zero output | ±0.5%F.S |
| Accuracy | 0.1%F.S. |
| Hysteresis | 0.5%F.S. |
| Repeatability | 0.1%F.S. |
| Creep (30 minutes) | 0.05%F.S |
| Temperature sensitivity drift | 0.05%F.S./10°C |
| Zero temperature drift | 0.05%F.S./10°C |
| Response time | 1.0ms (50% response) |
| Response frequency | 1kHz |
| Max. torsion angle | 2.6×10rad (0.149°) |
| Inertial torque | 0.38kg.cm |
| Intrinsic frequency of rotor vibration | 19.4kHz |
| Torque constant | 3.85×10N.m/rad |
| Material | stainless steel |
| Annual stability | 0.3%/year |
| load resistance | >2kΩ |
| Power supply | DC5~15V |
| Working environment | -10~50°C ≤85%RH |
| Safety overload | 150% |
| Extreme overload | 200% |
| Cable specification | Ø5mm×3m |
| Extreme cable pulling force | 10kg |




**(mm)**

| Code | Maximum range | VK | A | B | L | L1 | L2 | L3 | H | H1 | H2 | A1 | ØD | ØD1 | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IST-IR10 | 10N.m | 3/8" | 44 | 38 | 72 | 13 | 11 | 15 | 19 | 58 | 33 | 24 | 25 | 20 | 5-M4 depth 8 |
| IST-IR20 | 20N.m | | | | | | | | | | | | | | |
| IST-IR30 | 30N.m | | | | | | | | | | | | | | |
| IST-IR50 | 50N.m | 1/2" | 44 | 38 | 80 | 17 | 15 | 19 | 19 | 58 | 33 | 24 | 25 | 20 | 5-M4 depth 8 |
| IST-IR100 | 100N.m | | | | | | | | | | | | | | |
| IST-IR200 | 200N.m | | | | | | | | | | | | | | |

**STANDARD DELIVERY**

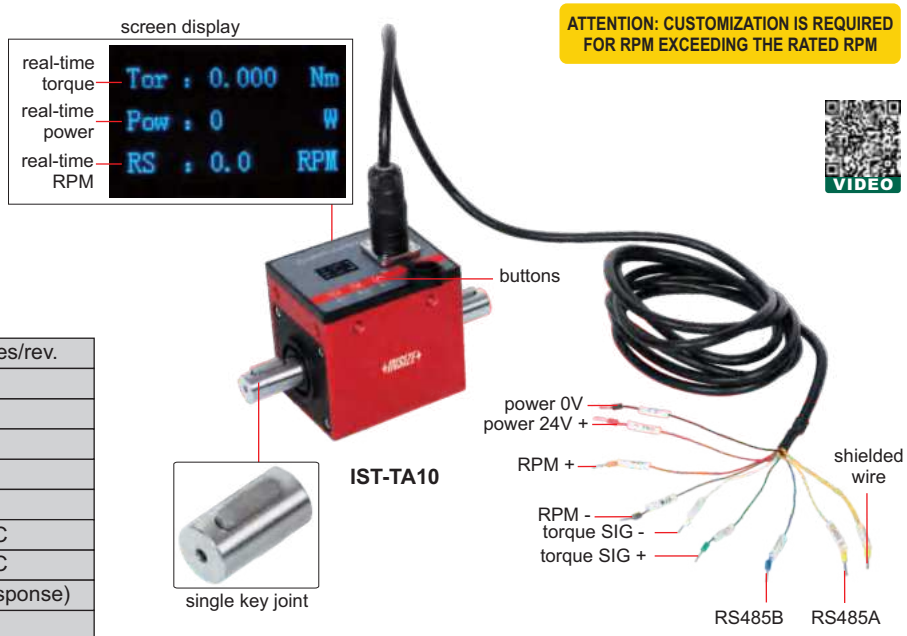
| | |
|---|---|
| Torque sensor (with connecting cable) | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Handheld force/torque indicator | ISF-DG4 |

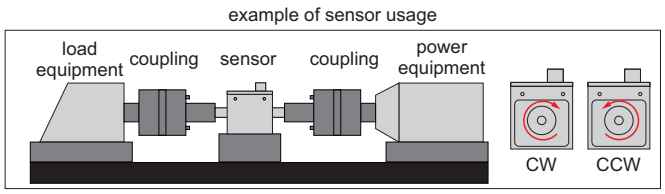
# DYNAMIC TORQUE SENSORS

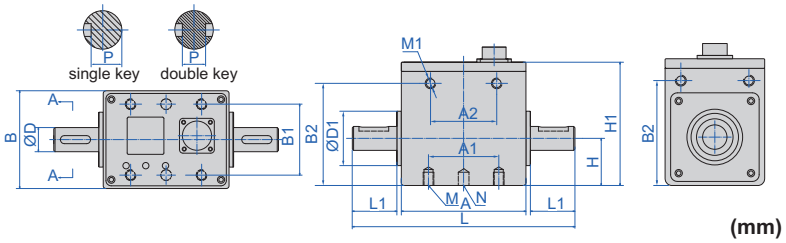
- Real-time display of torque, RPM and power values
- Support RS485 communication, support active uploading protocols
- Communication rate up to 1000 Hz
- Torque signal is ±5V transformed voltage output
- OLED display, resolution 128*64
- Simple calibration, zeroing, filtering, etc. can be performed




**SPECIFICATION**

| | |
|---|---|
| **RPM signal** | 120/60/10 pulses/rev. |
| **Zero output** | ±0.1%F.S. |
| **Accuracy** | 0.1%F.S. |
| **Hysteresis** | 0.5%F.S. |
| **Repeatability** | 0.1%F.S. |
| **Creep (30 minutes)** | 0.05%F.S. |
| **Temperature sensitivity drift** | 0.05%F.S./10°C |
| **Zero temperature drift** | 0.05%F.S./10°C |
| **Response time** | 0.6ms (50% response) |
| **Response frequency** | 1kHz |
| **Max. torsion angle** | 2.6×10rad (0.149°) |
| **Inertial torque** | 0.38kg.cm |
| **Intrinsic frequency of rotor vibration** | 19.4kHz |
| **Torque constant** | 3.85×10N.m/rad |
| **Material** | stainless steel |
| **Annual stability** | 0.3%/year |
| **load resistance** | >2kΩ |
| **Power supply** | DC24V 0.2A |
| **Working environment** | -10~50°C, ≤85%RH |
| **Safety overload** | 150% |
| **Extreme overload** | 200% |
| **Cable specification** | Ø5mm×3m |
| **Extreme cable pulling force** | 10kg |




(mm)

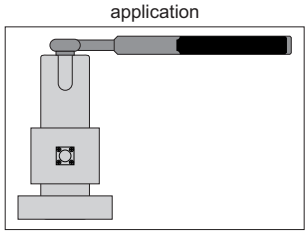
| Code | Maximum range | Rated RPM | ØD | B | L | L1 | H | H1 | A1 | A2 | B1 | B2 | ØD1 | M | M1 | N | Key size (L×W) | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IST-TA1S** | 1N.m | 8000rpm | 10 | 51 | 108 | 18 | 25.5 | 68 | 58 | / | 43 | / | 12 | 4-M3 depth 6 | / | / | single key 15×3 | 8.2 |
| **IST-TA2S** | 2N.m | | | | | | | | | | | | | | | | | |
| **IST-TA3S** | 3N.m | | | | | | | | | | | | | | | | | |
| **IST-TA5S** | 5N.m | | | | | | | | | | | | | | | | | |
| **IST-TA1L** | 1N.m | 8000rpm | 10 | 73 | 148 | 23.6 | 35.5 | 93 | 53 | 50 | 53 | 77 | 41 | 4-M8 depth 10 | 8-M8 depth 6 | 2-Ø8 depth 10 | single key 10×3 | 8.2 |
| **IST-TA2L** | 2N.m | | | | | | | | | | | | | | | | | |
| **IST-TA3L** | 3N.m | | | | | | | | | | | | | | | | | |
| **IST-TA5L** | 5N.m | | | | | | | | | | | | | | | | | |
| **IST-TA10** | 10N.m | 8000rpm | 18 | 73 | 168 | 33.6 | 35.5 | 93 | 53 | 50 | 53 | 77 | 41 | 4-M8 depth 10 | 8-M8 depth 6 | 2-Ø8 depth 10 | single key 22×6 | 14.5 |
| **IST-TA20** | 20N.m | | | | | | | | | | | | | | | | | |
| **IST-TA30** | 30N.m | | | | | | | | | | | | | | | | | |
| **IST-TA50** | 50N.m | | | | | | | | | | | | | | | | | |
| **IST-TA100** | 100N.m | | | | | | | | | | | | | | | | | |
| **IST-TA200** | 200N.m | 7000rpm | 28 | 73 | 208 | 53.5 | 35.5 | 93 | 53 | 50 | 53 | 77 | 51 | 4-M8 depth 10 | 8-M8 depth 6 | 2-Ø8 depth 10 | single key 28×8 | 24 |
| **IST-TA300** | 300N.m | | | | | | | | | | | | | | | | | |
| **IST-TA500** | 500N.m | 6000rpm | 38 | 90 | 238 | 65.5 | 44 | 107.5 | 60 | 60 | 60 | 91 | 61 | 4-M8 depth 12 | 8-M8 depth 12 | 2-Ø8 depth 10 | double key 45×10 | 28 |
| **IST-TA800** | 800N.m | | | | | | | | | | | | | | | | | |
| **IST-TA1000** | 1000N.m | 4000rpm | 60 | 120 | 258 | 75.5 | 60 | 138.5 | 60 | 70 | 75 | 122.5 | 93 | 4-M10 depth 15 | 8-M8 depth 15 | 2-Ø10 depth 15 | double key 60×18 | 46 |
| **IST-TA2000** | 2000N.m | | | | | | | | | | | | | | | | | |
| **IST-TA3000** | 3000N.m | | | | | | | | | | | | | | | | | |
| **IST-TA5000** | 5000N.m | | | | | | | | | | | | | | | | | |
| **IST-TA10000** | 10000N.m | 3000rpm | 98 | 160 | 356 | 100.5 | 80 | 191.6 | 80 | 80 | 120 | 157 | 129 | 4-M12 depth 25 | 4-M12 depth 25 | / | double key 90×28 | 78 |
| **IST-TA20000** | 20000N.m | | | | | | | | | | | | | | | | | |



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# STATIC TORQUE SENSORS

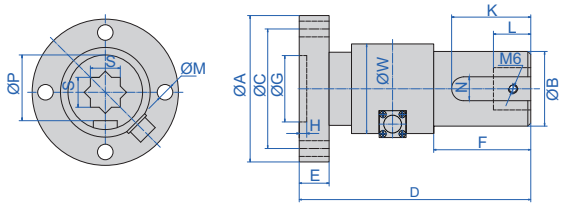
application



VIDEO

- Wide range of applications: for testing electric, pneumatic and manual torque screwdrivers and torque wrenches and other torque tools and torque monitoring
- Clockwise and counter-clockwise operation
- High overall accuracy, good long-term stability




## SPECIFICATION

| | |
|---|---|
| **Output sensitivity** | 1.0~2.0mV/V |
| **Zero output** | ±1%F.S. |
| **Linearity** | ±0.1%F.S. |
| **Hysteresis** | ±0.5%F.S. |
| **Repeatability** | ±0.3%F.S. |
| **Creep (30 minutes)** | ±0.1%F.S. |
| **Temperature sensitivity drift** | ±0.1%F.S./10°C |
| **Zero temperature drift** | ±0.1%F.S./10°C |
| **Response frequency** | 10kHz |
| **Material** | alloy steel / stainless steel |
| **Electrical impedance** | 350±5/700±5Ω |
| **Insulation impedance** | ≥5000MΩ/100VDC |
| **Operation voltage** | 5~15V |
| **Working temperature** | -20~80°C |
| **Safety overload** | 120% |
| **Extreme overload** | 150% |
| **Cable specification** | Ø5mm×3m |
| **Extreme cable pulling force** | 10kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Torque sensor (with connecting cable)** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Handheld force/ torque Indicators** | **ISF-DG** series |

**(mm)**

| Code | Maximum range | ØA | ØB | ØC | ØW | D | E | F | K | L | N | S | ØP | ØM | ØG | H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IST-NJ10S** | 10N.m | 98 | 50 | 80 | 58 | 90 | 15 | 33 | 33 | 25 | 16 | 20 | 44 | 4×Ø10.5 (4×Ø6 is **optional**) | / | / |
| **IST-NJ20S** | 20N.m | | | | | | | | | | | | | | | |
| **IST-NJ30S** | 30N.m | | | | | | | | | | | | | | | |
| **IST-NJ50S** | 50N.m | | | | | | | | | | | | | | | |
| **IST-NJ100S** | 100N.m | | | | | | | | | | | | | | | |
| **IST-NJ200S** | 200N.m | | | | | | | | | | | | | | | |
| **IST-NJ300S** | 300N.m | | | | | | | | | | | | | | | |
| **IST-NJ500S** | 500N.m | | | | | | | | | | | | | | | |
| **IST-NJ1000S** | 1000N.m | | | | | | | | | | | | | | | |
| **IST-NJ10L** | 10N.m | 98 | 50 | 80 | 58 | 155 | 20 | 65 | 53 | 25 | 16 | 20 | 44 | 4×Ø10.5 (4×Ø6 is **optional**) | / | / |
| **IST-NJ20L** | 20N.m | | | | | | | | | | | | | | | |
| **IST-NJ30L** | 30N.m | | | | | | | | | | | | | | | |
| **IST-NJ50L** | 50N.m | | | | | | | | | | | | | | | |
| **IST-NJ100L** | 100N.m | | | | | | | | | | | | | | | |
| **IST-NJ200L** | 200N.m | | | | | | | | | | | | | | | |
| **IST-NJ300L** | 300N.m | | | | | | | | | | | | | | | |
| **IST-NJ500L** | 500N.m | | | | | | | | | | | | | | | |
| **IST-NJ1000L** | 1000N.m | | | | | | | | | | | | | | | |
| **IST-NJ2000** | 2000N.m | 125 | 75 | 105 | 83 | 150 | 20 | 65 | 60 | 30 | 20 | 25.5 | 67.5 | 8×Ø12 | 60 | 6 |
| **IST-NJ3000** | 3000N.m | | | | | | | | | | | 40.5 | | | | |
| **IST-NJ5000** | 5000N.m | | | | | | | | | | | | | | | |

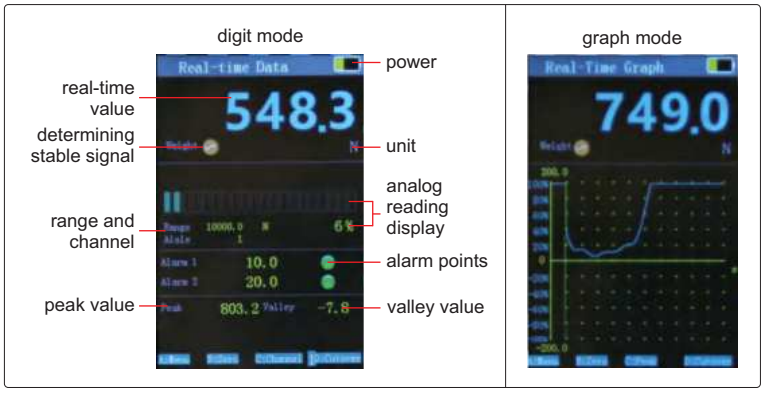
# HANDHELD FORCE/TORQUE INDICATORS

VIDEO

- For use with force sensors and torque sensors
- Three modes of real-time value display, peak value display and valley value display
- Force unit: N, kN, kg, lb, t
- Torque unit: N.m, kg.cm, in.lb, ft.lb
- High sampling rate captures peak value accurately
- Select to display the real-time curve and the last historical curve
- Real-time automatic capture of peak value and valley value
- Parameter backup and restoration, even if the parameters are messed up, you can restore them with a single click
- Weightless calibration, just enter the sensor parameters and you are ready for calibration
- A variety of alarm options: upper limit alarm, lower limit alarm, peak and valley alarm, over 1.2 times of the range alarm
- Supply voltage 3.5V, analog signal input range -15~15mV




**ISF-DG1**










**SPECIFICATION**

| Code | ISF-DG1 | ISF-DG2 | ISF-DG3 | ISF-DG4 |
|---|---|---|---|---|
| Number of channels | 7 channels | | single channel | |
| Max. sampling frequency | 3200Hz | 12800Hz | 3200Hz | 3200Hz |
| Type | force+torque | | force | torque |
| Unit switch | switching units requires recalibration | | units can be switched in real time | |
| Accuracy | ±0.1% (of load capacity) | | | |
| Output | TYPE-C | | | |
| Number of memory | 200 groups | | | |
| Power supply | built-in rechargeable battery, can be used for 15 hours | | | |
| Dimension | 132×76×20mm | | | |
| Weight | 300g | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Power adapter | 1 pc |



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VIDEO

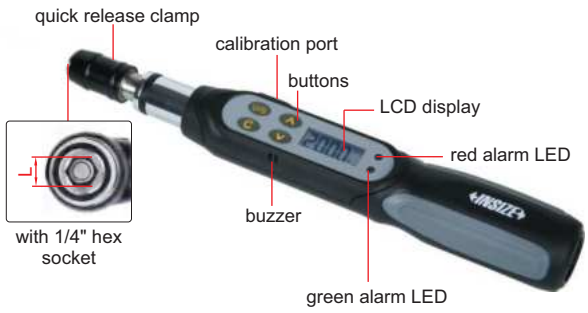
INSPECTION CERTIFICATE


phillips screwdriver bits (included)


hex screwdriver bits (included)

# DIGITAL TORQUE SCREWDRIVERS

- Clockwise and counter-clockwise operation
- Unit: cN.m, in.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when target torque value is 90%~100% of target torque
  – Red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations




**IST-SD200**

**SPECIFICATION**

| Code | | IST-SD50 | IST-SD200 | IST-SD400 |
|---|---|---|---|---|
| Range | | 10~50cN.m | 40~200cN.m | 80~400cN.m |
| Accuracy | clockwise | ±3% | ±2.5% | ±2.5% |
| | counter-clockwise | ±4% | ±3.5% | ±3.5% |
| Resolution | | 0.1cN.m | 0.1cN.m | 0.1cN.m |
| Size of hex socket (L) | | 1/4" | 1/4" | 1/4" |
| Power supply | | 1×AAA battery | | |
| Length | | 193mm | 203mm | 203mm |
| Weight | | 190g | 200g | 200g |

**STANDARD DELIVERY**

| | |
|---|---|
| Torque screwdriver | 1 pc |
| Phillips screwdriver bits | 1 pc |
| Hex screwdriver bits | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |

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INSPECTION CERTIFICATE

BUILT-IN BLUETOOTH

VIDEO

# BLUETOOTH DIGITAL TORQUE SCREWDRIVERS (KEYBOARD SIGNAL)




**IST-3SD200**


phillips screwdriver bits (included)


hex screwdriver bits (included)

**Torque screwdrivers:**

- Clockwise and counter-clockwise operation
- Unit: cN.m, in.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when target torque value is 90%~100% of target torque
  – Red and green LED lights on and buzzer sounds when target torque value is reached
- Auto power off

**Data transmission:**

- Built-in Bluetooth module, which can be connected with computers (with Bluetooth function), mobile phones, tablets and other devices
- Keyboard signal, can be transmitted to Excel
- Transmission distance is 10 meters (no obstacles, no electromagnetic interference)
- Bluetooth connection and disconnection are respectively shown by indicator lights

**SPECIFICATION**

| Code | | IST-3SD50 | IST-3SD200 | IST-3SD400 | IST-3SD600 |
|---|---|---|---|---|---|
| Range | | 10~50cN.m | 40~200cN.m | 80~400cN.m | 120~600cN.m |
| Accuracy | clockwise | ±2% | | | |
| | counter-clockwise | ±3% | | | |
| Resolution | | 0.1cN.m | | | |
| Size of hex socket (L) | | 1/4" | | | |
| Power supply | | 1×3.7V replaceable lithium battery | | | |
| Length | | 203mm | | | |
| Weight | | 190g | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Torque screwdriver | 1 pc |
| Phillips screwdriver bits | 1 pc |
| Hex screwdriver bits | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |



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# WIRED TRANSMISSION DIGITAL TORQUE SCREWDRIVERS (KEYBOARD SIGNAL)

DATA TRANSMISSION

INSPECTION CERTIFICATE



phillips screwdriver bits (included)



hex screwdriver bits (included)




IST-2SD200



with 1/4" hex socket

**Torque screwdrivers:**

- Clockwise and counter-clockwise operation
- Unit: cN.m, in.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when target torque value is 90%~100% of target torque
  – Red and green LED lights on and buzzer sounds when target torque value is reached
- Auto power off

**Data transmission:**

- Keyboard signal through a cable, can be transmitted to Excel, Word, Txt, etc.



**SPECIFICATION**

| Code | | IST-2SD50 | IST-2SD200 | IST-2SD400 | IST-2SD600 |
|---|---|---|---|---|---|
| Range | | 10~50cN.m | 40~200cN.m | 80~400cN.m | 120~600cN.m |
| Accuracy | clockwise | ±2% | | | |
| | counter-clockwise | ±3% | | | |
| Resolution | | 0.1cN.m | | | |
| Size of hex socket (L) | | 1/4" | | | |
| Power supply | | 1×3.7V replaceable lithium battery | | | |
| Length | | 203mm | | | |
| Weight | | 190g | | | |

**STANDARD DELIVERY**

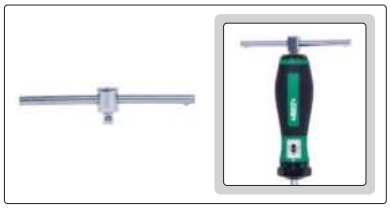
| | |
|---|---|
| Torque screwdriver | 1 pc |
| Phillips screwdriver bits | 1 pc |
| Hex screwdriver bits | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |
| Transmission cable | IST-HID-CABLE |

# TORQUE SCREWDRIVERS

ATTENTION: CLOCKWISE OPERATION ONLY



T-bar wrench (for **IST-MG250**, **IST-MG360**, **IST-MG600**)




IST-MG100

**SPECIFICATION**

| Code | IST-MG100 | IST-MG250 | IST-MG360 | IST-MG600 |
|---|---|---|---|---|
| Range (clockwise) | 20~100cN.m | 50~250cN.m | 60~360cN.m | 1.0~6.0N.m |
| Graduation | 2cN.m | 5cN.m | 5cN.m | 0.1N.m |
| Head | 1/4" hex socket | | | |
| Accuracy | ±6% | | | |
| Length | 172mm | | | |
| Weight | 0.26kg | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Torque screwdriver | 1 pc |
| T-bar wrench (for IST-MG250, IST-MG360, IST-MG600) | 1 pc |



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ATTENTION: TORQUE TESTERS ARE NEEDED FOR CALIBRATION

# INTELLIGENT ELECTRIC SCREWDRIVERS (CURRENT CONTROL)

ATTENTION: SPEED SHOULD BE BELOW 100RPM WHEN TIGHTENING IS ENDED

VIDEO



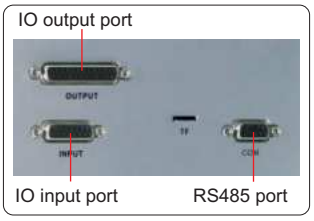
HES-E152 HES-E403 HES-E901A



controller **type A**



controller **type B**




communication port (included)

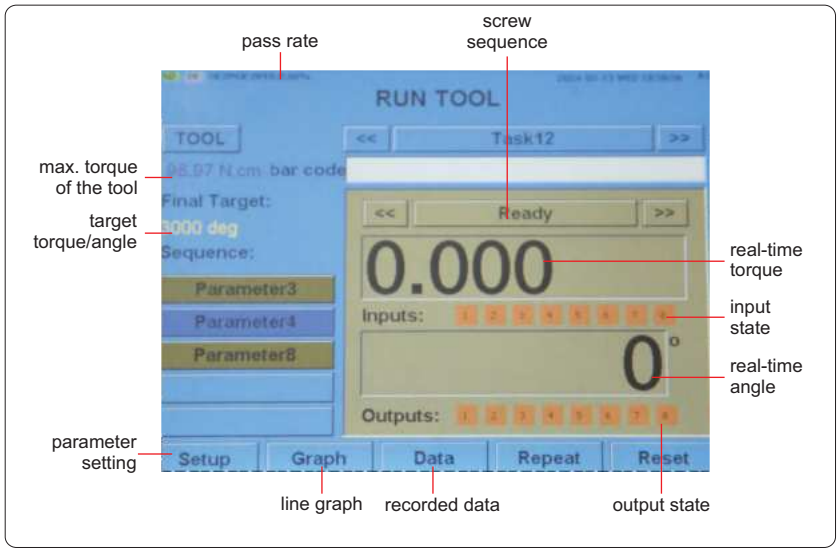


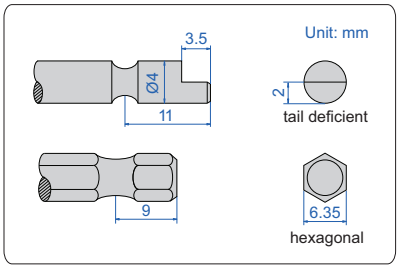
- Highly efficient heat dissipation setting, ultra-low noise handling
- Permanent magnet synchronous servo motor and high-precision reducer power transmission mechanism
- High-precision angle sensor (resolution 1°) and two-color LED indication of locking status
- The safety level conforms to the relevant provisions of GB3883/IEC60745 and other standards
- 12 task modes, each task can be configured with 8 different torque parameters
- Locked data is stored in EXCEL on the hard disk for 600 days
- Built-in servo drive for precise control of torque, angle and speed
- Provide graphical tool for process optimization and diagnostic
- Provide programmable IO and RS485 communication port for process control and data transmission
- Physical buttons for assisted operation and they are monitored by LED lights



balance arm (**optional**)

controller (included)




screwdriver head (**optional**)
(can be customized: cross, flathead, hexagonal, star-shaped)

To be continued



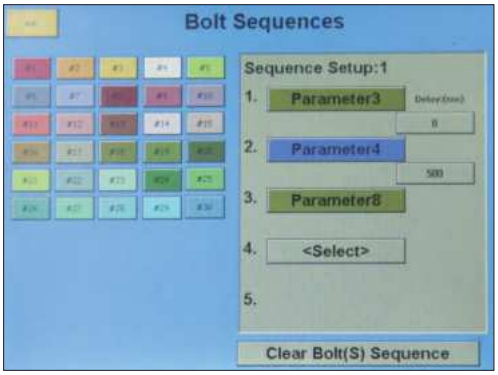
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Continued from previous page

interface of tightening parameter setting




interface of screw sequence matching parameters




**SPECIFICATION**

| Code | | HES-E151 | HES-E152 | HES-E401 | HES-E402 | HES-E403 | HES-E404 |
|---|---|---|---|---|---|---|---|
| Torque range | | 0.01~0.13N.m | 0.06~0.55N.m | 0.02~0.23N.m | 0.15~0.90N.m | 0.20~1.20N.m | 0.50~1.60N.m |
| Motor power | | DC15W | | DC40W | | | |
| Max. speed | | 5000rpm | 1200rpm | 5000rpm | 1200rpm | 1000rpm | 800rpm |
| Applicable screw outside diameter | | 1.0~1.7mm | 1.4~2.5mm | 1.0~2.0mm | 2.0~3.0mm | 2.0~3.5mm | 2.5~4.0mm |
| Applicable screwdriver head | | Ø4mm tail deficient | | | | 6.35mm hexagonal | |
| Controller | | type A | | | | | |
| Power supply | | AC 85~264V, 47~63Hz | | | | | |
| Display operation interface | | touch screen menu operation mode, 3 function buttons+3 LED indicators | | | | | |
| Torque accuracy | | ±5% at 30%~80% of maximum output torque, ±8% in other range | | | | | |
| Dimension | electric screwdriver | 242×53×35mm | | 214×64.4×38mm | 231×64.4×38mm | | |
| | controller | 151.5×185.8×221mm | | | | | |
| Weight | electric screwdriver | 300g | | 400g | 500g | | 600g |
| | controller | 3500g | | | | | |

| Code | | HES-E901A | HES-E902A | HES-E903A | HES-E901B | HES-E902B | HES-E903B |
|---|---|---|---|---|---|---|---|
| Torque range | | 0.10~0.70N.m | 0.60~2.40N.m | 0.60~3.00N.m | 0.20~1.20N.m | 0.80~4.30N.m | 1.00~5.50N.m |
| Motor power | | DC90W | | | AC90W | | |
| Max. speed | | 5000rpm | 1200rpm | 1000rpm | 5000rpm | 1500rpm | 1200rpm |
| Applicable screw outside diameter | | 2.0~2.5mm | 3.5~4.5mm | 3.5~5.0mm | 2.0~3.5mm | 3.5~5.5mm | 4.0~6.0mm |
| Applicable screwdriver head | | 6.35mm hexagonal | | | | | |
| Controller | | type B | | | | | |
| Power supply | | AC 200~230V±10%, 50~60Hz | | | | | |
| Display operation interface | | touch screen menu operation mode, 3 function buttons+3 LED indicators | | | | | |
| Torque accuracy | | ±5% at 30%~80% of maximum output torque, ±8% in other range | | | | | |
| Dimension | electric screwdriver | 317×59.5×47.5mm | | | | | |
| | controller | 210×160×345mm | | | 235×160×345mm | | |
| Weight | electric screwdriver | 900g | 1060g | | 900g | 1060g | |
| | controller | 5500g | | | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Electric screwdriver | 1 pc |
| Controller | 1 pc |
| Cross screwdriver head | 1 pc |
| Tool connection cable | 1 pc |
| USB transmission cable | 1 pc |

**OPTIONAL ACCESSORY**

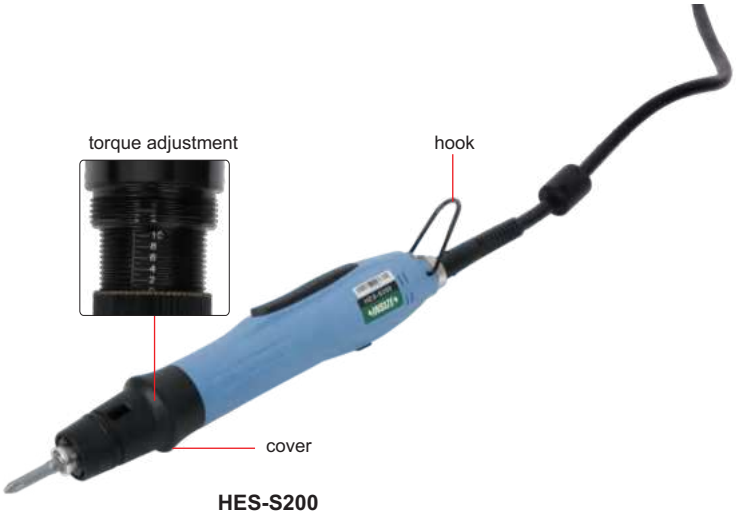
| | |
|---|---|
| Ø4mm tail deficient screwdriver head | |
| 6.35mm hexagonal screwdriver head | |
| Balance arm | HES-E-X* |
| QR code scanner | HES-E-S |

* Not suitable for **HES-E151**, **HES-E152**

ATTENTION: TORQUE TESTERS ARE NEEDED TO SET TORQUE

# INVERTER BRUSHLESS ELECTRIC SCREWDRIVERS

VIDEO




**HES-S200**

spring loaded balancer (**optional**)



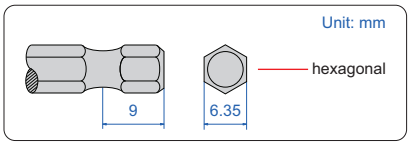


cross screwdriver head (included)



- Adopting high performance, low inertia, low loosening, low power consumption, low impact brushless servo motor components, with ultra-long life and durability
- Frequency conversion and constant voltage function for stable torque, temperature and speed, low temperature rise
- Ergonomic design, small size and light weight, wider range torque, can be applied to a variety of screw locking requirements, reduce procurement cost
- The safety and durability of low-voltage frequency conversion and the convenience and stability of high-voltage direct plug-in, more flexible and economical in operation
- No toner spillage design, meets the requirements of the 3C industry and environmental protection

screwdriver head (**optional**) (can be customized: cross, flathead, hexagonal, star-shaped)




## SPECIFICATION

| Code | | HES-S020 | HES-S050 | HES-S120 | HES-S160 | HES-S200 | HES-S250 |
|---|---|---|---|---|---|---|---|
| Torque range | | 0.03~0.20N.m | 0.05~0.50N.m | 0.20~1.20N.m | 0.20~1.60N.m | 0.40~2.00N.m | 0.50~2.50N.m |
| | | 0.3~2.0kgf.cm | 0.5~5.0kgf.cm | 2.0~12.0kgf.cm | 2.0~16.0kgf.cm | 4.0~20.0kgf.cm | 5.0~25.0kgf.cm |
| Torque repeatability | | 5% (at 30%~80% of maximum output torque) | | | | | |
| Rated power | | DC60W | | | | | DC75W |
| Speed range | | 700~1000rpm | 700~1000rpm | 1400~2000rpm | 700~1000rpm | 700~1000rpm | 500~750rpm |
| Applicable screw outside diameter | mechanical | 1.0~2.2mm | 1.0~2.6mm | 1.4~3.0mm | 2.2~4.2mm | 2.6~4.5mm | 3.0~5.0mm |
| | self-tapping | 1.0~2.0mm | 1.0~2.3mm | 1.4~2.6mm | 2.0~3.2mm | 2.3~3.5mm | 2.6~4.0mm |
| Applicable screwdriver head | | 6.35mm hexagonal | | | | | |
| Power supply | | AC100~240V, 50/60Hz | | | | | |
| Electric screwdriver dimension | | 238×45×40mm | | | | | |
| Electric screwdriver weight | | 450g | | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Electric screwdriver | 1 pc |
| AC adapter | 1 pc |
| Cross screwdriver head | 2 pcs |

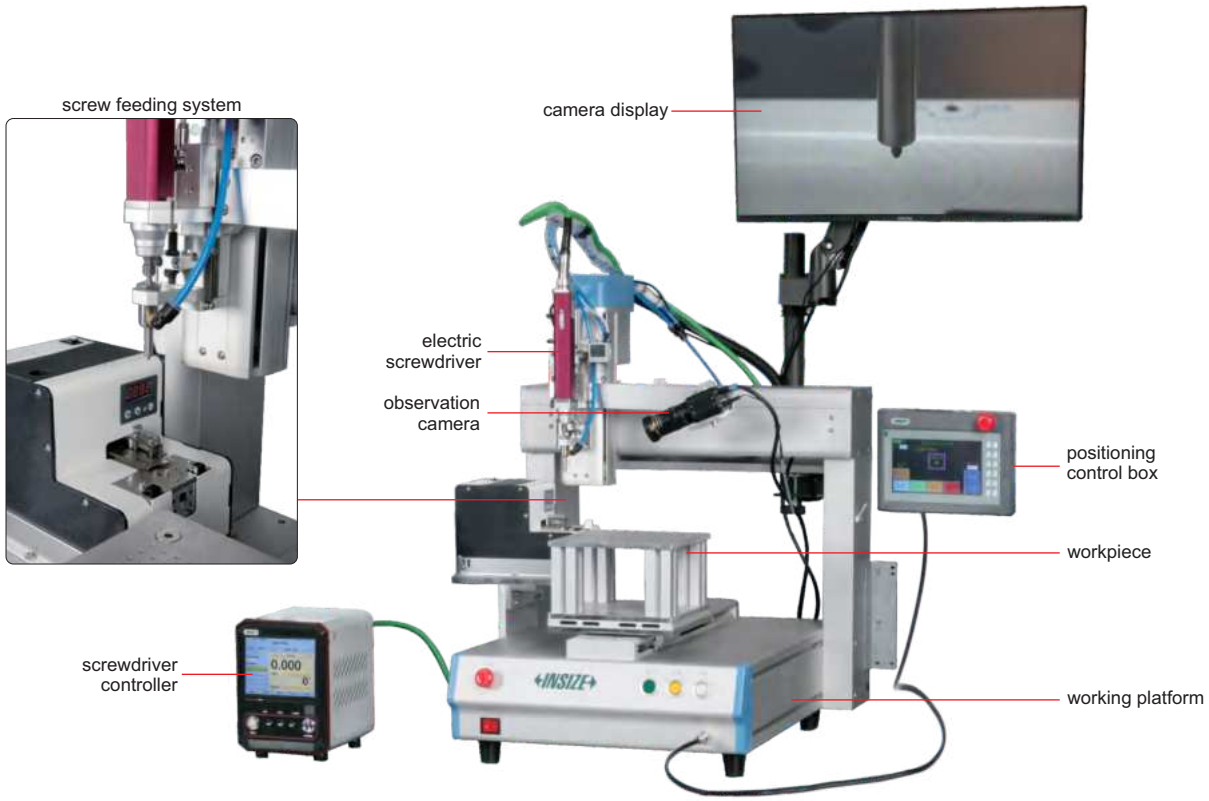
## OPTIONAL ACCESSORY

| | |
|---|---|
| 6.35mm hexagonal screwdriver head | |
| Spring loaded balancer | HES-E-X |

# DESKTOP AUTOMATIC TIGHTENING MACHINE
# CODE ATM

CUSTOMIZED ACCORDING TO WORKPIECES

VIDEO






## SPECIFICATION

| | | | |
|---|---|---|---|
| Working platform | working direction | | vertically down |
| | max. operation speed | XY-axis | 800mm/s |
| | | Z-axis | 400mm/s |
| | max. load | XY-axis | 10kg |
| | | Z-axis | 5kg |
| | positioning repeatability | | ±0.05mm |
| | control axis | | XYZ axis |
| | number of preset positioning programs | | 80 |
| | number of positioning points for one program | | 350 |
| | number of I/O ports | | 4 input, 4 output |
| Intelligent electric screwdriver* | applicable torque range | | 0.01~7.50N.m |
| | applicable screw outside diameter | | 1.0~7.0mm |
| | torque accuracy | | ±5% at 30%~80% of maximum output torque, ±8% in other range |
| | resolution of angle | | 1° |
| | number of preset tightening programs | | 12 |
| | number of preset callable parameters | | 8 |
| | number of I/O ports | | 8 input, 8 output |
| Power supply | | | AC 220V, 50Hz |
| Pressure supply | | | 0.5~0.7Mpa |
| Environmental requirement | | | temperature: 0~40°C, relative humidity: 20~85% |

* Intelligent screwdrivers with different torque ranges for different tightening screws

- Working platform is equipped with servo motor for fast working speed and high positioning accuracy
- Intelligent screwdriver with precise control of torque, angle and speed
- Blow or suction automatic screw feeding system is efficient and stable
- Camera-assisted positioning for more convenient and accurate

steps

Step 1: place the workpiece on positioning fixture and fix it firmly
Step 2: press the reset button to return the platform and cylinder to the initial position
Step 3: press the start button, according to the set program to complete tightening of all screws on the workpiece
Step 4: replace workpiece

## STANDARD DELIVERY

| | |
|---|---|
| Working platform | main unit |
| | positioning control box |
| | positioning fixture |
| Intelligent electric screwdriver | electric screwdriver |
| | controller |
| | suitable screwdriver head |
| Screw feeding system | 1 set |
| Camera-assisted positioning system | 1 set |
| Control program | 1 set |



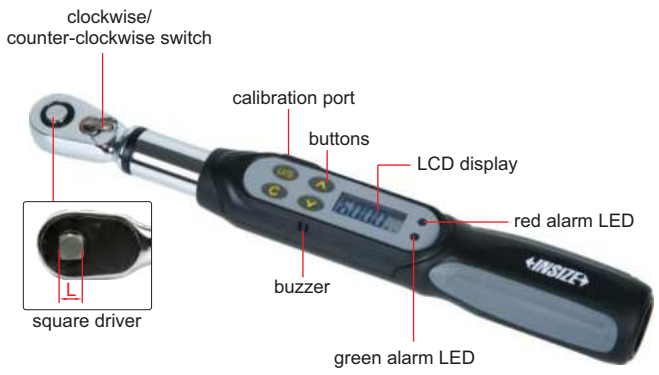
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VIDEO

INSPECTION CERTIFICATE

# SMALL RANGE DIGITAL TORQUE WRENCHES

- Ratchet head
- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when target torque value is 90%~100% of target torque
  – Red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations
- Non-slip grip handle
- With overload record
  (once the torque reaches 110% of the maximum range)




IST-WP6

**SPECIFICATION**

| Code | | IST-WP6 | IST-WP12 | IST-WP20 |
|---|---|---|---|---|
| Range | | 1.2~6N.m | 2.4~12N.m | 4~20N.m |
| Accuracy | clockwise | ±3% | | |
| | counter-clockwise | ±4% | | |
| Resolution | | 0.001N.m | 0.01N.m | 0.01N.m |
| Square driver (L) | | 1/4" | | |
| Power supply | | 1×AAA battery | | |
| Length | | 260mm | | |
| Weight | | 430g | | |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |



VIDEO

INSPECTION CERTIFICATE

# SHORT HANDLE DIGITAL TORQUE WRENCHES

- Ratchet head
- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 90%~100% of target torque
  – Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off in 5 minutes automatically
- Non-slip grip handle
- With damp record
- With overload record (once the torque reaches 110% of the maximum range)




IST-WS60

**SPECIFICATION**

| Code | | IST-WS12 | IST-WS20 | IST-WS30 | IST-WS30A | IST-WS60 | IST-WS85 |
|---|---|---|---|---|---|---|---|
| Range | | 2.4~12N.m | 4~20N.m | 6~30N.m | 6~30N.m | 12~60N.m | 17~85N.m |
| Accuracy | clockwise | ±3% | | | | | |
| | counter-clockwise | ±4% | | | | | |
| Resolution | | 0.01N.m | 0.01N.m | 0.01N.m | 0.01N.m | 0.01N.m | 0.1N.m |
| Square driver (L) | | 1/4" | 1/4" | 1/4" | 3/8" | 3/8" | 3/8" |
| Power supply | | 2×AAA batteries | | | | | |
| Length | | 215mm | 215mm | 215mm | 215mm | 225mm | 271mm |
| Weight | | 750g | 750g | 750g | 830g | 917g | 1000g |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |

# WIRED TRANSMISSION DIGITAL TORQUE WRENCHES (KEYBOARD SIGNAL)

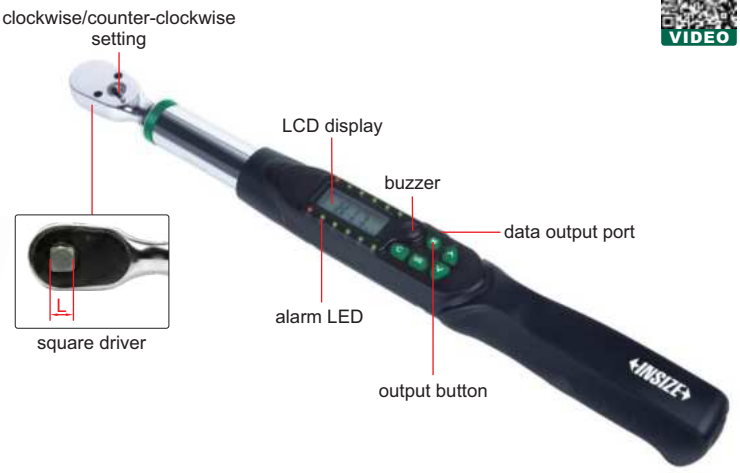
INSPECTION CERTIFICATE

TYPE B OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

VIDEO




**IST-17W12A**
**type A**

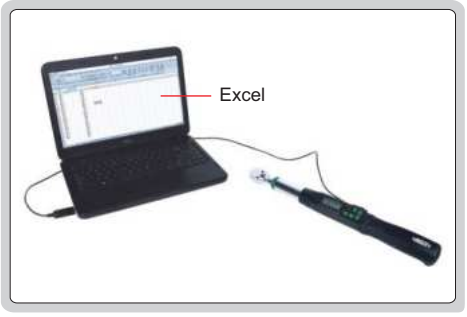



**IST-17W135A**
**type B**



**Torque wrench:**

- Ratchet head
- Unit: N.m, in.lb, ft.lb, kg.cm
- Clockwise and counter-clockwise operation
- Peak and track working mode
- Can set tolerance with judgement in peak working mode
- 9 target torque values can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 80%~99.5% of target torque
  – Both green and red LED light on and buzzer sounds when torque value is over 99.5% of target torque
- Power off in 2 minutes automatically
- Non-slip grip handle
- With overload record (once the torque reaches 110% of the maximum range)




transmission cable (**optional**)
keyboard signal output via transmission cable

**Data transmission:**

- Keyboard signal through a cable, can be transmitted to Excel, Word, Txt, etc.
- Press the output button once to output a value

**SPECIFICATION**

| Code | IST-17W06A | IST-17W12A | IST-17W20A | IST-17W30A | IST-17W135A | IST-17W200A | IST-17W340A |
|---|---|---|---|---|---|---|---|
| Type | type A (short handle) | | | type B (long handle) | | | |
| Range | 1.2~6N.m | 2.4~12N.m | 4~20N.m | 6~30N.m | 27~135N.m | 40~200N.m | 68~340N.m |
| Accuracy | clockwise: ±2% | | | | | | |
| | counter-clockwise: ±3% | | | | | | |
| Tolerance setting range | -20%~+20% (target torque value) | | | | | | |
| Resolution | 0.001N.m | 0.01N.m | 0.01N.m | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Square driver (L) | 1/4" | 1/4" | 1/4" | 1/4" | 3/8" | 1/2" | 1/2" |
| Power supply | 2×AAA batteries | | | 2×AA batteries | | | |
| Length | 215mm | 215mm | 215mm | 390mm | 415mm | 530mm | 650mm |
| Weight | 750g | 750g | 750g | 760g | 940g | 1340g | 1540g |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |
| Transmission cable (keyboard signal) | IST-HID-CABLE * |
| Transmission cable (serial port signal) | 7305-IST * |

*Torque wrench must be equipped with an optional transmission cable to enable data transmission



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# BLUETOOTH DIGITAL TORQUE WRENCHES (KEYBOARD SIGNAL)

TYPE B OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

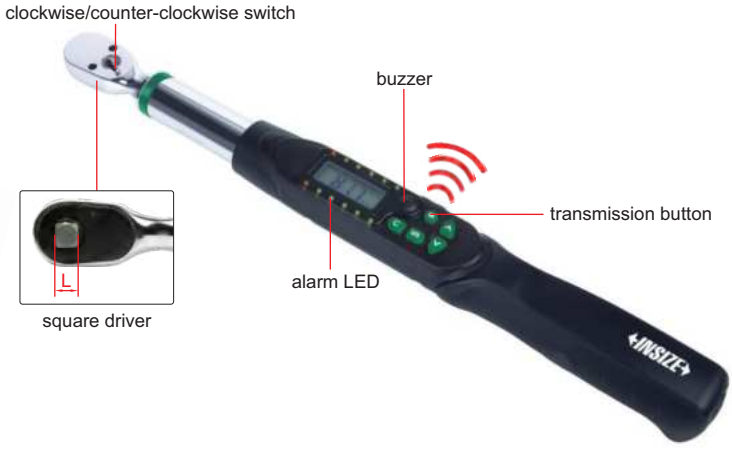
BUILT-IN BLUETOOTH

INSPECTION CERTIFICATE

VIDEO




**IST-15W12A**
**type A**




**IST-15W135A**
**type B**

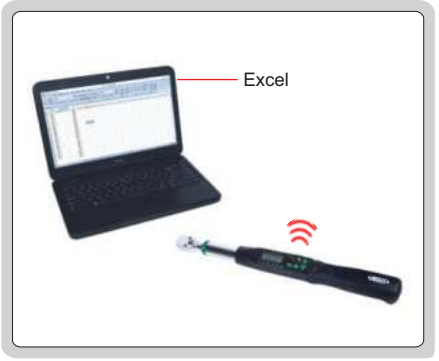


**Torque wrenches:**

- Ratchet head
- Unit: in.lb, ft.lb, N.m, kg.cm
- Clockwise and counter-clockwise operation
- Peak and track working mode
- Can set tolerance with judgement in peak working mode
- 9 target torque values can be set, with audible and visible alarm: LED lights up in sequence, and the buzzer gets louder and louder when torque value is 80%~99.5% of target torque
- Power off in 2 minutes automatically
- Non-slip grip handle
- With overload record (once the torque reaches 110% of the maximum range)

**Data transmission:**

- Built-in Bluetooth 4.0 module, which can be connected with computers (with Bluetooth function), mobile phones, tablets and other devices
- Keyboard signal, can be transmitted to Excel, Word, TXT
- Transmission distance is 10 meters (no obstacles, no electromagnetic interference)
- Bluetooth connection and disconnection are respectively shown by indicator lights




transmission distance is 10 meters
(no obstacles, no electromagnetic interference)

**SPECIFICATION**

| Code | | IST-15W06A | IST-15W12A | IST-15W20A | IST-15W30A | IST-15W135A | IST-15W200A | IST-15W340A |
|---|---|---|---|---|---|---|---|---|
| Type | | type A (short handle) | | | type B (long handle) | | | |
| Range | | 1.2~6N.m | 2.4~12N.m | 4~20N.m | 6~30N.m | 27~135N.m | 40~200N.m | 68~340N.m |
| Accuracy | clockwise | ±2% | | | | | | |
| | counter-clockwise | ±3% | | | | | | |
| Tolerance setting range | | -20%~+20% (target torque value) | | | | | | |
| Resolution | | 0.001N.m | 0.01N.m | 0.01N.m | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Square driver (L) | | 1/4" | 1/4" | 1/4" | 1/4" | 3/8" | 1/2" | 1/2" |
| Power supply | | 2xAAA batteries | | | 2xAA batteries | | | |
| Length | | 215mm | 215mm | 215mm | 390mm | 415mm | 530mm | 650mm |
| Weight | | 750g | 750g | 750g | 760g | 940g | 1340g | 1540g |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |



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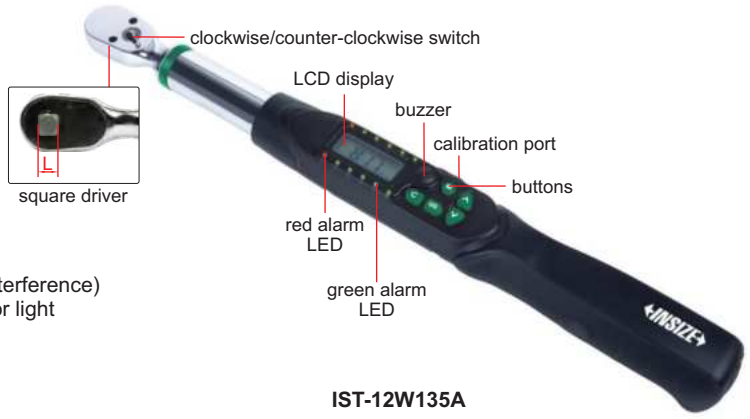
# TWO-WAY BLUETOOTH DIGITAL TORQUE WRENCHES

INSPECTION CERTIFICATE

BUILT-IN BLUETOOTH

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

VIDEO




IST-12W135A

**Data transmission:**

- Data transmission via bluetooth (bluetooth 4.0)
- Two-way transmission and control
- Transmission distance: 10m (no obstacles, no electromagnetic interference)
- Bluetooth connection and disconnection are displayed by indicator light

**Torque wrench:**

- Ratchet head
- Unit: N.m, in.lb, ft.lb, kg.cm
- Clockwise and counter-clockwise operation
- Peak and track working mode
- Can set tolerance with judgement in peak working mode
- 9 target torque values can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 80%~99.5% of target torque
  – Both green and red LED light on and buzzer sounds when torque value is over 99.5% of target torque
- Power off in 2 minutes automatically
- Non-slip grip handle
- With overload record (once the torque reaches 110% of the maximum range)



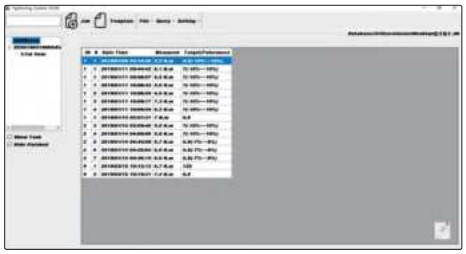


a computer can be connected with multiple wrenches, the transmission distance is 10 meters (no obstacles, no electromagnetic interference)

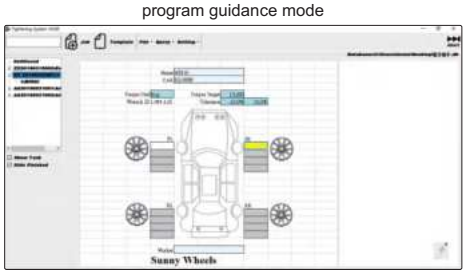
**Software:**

- In Windows 10 system version 1709 or above
- Two operation mode:
  – Data transmission mode: wrench transmits actual torque value to software after operation
  – Program guidance mode: firstly set process on software (set sequence of tightening, select wrench and set torque values and tolerances). Then software shows which wrench the operator should use (indicator light of the selected wrench is on) and shows the target torque value, and serial number of the screw to be tightened (shows on the wrench ); After the operation is finished, the actual torque value is sent to software
- Can select whether the wrench only sends qualified data after operation (in accordance with the tolerance)
- Two data transmission modes: automatic or press button to send
- When the wrench is disconnected, data is stored in the wrench and automatically sent to computer after connection via Bluetooth
- The data in software can be printed or exported to Excel

data transmission mode



program guidance mode



**SPECIFICATION**

| Code | IST-12W30A | IST-12W135A | IST-12W200A | IST-12W340A |
|---|---|---|---|---|
| Range | 6~30N.m | 27~135N.m | 40~200N.m | 68~340N.m |
| Accuracy | clockwise: ±2% | | | |
| | counter-clockwise: ±3% | | | |
| Tolerance setting range | -20%~+20% (target torque value) | | | |
| Resolution | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Square driver (L) | 1/4" | 3/8" | 1/2" | 1/2" |
| Power supply | 2xAA batteries | | | |
| Length | 390mm | 415mm | 530mm | 650mm |
| Weight | 760g | 940g | 1340g | 1540g |

**OPTIONAL ACCESSORY**

| Calibration cable | IST-W-CABLE |
|---|---|



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# TWO-WAY WIRELESS DIGITAL TORQUE WRENCHES




IST-13W135A



two-way receiver

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

TRANSMISSION DISTANCE IS 300 METERS

INSPECTION CERTIFICATE

VIDEO

**Torque wrench:**

- Ratchet head
- The test results can be transmitted wirelessly to the computer and PLC
- Unit: N.m, in.lb, ft.lb, kg.cm
- Clockwise and counter-clockwise operation
- Peak and track working mode
- Can set tolerance with judgement in peak working mode
- 9 target torque values can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 80%~99.5% of target torque
  – Both green and red LED light on and buzzer sounds when torque value is over 99.5% of target torque
- Power off in 2 minutes automatically
- Non-slip grip handle
- With damp record
- With overload record
  (once the torque reaches 110% of the maximum range)

**Two-way receiver:**

- A two-way receiver can be connected with up to 10 wrenches at the same time, and the maximum transmission distance is 300 meters

**Software:**

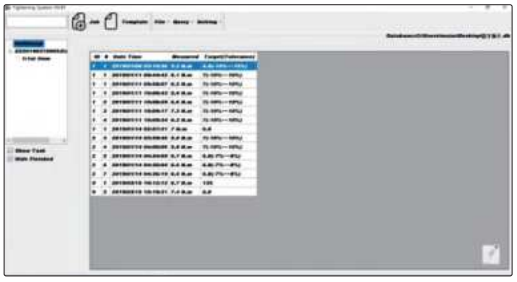
- In Windows10 system version 1709 or above
- Two operation mode:
  – Data transmission mode: wrench transmits actual torque value to software after operation
  – Program guidance mode: firstly set process on software (set sequence of tightening, select wrench and set torque values and tolerances). Then software shows which wrench the operator should use (indicator light of the selected wrench is on) and shows the target torque value, and serial number of the screw to be tightened (shows on the wrench ); After the operation is finished, the actual torque value is sent to software.
- Can select whether the wrench only sends qualified data after operation (in accordance with the tolerance)
- Two data transmission modes: automatic or press button to send
- When the wrench is disconnected, data is stored in the wrench and automatically sent to computer after wireless connection
- The data in software can be printed or sent to Excel

**TWO-WAY RECEIVER SPECIFICATION**

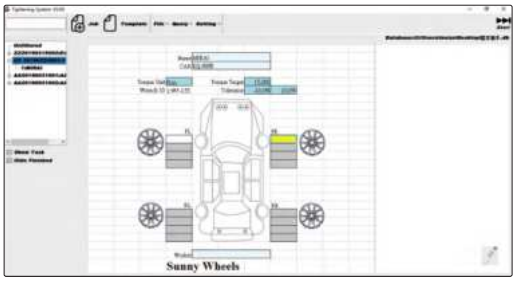
| Code | IST-13WREC | IST-13WREC-PLC |
|---|---|---|
| Signal output to | computer | PLC |
| Working frequency | ISM433MHz (432.0~433.8MHz, adjustable) | |
| Power supply | power adapter, 24V, 0.5A | |
| Dimension | 200×108×31mm | |
| Weight | 500g | |

**OPTIONAL ACCESSORY**

| Calibration cable | IST-SD-CABLE |
|---|---|



data transmission mode



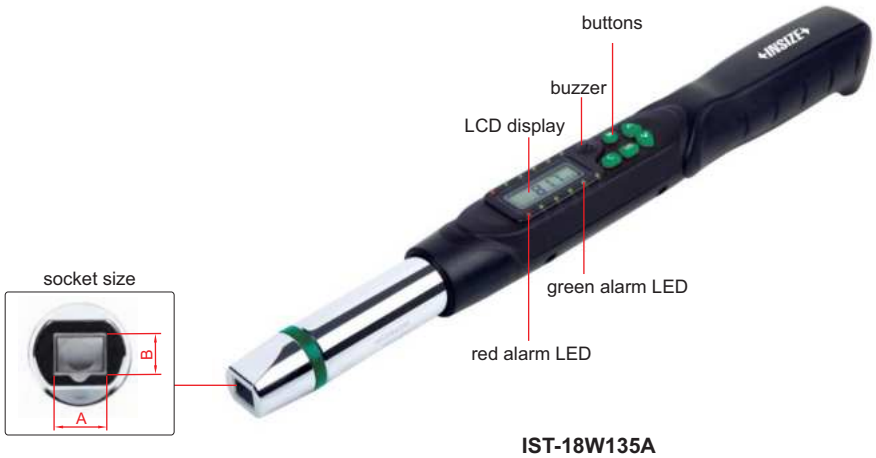

program guidance mode

**SPECIFICATION**

| Code | Range | Accuracy | Unit | Resolution | Square driver (L) | Working frequency | Power supply | Length | Weight |
|---|---|---|---|---|---|---|---|---|---|
| IST-13W30A | 6~30N.m | clockwise: ±2% counter-clockwise: ±3% | N-m/ft-lb/ in-lb/kg-cm | 0.01N.m | 1/4" | ISM433MHz (432.0~433.8MHz, adjustable) | 2×AA batteries | 390mm | 760g |
| IST-13W60A | 12~60N.m | | | 0.01N.m | 3/8" | | | 390mm | 940g |
| IST-13W135A | 27~135N.m | | | 0.1N.m | 3/8" | | | 415mm | 940g |
| IST-13W200A | 40~200N.m | | | 0.1N.m | 1/2" | | | 530mm | 1340g |
| IST-13W340A | 68~340N.m | | | 0.1N.m | 1/2" | | | 650mm | 1540g |
| IST-13W1200A | 240~1200N.m | clockwise: ±2.5% counter-clockwise: ±3.5% | N-m/ft-lb | 1N.m | 1" | | | 1800mm | 9000g |
| IST-13W1500A | 300~1500N.m | | | 1N.m | 1" | | | 1800mm | 9000g |
| IST-13W2000A | 400~2000N.m | | | 1N.m | 1" | | | 1800mm | 10500g |

# INTERCHANGEABLE HEAD BLUETOOTH DIGITAL TORQUE WRENCHES (KEYBOARD SIGNAL)

INSPECTION CERTIFICATE




**IST-18W135A**

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

VIDEO



**Torque wrenches:**

- Unit: N.m, in.lb, ft.lb, kg.cm
- Clockwise and counter-clockwise operation
- Peak and track working modes
- Can set tolerance with judgement in peak working mode
- 9 target torque values can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 80%~99.5% of target torque
  – Both green and red LED light on and buzzer sounds when torque value is over 99.5% of target torque
- Power off in 2 minutes automatically without any operations
- Non-slip grip handle
- With overload record (once the torque reaches 110% of the maximum range)

ratchet head (included)

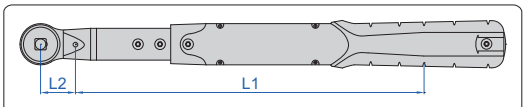



square driver

**Data transmission:**

- Built-in Bluetooth 4.0 module, which can be connected with computers (with Bluetooth function), mobile phones, tablets and other devices
- Keyboard signal, can be transmitted to Excel, Word, TXT
- Transmission distance is 10 meters (no obstacles, no electromagnetic interference)
- Bluetooth connection and disconnection are respectively shown by indicator lights

torque correction




torque value needs to be corrected if L2 is different when head is changed

**SPECIFICATION**

| Code | | IST-18W30A | IST-18W135A | IST-18W200A | IST-18W340A |
|---|---|---|---|---|---|
| Range | | 6~30N.m | 27~135N.m | 40~200N.m | 68~340N.m |
| Accuracy | clockwise | ±2% | | | |
| | counter-clockwise | ±3% | | | |
| Resolution | | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Socket size (A×B) | | 12×9mm | 12×9mm | 18×14mm | 18×14mm |
| Arm length (L1) | | 272.7mm | 287.7mm | 381.2mm | 501.2mm |
| Power supply | | 2×AA batteries, for 110 hours working | | | |
| Weight | | 1400g | 1570g | 2170g | 2320g |

**RATCHET HEAD (INCLUDED) SPECIFICATION**

| For torque wrench | IST-18W30A | IST-18W135A | IST-18W200A | IST-18W340A |
|---|---|---|---|---|
| Square driver (D) | 1/4" | 3/8" | 1/2" | 1/2" |
| Length (L2) | 29mm | 29mm | 40mm | 40mm |

To be continued



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**STANDARD DELIVERY**

| | |
|---|---|
| **Torque wrench** | 1 pc |
| **Ratchet head** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Calibration cable** | **IST-W-CABLE** |
| **Interchangeable head** | refer to details |





**RATCHET HEAD (optional)**

| Code | Square driver (D) | Applicable wrenches |
|---|---|---|
| **IST-2W-R1** | 1/4" | **IST-18W30A** |
| **IST-2W-R2** | 3/8" | **IST-18W135A** |
| **IST-2W-R3** | 1/2" | **IST-18W135A** |
| **IST-2W-R4** | 1/2" | **IST-18W200A IST-18W340A** |

**ADJUSTABLE SPANNER HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-2W-A1** | 5~27mm | **IST-18W30A IST-18W135A** |
| **IST-2W-A2** | 5-30mm | **IST-18W200A** |
| **IST-2W-A3** | 10-41mm | **IST-18W340A** |





**OPEN END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-2W-K7** | 7mm | **IST-18W30A IST-18W135A** |
| **IST-2W-K8** | 8mm | |
| **IST-2W-K9** | 9mm | |
| **IST-2W-K10** | 10mm | |
| **IST-2W-K11** | 11mm | |
| **IST-2W-K12** | 12mm | |
| **IST-2W-K13** | 13mm | |
| **IST-2W-K14** | 14mm | |
| **IST-2W-K15** | 15mm | |
| **IST-2W-K16** | 16mm | |
| **IST-2W-K17** | 17mm | |
| **IST-2W-K18** | 18mm | |
| **IST-2W-K19** | 19mm | |
| **IST-2W-K13A** | 13mm | **IST-18W200A IST-18W340A** |
| **IST-2W-K14A** | 14mm | |
| **IST-2W-K15A** | 15mm | |
| **IST-2W-K16A** | 16mm | |
| **IST-2W-K17A** | 17mm | |
| **IST-2W-K18A** | 18mm | |
| **IST-2W-K19A** | 19mm | |
| **IST-2W-K21A** | 21mm | |
| **IST-2W-K22A** | 22mm | |
| **IST-2W-K24A** | 24mm | |
| **IST-2W-K27A** | 27mm | |

**BOX END HEAD (optional)**

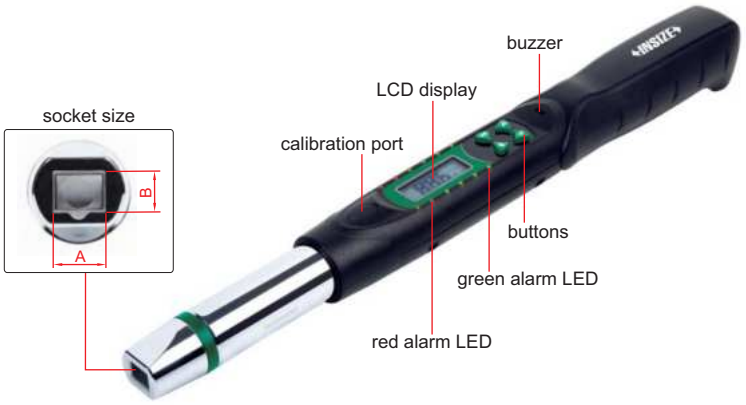
| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-2W-M7** | 7mm | **IST-18W30A IST-18W135A** |
| **IST-2W-M8** | 8mm | |
| **IST-2W-M10** | 10mm | |
| **IST-2W-M11** | 11mm | |
| **IST-2W-M12** | 12mm | |
| **IST-2W-M13** | 13mm | |
| **IST-2W-M14** | 14mm | |
| **IST-2W-M15** | 15mm | |
| **IST-2W-M16** | 16mm | |
| **IST-2W-M17** | 17mm | |
| **IST-2W-M18** | 18mm | |
| **IST-2W-M19** | 19mm | |
| **IST-2W-M21** | 21mm | |
| **IST-2W-M22** | 22mm | |
| **IST-2W-M13A** | 13mm | **IST-18W200A IST-18W340A** |
| **IST-2W-M14A** | 14mm | |
| **IST-2W-M15A** | 15mm | |
| **IST-2W-M16A** | 16mm | |
| **IST-2W-M17A** | 17mm | |
| **IST-2W-M18A** | 18mm | |
| **IST-2W-M19A** | 19mm | |
| **IST-2W-M21A** | 21mm | |

# INTERCHANGEABLE HEAD DIGITAL TORQUE WRENCHES

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

INSPECTION CERTIFICATE

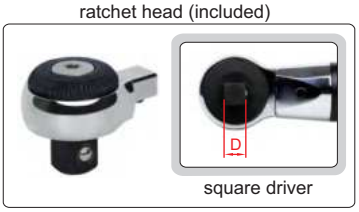
VIDEO




**IST-2W135A**



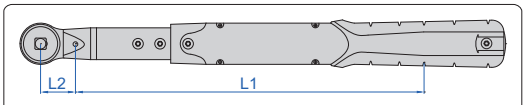
ratchet head (included)




square driver

- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm, degree
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  - Green LED light on and buzzer sounds when torque value is 90%~100% of target torque
  - Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off in 5 minutes automatically without any operations
- Non-slip grip handle
- With damp record
- With overload record
  (once the torque reaches 110% of the maximum range)

torque correction




torque value needs to be corrected if L2 is different when head is changed

**SPECIFICATION**

| Code | | IST-2W30A | IST-2W135A | IST-2W200A | IST-2W340A | IST-2W410A |
|---|---|---|---|---|---|---|
| Range | | 6~30N.m | 27~135N.m | 40~200N.m | 68~340N.m | 82~410N.m |
| Accuracy | clockwise | ±2% | | | | |
| | counter-clockwise | ±3% | | | | |
| Resolution | | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Socket size (A×B) | | 12×9mm | 12×9mm | 18×14mm | 18×14mm | 18×14mm |
| Arm length (L1) | | 272.7mm | 287.7mm | 381.2mm | 501.2mm | 501.2mm |
| Power supply | | 2xAA batteries, for 110 hours working | | | | |
| Weight | | 1400g | 1570g | 2170g | 2320g | 2320g |

**STANDARD DELIVERY**

| | |
|---|---|
| Torque wrench | 1 pc |
| Ratchet head | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-W-CABLE |
| Interchangeable head | refer to details |

To be continued



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**RATCHET HEAD (INCLUDED) SPECIFICATION**

| For torque wrench | IST-2W30A | IST-2W135A | IST-2W200A | IST-2W340A | IST-2W410A |
|---|---|---|---|---|---|
| Square driver (D) | 1/4" | 3/8" | 1/2" | 1/2" | 3/4" |
| Length (L2) | 29mm | 29mm | 40mm | 40mm | 40mm |





**RATCHET HEAD (optional)**

| Code | Square driver (D) | Applicable wrenches |
|---|---|---|
| IST-2W-R1 | 1/4" | IST-2W30A |
| IST-2W-R2 | 3/8" | IST-2W135A |
| IST-2W-R3 | 1/2" | IST-2W135A |
| IST-2W-R4 | 1/2" | IST-2W200A<br>IST-2W340A<br>IST-2W410A |

**ADJUSTABLE SPANNER HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| IST-2W-A1 | 5~27mm | IST-2W30A<br>IST-2W135A |
| IST-2W-A2 | 5-30mm | IST-2W200A<br>IST-2W410A |
| IST-2W-A3 | 10-41mm | IST-2W340A<br>IST-2W410A |





**OPEN END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| IST-2W-K7 | 7mm | IST-2W30A<br>IST-2W135A |
| IST-2W-K8 | 8mm | |
| IST-2W-K9 | 9mm | |
| IST-2W-K10 | 10mm | |
| IST-2W-K11 | 11mm | |
| IST-2W-K12 | 12mm | |
| IST-2W-K13 | 13mm | |
| IST-2W-K14 | 14mm | |
| IST-2W-K15 | 15mm | |
| IST-2W-K16 | 16mm | |
| IST-2W-K17 | 17mm | |
| IST-2W-K18 | 18mm | |
| IST-2W-K19 | 19mm | |
| IST-2W-K13A | 13mm | IST-2W200A<br>IST-2W340A<br>IST-2W410A |
| IST-2W-K14A | 14mm | |
| IST-2W-K15A | 15mm | |
| IST-2W-K16A | 16mm | |
| IST-2W-K17A | 17mm | |
| IST-2W-K18A | 18mm | |
| IST-2W-K19A | 19mm | |
| IST-2W-K21A | 21mm | |
| IST-2W-K22A | 22mm | |
| IST-2W-K24A | 24mm | |
| IST-2W-K27A | 27mm | |

**BOX END HEAD (optional)**

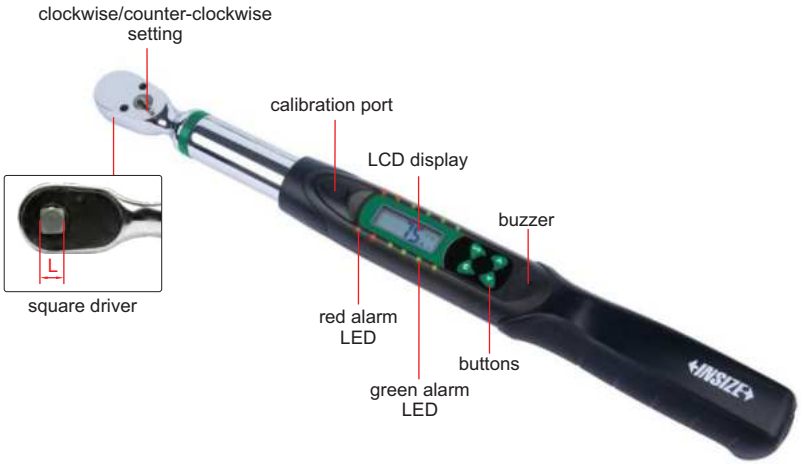
| Code | Open size | Applicable wrenches |
|---|---|---|
| IST-2W-M7 | 7mm | IST-2W30A<br>IST-2W135A |
| IST-2W-M8 | 8mm | |
| IST-2W-M10 | 10mm | |
| IST-2W-M11 | 11mm | |
| IST-2W-M12 | 12mm | |
| IST-2W-M13 | 13mm | |
| IST-2W-M14 | 14mm | |
| IST-2W-M15 | 15mm | |
| IST-2W-M16 | 16mm | |
| IST-2W-M17 | 17mm | |
| IST-2W-M18 | 18mm | |
| IST-2W-M19 | 19mm | |
| IST-2W-M21 | 21mm | |
| IST-2W-M22 | 22mm | |
| IST-2W-M13A | 13mm | IST-2W200A<br>IST-2W340A |
| IST-2W-M14A | 14mm | |
| IST-2W-M15A | 15mm | |
| IST-2W-M16A | 16mm | |
| IST-2W-M17A | 17mm | |
| IST-2W-M18A | 18mm | |
| IST-2W-M19A | 19mm | |
| IST-2W-M21A | 21mm | |

# DIGITAL ANGLE TORQUE WRENCHES

INSPECTION CERTIFICATE

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%
ONLY FOR RANGE 6~340N.m

VIDEO




**IST-1W135A**



- Ratchet head
- Clockwise and counter-clockwise operation
- Set the desired torque first, after reaching the desired torque, set the angle and turn the wrench at this angle to apply extra torque
- Unit: N.m, in.lb, ft.lb, kg.cm, degree
- Peak and track working mode
- Target torque or angle value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque or angle value is 90%~100% of target torque or angle
  – Both green and red LED light on and buzzer sounds when target torque or angle value is reached
- Power off in 5 minutes automatically
- Non-slip grip handle
- With damp record
- With overload record (once the torque reaches 110% of the maximum range)




set the desired torque first, after reaching the desired torque, set the angle and turn the wrench at this angle to apply extra torque

**SPECIFICATION**

| Code | Range | | Accuracy | Resolution | | Square driver (L) | Power supply | Length | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | torque | angle | | torque | angle | | | | |
| **IST-1W30A** | 6~30N.m | 0~999° | clockwise: ±2% counter-clockwise: ±3% ±2° (rotate 90°) | 0.01N.m | 1° | 1/4" | 2×AA batteries | 390mm | 830g |
| **IST-1W135A** | 27~135N.m | | | 0.1N.m | | 3/8" | | 415mm | 950g |
| **IST-1W200A** | 40~200N.m | | | 0.1N.m | | 1/2" | | 530mm | 1.4kg |
| **IST-1W340A** | 68~340N.m | | | 0.1N.m | | 1/2" | | 650mm | 1.6kg |
| **IST-1W500A** | 100~500N.m | | | 0.1N.m | | 3/4" | | 950mm | 5kg |
| **IST-1W850A** | 170~850N.m | | clockwise: ±2.5% counter-clockwise: ±3.5% ±2° (rotate 90°) | 0.1N.m | | 3/4" | | 1220mm | 6kg |
| **IST-1W1200A** | 240~1200N.m | | | 1N.m | | 1" | | 1800mm | 9.1kg |
| **IST-1W1500A** | 300~1500N.m | | | 1N.m | | 1" | | 1800mm | 9.1kg |
| **IST-1W2000A** | 400~2000N.m | | | 1N.m | | 1" | | 1800mm | 10.5kg |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Calibration cable** | **IST-W-CABLE** |



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# QUALITY INSPECTION TORQUE WRENCHES

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%
ONLY FOR RANGE 6~340N.m

MEASURE THE TORQUE OF TIGHTENED BOLTS

INSPECTION CERTIFICATE

VIDEO




**IST-4W135A**
**type A**




**IST-4W1200A**
**type B**

- Ratchet head
- Retighten the tightened bolts to measure the torque, read the torque value when the looseness is detected again
- Three measuring modes:
  Angle mode: rotation angle can be set, when turning to the angle, 2 LED lights blinking and buzzer beeping, capturing torque values
  Maximum value display mode: capturing peak torque values
  Real-time value display mode: real-time tracking of torque values
- Unit: N.m, in.lb, ft.lb, kg.cm
- With audible and visible alarm, 9 preset usage modes
- In angle mode and maximum value mode, upper and lower tolerance limits can be set to determine pass or fail by LED lights
- Clockwise and count-clockwise operation
- Memory of 50 results
- Enter power saving mode after 2 minutes
- Non-slip grip handle
- With overload record (once the torque reaches 110% of the maximum range)

**SPECIFICATION**

| Code | Type | Range | Accuracy | Resolution | Square driver (L) | Power supply | Length | Weight |
|---|---|---|---|---|---|---|---|---|
| IST-4W30A | A | 6~30N.m | clockwise: ±2% counter-clock wise: ±3% | 0.01N.m | 1/4" | 2×AA batteries, for 110 hours working | 390mm | 760g |
| IST-4W135A | | 27~135N.m | | 0.1N.m | 3/8" | | 415mm | 940g |
| IST-4W200A | | 40~200N.m | | 0.1N.m | 1/2" | | 530mm | 1340g |
| IST-4W340A | | 68~340N.m | | 0.1N.m | 1/2" | | 650mm | 1540g |
| IST-4W850A | B | 170~850N.m | clockwise: ±2.5% counter-clock wise: ±3.5% | 0.1N.m | 3/4" | | 1220mm | 6000g |
| IST-4W1200A | | 240~1200N.m | | 1N.m | 1" | | 1800mm | 9100g |
| IST-4W1500A | | 300~1500N.m | | 1N.m | 1" | | 1800mm | 9100g |
| IST-4W2000A | | 400~2000N.m | | 1N.m | 1" | | 1800mm | 10500g |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-W-CABLE |



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# INTERCHANGEABLE HEAD QUALITY INSPECTION TORQUE WRENCHES

INSPECTION CERTIFICATE

MEASURE THE TORQUE OF TIGHTENED BOLTS

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

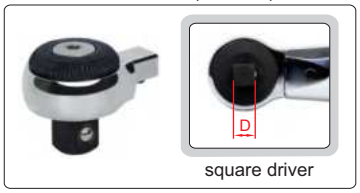
VIDEO




**IST-16W135A**



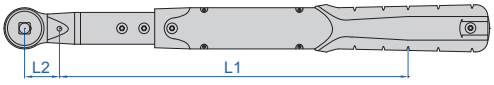
ratchet head (included)




square driver

- Retighten the tightened bolt to measure the torque, the torque value can be displayed when the bolt is turned again
- Three measuring modes:
  Angle mode: rotation angle can be set, when turning to the angle, 2 LED lights blinking and buzzer beeping, capturing torque values
  Maximum value display mode: capturing peak torque values
  Real-time value display mode: real-time tracking of torque values
- Unit: N.m, in.lb, ft.lb, kg.cm
- With audible and visible alarm, 9 preset usage modes
- In angle mode and maximum value mode, upper and lower tolerance limits can be set to determine pass or fail by LED lights
- Clockwise and count-clockwise operation
- Memory of 50 results
- Enter power saving mode after 2 minutes
- Non-slip grip handle
- With overload record (once the torque reaches 110% of the maximum range)

torque correction




torque value needs to be corrected if L2 is different when head is changed

**SPECIFICATION**

| Code | | IST-16W30A | IST-16W135A | IST-16W200A | IST-16W340A |
|---|---|---|---|---|---|
| Range | | 6~30N.m | 27~135N.m | 40~200N.m | 68~340N.m |
| Accuracy | clockwise | ±2% | | | |
| | counter-clockwise | ±3% | | | |
| Resolution | | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Socket size (A×B) | | 12×9mm | 12×9mm | 18×14mm | 18×14mm |
| Arm length (L1) | | 272.7mm | 287.7mm | 381.2mm | 501.2mm |
| Power supply | | 2×AA batteries | | | |
| Weight | | 1400g | 1570g | 2170g | 2320g |

**RATCHET HEAD (INCLUDED) SPECIFICATION**

| For torque wrench | IST-16W30A | IST-16W135A | IST-16W200A | IST-16W340A |
|---|---|---|---|---|
| Square driver (D) | 1/4" | 3/8" | 1/2" | 1/2" |
| Length (L2) | 29mm | 29mm | 40mm | 40mm |

To be continued



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Continued from previous page

**STANDARD DELIVERY**

| | |
|---|---|
| **Torque wrench** | 1 pc |
| **Ratchet head** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Calibration cable** | **IST-W-CABLE** |
| **Interchangeable head** | refer to details |





**RATCHET HEAD (optional)**

| Code | Square driver (D) | Applicable wrenches |
|---|---|---|
| **IST-2W-R1** | 1/4" | **IST-16W30A** |
| **IST-2W-R2** | 3/8" | **IST-16W135A** |
| **IST-2W-R3** | 1/2" | **IST-16W135A** |
| **IST-2W-R4** | 1/2" | **IST-16W200A IST-16W340A** |

**ADJUSTABLE SPANNER HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-2W-A1** | 5~27mm | **IST-16W135A** |
| **IST-2W-A2** | 5-30mm | **IST-16W200A** |
| **IST-2W-A3** | 10-41mm | **IST-16W340A** |







**OPEN END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-2W-K7** | 7mm | **IST-16W30A IST-16W135A** |
| **IST-2W-K8** | 8mm | |
| **IST-2W-K9** | 9mm | |
| **IST-2W-K10** | 10mm | |
| **IST-2W-K11** | 11mm | |
| **IST-2W-K12** | 12mm | |
| **IST-2W-K13** | 13mm | |
| **IST-2W-K14** | 14mm | |
| **IST-2W-K15** | 15mm | |
| **IST-2W-K16** | 16mm | |
| **IST-2W-K17** | 17mm | |
| **IST-2W-K18** | 18mm | |
| **IST-2W-K19** | 19mm | |
| **IST-2W-K13A** | 13mm | **IST-16W200A IST-16W340A** |
| **IST-2W-K14A** | 14mm | |
| **IST-2W-K15A** | 15mm | |
| **IST-2W-K16A** | 16mm | |
| **IST-2W-K17A** | 17mm | |
| **IST-2W-K18A** | 18mm | |
| **IST-2W-K19A** | 19mm | |
| **IST-2W-K21A** | 21mm | |
| **IST-2W-K22A** | 22mm | |
| **IST-2W-K24A** | 24mm | |
| **IST-2W-K27A** | 27mm | |

**BOX END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-2W-M7** | 7mm | **IST-16W30A IST-16W135A** |
| **IST-2W-M8** | 8mm | |
| **IST-2W-M10** | 10mm | |
| **IST-2W-M11** | 11mm | |
| **IST-2W-M12** | 12mm | |
| **IST-2W-M13** | 13mm | |
| **IST-2W-M14** | 14mm | |
| **IST-2W-M15** | 15mm | |
| **IST-2W-M16** | 16mm | |
| **IST-2W-M17** | 17mm | |
| **IST-2W-M18** | 18mm | |
| **IST-2W-M19** | 19mm | |
| **IST-2W-M21** | 21mm | |
| **IST-2W-M22** | 22mm | |
| **IST-2W-M13A** | 13mm | **IST-16W200A IST-16W340A** |
| **IST-2W-M14A** | 14mm | |
| **IST-2W-M15A** | 15mm | |
| **IST-2W-M16A** | 16mm | |
| **IST-2W-M17A** | 17mm | |
| **IST-2W-M18A** | 18mm | |
| **IST-2W-M19A** | 19mm | |
| **IST-2W-M21A** | 21mm | |

# DIGITAL TORQUE WRENCHES

INSPECTION CERTIFICATE

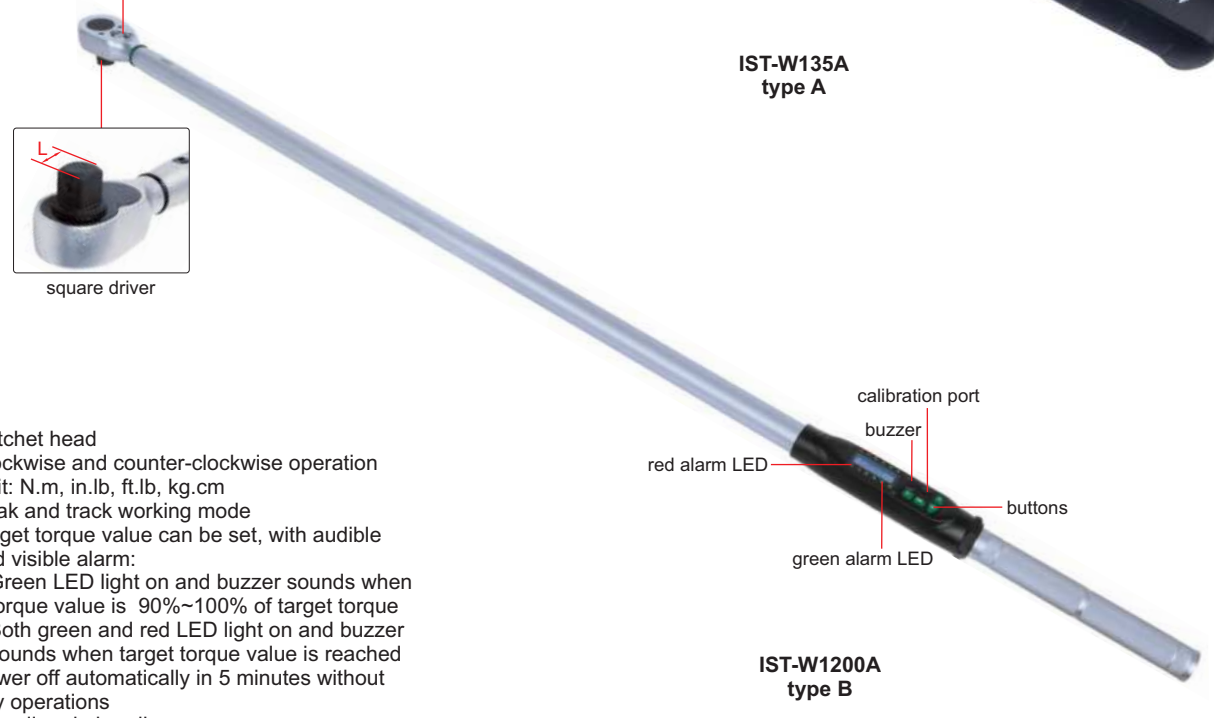
OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%
ONLY FOR RANGE 6~850N.m

POPULAR MODEL

VIDEO




**IST-W135A**
**type A**




**IST-W1200A**
**type B**

- Ratchet head
- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working mode
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 90%~100% of target torque
  – Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations
- Non-slip grip handle
- With damp record
- With overload record (once the torque reaches 110% of the maximum range)

## SPECIFICATION

| Code | Type | Range | Accuracy | Resolution | Square driver (L) | Power supply | Length | Weight |
|---|---|---|---|---|---|---|---|---|
| **IST-W30A** | A | 6~30N.m | clockwise: ±2% counter-clock wise: ±3% | 0.01N.m | 1/4" | 2×AA batteries, for 110 hours working | 390mm | 830g |
| **IST-W135A** | | 27~135N.m | | 0.1N.m | 3/8" | | 415mm | 950g |
| **IST-W200A** | | 40~200N.m | | 0.1N.m | 1/2" | | 530mm | 1.4kg |
| **IST-W340A** | | 68~340N.m | | 0.1N.m | 1/2" | | 650mm | 1.6kg |
| **IST-W500A*** | B | 100~500N.m | clockwise: ±2.5% counter-clock wise: ±3.5% | 0.1N.m | 3/4" | | 1285mm | 7kg |
| **IST-W850A** | | 170~850N.m | | 0.1N.m | 3/4" | | 1295mm | 6kg |
| **IST-W1200A** | | 240~1200N.m | | 1N.m | 1" | | 1920mm | 13kg |
| **IST-W1500A** | | 300~1500N.m | | 1N.m | 1" | | 1920mm | 13kg |
| **IST-W2000A** | | 400~2000N.m | | 1N.m | 1" | | 1920mm | 14kg |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Calibration cable** | **IST-W-CABLE** |

* The accuracy of this code is not optional



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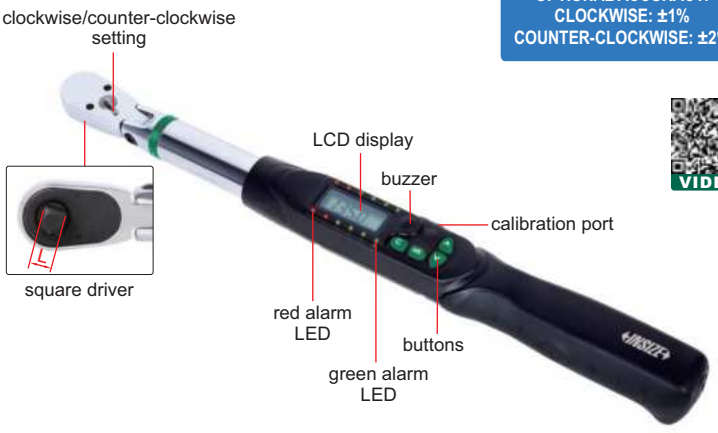
## SWING-HEAD DIGITAL TORQUE WRENCHES

INSPECTION CERTIFICATE

- Ratchet head
- Unit: N.m, in.lb, ft.lb, kg.cm
- Clockwise and count-clockwise operation
- Peak and track working mode
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 90%~100% of target torque
  – Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations
- Non-slip grip handle
- With damp record
- With overload record (once the torque reaches 110% of the maximum range)

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

VIDEO




IST-21W135A

**OPTIONAL ACCESSORY**

| Calibration cable | IST-W-CABLE |
|---|---|

**SPECIFICATION**

| Code | IST-21W30A | IST-21W135A | IST-21W200A | IST-21W340A |
|---|---|---|---|---|
| Range | 6~30N.m | 27~135N.m | 40~200N.m | 68~340N.m |
| Accuracy | clockwise: ±2% (when ratchet head is flush with grip) | | | |
| | counter-clockwise: ±3% (when ratchet head is flush with grip) | | | |
| Resolution | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Square driver (L) | 1/4" | 3/8" | 1/2" | 1/2" |
| Power supply | 2×AA batteries | | | |
| Length | 390mm | 415mm | 530mm | 650mm |
| Weight | 760g | 940g | 1340g | 1540g |



swing-head ratchet head

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## ADJUSTABLE OPEN HEAD DIGITAL TORQUE WRENCHES

INSPECTION CERTIFICATE

VIDEO

ATTENTION: CLOCKWISE OPERATION ONLY

- The movable jaw of the adjustable open head has a protruding positioning design to ensure accuracy
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working mode
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 90%~100% of target torque
  – Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations
- Non-slip grip handle
- With damp record
- With overload record (once the torque reaches 110% of the maximum range)




IST-24W135A26

**OPTIONAL ACCESSORY**

| Calibration cable | IST-W-CABLE |
|---|---|

**SPECIFICATION**

| Code | IST-24W60A26 | IST-24W85A26 | IST-24W135A26 | IST-24W135A30 | IST-24W200A30 | IST-24W200A41 | IST-24W340A41 |
|---|---|---|---|---|---|---|---|
| Range | 12~60N.m | 17~85N.m | 27~135N.m | 27~135N.m | 40~200N.m | 40~200N.m | 68~340N.m |
| Adjustable open range | 5~26mm | 5~26mm | 5~26mm | 5~30mm | 5~30mm | 10~41mm | 10~41mm |
| Accuracy | clockwise: ±3% | | | | | | |
| Resolution | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Power supply | 2×AA batteries | | | | | | |
| Length | 428mm | 428mm | 428mm | 525mm | 525mm | 650mm | 650mm |
| Weight | 1190g | 1190g | 1190g | 1400g | 1400g | 1600g | 1600g |



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## MECHANICAL TORQUE WRENCHES (DIGITAL SETTING)

VIDEO

ATTENTION: DISPLAY PRE-SET TORQUE VALUE (NOT REAL TIME TORQUE)

ATTENTION: CLOCKWISE OPERATION ONLY

INSPECTION CERTIFICATE




- Ratchet head
- Unit: N.m, in.lb, ft.lb, kg.cm
- Mechanical “click” torque wrench, the pre-set torque value is shown on the display



**SPECIFICATION**

| Code | IST-19WM60 | IST-19WM100 | IST-19WM140 | IST-19WM200 | IST-19WM300 |
|---|---|---|---|---|---|
| Range (clockwise) | 12~60N.m | 20~100N.m | 28~140N.m | 40~200N.m | 60~300N.m |
| Accuracy | ±3% | ±3% | ±3% | ±3% | ±3% |
| Resolution | 0.1N.m | 0.1N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Square driver (D) | 3/8" | 3/8" | 1/2" | 1/2" | 1/2" |
| Length | 382mm | 450mm | 481mm | 520mm | 585mm |
| Weight | 1.3kg | 1.4kg | 1.45kg | 1.6kg | 1.8kg |

## INTERCHANGEABLE HEAD MECHANICAL TORQUE WRENCHES (DIGITAL SETTING)

ATTENTION: DISPLAY PRE-SET TORQUE VALUE (NOT REAL TIME TORQUE)

ATTENTION: CLOCKWISE OPERATION ONLY

INSPECTION CERTIFICATE

VIDEO




- Unit: N.m, in.lb, ft.lb, kg.cm
- Mechanical “click” torque wrench, the pre-set torque value is shown on the display

**SPECIFICATION**

| Code | IST-25WM60 | IST-25WM100 | IST-25WM140 | IST-25WM200 | IST-25WM300 |
|---|---|---|---|---|---|
| Range (clockwise) | 12~60N.m | 20~100N.m | 28~140N.m | 40~200N.m | 60~300N.m |
| Accuracy | ±3% | ±3% | ±3% | ±3% | ±3% |
| Resolution | 0.1N.m | 0.1N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| Socket size (A×B) | 12×9mm | 12×9mm | 18×14mm | 18×14mm | 18×14mm |
| Length | 408mm | 431mm | 492mm | 510mm | 568mm |
| Weight | 1.3kg | 1.4kg | 1.45kg | 1.5kg | 1.7kg |

To be continued



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Continued from previous page



**RATCHET HEAD (optional)**

| Code | Square driver | Applicable wrenches |
|---|---|---|
| IST-11WM-R1 | 1/4" | IST-25WM60<br>IST-25WM100 |
| IST-11WM-R2 | 3/8" | IST-25WM60<br>IST-25WM100 |
| IST-11WM-R3 | 1/2" | IST-25WM140<br>IST-25WM200<br>IST-25WM300 |
| IST-11WM-R4 | 3/4" | IST-25WM140<br>IST-25WM200<br>IST-25WM300 |



**HOOK HEAD (optional)**

| | |
|---|---|
| Hook head | customized according to customer requirements |



**OPEN END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| IST-11WM-K6 | 6mm | IST-25WM60<br>IST-25WM100 |
| IST-11WM-K7 | 7mm | |
| IST-11WM-K8 | 8mm | |
| IST-11WM-K9 | 9mm | |
| IST-11WM-K10 | 10mm | |
| IST-11WM-K11 | 11mm | |
| IST-11WM-K12 | 12mm | |
| IST-11WM-K13 | 13mm | |
| IST-11WM-K14 | 14mm | |
| IST-11WM-K15 | 15mm | |
| IST-11WM-K16 | 16mm | |
| IST-11WM-K17 | 17mm | |
| IST-11WM-K18* | 18mm | |
| IST-11WM-K19* | 19mm | |
| IST-11WM-K13A | 13mm | IST-25WM140<br>IST-25WM200<br>IST-25WM300 |
| IST-11WM-K14A | 14mm | |
| IST-11WM-K15A | 15mm | |
| IST-11WM-K16A | 16mm | |
| IST-11WM-K17A | 17mm | |
| IST-11WM-K18A | 18mm | |
| IST-11WM-K19A | 19mm | |
| IST-11WM-K20A | 20mm | |
| IST-11WM-K21A | 21mm | |
| IST-11WM-K22A | 22mm | |
| IST-11WM-K23A | 23mm | |
| IST-11WM-K24A | 24mm | |
| IST-11WM-K27A* | 27mm | |
| IST-11WM-K30A* | 30mm | |
| IST-11WM-K32A* | 32mm | |

*Torque value needs to be corrected for these heads



**BOX END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| IST-11WM-M8 | 8mm | IST-25WM60<br>IST-25WM100 |
| IST-11WM-M10 | 10mm | |
| IST-11WM-M13 | 13mm | |
| IST-11WM-M14 | 14mm | |
| IST-11WM-M15 | 15mm | |
| IST-11WM-M17 | 17mm | |
| IST-11WM-M19 | 19mm | |
| IST-11WM-M13A | 13mm | IST-25WM140<br>IST-25WM200 |
| IST-11WM-M14A | 14mm | |
| IST-11WM-M15A | 15mm | |
| IST-11WM-M17A | 17mm | |
| IST-11WM-M19A | 19mm | |
| IST-11WM-M22A | 22mm | |
| IST-11WM-M24A | 24mm | |
| IST-11WM-M27A | 27mm | |
| IST-11WM-M30A | 30mm | |
| IST-11WM-M32A | 32mm | |

# TORQUE WRENCHES

ATTENTION: CLOCKWISE OPERATION ONLY

INSPECTION CERTIFICATE




VIDEO

POPULAR MODEL

**IST-28WM200**



- According to DIN ISO 6789, ASME B107.300
- Ratchet head
- Dual window design with clear scale
- Non-slip grip handle
- Push-pull locking device, easy to operate

**SPECIFICATION**

| Code | IST-28WM25 | IST-28WM50 | IST-28WM60 | IST-28WM100 | IST-28WM150 |
|---|---|---|---|---|---|
| Range (clockwise) | 5~25N.m | 10~50N.m | 10~60N.m | 20~100N.m | 30~150N.m |
| Accuracy | ±3% | ±3% | ±3% | ±3% | ±3% |
| Graduation | 0.2N.m | 0.5N.m | 0.5N.m | 0.5N.m | 1N.m |
| Square driver (D) | 1/4" | 3/8" | 3/8" | 1/2" | 1/2" |
| Length | 321mm | 387mm | 387mm | 433mm | 463mm |
| Weight | 820g | 1000g | 1000g | 1100g | 1200g |

| Code | IST-28WM200 | IST-28WM300 | IST-28WM340 | IST-28WM400 |
|---|---|---|---|---|
| Range (clockwise) | 40~200N.m | 60~300N.m | 60~340N.m | 80~400N.m |
| Accuracy | ±3% | ±3% | ±3% | ±3% |
| Graduation | 1N.m | 1.5N.m | 2N.m | 2N.m |
| Square driver (D) | 1/2" | 1/2" | 1/2" | 1/2" |
| Length | 491mm | 551mm | 551mm | 700mm |
| Weight | 1250g | 1400g | 1400g | 1650g |

| Code | IST-28WM550 | IST-28WM750 | IST-28WM1000 | IST-28WM1500 |
|---|---|---|---|---|
| Range (clockwise) | 100~550N.m | 150~750N.m | 200~1000N.m | 300~1500N.m |
| Accuracy | ±3% (≤500N.m)<br>±4% (>500N.m) | ±3% (≤500N.m)<br>±4% (>500N.m) | ±3% (≤500N.m)<br>±4% (>500N.m) | ±3% (≤500N.m)<br>±4% (>500N.m) |
| Graduation | 3N.m | 5N.m | 5N.m | 10N.m |
| Square driver (D) | 3/4" | 3/4" | 3/4" | 1" |
| Length | 807mm | 1105mm | 1105mm | 1260mm |
| Weight | 3100g | 4000g | 4000g | 4500g |



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# INTERCHANGEABLE HEAD TORQUE WRENCHES

ATTENTION: CLOCKWISE OPERATION ONLY

INSPECTION CERTIFICATE

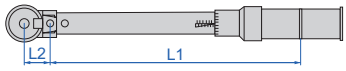
VIDEO




**IST-29WM200**

- According to DIN ISO 6789, ASME B107.300
- Non-slip grip handle
- Push-pull locking device, easy to operate
- Dual window design with clear scale

torque correction




torque value needs to be corrected if L2 is different when head is changed



**SPECIFICATION**

| Code | Range (clockwise) | Accuracy | Graduation | Socket Size (A×B) | Length | Weight |
|---|---|---|---|---|---|---|
| **IST-29WM25** | 5~25N.m | ±3% | 0.2N.m | 12×9mm | 315mm | 700g |
| **IST-29WM50** | 10~50N.m | ±3% | 0.5N.m | 12×9mm | 376mm | 820g |
| **IST-29WM60** | 10~60N.m | ±3% | 0.5N.m | 12×9mm | 376mm | 820g |
| **IST-29WM100** | 20~100N.m | ±3% | 0.5N.m | 12×9mm | 417mm | 900g |
| **IST-29WM150** | 30~150N.m | ±3% | 1N.m | 18×14mm | 460mm | 1150g |
| **IST-29WM200** | 40~200N.m | ±3% | 1N.m | 18×14mm | 478mm | 1200g |
| **IST-29WM300** | 60~300N.m | ±3% | 1.5N.m | 18×14mm | 538mm | 1200g |
| **IST-29WM400** | 80~400N.m | ±3% | 2N.m | 18×14mm | 694mm | 1600g |
| **IST-29WM550** | 100~550N.m | ±3% (≤500N.m)<br>±4% (>500N.m) | 3N.m | 32×24mm | 919mm | 2000g |
| **IST-29WM750** | 150~750N.m | ±3% (≤500N.m)<br>±4% (>500N.m) | 5N.m | 32×24mm | 1070mm | 4000g |
| **IST-29WM850** | 200~850N.m | ±3% (≤500N.m)<br>±4% (>500N.m) | 5N.m | 32×24mm | 1137mm | 4200g |



**RATCHET HEAD (optional)**

| Code | Square driver | Applicable wrenches |
|---|---|---|
| **IST-11WM-R1** | 1/4" | **IST-29WM25** |
| **IST-11WM-R2** | 3/8" | **IST-29WM25, IST-29WM50, IST-29WM60, IST-29WM100** |
| **IST-11WM-R3** | 1/2" | **IST-29WM150, IST-29WM200, IST-29WM300, IST-29WM400** |
| **IST-11WM-R4** | 3/4" | **IST-29WM150, IST-29WM200, IST-29WM300, IST-29WM400** |
| **IST-11WM-R5** | 3/4" | **IST-29WM550, IST-29WM750, IST-29WM850** |

To be continued

Continued from previous page

type A (**optional**)



type C (**optional**)



type O (**optional**)



**ER WRENCH HEAD (optional)**

| | |
|---|---|
| **Type C*** | customized according to customer requirements |
| **Type UM*** | |
| **Type M*** | |
| **Type O*** | |
| **Type A*** | |

type UM (**optional**)



type M (**optional**)









**OPEN END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-11WM-K8** | 8mm | **IST-29WM25 IST-29WM50 IST-29WM60 IST-29WM100** |
| **IST-11WM-K10** | 10mm | |
| **IST-11WM-K13** | 13mm | |
| **IST-11WM-K14** | 14mm | |
| **IST-11WM-K15** | 15mm | |
| **IST-11WM-K17** | 17mm | |
| **IST-11WM-K19*** | 19mm | |
| **IST-11WM-K13A** | 13mm | **IST-29WM150 IST-29WM200 IST-29WM300 IST-29WM400** |
| **IST-11WM-K14A** | 14mm | |
| **IST-11WM-K15A** | 15mm | |
| **IST-11WM-K17A** | 17mm | |
| **IST-11WM-K19A** | 19mm | |
| **IST-11WM-K22A** | 22mm | |
| **IST-11WM-K24A** | 24mm | |
| **IST-11WM-K27A*** | 27mm | |
| **IST-11WM-K30A*** | 30mm | |
| **IST-11WM-K32A*** | 32mm | |
| **IST-11WM-K22B** | 22mm | **IST-29WM550 IST-29WM750 IST-29WM850** |
| **IST-11WM-K24B** | 24mm | |
| **IST-11WM-K27B** | 27mm | |
| **IST-11WM-K28B** | 28mm | |
| **IST-11WM-K30B** | 30mm | |
| **IST-11WM-K32B** | 32mm | |
| **IST-11WM-K33B*** | 33mm | |
| **IST-11WM-K36B*** | 36mm | |
| **IST-11WM-K38B*** | 38mm | |
| **IST-11WM-K40B*** | 40mm | |

**BOX END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-11WM-M8** | 8mm | **IST-29WM25 IST-29WM50 IST-29WM60 IST-29WM100** |
| **IST-11WM-M10** | 10mm | |
| **IST-11WM-M13** | 13mm | |
| **IST-11WM-M14** | 14mm | |
| **IST-11WM-M15** | 15mm | |
| **IST-11WM-M17** | 17mm | |
| **IST-11WM-M19** | 19mm | |
| **IST-11WM-M13A** | 13mm | **IST-29WM150 IST-29WM200 IST-29WM300 IST-29WM400** |
| **IST-11WM-M14A** | 14mm | |
| **IST-11WM-M15A** | 15mm | |
| **IST-11WM-M17A** | 17mm | |
| **IST-11WM-M19A** | 19mm | |
| **IST-11WM-M22A** | 22mm | |
| **IST-11WM-M24A** | 24mm | |
| **IST-11WM-M27A*** | 27mm | |
| **IST-11WM-M30A*** | 30mm | |
| **IST-11WM-M32A*** | 32mm | |
| **IST-11WM-M22B** | 22mm | **IST-29WM550 IST-29WM750 IST-29WM850** |
| **IST-11WM-M24B** | 24mm | |
| **IST-11WM-K27B** | 27mm | |
| **IST-11WM-M28B** | 28mm | |
| **IST-11WM-M30B** | 30mm | |
| **IST-11WM-M32B** | 32mm | |
| **IST-11WM-M33B** | 33mm | |
| **IST-11WM-M36B*** | 36mm | |
| **IST-11WM-M38B*** | 38mm | |
| **IST-11WM-M40B*** | 40mm | |

*Torque value needs to be corrected for these heads



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ATTENTION: CLOCKWISE OPERATION ONLY

INSPECTION CERTIFICATE

# TORQUE WRENCHES

- Ratchet head
- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable




IST-9WM200

VIDEO

**SPECIFICATION**

| Code | IST-9WM12 | IST-9WM20 | IST-9WM30 | IST-9WM60 | IST-9WM100 |
|---|---|---|---|---|---|
| Range (clockwise) | 2.5~12N.m | 4~20N.m | 6~30N.m | 10~60N.m | 20~100N.m |
| Accuracy | ±3% | ±3% | ±3% | ±3% | ±3% |
| Graduation | 0.1N.m | 0.1N.m | 0.2N.m | 0.5N.m | 0.5N.m |
| Square driver (D) | 1/4" | 1/4" | 3/8" | 3/8" | 1/2" |
| Length | 290mm | 290mm | 318mm | 388mm | 443mm |
| Weight | 680g | 680g | 820g | 960g | 1040g |

| Code | IST-9WM125 | IST-9WM200 | IST-9WM335 | IST-9WM500 | IST-9WM800 |
|---|---|---|---|---|---|
| Range (clockwise) | 25~125N.m | 40~200N.m | 65~335N.m | 100~500N.m | 160~800N.m |
| Accuracy | ±3% | ±3% | ±3% | ±3% | ±3% (≤500N.m)<br>±4% (>500N.m) |
| Graduation | 0.5N.m | 1N.m | 1N.m | 2.5N.m | 4N.m |
| Square driver (D) | 1/2" | 1/2" | 1/2" | 3/4" | 3/4" |
| Length | 443mm | 468mm | 528mm | 855mm | 1055mm |
| Weight | 1040g | 1160g | 1300g | 5000g | 5900g |

| Code | IST-9WM1000 | IST-9WM1500 | IST-9WM2000 | IST-9WM3000 |
|---|---|---|---|---|
| Range (clockwise) | 200~1000N.m | 300~1500N.m | 400~2000N.m | 600~3000N.m |
| Accuracy | ±3% (≤500N.m)<br>±4% (>500N.m) | ±3% (≤500N.m)<br>±4% (>500N.m) | ±3% (≤500N.m)<br>±4% (>500N.m) | ±4% |
| Graduation | 5N.m | 5N.m | 10N.m | 15N.m |
| Square driver (D) | 3/4" | 1" | 1" | 1" |
| Length | 1055mm | 1260mm | 1260mm | 1260mm |
| Weight | 5900g | 9200g | 9200g | 10500g |



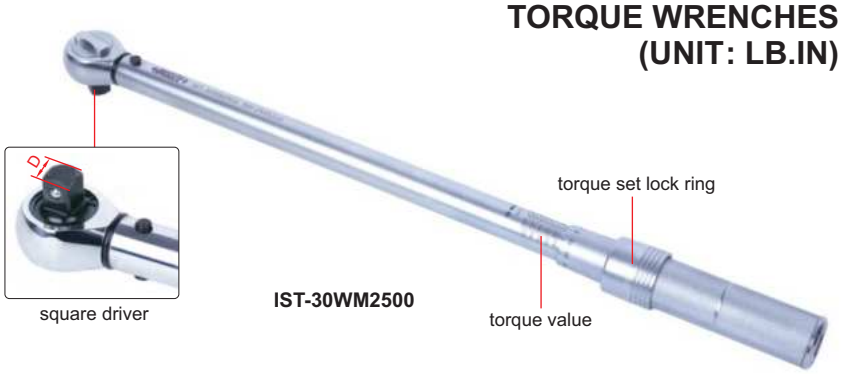
ATTENTION: CLOCKWISE OPERATION ONLY

INSPECTION CERTIFICATE

# TORQUE WRENCHES (UNIT: LB.IN)

VIDEO

- Ratchet head
- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable




IST-30WM2500

**SPECIFICATION**

| Code | Range (clockwise) | Accuracy | Graduation | Square driver (D) | Length | Weight |
|---|---|---|---|---|---|---|
| IST-30WM50 | 10~50lb.in | ±4% | 0.5lb.in | 1/4" | 183mm | 320g |
| IST-30WM100 | 20~100lb.in | | 1lb.in | 1/4" | 195mm | 340g |
| IST-30WM150 | 30~150lb.in | | 1.5lb.in | 1/4" | 207mm | 360g |
| IST-30WM200 | 40~200lb.in | | 1lb.in | 1/4" | 280mm | 680g |
| IST-30WM250 | 50~250lb.in | | 1lb.in | 3/8" | 315mm | 820g |
| IST-30WM500 | 100~500lb.in | | 1lb.in | 3/8" | 390mm | 940g |
| IST-30WM750 | 150~750lb.in | | 1.5lb.in | 3/8" | 428mm | 1040g |
| IST-30WM1000 | 200~1000lb.in | | 2.5lb.in | 3/8" | 441mm | 1130g |
| IST-30WM2500 | 500~2500lb.in | | 10lb.in | 1/2" | 525mm | 1300g |

# INTERCHANGEABLE HEAD TORQUE WRENCHES

ATTENTION: CLOCKWISE OPERATION ONLY

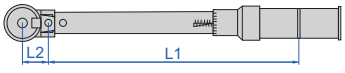
INSPECTION CERTIFICATE

VIDEO




**IST-11WM200**

torque correction




torque value needs to be corrected if L2 is different when head is changed

- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable

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**SPECIFICATION**

| Code | Range (clockwise) | Accuracy | Graduation | Socket size (A×B) | Arm length (L1) | Length (L2) | Weight |
|---|---|---|---|---|---|---|---|
| **IST-11WM12** | 2.5~12N.m | ±3% | 0.05N.m | 12×9mm | 225mm | 28.42mm | 580g |
| **IST-11WM30** | 6.0~30N.m | ±3% | 0.1N.m | 12×9mm | 243mm | 28.42mm | 720g |
| **IST-11WM60** | 10~60N.m | ±3% | 0.5N.m | 12×9mm | 314mm | 28.42mm | 860g |
| **IST-11WM125** | 25~125N.m | ±3% | 0.5N.m | 12×9mm | 367mm | 28.42mm | 940g |
| **IST-11WM200** | 40~200N.m | ±3% | 1N.m | 18×14mm | 402mm | 38.97mm | 1060g |
| **IST-11WM335** | 65~335N.m | ±3% | 1N.m | 18×14mm | 458mm | 38.97mm | 1200g |
| **IST-11WM500** | 100~500N.m | ±3% | 2.5N.m | 32×24mm | 734mm | 59mm | 5000g |
| **IST-11WM800** | 160~800N.m | ±3% (≤500N.m)<br>±4% (>500N.m) | 4N.m | 32×24mm | 934mm | 59mm | 5900g |
| **IST-11WM1000** | 200~1000N.m | ±3% (≤500N.m)<br>±4% (>500N.m) | 5N.m | 32×24mm | 934mm | 59mm | 5900g |
| **IST-11WM1500** | 300~1500N.m | ±3% (≤500N.m)<br>±4% (>500N.m) | 5N.m | 36×27mm | 1128mm | 74mm | 9000g |
| **IST-11WM2000** | 400~2000N.m | ±3% (≤500N.m)<br>±4% (>500N.m) | 10N.m | 36×27mm | 1128mm | 74mm | 9000g |
| **IST-11WM3000** | 600~3000N.m | ±4% | 15N.m | 36×27mm | 1136mm | 74mm | 10300g |

type A (**optional**)



type C (**optional**)



type O (**optional**)



**ER WRENCH HEAD (optional)**

| | |
|---|---|
| Type C* | customized according to customer requirements |
| Type UM* | |
| Type M* | |
| Type O* | |
| Type A* | |

type UM (**optional**)



type M (**optional**)



To be continued



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Continued from previous page



**RATCHET HEAD (optional)**

| Code | Square driver | Applicable wrenches |
|---|---|---|
| IST-11WM-R1 | 1/4" | IST-11WM12, IST-11WM30 |
| IST-11WM-R2 | 3/8" | IST-11WM12, IST-11WM30, IST-11WM60, IST-11WM125 |
| IST-11WM-R3 | 1/2" | IST-11WM200, IST-11WM335 |
| IST-11WM-R4 | 3/4" | IST-11WM200, IST-11WM335 |
| IST-11WM-R5 | 3/4" | IST-11WM500, IST-11WM800, IST-11WM1000 |
| IST-11WM-R6 | 1" | IST-11WM1500, IST-11WM2000, IST-11WM3000 |





**OPEN END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| IST-11WM-K8 | 8mm | IST-11WM12<br>IST-11WM30<br>IST-11WM60<br>IST-11WM125 |
| IST-11WM-K10 | 10mm | |
| IST-11WM-K13 | 13mm | |
| IST-11WM-K14 | 14mm | |
| IST-11WM-K15 | 15mm | |
| IST-11WM-K17 | 17mm | |
| IST-11WM-K19* | 19mm | |
| IST-11WM-K13A | 13mm | IST-11WM200<br>IST-11WM335 |
| IST-11WM-K14A | 14mm | |
| IST-11WM-K15A | 15mm | |
| IST-11WM-K17A | 17mm | |
| IST-11WM-K19A | 19mm | |
| IST-11WM-K22A | 22mm | |
| IST-11WM-K24A | 24mm | |
| IST-11WM-K27A* | 27mm | |
| IST-11WM-K30A* | 30mm | |
| IST-11WM-K32A* | 32mm | |
| IST-11WM-K22B | 22mm | IST-11WM500<br>IST-11WM800<br>IST-11WM1000 |
| IST-11WM-K24B | 24mm | |
| IST-11WM-K27B | 27mm | |
| IST-11WM-K28B | 28mm | |
| IST-11WM-K30B | 30mm | |
| IST-11WM-K32B | 32mm | |
| IST-11WM-K33B* | 33mm | |
| IST-11WM-K36B* | 36mm | |
| IST-11WM-K38B* | 38mm | |
| IST-11WM-K40B* | 40mm | |
| IST-11WM-K30C | 30mm | IST-11WM1500<br>IST-11WM2000<br>IST-11WM3000 |
| IST-11WM-K32C | 32mm | |
| IST-11WM-K34C | 34mm | |
| IST-11WM-K36C | 36mm | |
| IST-11WM-K38C | 38mm | |
| IST-11WM-K41C | 41mm | |
| IST-11WM-K45C | 45mm | |
| IST-11WM-K50C* | 50mm | |
| IST-11WM-K55C* | 55mm | |
| IST-11WM-K60C* | 60mm | |

**BOX END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| IST-11WM-M8 | 8mm | IST-11WM12<br>IST-11WM30<br>IST-11WM60<br>IST-11WM125 |
| IST-11WM-M10 | 10mm | |
| IST-11WM-M13 | 13mm | |
| IST-11WM-M14 | 14mm | |
| IST-11WM-M15 | 15mm | |
| IST-11WM-M17 | 17mm | |
| IST-11WM-M19 | 19mm | |
| IST-11WM-M13A | 13mm | IST-11WM200<br>IST-11WM335 |
| IST-11WM-M14A | 14mm | |
| IST-11WM-M15A | 15mm | |
| IST-11WM-M17A | 17mm | |
| IST-11WM-M19A | 19mm | |
| IST-11WM-M22A | 22mm | |
| IST-11WM-M24A | 24mm | |
| IST-11WM-M27A* | 27mm | |
| IST-11WM-M30A* | 30mm | |
| IST-11WM-M32A* | 32mm | |
| IST-11WM-M22B | 22mm | IST-11WM500<br>IST-11WM800<br>IST-11WM1000 |
| IST-11WM-M24B | 24mm | |
| IST-11WM-K27B | 27mm | |
| IST-11WM-M28B | 28mm | |
| IST-11WM-M30B | 30mm | |
| IST-11WM-M32B | 32mm | |
| IST-11WM-M33B | 33mm | |
| IST-11WM-M36B* | 36mm | |
| IST-11WM-M38B* | 38mm | |
| IST-11WM-M40B* | 40mm | |
| IST-11WM-M30C | 30mm | IST-11WM1500<br>IST-11WM2000<br>IST-11WM3000 |
| IST-11WM-M32C | 32mm | |
| IST-11WM-M34C | 34mm | |
| IST-11WM-M36C | 36mm | |
| IST-11WM-M38C | 38mm | |
| IST-11WM-M41C | 41mm | |
| IST-11WM-M45C | 45mm | |
| IST-11WM-M50C | 50mm | |
| IST-11WM-M55C* | 55mm | |
| IST-11WM-M60C* | 60mm | |

*Torque value needs to be corrected for these heads

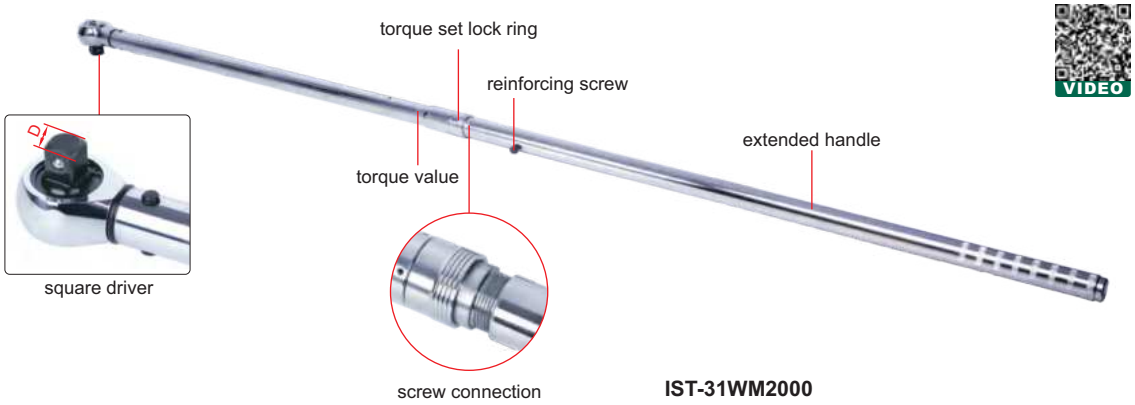
## EXTENDED HANDLE TORQUE WRENCHES

ATTENTION: CLOCKWISE OPERATION ONLY

ATTENTION: MUST BE USED WITH EXTENDED HANDLE

INSPECTION CERTIFICATE

VIDEO




**IST-31WM2000**

- Ratchet head
- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable
- Extended handle for less force



**SPECIFICATION**

| Code | Range (clockwise) | Accuracy | Graduation | Square driver (D) | Length | Weight |
|---|---|---|---|---|---|---|
| **IST-31WM1500** | 300~1500N.m | ±4% | 5N.m | 1" | 2200mm | 12100g |
| **IST-31WM2000** | 400~2000N.m | | 10N.m | 1" | 2200mm | 12100g |
| **IST-31WM3000** | 600~3000N.m | | 15N.m | 1" | 2780mm | 15500g |

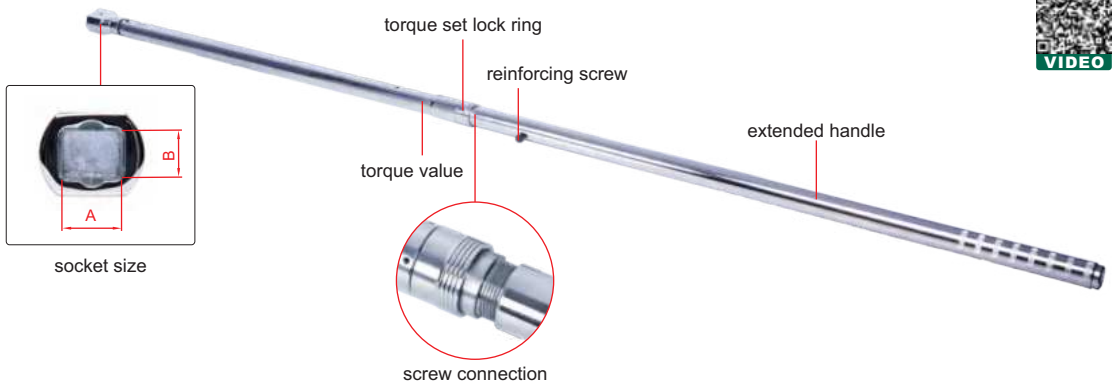
## EXTENDED HANDLE INTERCHANGEABLE HEAD TORQUE WRENCHES

ATTENTION: CLOCKWISE OPERATION ONLY

ATTENTION: MUST BE USED WITH EXTENDED HANDLE

INSPECTION CERTIFICATE

VIDEO




**IST-32WM2000**

- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable
- Extended handle for less force

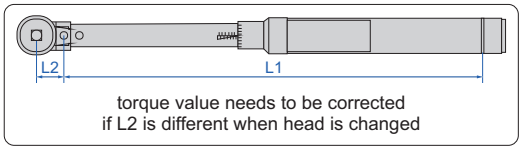
**SPECIFICATION**

| Code | Range (clockwise) | Accuracy | Graduation | Socket size (A×B) | Length | Weight |
|---|---|---|---|---|---|---|
| **IST-32WM1500** | 300~1500N.m | ±4% | 5N.m | 36×27mm | 2200mm | 12500g |
| **IST-32WM2000** | 400~2000N.m | | 10N.m | 36×27mm | 2200mm | 12500g |
| **IST-32WM3000** | 600~3000N.m | | 15N.m | 36×27mm | 2780mm | 15300g |

To be continued

Continued from previous page

torque correction




torque value needs to be corrected
if L2 is different when head is changed

type A (**optional**)



type C (**optional**)



type O (**optional**)



**ER WRENCH HEAD (optional)**

| | |
|---|---|
| **Type C*** | customized according to customer requirements |
| **Type UM*** | |
| **Type M*** | |
| **Type O*** | |
| **Type A*** | |

type UM (**optional**)



type M (**optional**)







**RATCHET HEAD (optional)**

| Code | Square driver | Applicable wrenches |
|---|---|---|
| **IST-11WM-R6** | 1" | **IST-32WM1500, IST-32WM2000, IST-32WM3000** |





**OPEN END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-11WM-K30C** | 30mm | **IST-32WM1500 IST-32WM2000 IST-32WM3000** |
| **IST-11WM-K32C** | 32mm | |
| **IST-11WM-K34C** | 34mm | |
| **IST-11WM-K36C** | 36mm | |
| **IST-11WM-K38C** | 38mm | |
| **IST-11WM-K41C** | 41mm | |
| **IST-11WM-K45C** | 45mm | |
| **IST-11WM-K50C*** | 50mm | |
| **IST-11WM-K55C*** | 55mm | |
| **IST-11WM-K60C*** | 60mm | |

**BOX END HEAD (optional)**

| Code | Open size | Applicable wrenches |
|---|---|---|
| **IST-11WM-M30C** | 30mm | **IST-32WM1500 IST-32WM2000 IST-32WM3000** |
| **IST-11WM-M32C** | 32mm | |
| **IST-11WM-M34C** | 34mm | |
| **IST-11WM-M36C** | 36mm | |
| **IST-11WM-M38C** | 38mm | |
| **IST-11WM-M41C** | 41mm | |
| **IST-11WM-M45C** | 45mm | |
| **IST-11WM-M50C** | 50mm | |
| **IST-11WM-M55C*** | 55mm | |
| **IST-11WM-M60C*** | 60mm | |

*Torque value needs to be corrected for these heads

# PRESET TORQUE WRENCHES

ATTENTION: CLOCKWISE OPERATION ONLY




square driver

**IST-PW20**



torque adjustment tool (**optional**)

- Ratchet head
- Torque is preset, to prevent adjustment by mistake during use
- The torque is set at the factory before delivery. Customers can also set the torque with torque adjustment tool (**IST-PW-TOOL**, **optional**) and digital torque testers (**IST-TT□□□**, **optional**)
- Clockwise operation only



## SPECIFICATION

| Code | IST-PW12 | IST-PW20 | IST-PW30 | IST-PW60 |
|---|---|---|---|---|
| Adjustable range* | 2.5~12N.m<br>22~105in.lb | 4~20N.m<br>36~175in.lb | 6~30N.m<br>55~265in.lb | 10~60N.m<br>8~44ft.lb |
| Accuracy | ±3% | ±3% | ±3% | ±3% |
| Square driver (D) | 1/4" | 1/4" | 3/8" | 3/8" |
| Length | 184mm | 184mm | 214mm | 255mm |
| Weight | 450g | 450g | 500g | 560g |

| Code | IST-PW125 | IST-PW200 | IST-PW340 | IST-PW500 |
|---|---|---|---|---|
| Adjustable range* | 25~125N.m<br>20~90ft.lb | 40~200N.m<br>30~145ft.lb | 65~340N.m<br>50~250ft.lb | 100~500N.m<br>75~365ft.lb |
| Accuracy | ±3% | ±3% | ±3% | ±3% |
| Square driver (D) | 3/8" | 1/2" | 1/2" | 3/4" |
| Length | 366mm | 457mm | 691mm | 910mm |
| Weight | 790g | 1200g | 1960g | 2800g |

| Code | IST-PW650 | IST-PW800 | IST-PW1000A | IST-PW1000B |
|---|---|---|---|---|
| Adjustable range* | 150~650N.m<br>110~475ft.lb | 160~800N.m<br>120~585ft.lb | 200~1000N.m<br>150~735ft.lb | 200~1000N.m<br>150~735ft.lb |
| Accuracy | ±4% | ±4% | ±4% | ±4% |
| Square driver (D) | 3/4" | 3/4" | 3/4" | 1" |
| Length | 910mm | 1037mm | 1265mm | 1265mm |
| Weight | 2800g | 5000g | 6000g | 6000g |

## OPTIONAL ACCESSORY

| Torque adjustment tool | IST-PW-TOOL |
|---|---|

*Adjust to a fixed torque value according to customer requirements before delivery



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# DIAL TORQUE WRENCHES

INSPECTION CERTIFICATE

VIDEO




IST-DW70

- Clockwise and counter-clockwise operation
- According to DIN ISO 6789, ASME B107.300

**SPECIFICATION**

| Code | IST-DW1D8 | IST-DW3D5 | IST-DW9 | IST-DW18 | IST-DW35 |
|---|---|---|---|---|---|
| Range | 0.36~1.8N.m<br>3~16in.lb | 0.7~3.5N.m<br>6~30in.lb | 1.8~9N.m<br>15~75in.lb | 3.6~18N.m<br>30~150in.lb | 7~35N.m<br>60~300in.lb |
| Accuracy | ±4% | ±4% | ±4% | ±4% | ±4% |
| Graduation | 0.02N.m<br>0.2in.lb | 0.05N.m<br>0.5in.lb | 0.1N.m<br>1in.lb | 0.2N.m<br>2in.lb | 0.5N.m<br>5in.lb |
| Square driver (D) | 1/4" | 1/4" | 1/4" | 3/8" | 3/8" |
| Length | 254mm | 254mm | 254mm | 254mm | 254mm |
| Weight | 480g | 480g | 480g | 480g | 480g |

| Code | IST-DW70 | IST-DW140 | IST-DW240 | IST-DW350 | IST-DW480 |
|---|---|---|---|---|---|
| Range | 14~70N.m<br>120~600in.lb | 28~140N.m<br>20~100ft.lb | 48~240N.m<br>35~175ft.lb | 70~350N.m<br>50~250ft.lb | 96~480N.m<br>70~350ft.lb |
| Accuracy | ±4% | ±4% | ±4% | ±4% | ±4% |
| Graduation | 1N.m<br>10in.lb | 2N.m<br>1ft.lb | 3N.m<br>2.5ft.lb | 2.5N.m<br>2.5ft.lb | 6N.m<br>5ft.lb |
| Square driver (D) | 3/8" | 1/2" | 1/2" | 1/2" | 3/4" |
| Length | 378mm | 546mm | 546mm | 546mm | 708mm |
| Weight | 820g | 1300g | 1300g | 1300g | 4030g |

# WRENCH SOCKETS



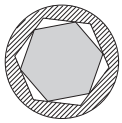
hexagonal rotary socket



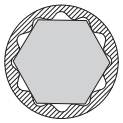
12-point short socket



12-point long socket



contact state of common hexagonal socket and hexagonal bolt



contact state of 12-point socket and hexagonal bolt

- Cold extrusion molding of 6150# Cr-V steel, withstand 25%-50% more torque than carbon steel socket
- 12-point socket, arc inner corner design, so that the socket and bolt contact surface for edge contact, do not damage the bolt, improve the life of the bolt

To be continued

Continued from previous page

### 1/4" 12-POINT SHORT SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-A4 | 4mm | 24.5mm |
| IST-S-A4D5 | 4.5mm | 24.5mm |
| IST-S-A5 | 5mm | 24.5mm |
| IST-S-A5D5 | 5.5mm | 24.5mm |
| IST-S-A6 | 6mm | 24.5mm |
| IST-S-A7 | 7mm | 24.5mm |
| IST-S-A8 | 8mm | 24.5mm |
| IST-S-A9 | 9mm | 24.5mm |
| IST-S-A10 | 10mm | 24.5mm |
| IST-S-A11 | 11mm | 24.5mm |
| IST-S-A12 | 12mm | 24.5mm |
| IST-S-A13 | 13mm | 24.5mm |
| IST-S-A14 | 14mm | 24.5mm |

### 3/8" 12-POINT SHORT SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-D6 | 6mm | 25mm |
| IST-S-D7 | 7mm | 25mm |
| IST-S-D8 | 8mm | 25mm |
| IST-S-D9 | 9mm | 25mm |
| IST-S-D10 | 10mm | 25mm |
| IST-S-D11 | 11mm | 25mm |
| IST-S-D12 | 12mm | 25mm |
| IST-S-D13 | 13mm | 25mm |
| IST-S-D14 | 14mm | 25mm |
| IST-S-D15 | 15mm | 25mm |
| IST-S-D16 | 16mm | 25mm |
| IST-S-D17 | 17mm | 25mm |
| IST-S-D18 | 18mm | 25mm |
| IST-S-D19 | 19mm | 28mm |
| IST-S-D20 | 20mm | 28mm |
| IST-S-D21 | 21mm | 28mm |
| IST-S-D22 | 22mm | 31.5mm |
| IST-S-D24 | 24mm | 31.5mm |

### 1/2" 12-POINT SHORT SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-G8 | 8mm | 37.8mm |
| IST-S-G9 | 9mm | 37.8mm |
| IST-S-G10 | 10mm | 37.8mm |
| IST-S-G11 | 11mm | 37.8mm |
| IST-S-G12 | 12mm | 37.8mm |
| IST-S-G13 | 13mm | 37.8mm |
| IST-S-G14 | 14mm | 37.8mm |
| IST-S-G15 | 15mm | 37.8mm |
| IST-S-G16 | 16mm | 37.8mm |
| IST-S-G17 | 17mm | 37.8mm |
| IST-S-G18 | 18mm | 37.8mm |
| IST-S-G19 | 19mm | 37.8mm |
| IST-S-G20 | 20mm | 37.8mm |
| IST-S-G21 | 21mm | 37.8mm |
| IST-S-G22 | 22mm | 40mm |
| IST-S-G23 | 23mm | 40mm |
| IST-S-G24 | 24mm | 40mm |
| IST-S-G27 | 27mm | 43mm |
| IST-S-G30 | 30mm | 43mm |
| IST-S-G32 | 32mm | 43mm |

### 1/4" 12-POINT LONG SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-B4 | 4mm | 49mm |
| IST-S-B5 | 5mm | 49mm |
| IST-S-B6 | 6mm | 49mm |
| IST-S-B7 | 7mm | 49mm |
| IST-S-B8 | 8mm | 49mm |
| IST-S-B9 | 9mm | 49mm |
| IST-S-B10 | 10mm | 49mm |
| IST-S-B11 | 11mm | 49mm |
| IST-S-B12 | 12mm | 49mm |
| IST-S-B13 | 13mm | 49mm |

### 3/8" 12-POINT LONG SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-E8 | 8mm | 63.5mm |
| IST-S-E9 | 9mm | 63.5mm |
| IST-S-E10 | 10mm | 63.5mm |
| IST-S-E11 | 11mm | 63.5mm |
| IST-S-E12 | 12mm | 63.5mm |
| IST-S-E13 | 13mm | 63.5mm |
| IST-S-E14 | 14mm | 63.5mm |
| IST-S-E15 | 15mm | 63.5mm |
| IST-S-E16 | 16mm | 63.5mm |
| IST-S-E17 | 17mm | 63.5mm |
| IST-S-E18 | 18mm | 63.5mm |
| IST-S-E19 | 19mm | 63.5mm |
| IST-S-E20 | 20mm | 63.5mm |
| IST-S-E21 | 21mm | 63.5mm |
| IST-S-E22 | 22mm | 63.5mm |

### 1/2" 12-POINT LONG SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-H8 | 8mm | 77mm |
| IST-S-H9 | 9mm | 77mm |
| IST-S-H10 | 10mm | 77mm |
| IST-S-H11 | 11mm | 77mm |
| IST-S-H12 | 12mm | 77mm |
| IST-S-H13 | 13mm | 77mm |
| IST-S-H14 | 14mm | 77mm |
| IST-S-H15 | 15mm | 77mm |
| IST-S-H16 | 16mm | 77mm |
| IST-S-H17 | 17mm | 77mm |
| IST-S-H18 | 18mm | 77mm |
| IST-S-H19 | 19mm | 77mm |
| IST-S-H20 | 20mm | 77mm |
| IST-S-H21 | 21mm | 77mm |
| IST-S-H22 | 22mm | 77mm |
| IST-S-H23 | 23mm | 77mm |
| IST-S-H24 | 24mm | 77mm |
| IST-S-H25 | 25mm | 77mm |
| IST-S-H26 | 26mm | 77mm |
| IST-S-H27 | 27mm | 77mm |
| IST-S-H28 | 28mm | 77mm |
| IST-S-H29 | 29mm | 77mm |
| IST-S-H30 | 30mm | 77mm |
| IST-S-H32 | 32mm | 77mm |

### 1/4" HEXAGONAL ROYARY SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-C3 | 3mm | 37mm |
| IST-S-C4 | 4mm | 37mm |
| IST-S-C5 | 5mm | 37mm |
| IST-S-C6 | 6mm | 37mm |
| IST-S-C8 | 8mm | 37mm |

### 3/8" HEXAGONAL ROYARY SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-F3 | 3mm | 50mm |
| IST-S-F4 | 4mm | 50mm |
| IST-S-F5 | 5mm | 50mm |
| IST-S-F6 | 6mm | 50mm |
| IST-S-F7 | 7mm | 50mm |
| IST-S-F8 | 8mm | 50mm |
| IST-S-F10 | 10mm | 50mm |

### 1/2" HEXAGONAL ROYARY SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-I5 | 5mm | 180mm |
| IST-S-I6S | 6mm | 70mm |
| IST-S-I6 | 6mm | 140mm |
| IST-S-I6L | 6mm | 250mm |
| IST-S-I7 | 7mm | 100mm |
| IST-S-I8 | 8mm | 120mm |
| IST-S-I10 | 10mm | 140mm |
| IST-S-I17 | 17mm | 50mm |

### 3/4" 12-POINT SOCKET

| Code | Capacity | Length |
|---|---|---|
| IST-S-J19 | 19mm | 50mm |
| IST-S-J21 | 21mm | 50mm |
| IST-S-J22 | 22mm | 50mm |
| IST-S-J23 | 23mm | 50mm |
| IST-S-J24 | 24mm | 51mm |
| IST-S-J25 | 25mm | 52mm |
| IST-S-J26 | 26mm | 52mm |
| IST-S-J27 | 27mm | 52mm |
| IST-S-J28 | 28mm | 52mm |
| IST-S-J29 | 29mm | 54mm |
| IST-S-J30 | 30mm | 56mm |
| IST-S-J32 | 32mm | 56mm |
| IST-S-J33 | 33mm | 56mm |
| IST-S-J34 | 34mm | 56mm |
| IST-S-J35 | 35mm | 58mm |
| IST-S-J36 | 36mm | 58mm |
| IST-S-J38 | 38mm | 60mm |
| IST-S-J41 | 41mm | 64mm |
| IST-S-J46 | 46mm | 68mm |
| IST-S-J50 | 50mm | 72mm |
| IST-S-J55 | 55mm | 76mm |
| IST-S-J60 | 60mm | 78mm |



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VIDEO

INSPECTION CERTIFICATE

# DIGITAL TORQUE ADAPTERS (WITH ANGLE DETECTION)

working with mechanical wrenches






**IST-5W135A**

- Clockwise and counter-clockwise operation
- After reaching the desired torque, turn the wrench at a angle to apply extra torque
- Unit: N.m, in.lb, ft.lb, kg.cm, degree
- Peak and track working modes
- Target torque or angle value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque or angle value is 80%~100% of target torque or angle
  – Both green and red LED light on and buzzer sounds when target torque or angle value is reached
- Power off in 2 minutes automatically
- Memory 50 measurement values for browsing
- With overload record (once the torque reaches 110% of the maximum range)



**SPECIFICATION**

| Code | | IST-5W30A | IST-5W135A | IST-5W200A | IST-5W340A |
|---|---|---|---|---|---|
| Range | torque | 6~30N.m | 27~135N.m | 40~200N.m | 68~340N.m |
| | angle | 0~999° | | | |
| Accuracy | clockwise | ±3% | | | |
| | counter-clockwise | ±4% | | | |
| | angle | ±2° (rotate at 90°) | | | |
| Resolution | torque | 0.01N.m | 0.1N.m | 0.1N.m | 0.1N.m |
| | angle | 1° | | | |
| Square driver (L) | | 1/4" | 3/8" | 1/2" | 1/2" |
| Power supply | | 2xAAA batteries | | | |
| Dimension | | Ø85×60mm | Ø85×75mm | Ø85×80mm | Ø85×80mm |
| Weight | | 150g | 220g | 240g | 240g |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |

REFER TO PAGE 410 FOR DETAILS

## DIGITAL ANGLE METER CODE 2177-121



# TORQUE MULTIPLIERS

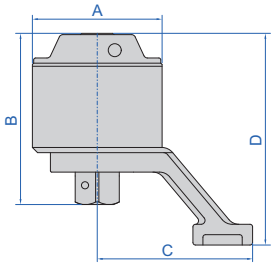
VIDEO




**IST-TM2000**




**IST-TM3500P**




bevel type

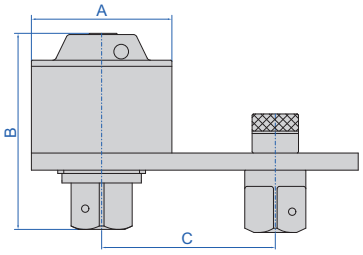
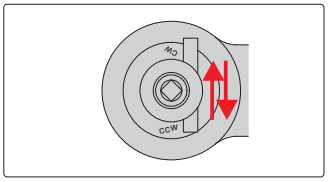



plate type



application




after tightening, toggle the anti-bounce reversing dowel, turn the wrench in the anticlockwise direction, then remove the wrench from torque multiplier

- Input to output accuracy: ±5%

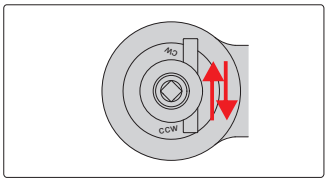
**Z TYPE (BEVEL TYPE) TORQUE MULTIPLIER**

| Code | Capacity | Torque ratio | Square socket | Square driver | Dimension (A×B×C×D) | For bolt | For nut | Weight |
|---|---|---|---|---|---|---|---|---|
| IST-TM1000 | 1000N.m | 1:4 | 1/2" | 1" | 82×98.5×97×122.4mm | M20~30 | S30~46 | 2.1kg |
| IST-TM2000 | 2000N.m | 1:13 | 1/2" | 1" | 82×120×105×147mm | M22~35 | S32~55 | 3.15kg |
| IST-TM3500 | 3500N.m | 1:16 | 1/2" | 1" | 98×131×120×163mm | M30~45 | S46~70 | 4.9kg |
| IST-TM5500 | 5500N.m | 1:20.5 | 1/2" | 1 1/2" | 115×163.5×137×199mm | M38~52 | S55~80 | 8.1kg |
| IST-TM7500 | 7500N.m | 1:23 | 1/2" | 1 1/2" | 127×173×146×215mm | M42~60 | S65~90 | 10.6kg |
| IST-TM10000 | 10000N.m | 1:28 | 1/2" | 1 1/2" | 141×170×164×238mm | M52~72 | S80~105 | 14kg |

**L TYPE (PLATE TYPE) TORQUE MULTIPLIER**

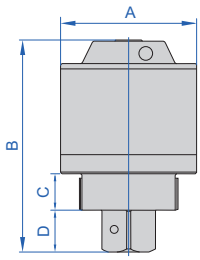
| Code | Capacity | Torque ratio | Square socket | Square driver | Dimension (A×B×C) | For bolt | For nut | Weight |
|---|---|---|---|---|---|---|---|---|
| IST-TM1000P | 1000N.m | 1:4 | 1/2" | 1" | 82×91×(76.7~127.3)mm | M20~30 | S30~46 | 2.4kg |
| IST-TM2000P | 2000N.m | 1:13 | 1/2" | 1" | 82×120×(92.7~129.3)mm | M22~35 | S32~55 | 3.5kg |
| IST-TM3500P | 3500N.m | 1:16 | 1/2" | 1" | 98×128×(102.7~145.3)mm | M30~45 | S46~70 | 5.0kg |
| IST-TM5500P | 5500N.m | 1:20.5 | 1/2" | 1 1/2" | 115×157×(134.05~165.95)mm | M38~52 | S55~80 | 8.7kg |
| IST-TM7500P | 7500N.m | 1:23 | 1/2" | 1 1/2" | 127×168×(139.05~190.95)mm | M42~60 | S65~90 | 11.7kg |
| IST-TM10000P | 10000N.m | 1:28 | 1/2" | 1 1/2" | 141×186×(144.05~215.95)mm | M52~72 | S80~105 | 15.2kg |
| IST-TM15000P | 15000N.m | 1:50 | 3/4" | 2 1/2" | 156×246×(155.25~244.75)mm | M60~85 | S80~120 | 24.1kg |
| IST-TM20000P | 20000N.m | 1:76 | 3/4" | 2 1/2" | 170×264×(163.75~276.25)mm | M72~100 | S105~145 | 27.8kg |

after tightening, toggle the anti-bounce reversing dowel, turn the wrench in the anticlockwise direction, then remove the wrench from torque multiplier










VIDEO

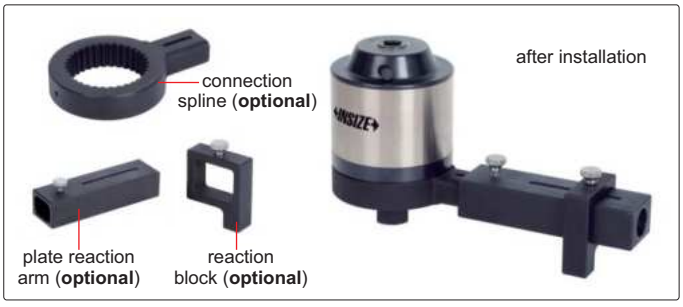
**IST-ST2000**

- High efficiency gear set with small input torque and large output torque
- Can be installed directly on the workpieces or through different options to form different installation types

application




plate type




bevel type

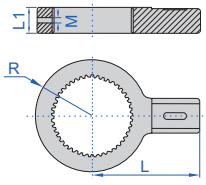



32

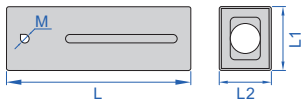
**SPECIFICATION**

| Code | Capacity | Accuracy | Torque ratio | Square socket | Square driver | Dimension (A×B×C×D) | For bolt | For nut | Weight |
|---|---|---|---|---|---|---|---|---|---|
| IST-ST2000 | 2000N.m | ±5% | 1:13.3 (plate) | 1/2" | 1" | 82×135×18×26mm | M22~35 | S32~55 | 3.2kg |
| | | | 1:12 (bevel) | | | | | | |
| IST-ST3500 | 3500N.m | | 1:16 (plate) | 1/2" | 1" | 98×150×25×26mm | M30~45 | S46~70 | 4.8kg |
| | | | 1:15 (bevel) | | | | | | |
| IST-ST5500 | 5500N.m | | 1:21.5 (plate) | 1/2" | 1 1/2" | 115×180×29×39mm | M38~52 | S55~80 | 7.8kg |
| | | | 1:18.5 (bevel) | | | | | | |
| IST-ST7500 | 7500N.m | | 1:24 (plate) | 1/2" | 1 1/2" | 127×198×34×39mm | M42~60 | S65~90 | 10.8kg |
| | | | 1:20 (bevel) | | | | | | |








**CONNECTION SPLINE (optional)**

| Code | Dimension (mm) | | | |
|---|---|---|---|---|
| | R | L | L1 | M |
| IST-ST2000-C1 | 41 | 78 | 18 | 5 |
| IST-ST3500-C2 | 49 | 95 | 23 | 5 |
| IST-ST5500-C3 | 58 | 112 | 28.5 | 6 |
| IST-ST7500-C4 | 63.5 | 123.5 | 29 | 6 |

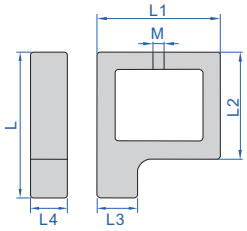
**PLATE REACTION ARM (optional)**

| Code | Dimension (mm) | | | |
|---|---|---|---|---|
| | L | L1 | L2 | M |
| IST-ST2000-P1 | 120 | 38 | 25.5 | 4 |
| IST-ST3500-P2 | 145 | 42 | 32 | 5 |
| IST-ST5500-P3 | 150 | 53 | 45 | 6 |
| IST-ST7500-P4 | 175 | 60 | 49 | 8 |

To be continued

Continued from previous page

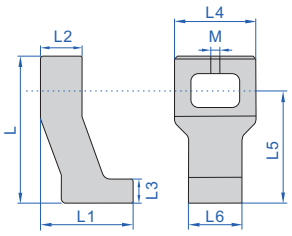





**REACTION BLOCK (optional)**

| Code | Dimension (mm) | | | | | |
|---|---|---|---|---|---|---|
| | L | L1 | L2 | L3 | L4 | M |
| IST-ST2000-R1 | 53.5 | 52 | 39.5 | 15 | 18 | 4 |
| IST-ST3500-R2 | 66 | 58 | 48 | 18 | 20 | 5 |
| IST-ST5500-R3 | 94.5 | 73 | 65 | 22 | 25 | 6 |
| IST-ST7500-R4 | 98 | 83 | 72 | 28 | 25 | 8 |






**BEVEL REACTION ARM (optional)**

| Code | Dimension (mm) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | L | L1 | L2 | L3 | L4 | L5 | L6 | M |
| IST-ST2000-B1 | 85 | 51 | 18 | 14 | 44 | 60 | 25 | 4 |
| IST-ST3500-B2 | 87.5 | 52 | 20 | 15 | 50 | 67 | 30 | 5 |
| IST-ST5500-B3 | 110 | 70 | 30 | 16 | 59 | 86 | 35 | 6 |
| IST-ST7500-B4 | 123 | 78 | 35 | 20 | 68 | 94 | 45 | 6 |



## TWO-USE TORQUE MULTIPLIERS




**IST-DT2000**

VIDEO

- High efficiency gear set with small input torque and large output torque
- The reaction arm can adjust the position of the applied force according to the operation conditions
- Plate reaction arm and bevel reaction arm are included

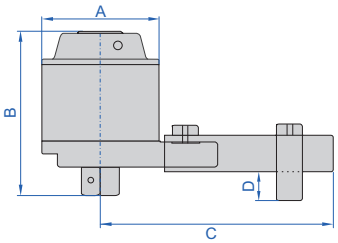
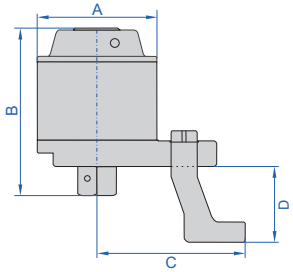
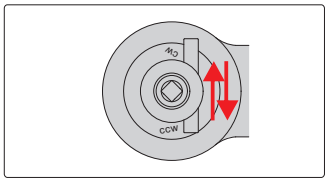



plate type




bevel type

after tightening, toggle the anti-bounce reversing dowel, turn the wrench in the anticlockwise direction, then remove the wrench from torque multiplier




application




plate type




bevel type




**SPECIFICATION**

| Code | Capacity | Accuracy | Torque ratio | Square socket | Square driver | Dimension (A×B×C×D) | For bolt | For nut | Weight |
|---|---|---|---|---|---|---|---|---|---|
| IST-DT2000 | 2000N.m | ±5% | 1:13.3 (plate) | 1/2" | 1" | 82×120×160×21mm | M22~35 | S32~55 | 4.1kg |
| | | | 1:12 (bevel) | | | 82×120×93×52mm | | | |
| IST-DT3500 | 3500N.m | | 1:16 (plate) | 1/2" | 1" | 98×133×152×26mm | M30~45 | S46~70 | 6.4kg |
| | | | 1:15 (bevel) | | | 98×133×117×56mm | | | |
| IST-DT5500 | 5500N.m | | 1:21.5 (plate) | 1/2" | 1 1/2" | 115×165×210×39.5mm | M38~52 | S55~80 | 11.4kg |
| | | | 1:18.5 (bevel) | | | 115×165×134×72mm | | | |
| IST-DT7500 | 7500N.m | | 1:24 (plate) | 1/2" | 1 1/2" | 127×174×243×38mm | M42~60 | S65~90 | 16kg |
| | | | 1:20 (bevel) | | | 127×174×146×80mm | | | |



Coating Thickness Gauges
Page 1039-1046



Plating Thickness Instruments
Page 1047



Surface Profile Gauges
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Wet Film Gauges
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Gloss Meters
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Holiday Detectors
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Spectrophotometers
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Digital Adhesion Testers
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Pencil Hardness Testers
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Rotational Abrasion Testers
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Cross Cut Adhesion Testers
Page 1067



Conical Mandrel Test Apparatus
Page 1068



Paint Film Flexibility Testers
Page 1068



Impact Testers
Page 1069



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# COATING THICKNESS GAUGE (HIGH PRECISION)
# CODE ISO-8000FN

SUITABLE FOR THIN COATING BELOW 10μm

FOR MAGNETIC AND NON-MAGNETIC SUBSTRATES


calibration foils (included)


stand
(**optional**)


eddy current probe **N2000**
(**optional**)


zero calibration plate
(included)


eddy current probe **N1500**
(**optional**)

VIDEO



magnetic induction probe **F500**
(included)

33

- Can measure thickness of thin coating below 10μm
- High repeatability
- Magnetic induction probe measures the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate
  Substrate: iron, steel, magnetic stainless steel (not for non-magnetic stainless steel)
  Coating: zinc, aluminum, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Eddy current probe measures the thickness of non-conductive coating on non-magnetic metal substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- Maximum, minimum, average and variance values can be calculated automatically

## SPECIFICATION

| **Probe** | | **F500** (included)<br>magnetic induction probe | **N1500 (optional)**<br>eddy current probe | **N2000 (optional)**<br>eddy current probe |
|---|---|---|---|---|
| **Measuring range** | | 0~500μm | 0~1500μm | 0~2000μm |
| **Resolution** | | 0.1μm (range<100μm)<br>1μm (100μm≤range≤500μm) | 0.1μm (range<100μm)<br>1μm (100μm≤range<1000μm)<br>0.01mm (1.00mm≤range≤1.50mm) | 0.1μm (range<100μm)<br>1μm (100μm≤range<1000μm)<br>0.01mm (1.00mm≤range≤2.00mm) |
| **Accuracy*** | | ±(0.5μm+2%L) | | |
| **Repeatability*** | | ≤(0.2μm+0.8%L) | | ≤(0.2μm+1%L) |
| **Measuring mode** | | single and continuous | | |
| **Measuring interval** | **single mode** | 1.5s | 0.8s | |
| | **continuous mode** | 0.4s | 0.4s | |
| **Calibration mode** | | zero calibration and multi-points calibration (1~5 points) | | |
| **Minimum substrate thickness** | | 0.1mm | 0.05mm | |
| **Minimum measuring area** | | Ø7mm | | Ø25mm |
| **Minimum radius of curvature workpieces** | **convex surface** | 1.5mm | | |
| | **concave surface** | 10mm | | |
| **Unit** | | μm/mil | | |
| **Power supply** | | 4×1.5V AAA batteries | | |
| **Dimension** | | 148×76×26mm | | |
| **Weight** | | 148g | | |

*L is measuring thickness in μm

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Magnetic induction probe** | 1 pc |
| **Zero calibration plate** | 1 pc |
| **Calibration foils (5.6μm, 11.6μm, 24.6μm, 50.0μm,100μm, 252μm, 390μm)** | 1 set |
| **1.5V AAA battery** | 4 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Eddy current probe (with zero calibration plate and standard foil)** | **ISO-8000FN-N1500**** |
| | **ISO-8000FN-N2000** |
| **Stand** | **ISO-8000FN-STAND** |

**For precision measurement of thin coating below 10μm, please use the stand for eddy current probe



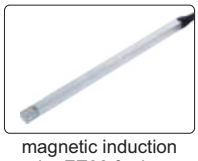
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POPULAR MODEL | BLUETOOTH | FOR MAGNETIC AND NON-MAGNETIC SUBSTRATES | DATA OUTPUT | VIDEO

# COATING THICKNESS GAUGE
# CODE 9501-1200

INSPECTION CERTIFICATE


eddy current probe **NFE** (**optional**) with zero calibration block


magnetic induction probe **FE90** for bores and grooves (**optional**)


calibration foils (included)


magnetic induction probe **FE10** for large range (**optional**)

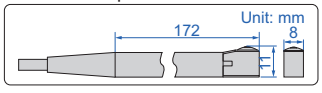

zero calibration block for **FE** (included)


receiver (**optional**)




- Magnetic induction probe (FE) measures the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate.
  Substrate: iron, steel, magnetic stainless steel (not for non-magnetic stainless steel)
  Coating: zinc, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Eddy current probe (NFE) measures the thickness of non-conductive coating on non-magnetic metal substrate.
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- Tolerance measurement
- Data statistic, including average, variance, maximum and minimum values
- Data can be sent to Excel by connecting to computers via bluetooth or cable of receiver
- Support bluetooth printer
- Automatic power off

**FE90** probe dimension




## SPECIFICATION

| Probe type | **FE** (included) magnetic induction probe | **NFE (optional)** eddy current probe | **FE90 (optional)** magnetic induction probe for bores and grooves | **FE10 (optional)** magnetic induction probe for large range |
|---|---|---|---|---|
| Measuring range | 0~1250μm | 0~1250μm | 0~1250μm | 500~10000μm |
| Accuracy* | ±(3%L+1)μm (range≤1250μm)<br>±(3%L+10)μm (range>1250μm) | | | |
| Resolution | 0.1μm (range<100μm) | | | |
| | 1μm (range≥100μm) | | | |
| Measuring mode | continuous and single | | | |
| Minimum substrate thickness | 0.5mm | 0.3mm | 0.5mm | 2mm |
| Minimum measuring area | Ø7mm | Ø15mm | Ø7mm | Ø40mm |
| Minimum curvature radius of convex workpiece | 1.5mm | 3mm | — | 10mm |
| Memory | 600 | | | |
| Output | USB | | | |
| Power supply | 2×1.5V AA batteries | | | |
| Dimension | 135×77×32mm | | | |
| Weight | 172g | | | |

*L is measuring thickness in μm

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Magnetic induction probe (FE) | 1 pc |
| Zero calibration block for FE probe | 1 pc |
| Calibration foils (50/100/250/500/1000μm) | 1 set |
| 1.5V AA battery | 2 pcs |
| Software and USB cable | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Receiver | ISR-C300-RECEIVER |
| Cable of receiver | 9501-1200-CABLE |
| Bluetooth printer | ISR-C002-PRINTER |
| Eddy current probe (NFE) with zero calibration block | 9501-1200-NFE |
| Magnetic induction probe (FE90) for bores and grooves | 9501-1200-FE90 |
| Magnetic induction probe (FE10) for large range | 9501-1200-FE10 |

# COATING THICKNESS GAUGE
# CODE 5401-TC11

TEMPERATURE COMPENSATION | DATA OUTPUT | VIDEO



eddy current probe
**NM** (**optional**)



magnetic induction probe
**FM** (included)

- Magnetic induction probe (FM) measures the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate.
  Substrate: steel, iron, alloy, hard magnetic steel, etc.
  Coating: zinc, aluminum, chrome, copper, rubber, paint, etc.
- Eddy current probe (NM) measures the thickness of non-conductive coating on non-magnetic metal substrate.
  Substrate: copper, aluminum, zinc, tin, etc.
  Coating: rubber, paint, plastic, anodized film, etc.
- Real-time temperature compensation guarantees high accuracy, thin plating and oxide layer less than 20μm can be measured accurately
- Reduces the effects of electromagnetic interference and hand-held operation
- Probe can be re-matched after abrasion
- Tolerance measurement with adjustable alarm threshold
- USB interface for data transmission
- Coupling status indication
- Support cable printer



## SPECIFICATION

| | | | |
|---|---|---|---|
| **Probe** | | **FM** (included)<br>magnetic induction probe | **NM (optional)**<br>eddy current probe |
| **Range** | | 0~1500μm | 0~1500μm<br>(chrome plating on copper: 0~40μm) |
| **Resolution** | | 0.1μm (<100μm)<br>1μm (100μm~1500μm) | |
| **Accuracy*** | **zero calibration** | ±(1μm+2%L) | |
| | **one-point calibration** | ±(1μm+2%L) | |
| | **two-point calibration** | ±[1μm+(1~2)%L] | |
| | **multi-point calibration** | ±(1μm+1%L) | |
| **Measuring mode** | | single point measurement, scan mode, differential mode, average mode | |
| **Calibration mode** | | zero calibration, one-point calibration, two-point calibration, multi-point calibration | |
| **Test frequency** | | 3 times per second | |
| **Minimum substrate thickness** | | 0.5mm | 0.3mm |
| **Minimum measuring area** | | Ø7mm | Ø5mm |
| **Minimum curvature radius of convex workpiece** | | 1.5mm | 3mm |
| **Data storage** | | 500 groups | |
| **Interface** | | USB | |
| **Operation temperature** | | -10°C~50°C | |
| **Power supply** | | 3×1.5V AAA batteries | |
| **Dimension** | | 150×70×30mm | |
| **Weight** | | 160g | |

* L is the measured value in μm

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Magnetic induction probe (FM)** | 1 pc |
| **Zero calibration block for FM probe** | 1 pc |
| **Calibration foils(12/50/100/250/500/1000μm)** | 6 pcs |
| **AAA battery** | 3 pcs |
| **Software and USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Eddy current probe (NM)<br>(with zero calibration block for NM probe)** | **5401-TC11-NM** |
| **Cable printer** | **5401-TC11-PRINTER** |



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TEMPERATURE COMPENSATION | ONLINE MEASUREMENT IN REAL TIME | BLUETOOTH

# COATING THICKNESS GAUGE (ADVANCED TYPE) CODE 5402-TC21

VIDEO

- Magnetic induction probe (FM) measures the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate.
  Substrate: steel, iron, alloy, hard magnetic steel, etc.
  Coating: zinc, aluminum, chrome, copper, rubber, paint, etc.
- Eddy current probe (NM) measures the thickness of non-conductive coating on non-magnetic metal substrate.
  Substrate: copper, aluminum, zinc, tin, etc.
  Coating: rubber, paint, plastic, anodized film, etc.
- Real-time temperature compensation guarantees high accuracy, thin plating and oxide layer less than 20μm can be measured accurately
- Reduces the effects of electromagnetic interference and hand-held operation
- Probe can be re-matched after abrasion
- Tolerance measurement with adjustable alarm threshold
- USB and bluetooth interface for data transmission and online measurement in real-time
- Coupling status indication
- Support cable printer



magnetic induction probe **FM** (included)



mid-range magnetic induction probe **FL** (**optional**)



high-range magnetic induction probe **FX** (**optional**)



low-range magnetic induction probe **FS** (**optional**)



high-temp magnetic induction probe **FH** (**optional**)



eddy current probe **NM** (**optional**)

**SPECIFICATION**

| Probe | | **FM** (included) magnetic induction probe | **FL** (**optional**) mid-range magnetic induction probe | **FX** (**optional**) high-range magnetic induction probe | **FS** (**optional**) low-range magnetic induction probe | **FH** (**optional**) high-temp magnetic induction probe | **NM** (**optional**) eddy current probe |
|---|---|---|---|---|---|---|---|
| Range | | 0~1500μm | 0~3000μm | 0~10000μm | 0~500μm | 0~3000μm | 0~1500μm |
| Resolution | | 0.1μm (<100μm)<br>1μm (100μm~10000μm) | | | | | |
| Accuracy * | zero calibration | ±(1μm+2%L) | ±(1μm+3%L) | ±(2μm+5%L) | ±(1μm+2%L) | ±(1μm+3%L) | ±(1μm+2%L) |
| | multi-point calibration | ±(1μm+1%L) | ±(1μm+2%L) | ±(1μm+3%L) | ±(1μm+1%L) | ±(1μm+2%L) | ±(1μm+1%L) |
| Measuring mode | | single point measurement, scan mode, differential mode, average mode | | | | | |
| Calibration mode | | zero calibration, one-point calibration, two-point calibration, multi-point calibration | | | | | |
| Minimum substrate thickness | | 0.5mm | 0.5mm | 2mm | 0.2mm | 0.5mm | 0.3mm |
| Minimum measuring area | | Ø7mm | Ø7mm | Ø40mm | Ø3mm | Ø7mm | Ø5mm |
| Minimum curvature radius of convex workpiece | | 1.5mm | 1.5mm | 10mm | 1mm | 1.5mm | 3mm |
| Data storage | | 500 groups | | | | | |
| Interface | | USB, bluetooth | | | | | |
| Operation temperature | | -10°C~50°C | | | | | |
| Power supply | | 3×1.5V AAA batteries | | | | | |
| Dimension | | 150×70×30mm | | | | | |
| Weight | | 160g | | | | | |

* L is the measured value in μm

To be continued

Continued from previous page

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Magnetic induction probe (FM) | 1 pc |
| Zero calibration block for FM probe | 1 pc |
| Calibration foils (12/50/100/250/500/1000μm) | 6 pcs |
| AAA battery | 3 pcs |
| Software and USB cable | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Eddy current probe (NM) (with zero calibration block for NM probe) | 5401-TC11-NM |
| Mid-range magnetic induction probe (FL) | 5402-TC21-FL |
| High-range magnetic induction probe (FX) | 5402-TC21-FX |
| Low-range magnetic induction probe (FS) | 5402-TC21-FS |
| High-temp magnetic induction probe (FH) | 5402-TC21-FH |
| Cable printer | 5401-TC11-PRINTER |

## COATING THICKNESS GAUGE (BASIC TYPE) CODE ISO-1000FN

FOR MAGNETIC AND NON-MAGNETIC SUBSTRATES

VIDEO



- Probe is suitable for both magnetic and non-magnetic metal substrates
- Can measure the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate
  Substrate: iron, steel, magnetic stainless steel (not for non-magnetic stainless steel)
  Coating: zinc, aluminum, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Can measure the thickness of non-conductive coating on non-magnetic metal substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- 3 measuring modes: Fe, NFe, Fe/NFe
- Store 9 measuring records
- Small and portable, easy for operation



ruby contact point

**SPECIFICATION**

| | | |
|---|---|---|
| Measuring range | | 0~5000μm |
| Resolution | | 0.1μm (range<100μm)<br>1μm (100μm≤range<1000μm)<br>0.01mm (1mm≤range≤5mm) |
| Accuracy * | | <2000μm: ±(2μm+3%L)<br>2000μm~5000μm: ±(2μm+5%L) |
| Measure interval | | 0.5s |
| Calibration mode | | zero calibration |
| Measuring mode | | Fe, NFe, Fe/NFe |
| Minimum substrate thickness | Fe | 0.2mm |
| | NFe | 0.05mm |
| Minimum measuring area | | Ø25mm |
| Minimum radius of curvature workpieces | convex surface | 5mm |
| | concave surface | 25mm |
| Unit | | μm/mil |
| Power supply | | 2×1.5V AAA batteries |
| Dimension | | 101×62×28mm |
| Weight | | 79g |

* L is the measured value in μm



standard foil (included)



Fe zero calibration plate (included)



NFe zero calibration plate (included)

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Fe zero calibration plate | 1 pc |
| NFe zero calibration plate | 1 pc |
| Standard foil (100μm) | 1 pc |
| 1.5V AAA battery | 2 pcs |



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VIDEO

FOR MAGNETIC AND NON-MAGNETIC SUBSTRATES

# COATING THICKNESS GAUGE (BASIC TYPE)
# CODE ISO-1200FN



- Probe is suitable for both magnetic and non-magnetic metal substrates
- Can measure the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate
  Substrate: iron, steel, magnetic stainless steel (not for non-magnetic stainless steel)
  Coating: zinc, aluminum, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Can measure the thickness of non-conductive coating on non-magnetic metal substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- 3 measuring modes: Fe, NFe, Fe/NFe
- Store 9 measuring records
- Small and portable, easy for operation




## SPECIFICATION

| | | |
|---|---|---|
| Measuring range | | 0~5000µm |
| Resolution | | 0.1µm (range<100µm)<br>1µm (100µm≤range<1000µm)<br>0.01mm (1mm≤range≤5mm) |
| Accuracy * | | <2000µm: ±(2µm+3%L)<br>2000µm~5000µm: ±(2µm+5%L) |
| Measure interval | | 0.5s |
| Calibration mode | | zero calibration |
| Measuring mode | | Fe, NFe, Fe/NFe |
| Minimum substrate thickness | Fe | 0.2mm |
| | NFe | 0.05mm |
| Minimum measuring area | | Ø25mm |
| Minimum radius of curvature workpieces | convex surface | 5mm |
| | concave surface | 25mm |
| Unit | | µm/mil |
| Power supply | | 2×1.5V AAA batteries |
| Main unit dimension | | 101×62×28mm |
| Probe dimension | | 71×26×22mm |
| Weight | | 114g |

* L is the measured value in µm


Fe zero calibration plate (included)


NFe zero calibration plate (included)

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Fe zero calibration plate | 1 pc |
| NFe zero calibration plate | 1 pc |
| Standard foil (100µm) | 1 pc |
| 1.5V AAA battery | 2 pcs |


standard foil (included)

# COATING THICKNESS GAUGE
# CODE 5403-QM32

VIDEO

FOR INDOOR OR OUTDOOR LOW TEMPERATURE USE

BLUETOOTH



ruby probe

- Suitable for both magnetic and non-magnetic metal substrates
- Can measure the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate
  Substrate: iron, steel, magnetic stainless steel
  Coating: zinc, aluminum, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Can measure the thickness of non-conductive coating on non-magnetic metal substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- Can quickly detect the paint thickness of iron and aluminum body of car, three colors of backlight indication, can identify non-metal shell and iron powder putty layer
- Can connect to mobile APP, measure and generate test reports in real time, and save or share the report
- Built-in multiple languages
- Store 9 measuring records
- Small and portable, easy for operation



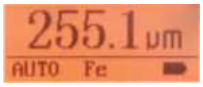
mobile APP



car body paint thickness detection



paint thickness<170µm, blue backlight indicates "normal thick"



paint thickness between 170µm and 350µm, yellow backlight indicates "slightly thick"



paint thickness>350µm, red backlight indicates "ultra thick"

## SPECIFICATION

| | |
|---|---|
| **Measuring range** | 0~3000µm |
| **Resolution** | 0.1µm (range<100µm)<br>1µm (100µm≤ range<1000µm)<br>0.01mm (1mm≤ range<3mm) |
| **Accuracy** | ±(2µm+3%L) L is measuring thickness in µm |
| **Measure interval** | 0.5s |
| **Calibration mode** | zero calibration |
| **Display** | LCD |
| **Working temperature** | -20~50°C |
| **Unit** | µm/mil |
| **Language** | Chinese, English, Turkish, Ukrainian |
| **Power supply** | 2×1.5V AAA batteries |
| **Dimension** | 100×60×24mm |
| **Weight** | 80g |


standard foil (included)


Fe zero calibration plate (included)


NFe zero calibration plate (included)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Fe zero calibration plate** | 1 pc |
| **NFe zero calibration plate** | 1 pc |
| **Standard foil (100µm)** | 1 pc |
| **1.5V AAA battery** | 2 pcs |



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VIDEO

FOR INDOOR OR OUTDOOR LOW TEMPERATURE USE

BLUETOOTH

# DOUBLE SCREEN COATING THICKNESS GAUGE
# CODE 5404-QM42



ruby probe

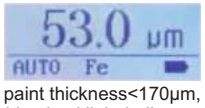
- Probe is suitable for both magnetic and non-magnetic metal substrates
- Can measure the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate
  Substrate: iron, steel, magnetic stainless steel
  Coating: zinc, aluminum, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Can measure the thickness of non-conductive coating on non-magnetic metal substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- Can quickly detect the paint thickness of iron and aluminum body of car, three colors of backlight indication, can identify non-metal shell and iron powder putty layer
- Can connect to mobile APP, measure and generate test reports in real time, and save or share reports
- Double screen, easy reading and normal use at -40°C low temperature
- Built-in multiple languages
- Store 9 measuring records
- Small and portable, easy for operation



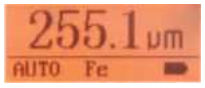
mobile APP



car body paint thickness detection



paint thickness<170µm, blue backlight indicates "normal thick"



paint thickness between 170µm and 350µm, yellow backlight indicates "slightly thick"



paint thickness>350µm, red backlight indicates "ultra thick"


OLED screen

## SPECIFICATION

| | |
|---|---|
| **Measuring range** | 0~3000µm |
| **Resolution** | 0.1µm (range<100µm)<br>1µm (100µm≤ range<1000µm)<br>0.01mm (1mm≤ range<3mm) |
| **Accuracy** | ±(2µm+3%L) L is measuring thickness in µm |
| **Measure interval** | 0.5s |
| **Calibration mode** | zero calibration |
| **Display** | front screen LCD, top screen OLED |
| **Working temperature** | -20~50°C (LCD screen), -40~50°C (OLED screen) |
| **Unit** | µm/mil |
| **Language** | Chinese, English, Turkish, Ukrainian |
| **Power supply** | 2×1.5V AAA batteries |
| **Dimension** | 100×60×24mm |
| **Weight** | 80g |


standard foil (included)


Fe zero calibration plate (included)


NFe zero calibration plate (included)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Fe zero calibration plate** | 1 pc |
| **NFe zero calibration plate** | 1 pc |
| **Standard foil (100µm)** | 1 pc |
| **1.5V AAA battery** | 2 pcs |

## CALIBRATION FOILS FOR COATING THICKNESS GAUGES

INSPECTION CERTIFICATE

- To calibrate or check the accuracy of coating thickness gauges
- Increase the measurement accuracy after foil calibration
- Uniformity: ±0.3μm (≤50μm), ±0.6% (>50μm)
- Dimension: 45×30mm (thickness≤2000μm), 50×30mm (thickness>2000μm)
- Supplied with manufacturer inspection certificate

| Code | Thickness | Deviation* | Uniformity |
|---|---|---|---|
| **9503-FL1** | 11.5μm | ±5% | ±0.3μm |
| **9503-FL2** | 23μm | ±5% | ±0.3μm |
| **9503-FL3** | 50.5μm | ±5% | ±0.6% |
| **9503-FL4** | 102μm | ±5% | ±0.6% |
| **9503-FL5** | 250μm | ±5% | ±0.6% |
| **9503-FL6** | 495μm | ±3% | ±0.6% |
| **9503-FL7** | 995μm | ±2% | ±0.6% |
| **9503-FL8** | 1780μm | ±5% | ±0.6% |
| **9503-FL9** | 3725μm | ±4% | ±0.6% |
| **9503-FL10** | 7650μm | ±2% | ±0.6% |
| **9503-FL11** | 780μm | ±5% | ±0.6% |
| **9503-FL12** | 1400μm | ±3% | ±0.6% |

* Deviation between the ordered thickness and the thickness marked on the calibration foils when supplied




**9503-FL6**

## X-RAY FLUORESCENCE SPECTROMETER (RoHS DETECTOR/ALLOY ANALYZER /PLATING THICKNESS INSTRUMENT) CODE XRF-B210

REFER TO PAGE 932~933 FOR DETAILS



## X-RAY FLUORESCENCE SPECTROMETER/PLATING THICKNESS INSTRUMENT (ADVANCED TYPE) CODE XRF-PT230

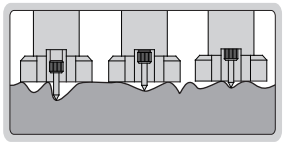
REFER TO PAGE 931 FOR DETAILS



## SURFACE PROFILE GAUGE

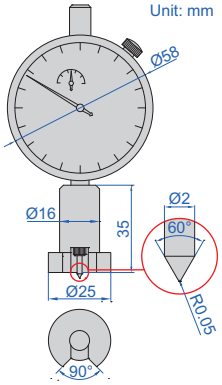
VIDEO

measure peak-to-valley height
of blast cleaned surfaces





2344-1




- Measure peak-to-valley height of blast cleaned surface.
  If the profile is too low, the adhesion of the coating to the surface will be reduced.
  If the profile is too high, there is the danger that the profile peaks will remain uncoated, allowing rust spots to occur.
- Meet ASTM D 4417-B
- Zero set block is included, set zero before measurement
- Stainless steel base

set zero



zero set block
(included)

33

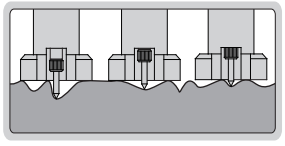
| Code | Range | Dial indicator stroke | Dial indicator graduation | Accuracy |
|---|---|---|---|---|
| **2344-1** | 0-1mm | 1mm | 0.001mm | ±0.005mm |

## DIGITAL SURFACE PROFILE GAUGE

DATA OUTPUT

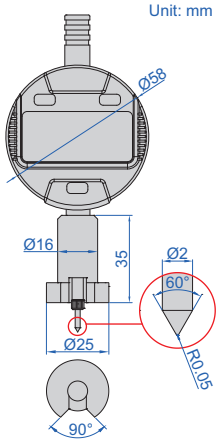
VIDEO

measure peak-to-valley height
of blast cleaned surfaces





2843-10




- Measure peak-to-valley height of blast cleaned surface.
  If the profile is too low, the adhesion of the coating to the surface will be reduced.
  If the profile is too high, there is the danger that the profile peaks will remain uncoated, allowing rust spots to occur.
- Meet ASTM D 4417-B
- Zero set block is included, set zero before measurement
- Button function: on/off, zero, mm/inch, absolute/incremental measurement
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21

set zero



zero set block
(included)

| Code | Range | Digital indicator stroke | Digital indicator resolution | Accuracy |
|---|---|---|---|---|
| **2843-10** | 0-12.7mm/0-0.5" | 12.7mm/0.5" | 0.001mm/0.00005" | ±0.005mm |

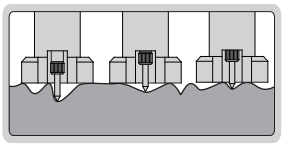
# DIGITAL SURFACE PROFILE GAUGE

VIDEO

DATA OUTPUT

DISPLAY MAXIMUM, MINIMUM, DIFFERENCE VALUE BETWEEN MAXIMUM AND MINIMUM

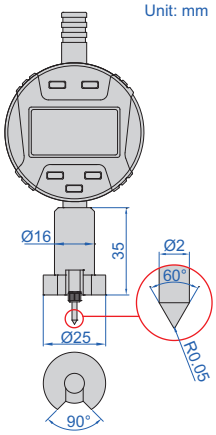
measure peak-to-valley height of blast cleaned surfaces





**2844-10**

Unit: mm






- Measure peak-to-valley height of blast cleaned surface.
  If the profile is too low, the adhesion of the coating to the surface will be reduced.
  If the profile is too high, there is the danger that the profile peaks will remain uncoated, allowing rust spots to occur.
- Meet ASTM D 4417-B
- Zero set block is included, set zero before measurement
- Button function: tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- CR2032 battery
- Automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Optional accessory:
  wireless transmitter code **7315-50M** (receiver is needed) page 6,
  bluetooth transmitter code **7214-50M** page 12,
  data output cable code **7302-40M** page 21

set zero



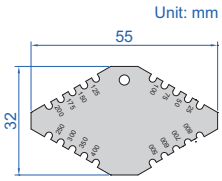

| Code | Range | Digital indicator stroke | Digital indicator resolution | Accuracy |
|---|---|---|---|---|
| **2844-10** | 0-12.7mm/0-0.5" | 12.7mm/0.5" | 0.001mm/0.00005" | ±0.005mm |

# WET FILM GAUGES



**4845-1**

Unit: mm

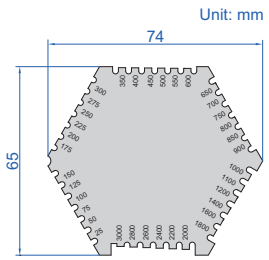



4845-1



**4845-2**

Unit: mm




4845-2

- Made of stainless steel

| Code | Range | Accuracy | Thickness |
|---|---|---|---|
| **4845-1** | 25-800μm | ±5μm | 1.8mm |
| **4845-2** | 25-3000μm | 25-100μm: ±5μm<br>100μm-3000μm: ±5% | 1mm |



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# GLOSS METERS

VIDEO

DATA OUTPUT

- According to JJG 696, ISO 2813, ASTM D2457, ASTM D523, GB/T 9754
- To measure the gloss level of material surfaces such as paint, wood, stone, plastic, paper, leather, metal, etc.
- Automatic judgement after setting high and low limits
- Automatic power off



5702-DG8

base with calibration block (included)





software (included), test can be controlled from the software, display test data and report



**SPECIFICATION**

| Code | 5702-DG6 | 5702-DG8 |
|---|---|---|
| Measuring angle | 60° | 20°, 60°, 85° |
| Measuring range | 0~200GU | 20°: 0~2000GU,<br>60°: 0~1000GU, 85°: 0~160GU |
| Measuring spot | 9mm×15mm | 20°: 9mm×9mm,<br>60°: 9mm×15mm, 85°: 5mm×38mm |
| Minimum measurement size | 20mm×10mm | 57mm×10mm |
| Accuracy | 0~100GU: ±1.5GU<br>100~200GU: ±1.5% | 0~100GU: ±1.5GU<br>100~2000GU: ±1.5% |
| Repeatability | 0~100GU: 0.2GU<br>100~200GU: 0.2% | 0~100GU: 0.2GU<br>100~2000GU: 0.2% |
| Resolution | 0.1GU | |
| Zero value error | 0.1GU | |
| Data port | USB (Type-C) | |
| Power supply | 3.7V rechargeable Li-ion battery | |
| Dimension | 135×45×75mm | |
| Weight | 237g | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Base with calibration block | 1 pc |
| U disk | 1 pc |
| AC/DC adapter | 1 pc |
| USB data cable | 1 pc |

# 60° GLOSS METER CODE ISQ-DG6

VIDEO

- To test the gloss of coating, such as painting, varnish, printing ink, etc.
- To test the material surfaces, such as metal, granite, ceramic, plastic, paper, etc.
- According to ISO 2813, ASTM D2457, ASTM D523
- Automatic power off



base with calibration block (included)



connect mobile phone via bluetooth (only Android system)



operate and output data by mobile phone

**SPECIFICATION**

| | |
|---|---|
| Incidence angle | 60° |
| Measuring range | 0~150GU |
| Resolution | 0.1GU |
| Accuracy | ±1.2GU |
| Repeatability | 0.4GU |
| Zero set error | 0.2GU |
| Measuring area | 20×10mm |
| Output | bluetooth |
| Power supply | 1×1.5V AA battery |
| Dimension | 123×38×65mm |
| Weight | 300g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Base with calibration block | 1 pc |
| Spare calibration block | 1 pc |



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# MICROPOROUS GLOSS METER (BASIC TYPE)
# CODE 5712-SG60

CAN BE OPERATED BY COMPUTERS OR MOBILE PHONES

DATA OUTPUT | BLUETOOTH | SPOT SIZE 1.5×3mm

VIDEO




microporous



base with calibration block (included)

connect to mobile phone via Bluetooth (only Android system)



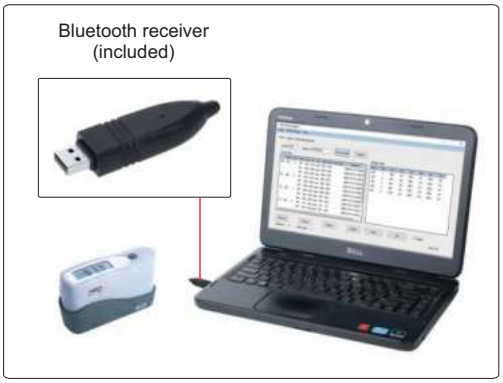
operate and output data by mobile phone



- According to ISO 2813, ASTM D2457, ASTM D523, GB/T 9754
- For measuring the gloss level of small and curved surfaces
- To measure the gloss level of material surfaces such as paint, wood, stone, plastic, paper, leather, metal, etc.
- Automatic power off

connect to computer via Bluetooth

Bluetooth receiver (included)



## SPECIFICATION

| | |
|---|---|
| Measuring angle | 60° |
| Measuring range | 0~199.9GU |
| Resolution | 0.1GU |
| Accuracy | ±1.5GU |
| Zero value error | ±0.2GU |
| Repeatability | ±0.4GU |
| Measuring spot | 1.5mm×3mm |
| Minimum measurement size | 2mm×4mm |
| Data output | Bluetooth |
| Software support | Windows, Android |
| Power supply | 1×1.5AA battery |
| Dimension | 123×65×38mm |
| Weight | 300g |

software (included), test can be controlled from the software



## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Base with calibration block | 1 pc |
| USB flash disk | 1 pc |
| Bluetooth receiver | 1 pc |

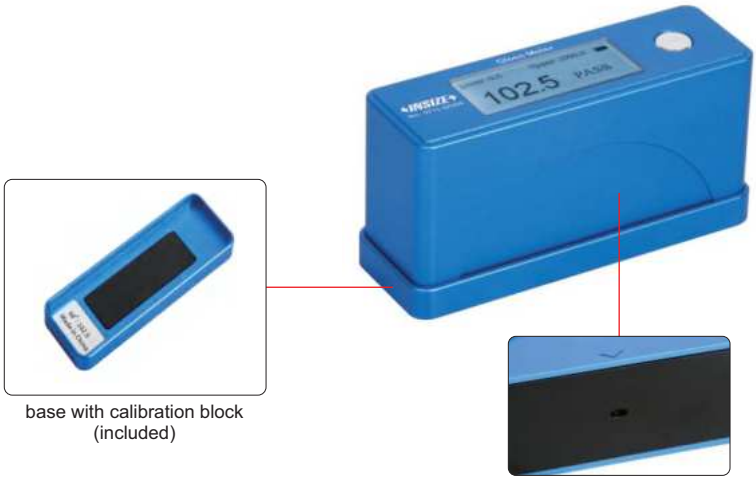


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DATA OUTPUT | QUALITY INSPECTION | SPOT SIZE 1.5×3mm

# MICROPOROUS GLOSS METER (ADVANCED TYPE)
# CODE 5711-SG60

VIDEO




base with calibration block (included)

microporous



- According to ISO 2813, ASTM D2457, ASTM D523, GB/T 9754
- For measuring the gloss level of small and curved surfaces up to 1000GU
- To measure the gloss level of material surfaces such as paint, wood, stone, plastic, paper, leather, metal, etc.
- The normal mode is for immediate measurement and fast readings, the quality control mode with customizable upper and lower limits is for rapid incoming inspection
- Self-contained calibration board with freely definable calibration values

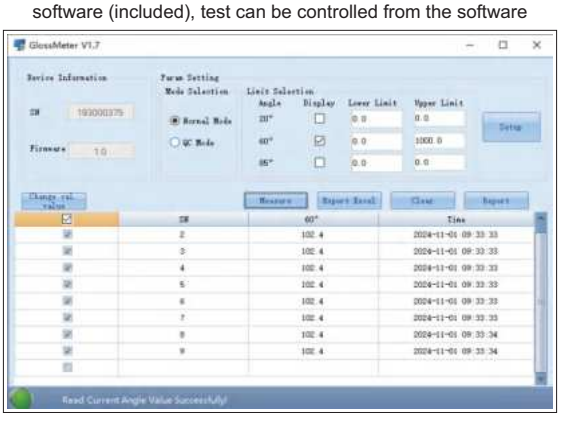


connect to computer via USB cable

## SPECIFICATION

| | |
|---|---|
| **Measuring angle** | 60° |
| **Measuring range** | 0~1000GU |
| **Resolution** | 0.1GU |
| **Accuracy** | 0~100GU: ±1.5GU<br>100~1000GU: ±1.5% |
| **Zero value error** | ±0.2GU |
| **Repeatability** | 0~100GU: ±0.2GU<br>100~1000GU: ±0.2% |
| **Measuring spot** | 1.5mm×3mm |
| **Minimum measurement size** | 3mm×6mm |
| **Data output** | USB (Type-C) |
| **Software support** | Windows |
| **Power supply** | Li-ion battery, 3.7V |
| **Dimension** | 102×35×51mm |
| **Weight** | 300g |

software (included), test can be controlled from the software



## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Base with calibration block** | 1 pc |
| **USB flash disk** | 1 pc |
| **Data cable** | 1 pc |



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# 20°/60°/85° GLOSS METER
# CODE ISQ-DG8

DATA OUTPUT | BLUETOOTH | CAN BE OPERATED BY COMPUTERS OR MOBILE PHONES | VIDEO

software flash disk
(included)



connect to mobile phone via bluetooth
(only Android system)



operate and output data by mobile phone

connect to computer via bluetooth or USB cable

bluetooth receiver
(included)





base with calibration block
(included)

- To test the gloss of coating, such as painting, varnish, printing ink, etc.
- To test the material surfaces, such as metal, granite, ceramic, plastic, paper, etc.
- According to ISO 2813, ASTM D2457, ASTM D523
- Memory of 10000 measurement results for browsing and output
- Automatic power off



software (included), test can be controlled from the software, display test data, output to Excel

**SPECIFICATION**

| | | | |
|---|---|---|---|
| **Incidence angle** | 20° | 60° | 85° |
| **Measuring range** | 0~2000GU | 0~1000GU | 0~160GU |
| **Resolution** | 0.1GU (range≤119.9GU) | | |
| | 1GU (range>119.9GU) | | |
| **Accuracy** | ±1.5GU (range≤119.9GU) | | |
| | ±1.5% (range>119.9GU) | | |
| **Repeatability** | 0.2GU (range≤119.9GU) | | |
| | 0.2% (range>119.9GU) | | |
| **Zero set error** | 0.2GU | | |
| **Measuring area** | 10×9mm | 16×9mm | 39×5mm |
| **Output** | USB and bluetooth | | |
| **Power supply** | 1×1.5V AA battery | | |
| **Dimension** | 155×48×75mm | | |
| **Weight** | 400g | | |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Base with calibration block** | 1 pc |
| **Software and USB cable** | 1 pc |
| **Bluetooth receiver** | 1 pc |

## GLOSS PLATES

CUSTOMIZED

- Used to calibrate work gloss meters
- The high gloss plates are made of polished black glass or other materials. The medium and low glossplates are made of ceramic

**SPECIFICATION**

| **Code** | **5721-LGU** | **5721-MGU** | **5721-HGU** |
|---|---|---|---|
| **Gloss range** | low gloss | medium gloss | high gloss |
| **Incidence angle*** | 20°, 45°, 60°, 75°, 85° | | |
| **Material** | polished black glass, ceramic, mirror reflective glass etc. | | |
| **Flatness (black glass plate)** | interference aperture ≤15, partial aperture ≤3 | | |
| **Spectrum reflection neutral error (ceramic plate)** | ±12% | | |
| **Annual variation** | ±1GU | | |
| **Environment** | temperature 5~45°C, relative humidity <85%RH | | |
| **Dimension** | 80×50×11mm | | |
| **Weight** | according to different materials | | |




**5721-LGU**

* Different incidence angles are available according to customer requirements

VIDEO

# HOLIDAY DETECTOR
# CODE 9511-HA30



strip brush (included)



- Inspect anti-corrosion coating status of different thickness with adjustable pulse high-voltage, coating includes insulating paint, glass lining, rubber lining, glass fiber reinforced plastic, coal tar epoxy, etc.
- When the brush with pulse high-voltage moves near the crack, pinhole or thin area on the coating surface, which results in gap gas breakdown and discharge spark, sound and light alarm will appear on the probe and the alarm sound can be heard with the headphone
- LCD display with light-control backlight
- Built-in rechargeable battery, easy to carry and suitable for outdoor inspection
- Automatic power off



headphone (included)



flat brush (included)

**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | 0.05~10mm (customization for inspecting coating thicker than 10mm is available) |
| **Output voltage** | 0.6~30.0kV (stepless adjustable) |
| **Resolution** | 0.1kV |
| **Power** | ≤5W |
| **Power supply** | 12V rechargeable Ni-MH battery |
| **Dimension** | 220×130×88mm |
| **Weight** | 2.5kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Probe** | 1 pc |
| **Strip brush*** | 1 pc |
| **Flat brush** | 1 pc |
| **Ground wire** | 1 pc |
| **Ground rod** | 1 pc |
| **Headphone** | 1 pc |
| **AC/DC adapter** | 1 pc |

*Arc brush and circular probe can be customized

## SPECTROPHOTOMETER SELECTION TABLE

| Code | 5700-LS35 | 5701-D40 | 9710-30 | 5707-DS78 | 5701-D45 | 5705-MS45 | 5706-DS01 |
|---|---|---|---|---|---|---|---|
| Optical geometry* | d/8 | d/8 | d/8 | d/8 | 45/0 | 15°, 25°, 45°, 75°, 110° | d/8 |
| Observer angle | 2° | 2°/10° | 2°/10° | 2°/10° | 2°/10° | 2°/10° | 2°/10° |
| Minimum measurement size | Ø8mm | 1×3mm | Ø4mm | Ø3mm | 1×3mm | Ø12mm | Ø3mm |
| Repeatability (ΔE*ab) | ≤0.03 | ≤0.025 | ≤0.03 | ≤0.01 | ≤0.025 | ≤0.03 | ≤0.015 |
| Portable | √ | √ | √ | √ | √ | √ | |
| Apertures switching | | √ | √ | √ | √ | | √ |
| Multi illuminantion | | √ | √ | √ | √ | √ | √ |
| Specular component include | √ | √ | √ | √ | | | √ |
| Specular component exclude | | √ | √ | √ | | | √ |
| Data output | | USB Bluetooth | USB | USB Bluetooth | USB Bluetooth | USB | USB |

*d/8 the sample is diffusely illuminated by the integrating sphere, receive reflected light at 8° to the sample normal
45/0 illuminate the sample with the light source at 45° to the sample normal, receive reflected light in the normal direction

# SPECTROPHOTOMETER
# CODE 5706-DS01

VIDEO






- Highly stable UV source for stable fluorescence measurements
- Grating spectroscopy, 7" IPS touch screen
- Two types of light sources: pulsed lamp and LED, can measure SCI and SCE simultaneously and quickly
- 24 standard light sources, more than 40 measurement indicators
- Temperature and humidity compensation function

**SPECIFICATION**

| | |
|---|---|
| **Optical geometry** | reflect: D/8 (diffused illumination, 8°direction reception),<br>transmission: D/0 (diffused illumination, vertical reception),<br>SCI (specular reflective light included), SCE (specular reflective light not included) |
| **Integrating sphere diameter** | Ø152mm |
| **Light source** | pulsed xenon lamp and LED |
| **Spectrophotometric mode** | concave grating |
| **Sensor** | double array CMOS image sensor |
| **Wavelength range** | 360nm~780nm |
| **Wavelength interval** | 10nm |
| **Reflectance measuring range** | 0~200% |
| **Reflectance resolution** | 0.01% |
| **Transmission measurement** | width and height unlimited, thickness≤50mm |
| **Measuring aperture** | reflect: XLAV Ø25.4mm/Ø30mm, LAV Ø15mm/Ø18mm, MAV Ø8mm/Ø11mm, SAV Ø3mm/Ø6mm<br>transmission: Ø17mm/Ø25mm |
| **Color space** | L*a*b, L*C*h, Hunter Lab, Yxy, XYZ |
| **Color difference formula** | ΔE*ab, ΔE*CH, ΔE*uv, ΔE*cmc, ΔE*94, ΔE*00, ΔEab (Hunter), 555 color classification |
| **Colorimetric index** | WI (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube, Berger Stensby),<br>YI (ASTM D1925, ASTM E313-00, ASTM E313-73), Tint (ASTM E313-00),<br>metamerism index Milm, staining fastness, color fastness, ISO luminance, R457, A density,<br>Tdensity, Edensity, M density, APHA/Hazen/Pt-Co, Gardner, Saybolt, Astm color, haze,<br>total transmittance, coverage, power, strength |
| **Observer angle** | 2°/10° |
| **Illuminant** | A, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10,<br>F11, F12, CWF, U30, DLF, NBF, TL83, TL84 |
| **Measuring time** | SCI or SCE <2 seconds, SCI and SCE simultaneous measuring <4 seconds |
| **Repeatability*** | ΔE*ab≤0.015; reflect / transmittance≤0.1% |
| **Inter-instrument error** | XLAV ΔE*ab≤0.25 (based on average of 12 swatches of BCRA series at 23°C) |
| **Data port** | RS232, USB, USB-B |
| **Power supply** | power adapter (24V/2.5A) |
| **Dimension** | 465×240×260mm |
| **Weight** | 10.8kg |

*After calibration, measure the white plate for 30 times at 5-second intervals with XLAV aperture, the standard deviation of the measurement results.

To be continued



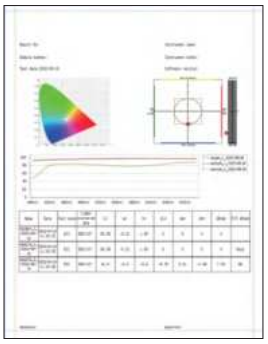
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software (included), can control the test by software, display test data and generate reports


software interface


data report

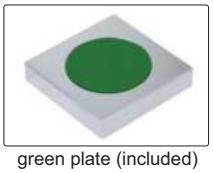

illustration report

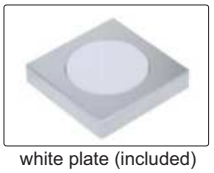
connect to computer



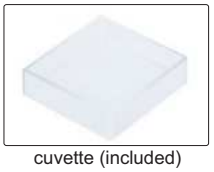

upward measurement



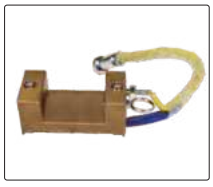

green plate (included)


white plate (included)


black cavity (included)


cuvette (included)


measuring aperture (included)


heated transmission clamp (**optional**)


small sample fixture (**optional**)

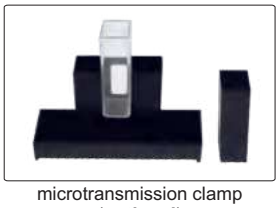

protective plate (**optional**)


vertical stand (**optional**)


cuvette support (**optional**)


fiber test holder (**optional**)


film test clamp (**optional**)


microtransmission clamp (**optional**)

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Black cavity | 1 pc |
| White plate | 1 pc |
| Green plate | 1 pc |
| Measuring aperture | 4 pcs |
| Cuvette | 1 pc |
| USB flash disk | 1 pc |
| Data cable | 2 pcs |
| Damping handle | 1 pc |
| Support platform | 1 pc |
| Transmission fixture | 1 pc |
| Power adapter | 1 pc |

**OPTIONAL ACCESSORY**

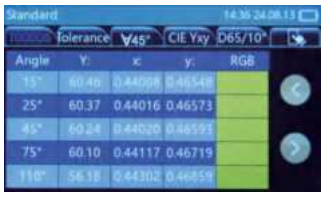
| | |
|---|---|
| Heated transmission clamp | 5706-DS01-CLAMP1 |
| Small sample fixture | 5706-DS01-FIXTURE |
| Cuvette support | 5706-DS01-SUPPORT |
| Vertical stand | 5706-DS01-STAND |
| Protective plate | 5706-DS01-PLATE |
| Fiber test holder | 5706-DS01-HOLDER |
| Microtransmission clamp | 5706-DS01-CLAMP2 |
| Film test clamp | 5706-DS01-CLAMP3 |

# MULTI-ANGLE SPECTROPHOTOMETER
# CODE 5705-MS45

CONCAVE GRATING SPECTROPHPTOMETRIC | DATA OUTPUT | BLUETOOTH

VIDEO





specimen recording interface





specimen reflectance recording interface

- Adopt 5 illumination sources, 1 receiver to measure 5 measurement angles at the same time
- Touch screen can display all angle measurement results, more intuitive view of the comprehensive data
- Full spectrum illumination measurement is more professional to avoid spectrum loss
- Provide 6 color spaces, multiple observation light sources
- Using concave grating spectrophotometric technology, with higher resolution, makes color measurement more accurate
- Built-in color camera positioning, can accurately judge the object measured position, and improve the measurement efficiency and accuracy
- Multiple functions, the screen can display various data intuitively


black light trap
(included)


white board
(included)


bluetooth receiver
(included)


wireless printer
(**optional**)


wired printer
(**optional**)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Black light trap** | 1 pc |
| **White board** | 1 pc |
| **Software and USB cable** | 1 pc |
| **Power adapter** | 1 pc |
| **Bluetooth receiver** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Wired printer** | **5705-MS45-PRINTER-A** |
| **Wireless printer** | **5705-MS45-PRINTER-B** |

To be continued

Continued from previous page

**SPECIFICATION**

| | |
|---|---|
| **Measurement geometry** | 5 measurement angles (5 illumination sources, 1 receiver) |
| **Measuring angle** | 45° receiver: 45as15°, 45as25°, 45as45°, 45as75°, 45as110° |
| **Lighting source** | full spectrum LED light source with blue enhancement |
| **Lamp life** | 5 years, 3 million times measurements |
| **Spectrophotometric mode** | concave grating |
| **Sensor** | 256 image element double array CMOS image sensor |
| **Wavelength range** | 400nm~700nm |
| **Wavelength interval** | 10nm |
| **Measurement range** | 0~600% |
| **Semiband width** | 10nm |
| **Measuring aperture** | illuminant Ø23mm/sampling Ø12mm |
| **Color space** | CIE LAB, XYZ, Yxy, Lch, βxy, DIN Lab99 |
| **Color difference formula** | ΔE*ab, ΔE*94, ΔE*cmc (2: 1), ΔE*cmc (1: 1), ΔE*00, DINΔE99, ΔE DIN6175 |
| **Other colorimetric index** | flop index |
| **Observer angle** | 2°/10° |
| **Illuminant** | D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TPL5), F11 (TL84), F12 (TL83/U30) |
| **Measuring time** | approx, 1 second for one angle, approx, 5 seconds for all angles |
| **Repeatability** | spectral reflectance: standard deviation within 0.08% chromaticity value: ΔE*ab 0.03 (when a white calibration plate is measured 30 times at 5 second intervals after white calibration) |
| **Reproducibility** | ΔE*<0.10, avg on the gray tile of BCRA tile set, ΔE*<0.25, avg on the color BCRA tile set |
| **Spectrophotometric mode** | 0.2ΔE*00 (avg on reference series II BCRA tile set) |
| **Trigger mode** | pressure sensing, trigger, key trigger, software trigger |
| **Measuring mode** | single measurement, average measurement (1~99), continuous measurement (1~99) |
| **Locating method** | color camera preview |
| **Power supply** | Li-ion battery, 3.7V, 3200mAh, continuous test 6000 times within 8 hours of full charge |
| **Display screen** | 3.5-inch TFT color LCD, capacitive touch screen |
| **Interface** | USB, bluetooth 5.0 |
| **Data storage** | standard 1000 pcs, sample 4000 pcs |
| **Calibration** | built-in white board parameters, external white board, black light trap |
| **Calibration interval** | 4 hours, 8 hours, 24 hours, startup calibration |
| **Dimension** | 195×83×128mm |
| **Weight** | 1kg |



FOUR APERTURES SWITCHING

VIDEO

BLUETOOTH

DATA OUTPUT

## PORTABLE SPECTROPHOTOMETER (EXCELLENT TYPE) CODE 5707-DS78



- The wavelength range of conventional spectrophotometer is 400~700nm, for more accurate colour measurement, the wavelength of this spectrophotometer is extended to 360~780nm
- Xenon lamp and LED light system for longer than expected life
- Four aperture sizes can be switched at will, allowing for easy measurement of even the smallest objects or curved samples
- Automatic wavelength accuracy correction using reference grade BCRA green boards
- No need to manually calibrate, just put it on the calibration base, the instrument will be automatically calibrated according to its own state and environmental factors, to ensure that the instrument is always in a stable state
- Built-in colour camera to take the view of the positioning, accurate determination of the object to be measured part
- Single measurement, continuous uninterrupted measurement, averaging possible



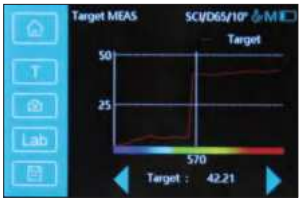
calibration cavity (included)

To be continued

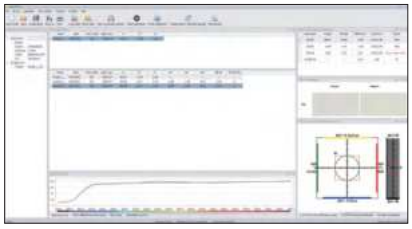
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specimen measurement interface



specimen reflectance measurement interface


software (included), test can be controlled from the software, display test data

**SPECIFICATION**

| | |
|---|---|
| **Optical geometry** | D/8 (diffused illumination/8° direction reception)<br>SCI+SCE (specular component included+specular component excluded) |
| **Integrating sphere size** | Ø40mm |
| **Lighting source** | full-band balanced LED + xenon lamp |
| **Sensor** | dual-row high-precision CMOS image sensor |
| **Calibration mode** | BCRA certifed black and white board energy calibration, green board wavelength accuracy calibration |
| **Spectrophotometric mode** | grating |
| **Display accuracy** | 0.01 |
| **Light source lifetime** | 10 million times measurements |
| **Wavelength range** | 360nm~780nm |
| **Wavelength interval** | 10nm |
| **Measurement range** | 0-200% |
| **Reflectance resolution** | 0.01% |
| **Measuring aperture** | Ø11mm, Ø10mm, Ø6mm, Ø3mm |
| **Repeatability** | 0.01 ΔE*ab (after instrument calibration, the white board was measured 30 times at 5s intervals with the MAV calibre) |
| **Inter-instrument error** | 0.2 ΔE*ab (BCRA series II 12 colour plates MAV calibre measurement average) |
| **Observer angle** | 2°/10° |
| **Colorimetric index** | spectral reflectivity, CIE-Lab, CIE-LCh, HunterLab, CIE-Luv, XYZ, Yxy, RGB (ΔE*ab, ΔE*cmc, ΔE*94, ΔE*00), Whiteness (ASTM E313-00, ASTM E313-73, CIE, ISO2470/R457, AATCC, Hunter, Taube Berger Stensby), Yellowness (ASTM D1925, ASTM E313-00, ASTM E313-73), Blackness (My, dM), Strength, Fastness, Tint (ASTM E313-00), CMYK (A, T, E, M), Milm, Munsell, Opacity, Color strength |
| **Illumination** | A, B, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, U35, DLF, NBF, TL83, TL84, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2 |
| **Measuring time** | 1s |
| **Data storage** | instrument: 10000pcs, app: mass storage |
| **Locating method** | color camera preview |
| **Display screen** | 3.5-inch full-colour screen, capacitive touch screen |
| **Interface** | USB, bluetooth |
| **Calibration** | automatic intelligent calibration |
| **Software support** | Andriod, iOS, Windows |
| **Power supply** | Li-ion battery, 7.2V, 3000mAh, fully charged continuous test 8000 times |
| **Dimension** | 233×77×93mm |
| **Weight** | 600g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Calibration cavity** | 1 pc |
| **Software and USB cable** | 1 pc |
| **Measuring aperture** | 4 pcs |
| **Power adapter** | 1 pc |



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DATA OUTPUT | BLUETOOTH

Ø8/4mm DUAL APERTURE

CONCAVE GRATING SPECTROPHOTOMETRIC

VIDEO

# PORTABLE SPECTROPHOTOMETER (ADVANCED TYPE)
# CODE 9710-30





measurement




software flash disk
(included)


white and black calibration
cavity (included)


printer (**optional**)



reflectivity

- Concave grating spectrophotometric
- 3.5 inch TFT color LCD, capacitive touch screen, 256 image element double arrays CMOS image sensor
- D/8 geometrical optics, conforms with CIE No.15, ISO7724/1, ASTM E1164, DIN5033 Teil 7
- Use long life and low power consumption combined LED light source
- Camera locating function, switchable 8mm/4mm aperture, support both SCI and SCE at the same time
- Large capacity storage space, over 20,000 measurement data
- USB port and Bluetooth 4.0
- Two standard observer angles, a variety of illuminant, a variety of color indexes, conforms with a variety of standard colorimetric data
- Measure sample spectra, accurate Lab data, can be used in color matching and accurate color transmission

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **White and black calibration cavity** | 1 pc |
| **Software and USB cable** | 1 pc |
| **AC/DC adapter** | 1 pc |

**OPTIONAL ACCESSORY**

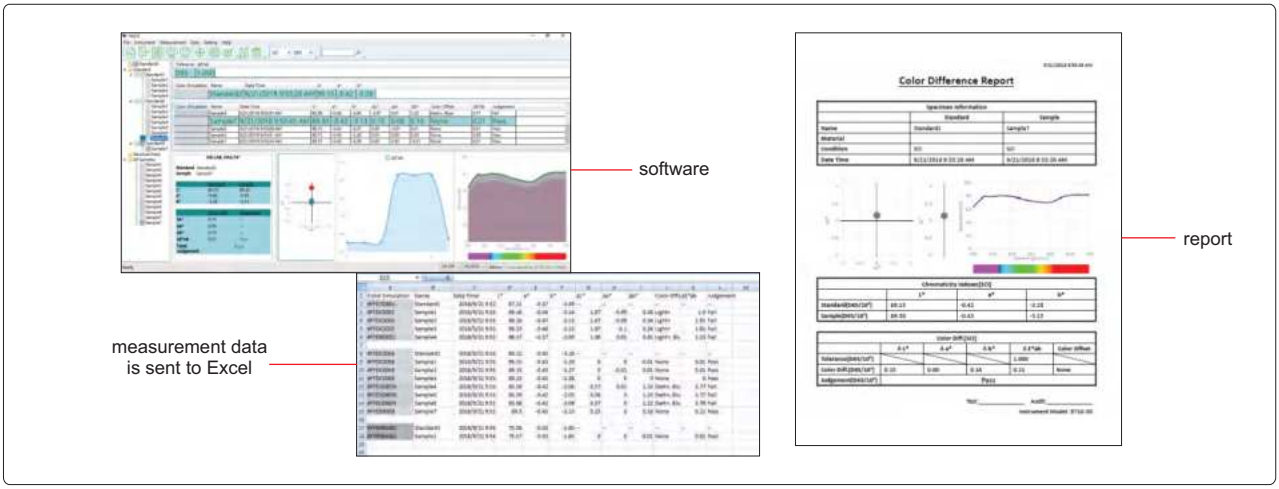
| | |
|---|---|
| **Printer** | **9710-PRINTER** |
| **Powder test box** | **9710-POWDERBOX** |
| **Universal test kit** | **9710-TESTKIT** |

To be continued

Continued from previous page

## SPECIFICATION

| | | |
|---|---|---|
| **Optical geometry** | | reflect: di: 8°, de: 8° (diffused illumination, 8-degree viewing angle) |
| **Integrating sphere size** | | Ø48mm |
| **Light source** | | combined LED light, UV light |
| **Spectrophotometric mode** | | concave grating |
| **Sensor** | | 256 image element double array CMOS image sensor |
| **Wavelength range** | | 400~700nm |
| **Wavelength interval** | | 10nm |
| **Semiband width** | | 10nm |
| **Measured reflectance range** | | 0~200% |
| **Measuring aperture** | | dual aperture: MAV: Ø8mm; SAV: Ø4mm |
| **Specular component** | | SCI&SCE |
| **Color space** | | CIE LAB, XYZ, Yxy, LCh, CIE LUV, hunter LAB |
| **Color difference formula** | | ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00v, ΔE (Hunter) |
| **Other colorimetric index** | | WI (ASTM E313, CIE/ISO, AATCC, hunter), YI (ASTM D1925, ASTM 313), metamerism index MI, staining fastness, color fastness, colorstrength, opacity |
| **Observer angle** | | 2°/10° |
| **Illumination** | | A, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, TI83, TI84, U35 |
| **Displayed data** | | spectrogram/values, samples chromaticity values, color difference values/graph, PASS/FAIL result, color offset |
| **Measuring time** | | 2.6s |
| **Repeatability** | **spectral reflectance** | MAV/SCI, within 0.08% of standard deviation (400~700nm: 0.18%) |
| | **colorimetric values** | MAV/SCI: ΔE*≤0.03 |
| **Inter-instrument error** | | MAV/SCI: ΔE*≤0.15 |
| **Measurement mode** | | single measurement, average measurement |
| **Data port** | | USB, bluetooth 4.0 |
| **Data storage** | | standard 1000 pcs, sample 28000 pcs |
| **Illuminant life span** | | 5 years, more than 3 million times measurements |
| **Power supply** | | Li-ion battery, 5000 measurements within 8 hours |
| **Dimension** | | 184×77×105mm |
| **Weight** | | 600g |




software (included), test can be controlled from the software, display test data, report



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FOUR KINDS OF APERTURE

DATA OUTPUT

VIDEO

GRATING SPECTROPHOTOMETRIC

MATCHING COLOR CARD QUICKLY

# HANDHELD SPECTROPHOTOMETERS (STANDARD TYPE)



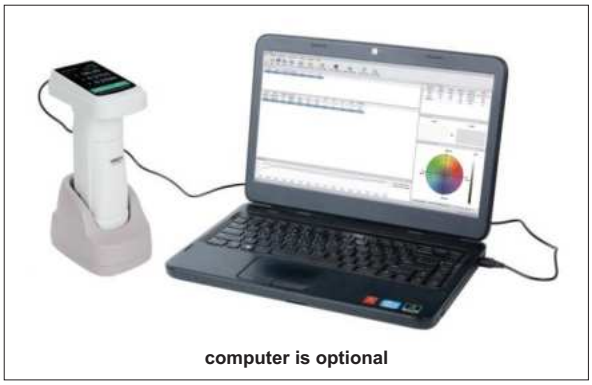
**5701-D40**

- Conforms with CIE No.15, ISO7724-1, ASTM E1164 and DIN5033 Teil7 standards
- Grating spectrophotometric, 3.5" IPS full color screen, dual optical path high precise CMOS array sensor
- Use long life and low power consumption combined LED light source, include UV and exclude UV measurement
- Camera locating function, switchable four apertures
- Large capacity storage space, over 20000 measurement data
- Two standard observer angles, a variety of illuminant, a variety of color indexes, conforms with a variety of standard colorimetric data
- Measure sample spectra, accurate Lab data, can be used in color matching and accurate color transmission

white calibration cavity (included)



connect to computer



**computer is optional**

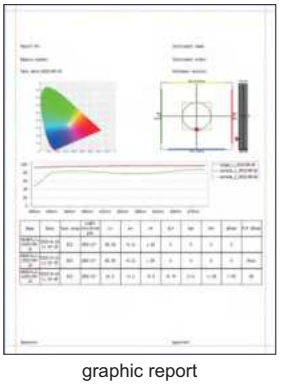
software (included), test can be controlled from the software, display test data, report



software



pure data report



graphic report

To be continued

Continued from previous page

**SPECIFICATION**

| Code | | 5701-D40 | 5701-D45 |
|---|---|---|---|
| Optical geometry | | D/8 (diffused illumination/8° direction reception), SCI+SCE (specular component included+specular component excluded) | 45/0 (45° illumination/vertical reception) |
| Integrating sphere size | | Ø40mm | ring lighting strips |
| Light source | | LED (full band balanced LED)+UV | LED (full band balanced LED) |
| Spectrophotometric mode | | grating | |
| Sensor | | dual optical path high precise CMOS array sensor | |
| Wavelength range | | 400~700nm | |
| Wavelength interval | | 10nm | |
| Reflectance measurement range | | 0~200% | |
| Reflectance resolution | | 0.01% | |
| Display resolution | | 0.01 | |
| Illumination area/aperture | | MAV: Ø11mm; SAV: Ø6mm, Ø3mm; MINI: 1×3mm | |
| Color space | | CIE-Lab, CIE-LCh, HunterLab, CIE Luv, XYZ, Yxy, RGB | |
| Color difference formula | | ΔE*ab, ΔE*cmc, ΔE*94, ΔE*00, ΔE*ch, ΔE*uv, ΔEab | |
| Other colorimetric index | | whiteness (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, hunter, taube berger stensby), yellowness (ASTM D1925, ASTM 313-00, ASTM E313-73), blackness (My, dM), color fastness, tint (ASTM E313-73) color density CMYK (A, T, E, M), milm, munsell, opacity, color strength | |
| Observer angle | | 2°/10° | |
| Illumination | | A, B, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, U35, DLF, NBF, TI83, TI84, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2 | |
| Measuring time | | about 1.5s | |
| Repeatability | spectral reflectance | within 0.08% of standard deviation | |
| | colorimetric values | ΔE*ab≤0.025 (after whiteboard correction, measuring the whiteboard 30 times at 5s interval) | |
| Inter-instrument error | | ΔE*ab≤0.25 (BCRA series II, average value of 12 color plates) | |
| Data port | | USB, bluetooth | |
| Light source lifetime | | 10 years, more than 1 million times measurements | |
| Power supply | | 3.7V/3000mAh, rechargeable 8000 times continuous tests | |
| Dimension | | 95×129×231mm | |
| Weight | | 750g | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| White calibration cavity | 1 pc |
| Measuring aperture | 9 pcs |
| USB cable | 1 pc |
| USB disk | 1 pc |
| AC/DC adapter | 1 pc |
| Black light trap | 1 pc |



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white calibration cavity (included)

VIDEO

# COLORIMETER (BASIC TYPE) CODE 5700-LS35



- Conforms with CIE 15, CIE S 005, ISO 7724-1 and ISO 13655 standards
- 3.5-inch IPS display and capacity touch panel
- Contains multiple color cards and can match the closest color code quickly
- QC testing function, can set color difference threshold
- Able to store 1000 colors and 1000 color comparison
- 3.7V/4000mAh battery, 10000 continuous measurements

**SPECIFICATION**

| | |
|---|---|
| **Illumination geometry** | D/8, specular component include (SCI) |
| **Illumination light source** | full spectrum LED light source |
| **Measurement conditions** | light source D65, field of view 10° |
| **Measuring time** | about 1s |
| **Color space** | CIE Lab, Luv, LCh, Yxy, CMYK, RGB, Hex |
| **Color difference formula** | ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00 |
| **Repeatability** | standard deviation ΔE*ab is within 0.03 (measurement condition: the average value of 30 measurements on the whiteboard at an interval of 3s after calibration) |
| **Charging interface** | USB (Type-C) |
| **Dimension** | 86×63×158mm |
| **Weight** | 245g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **White calibration cavity** | 1 pc |
| **USB cable** | 1 pc |
| **AC/DC adapter** | 1 pc |
| **Cleaning cloth** | 1 pc |
| **Locating plate** | 1 pc |



# COLOR STANDARD PLATES



5704-CP01



calibration certificate (included)

- To calibrate color measuring instruments
- Made of ceramic
- Wear resistance, corrosion resistance, high optical stability
- Supplied with ISO17025 calibration certificate from National Institute of Metrology, China

**SPECIFICATION**

| **Code** | **5704-CP01** | **5704-CPB** | **5704-CPG** | **5704-CPW** | **5704-CPR** | **5704-CPY** |
|---|---|---|---|---|---|---|
| **Color** | blue, green, white, red, yellow (full set) | blue | green | white | red | yellow |
| **Spectral reflectance factor** | spectral reflectance factor in the wavelength range of 380 nm to 780 nm | | | | | |
| **Standard illuminant** | D65, A, etc. | | | | | |
| **Viewing angle** | 2°, 10° | | | | | |
| **Color space** | CIE-Lab, XYZ, etc. | | | | | |
| **Annual variation** | Δx, Δy≤0.005 | | | | | |
| **Dimension** | 50×50mm | | | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| **Calibration certificate** | 1 pc |

# DIGITAL ADHESION TESTER
# CODE SPT-AD21

VIDEO





Ø20mm dolly (included)


glue gun and glue (included)


cutting tool (included) for Ø10mm, Ø14mm, Ø20mm dolly

- Pull-off test
- Built-in rechargeable lithium battery, no need external power source
- Portable design, can be used anywhere
- Standard USB interface, can directly transmit the stored data to computer, no need to install software
- Conforms to GB/T 5210, ASTM D4541/D7234, ISO 4624/16276-1
- Store all test results, includes maximum pull-off force, pull-off rate, dolly size and time
- Built in real-time clock, all saved data have corresponding date and time
- Selectable four different sizes dolly for different resolution and testing range
- No need conversion, the instrument can calculate pull-off force according to the dolly size
- Get the testing results from LCD directly
- Two units MPa and psi for selection and can be converted automatically

## SPECIFICATION

| | |
|---|---|
| **Range** | 0~20MPa |
| **Dolly diameter** | Ø20mm |
| **Resolution** | 0.01MPa (1psi) |
| **Accuracy** | ±1% full scale |
| **Pull-off force** | 0.7~20MPa |
| **Power supply** | built-in rechargeable lithium battery |
| **Dimension (L×W×H)** | 360×75×115mm |
| **Weight** | 3kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Ø20mm dolly** | 20 pcs |
| **Cutting tool** | 1 pc |
| **Charger** | 1 pc |
| **USB cable** | 1 pc |
| **Glue gun** | 1 pc |
| **3M glue** | 1 pc |

## OPTIONAL ACCESSORY

| | | |
|---|---|---|
| **Ø10mm dolly** | **SPT-AD21-10** | 10 pcs/package<br>pull-off force: 2.8~80MPa |
| **Ø14mm dolly** | **SPT-AD21-14** | 10 pcs/package<br>pull-off force: 1.4~40MPa |
| **Ø20mm dolly** | **SPT-AD21-20** | 10 pcs/package<br>pull-off force: 0.7~20MPa |
| **Ø50mm dolly** | **SPT-AD21-50*** | 10 pcs/package<br>pull-off force: 0.4~3.5MPa |
| **Cutting tool** | **SPT-AD21-CUTTER1** | for Ø10mm, Ø14mm, Ø20mm dolly |
| **Cutting tool** | **SPT-AD21-CUTTER2*** | for Ø50mm dolly |
| **Sleeve** | **SPT-AD21-SLEEVE*** | for Ø50mm dolly |
| **Glue** | **SPT-AD21-GLUE** | 3M DP420 epoxy glue/50ml |

*Ø50mm dolly requires corresponding cutter and sleeve



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VIDEO

## PENCIL HARDNESS TESTER
## CODE PHT-C751

- For flat coating surfaces
- Conform to ASTM D3363, ISO 15184, BS3900-E19 and ECCA-T4/1



in use





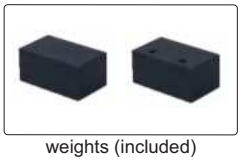
level (included)



pencils (included)



leveling rod (included)



weights (included)

### SPECIFICATION

| | |
|---|---|
| **Pressure of pencil on coating** | 500g, 750g, 1000g (main unit is 500g, one weight is 750g, two weights are 1000g) |
| **Angle between pencil and measured surface** | 45° |
| **Dimension (L×W×H)** | 95×80×110mm |
| **Weight** | 2kg |

### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Weights** | 2 pcs |
| **Leveling rod** | 1 pc |
| **Level** | 1 pc |
| **Pencil** | 12 pcs (4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H) |
| **Pencil sharpener** | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| **Pencil (12 pcs: 4B-6H)** | **PHT-C751-P** |
| **400 grade abrasive paper** | **PHT-C751-S** |



VIDEO

## ROTATIONAL ABRASION TESTER
## CODE QMY-AP32

- To test flat paint film
- Comply with ISO 7784-2, ISO 9352, GB/T1768, ASTM D3884, ASTM D1175 standards




### SPECIFICATION

| | |
|---|---|
| **Plateform rotary speed** | 60±2 r/min, 72±2 r/min (selectable) |
| **Load weight** | 500g, 750g, 1000g |
| **Sample size** | Ø100mm |
| **Grinding wheel** | external diameter (51.6±0.1)mm, thickness (12.7±0.1)mm |
| **Counting range of plateform rotation** | 0~9999 times |
| **Motor power** | 25W |
| **Power supply** | 220V, 50Hz |
| **Dimension** | 260×410×280mm |
| **Weight** | 14kg |

### STANDARD DELIVERY

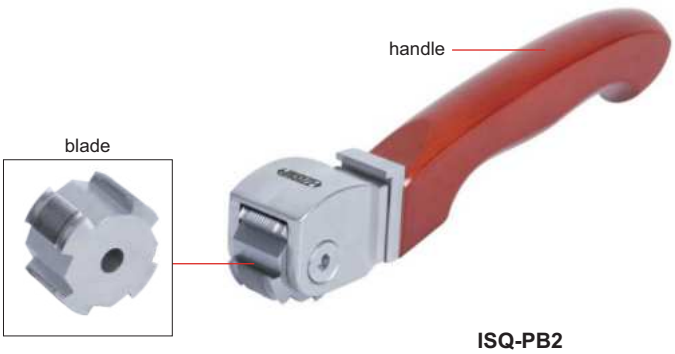
| | |
|---|---|
| **Main unit** | 1 pc |
| **Vacuum cleaner** | 1 pc |
| **1000g weight** | 2 pcs |
| **750g weight** | 2 pcs |
| **500g weight** | 2 pcs |
| **TABER CS-10 grinding wheel** | 1 pair |
| **Sandpaper** | 10 pcs |
| **Glass plate** | 5 pcs |

### OPTIONAL ACCESSORY

| | |
|---|---|
| **TABER CS17 grinding wheel (1 pair)** | **QMY-AP32-CS17** |
| **Glass plate (Ø100mm with a 9mm center hole, 100 pcs/box)** | **QMY-AP32-GP** |
| **Aluminum plate (Ø100mm with a 9mm center hole, 100 pcs/box)** | **QMY-AP32-AP** |
| **180# emery cloth strip (100 pcs/box)** | **QMY-AP32-EC** |

# CROSS CUT ADHESION TESTERS

VIDEO




ISQ-PB2


test tape (included)

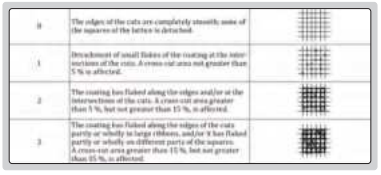

2X magnifier (included)


brush (included)




step 1: make grid cutting on surface


step 2: paste and remove the tape


step 3: according to the shedding status, judge the adhesion grade

- To test the adhesion of paint coating on metal, wood, plastic, etc.
- According to ASTM D3359, BS 3900E6, BS/EN ISO 2409

## SPECIFICATION

| Code | | ISQ-PB1 | ISQ-PB2 | ISQ-PB3 | ISQ-PB4 | ISQ-PB5 |
|---|---|---|---|---|---|---|
| Type | | octahedral blade | | | | |
| Number of blade teeth | | 6 | 11 | 6 | 11 | 6 |
| Blade pitch | | 1mm | | 2mm | | 3mm |
| Applied paint thickness | on hard substrate (like metal) | 0~60μm | | 61~120μm | | 121~250μm |
| | on soft substrate (like wood, plaster) | – | | 0~120μm | | 121~250μm |
| Minimum substrate thickness | hard substrate (like metal) | 0.25mm | | | | |
| | soft substrate (like wood, plaster) | – | | 10mm | | |
| Minimum size of test sample | | 150×100mm | | | | |
| Dimension | handle | 180×28×40mm | | | 180×30×40mm | 180×28×40mm |
| | blade | Ø30×18mm | | | Ø30×21mm | Ø30×18mm |
| Weight | | 277g | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Handle | 1 pc |
| Blade | 1 pc |
| Test tape | 1 pc |
| 2X magnifier | 1 pc |
| Brush | 1 pc |

## OPTIONAL ACCESSORY

| Code | Description | Applicable codes |
|---|---|---|
| ISQ-PBV | 25mm wide test tape, consumable | all codes |
| ISQ-PB1-A | octahedral blade with 6 teeth and 1mm pitch | ISQ-PB1, ISQ-PB2 ISQ-PB3, ISQ-PB5 |
| ISQ-PB2-A | octahedral blade with 11 teeth and 1mm pitch | |
| ISQ-PB3-A | octahedral blade with 6 teeth and 2mm pitch | |
| ISQ-PB4-A | octahedral blade with 11 teeth and 2mm pitch | ISQ-PB4 |
| ISQ-PB5-A | octahedral blade with 6 teeth and 3mm pitch | ISQ-PB1, ISQ-PB2 ISQ-PB3, ISQ-PB5 |



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# CONICAL MANDREL TEST APPARATUS
# CODE PPS-A203

step 1: place specimen



step 2: compress specimen

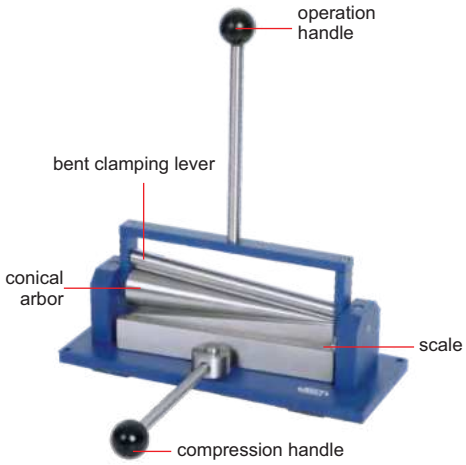


step 3: start the experiment



step 4: record the results






specimens (**optional**)



- To test the cracking resistance and elongation of color paints and varnishes
- According to ASTM D 522, ISO 6860

**SPECIFICATION**

| | | |
|---|---|---|
| **Conical arbor** | **small end diameter** | 3.1±0.1mm |
| | **large end diameter** | 38±0.1mm |
| | **length** | 203±3mm |
| **Dimension** | | 300×120×80mm |
| **Weight** | | 8kg |

**OPTIONAL ACCESSORY**

| Name | Code | Description |
|---|---|---|
| specimens | **PPS-A203-1** | material: burnished tinplate<br>dimension: 150×75×0.28mm |
| | **PPS-A203-2** | material: burnished tinplate<br>dimension: 150×100×0.28mm |
| | **PPS-A203-3** | material: cold-rolled steel<br>dimension: 150×100×0.8mm |



# PAINT FILM FLEXIBILITY TESTER
# CODE PPF-BF62



- To test the flexibility of paint and varnish
- Bend the coated test plates on the shaft rods with different diameter, the minimum shaft rod diameter that does not cause damage to the film is the film flexibility

**SPECIFICATION**

| | |
|---|---|
| **Shaft rod length** | 35mm |
| **Shaft rod 1** | Ø15mm |
| **Shaft rod 2** | Ø10mm |
| **Shaft rod 3** | Ø5mm |
| **Shaft rod 4** | Ø4mm |
| **Shaft rod 5** | cross section 3×10mm, radius of curved surface 1.5mm |
| **Shaft rod 6** | cross section 2×10mm, radius of curved surface 1.0mm |
| **Shaft rod 7** | cross section 1×10mm, radius of curved surface 0.5mm |
| **Dimension** | 450×75×100mm |
| **Weight** | 3.1kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Test plate** | 1 box (500 pcs) |
| **4X magnifier** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Test plate (dimension: 120×25×0.28mm, 500 pcs/box)** | **PPF-BF62-TP** |

# IMPACT TESTER
# CODE THD-PF34

VIDEO


300g main weight
(included)


1000g main weight
(included)


2lb main weight
(included)






2lb additional
weight (included)


1000g additional
weight (included)



Ø16.3mm die base
(included)



Ø12.7mm indenter
(included)



Ø15.9mm indenter
(included)



- For paint and varnish dry coating. To test the ability to resist cracking or peeling from the substrate when deformation is caused by weights impact under standard conditions
- Indenter, base and weight can be replaced quickly
- Conform to ISO 6272-2:2002, ASTM D 2794

**SPCIFICATION**

| | |
|---|---|
| **Impact height range** | 0-100cm (0-40inch) |
| **Graduation** | 1cm |
| **Impact depth** | 2.5cm |
| **Weight** | 1000g (2pcs), 300g (1pc), 2lb (2pcs) |
| **Indenter diameter** | Ø12.7mm (1/2 inch DIA), Ø15.9mm (5/8 inch DIA) |
| **Die base diameter** | Ø16.3mm |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Base plate (120×70×0.5mm, 180pcs/box)*** | **THD-PF34-T** |

*Can be customized according to the needs of different thickness, size and processing

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **1000g main weight** | 1 pc |
| **300g main weight** | 1 pc |
| **2lb main weight** | 1 pc |
| **1000g additional weight** | 1 pc |
| **2lb additional weight** | 1 pc |
| **Ø12.7mm indenter** | 1 pc |
| **Ø15.9mm indenter** | 1 pc |
| **Ø16.3mm die base** | 1 pc |



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Electromagnetic Ultrasonic Thickness Gauges
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Ultrasonic Thickness Gauges
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Tachometers
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Digital Moisture Meters
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Pressure Gauges
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# 34 PORTABLE INSTRUMENTS



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**Eddy Current Conductivity Testers**
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**Teslameters**
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**Light Transmittance Meters**
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**Digital Glass Thickness Meters**
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**Tripods**
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MEASUREMENT THROUGH COATING AND RUST LAYER

# ELECTROMAGNETIC ULTRASONIC THICKNESS GAUGE CODE EMU-S340

NO COUPLING AGENT REQUIRED

NON-CONTACT MEASUREMENT

TEMPERATURE COMPENSATION

VIDEO

- No surface polishing required, can penetrate anti-corrosion coating and rust (maximum 4mm), no coupling agent required
- Normal temperature permanent magnetic probe and high temperature permanent magnetic probe are using weak permanent magnet, to replace the strong permanent magnet commonly used nowadays. Completely solve the problem that EMAT transducer suction force is too large and difficult to move, so that the manual inspection is more simple, convenient and safe
- Temperature compensation function, can input the actual temperature of high-temperature components to automatically compensate the speed of sound, making the thickness measurement value more accurate
- Measurement of non verticality up to ±25°, low verticality requirements for probe placement
- Scanning mode: A-scan format, B-scan image format display of thickness measurement values
- 50000 thickness values and 4000 A-scan or B-scan data can be stored
- Integrated high-brightness LEDs on the back for easy on-site illumination






## SPECIFICATION

| | |
|---|---|
| **Measuring range** | 1.5~200mm (steel, stainless steel) |
| **Resolution** | 0.02mm |
| **Accuracy** | ±0.04mm+H/1000 (H≤50mm)<br>±0.2mm (50≥H≥100mm)<br>±0.3mm (100≥H≥200mm) |
| **Working gap (the distance between the probe and the measured object)** | normal temperature permanent magnetic probe≤4mm<br>high temperature permanent magnetic probe≤2mm |
| **Minimum required diameter** | ≥8mm |
| **Non-perpendicularity** | ±25° |
| **Excitation frequency** | 3.0MHz~3.9MHz |
| **Material velocity** | 1000~9999m/s |
| **Adjustment increments** | 1m/s |
| **Gate function** | automatic gate, manual single gate, manual double gate |
| **Display** | color LCD, 3.5 inch/320×480 pixel |
| **Interface** | USB2.0 |
| **Power supply** | rechargeable lithium battery, working time≥8 hours |
| **Dimension** | 195×90×40mm |
| **Weight** | 820g |



normal temperature permanent magnetic probe sweep support **EMU-S52 (optional)**



high temperature permanent magnetic probe **EMU-S51 (optional)**

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Transducer EMU-S50** | 1 pc |
| **Calibration block (diameter Ø36×wall thickness 10mm)** | 1 pc |
| **4G USB flash disk** | 1 pc |
| **USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **High temperature permanent magnetic probe** | **EMU-S51** |
| **Normal temperature permanent magnetic probe sweep support** | **EMU-S52** |

## SPECIFICATION OF TRANSDUCERS

| Code | Magnetism | Magnetic force | Diameter (Ød) | Applicable temperature | Application |
|---|---|---|---|---|---|
| **EMU-S50 (included)** | weak permanent magnet | ≤15N | Ø30mm | -10~60°C | general use |
| **EMU-S51 (optional)** | weak permanent magnet | ≤20N | Ø45mm | -50~800°C | for high temperature |



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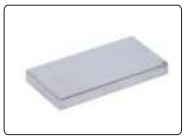
# PEN TYPE ELECTROMAGNETIC ULTRASONIC THICKNESS GAUGES

VIDEO

COUPLING AGENT IS NOT REQUIRED | MEASUREMENT THROUGH COATING AND RUST LAYER | WORK AT MAXIMUM 600°C | WITH A AND B SCAN



high temperature probe (**optional**)



calibration block (included)

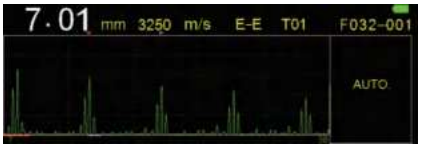


- Measurement without ultrasonic coupling agent, for workpieces with surface temperatures less than 600°C (depending on the probes)
- Compact size, easy to carry, comes with waveform display and full-function keyboard, easy to adjust the measurement parameters
- Non-contact measurement of rough, corroded surfaces without sanding
- Storage of 10000 data and 100 files
- Highly intelligent functions such as alarm for exceeding upper and lower limits, automatic zero calibration, automatic identification of probes, etc.
- Automatic power off
- Suitable for inspection of workpieces of various shapes, such as pipes, small tubes, elbows, etc.

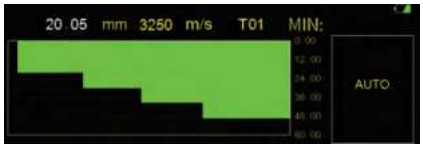


normal temperature probe (included)

**EMU-A100**




A-Scan




B-Scan

## SPECIFICATION

| Code | EMU-A100 | EMU-B100 |
|---|---|---|
| Data output | USB | USB, Bluetooth |
| Measuring range | refer to the specification of probes | |
| Resolution | 0.01mm | |
| Accuracy | ±0.04mm (H≤10mm)<br>±(0.04+H/1000)mm (10≤H<100mm)<br>±H/333mm (H≥100mm)<br>H is measuring thickness in mm | |
| Working gap (the distance between the probe and the measured object) | ≤1mm | |
| Gain | automatic and manual gain | |
| Material velocity | 1000~9999 m/s | |
| Measurement frequency | 2 times/second 10 times/second fast measurement mode | |
| Measuring mode | auto mode, manual mode | |
| Display | LED, 800×268 | |
| Storage | 10000 data stored in 100 files | |
| Power supply | 5V rechargeable lithium battery, 6 hours working time | |
| Operation temperature | -10°C~350°C | |
| Dimension | 180×35×34mm | |
| Weight | 300g | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Normal temperature probe | 1 pc |
| Calibration block (8mm) | 1 pc |
| USB cable | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| High temperature probe | EMU-B100-T02 |

## SPECIFICATON OF PROBES

| Code | Magnet | Measuring range | Diameter (Ød) | Working temperature | Applications |
|---|---|---|---|---|---|
| EMU-B100-T01 (included) | permanent magnet | 1.5~150mm | Ø20mm | -10~120°C | general use, mainly used for fine crystal materials, such as mild steel, aluminum |
| EMU-B100-T02 (optional) | permanent magnet | 1.5~300mm | Ø25mm | -10~600°C | high temperature environment, mainly used for ferromagnetic fine crystal materials, such as mild steel |



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PENETRATE COATING AND MEASURE THE THICKNESS OF SUBSTRATE | BLUETOOTH | REAL-TIME TEMPERATURE COMPENSATION | DATA OUTPUT

VIDEO

# ULTRASONIC THICKNESS GAUGE (ADVANCED TYPE) CODE ISU-800D

- Real-time temperature compensation eliminates the error caused by temperature variation
- Support both single element transducers and dual element transducers
- Measure the thickness of substrate through coating
- Measuring mode: standard mode (dual element transducer P-E mode, single element transducer: I-E mode), penetrate coating mode (dual element transducer: I-E mode, single element transducer: E-E mode or auto mode)
- Measure method: single point, scanning, deviation
- Set upper and lower limits for alarm when out-of-tolerance
- Single point and 2 points calibration
- Keyboard lock function avoids parameter setting change caused by unintended press during measurement
- Memory 1000 measurement values
- Data can be transmitted to PC by Bluetooth connection or Mini-USB cable




transducer **ISU-S15-P06** (included)



transducer **ISU-S2M-P14** (**optional**)



transducer **ISU-G5M-P10** (**optional**)



transducer **ISU-G5M-P08** (**optional**)



transducer **ISU-G7M-P06** (**optional**)



transducer **ISU-G2M-P12** (**optional**)



transducer **ISU-H3M-P12** (**optional**)



delay block **ISU-S15-P06-CB** (**optional**)



delay block **ISU-S15-P06-CB1** (**optional**)



## SPECIFICATION

| | |
|---|---|
| **Measuring range** | refer to the specification of transducers |
| **Resolution** | 0.01mm/0.001mm |
| **Accuracy** | refer to the specification of transducers |
| **Data output** | bluetooth and USB |
| **Velocity** | 1~19999m/s |
| **Power supply** | 3.7V rechargeable lithium battery |
| **Dimension** | 157×78×37mm |
| **Weight** | 260g |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Transducer ISU-S15-P06** | 1 pc |
| **Power adaptor** | 1 pc |
| **USB cable** | 1 pc |
| **Couplant** | 1 bottle |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Transducer** | refer to the specification of transducers |
| **Couplant (for ISU-H3M-P12)** | **ISU-HT5-COUPLANT** |
| **Thermal printer (with cable)** | **ISU-800D-PRINTER** |

## SPECIFICATION OF TRANSDUCERS (ON STEEL)

| Code | Type | Freq | Diameter (Ød) | Measuring range | Min. size of pipes (diameter x wall thickness) | Accuracy | Applicable temperature | Application |
|---|---|---|---|---|---|---|---|---|
| **ISU-S15-P06 (included)** | single element | 15MHz | 8mm | I-E: 0.9~28mm<br>E-E: 0.15~14mm | Ø10x1.5mm<br>Ø15x0.35mm | ±0.02mm/0.3%H* (take the larger one) | -10~60°C | high precision or thin workpieces |
| **ISU-S15-P06-CB (optional)**** | – | – | 5mm | I-E: 0.9~10mm<br>E-E: 0.15~5mm | Ø10x1.2mm<br>Ø15x0.35mm | | | high precision or irregular surface |
| **ISU-S15-P06-CB1 (optional)**** | – | – | 8mm | I-E: 0.9~38mm<br>E-E: 0.3~19mm | – | | | high precision or thick workpieces |
| **ISU-S2M-P14 (optional)** | single element | 2MHz | 19mm | I-E: 30~2000mm<br>E-E: 30~1000mm | – | ±0.5%H* | -10~310°C | ultra-thick workpieces |
| **ISU-G5M-P10 (optional)** | dual element | 5MHz | 13mm | 0.8~300mm | Ø25x3mm | ±0.04mm (range: <10mm)<br>±H/333mm* (range: ≥10mm) | -10~60°C | normal workpieces |
| **ISU-G5M-P08 (optional)** | dual element | 5MHz | 11mm | 0.8~225mm | Ø20x1.2mm | | | curved surface and normal workpieces |
| **ISU-G7M-P06 (optional)** | dual element | 7.5MHz | 9mm | 0.8~50mm | Ø15x1.2mm | | | curved surface and small workpieces |
| **ISU-G2M-P12 (optional)** | dual element | 2MHz | 17mm | 3~700mm | Ø30x4mm | ±0.05mm/0.5%H* (take the larger one) | | castings and thick workpieces |
| **ISU-H3M-P12 (optional)** | dual element | 3MHz | 15mm | 2~200mm | Ø25x3mm | ±0.05mm/0.5%H* (take the larger one) | -10~310°C | workpieces with high temperature |

* H is the measured thickness in mm
** Delay blockers, suitable for transducer **ISU-S15-P06**

# ULTRASONIC THICKNESS GAUGE
# CODE ISU-810D

PENETRATE COATING AND MEASURE THE THICKNESS OF SUBSTRATES | WITH A AND B SCAN | DATA OUTPUT

VIDEO

A scan



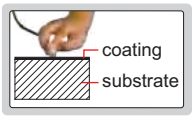

B scan



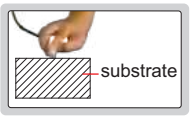




- Measure the thickness of substrate through coating
- Measuring mode: standard mode (dual element transducer: P-E), penetrate coating mode (dual element transducer: E-E)
- Dispiay mode: real-time color A-scan waveform mode, real-time color B-scan waveform mode, thickness value mode, Min/Max capture mode, difference or reduction rate mode
- Can measure gray cast iron, ductile iron, PE, PVC pipe, fiberglass, 3PE anticorrosive layer pipes, metal pipes, pressure vessels, shaped parts, wall thickness of small pipes etc.
- Set the upper and lower limits, and the reading color will change when the limit is exceeded
- One-point calibration and two-point calibration
- Can compensate the non-linearity of the twin-crystal probe by automatic V path correction
- Can store 100000 thickness values and 1000 waveforms
- USB 2.0 port connected to computer for statistics
- Languages: Chinese, English, German, French, Japanese
- Power off: automatic/manual




Echo-Echo mode (E-E)




Transmit-Echo mode (T-E)

transducer **ISU-810D-TC550** (**optional**)



transducer **ISU-810D-P04** (**optional**)



transducer **ISU-810D-P06** (**optional**)



transducer **ISU-810D-PT08** (**optional**)



transducer **ISU-810D-ZT12** (**optional**)



transducer **ISU-810D-GT12** (**optional**)



## SPECIFICATION

| | |
|---|---|
| **Measuring range** | refer to the specification of transducers |
| **Resolution** | 0.1/0.01mm |
| **Accuracy** | ±0.05mm (H<10mm)<br>±(0.05%H+0.01)mm (H≥100mm)<br>H is the thickness to be measured in mm |
| **Display** | 320×240, color screen display |
| **Measuring frequency** | 4Hz, 8Hz, 16Hz |
| **Velocity** | 500~9999m/s |
| **Applicable temperature** | -20~50°C |
| **Output** | USB |
| **Measuring unit** | mm/inch |
| **Power supply** | 2×1.5V AA batteries |
| **Dimension** | 153×76×37mm |
| **Weight** | 280g (including batteries) |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Transducer ISU-810D-TC510** | 1 pc |
| **Battery (AA)** | 2 pcs |
| **Couplant** | 1 bottle |
| **USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Transducer** | refer to the specification of transducers |
| **Couplant (for ISU-810D-GT12)** | **ISU-HT5-COUPLANT** |

## SPECIFICATION OF TRANSDUCERS

| Code | Frequency | Diameter (Ød) | Measuring range | Applicable temperature | Application |
|---|---|---|---|---|---|
| **ISU-810D-TC510 (included)** | 5MHz | 13.5mm | 1.2~400mm | -10~70°C | normal workpieces |
| **ISU-810D-TC550 (optional)** | 5MHz | 13.5mm | 1~200mm | -10~70°C | fiberglass and organic material |
| **ISU-810D-PT04 (optional)** | 10MHz | 7mm | 0.7~12mm | -10~70°C | small diameter workpieces |
| **ISU-810D-PT06 (optional)** | 7.5MHz | 8.7mm | 0.8~30mm | -10~70°C | curved surface and small workpieces |
| **ISU-810D-PT08 (optional)** | 5MHz | 11mm | 0.8~100mm | -10~60°C | normal workpieces |
| **ISU-810D-ZT12 (optional)** | 2MHz | 17mm | 4~508mm | -10~70°C | cast iron (coarse grain) and thick workpieces |
| **ISU-810D-GT12 (optional)** | 3MHz | 15mm | 2~80mm | -20~480°C | workpieces with high temperature |





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PENETRATE NON-METALLIC COATING AND MEASURE THE THICKNESS OF METAL SUBSTRATES

VIDEO

DATA OUTPUT

WITH A AND B SCAN

# ULTRASONIC THICKNESS GAUGE
# CODE ISU-720D

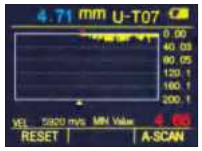
- Two measuring modes, Echo-Echo (E-E) and Transmit-Echo (T-E):
  – E-E is applicable for non-metallic coating (such as paint, plastic resin, etc.) on metal substrates, can penetrate coating and measure the thickness of substrates
  – T-E is to measure the thickness of material without coating, such as metal, plastic, glass, nylon, resin, ceramics, ice, etc.
- A scan, through the waveform, judges whether there are impurities, pores, cracks and so on inside, in order to avoid wrong measurement
- B scan, measures continuously, displays the thickness change on the screen
- Transducers can be automatically identified and zeroed
- Memory 10000 measurement values
- Data can be input to Excel and Word as keyboard signal
- Automatic or manual measurement
- When transducers are removed from workpieces, the measurement data are held on screen for easy viewing
- Set upper and lower limits for alarm when out-of-tolerance
- Automatic power off




A scan



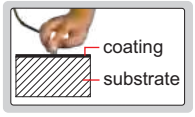
B scan



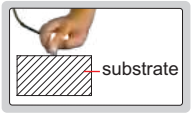
34

## SPECIFICATION (ON STEEL)

| | |
|---|---|
| **Measuring range** | refer to specification of transducers |
| **Resolution** | 0.1/0.01mm |
| **Accuracy** | ±0.04mm (H<10mm)<br>±(0.04+H/1000)mm (10≤H<100mm)<br>±H/333mm (H≥100mm)<br>H is the thickness to be measured in mm |
| **Frequency** | refer to specification of transducers |
| **Display** | 320×240, color screen display |
| **Velocity** | 1000~9999m/s |
| **Measuring frequency** | 2 times/second and 10 times/second |
| **Operation temperature of main unit** | -20~50°C |
| **Output** | USB |
| **Measuring unit** | mm/inch |
| **Power supply** | 2×1.5V AA batteries |
| **Dimension** | 133×75×29mm |
| **Weight** | 260g (including batteries) |




Echo-Echo mode (E-E)




Transmit-Echo mode (T-E)

transducer **ISU-T04** (**optional**)



transducer **ISU-T06** (**optional**)



transducer **ISU-T08** (**optional**)



transducer **ISU-T12** (**optional**)



transducer **ISU-T13** (**optional**)



transducer **ISU-T25** (**optional**)



## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Bicrystal transducer ISU-T07** | 1 pc |
| **Battery (AA)** | 2 pcs |
| **Couplant** | 1 bottle |
| **USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Transducer** | **ISU-T04, ISU-T06, ISU-T08, ISU-T12, ISU-T13, ISU-T25** |
| **Couplant (for ISU-T13)** | **ISU-HT5-COUPLANT** |

## SPECIFICATION OF TRANSDUCERS (ON STEEL)

| Code | Mode | Frequency | Diameter (Ød) | Measuring range | Minimum size of pipes for measurement (diameter × wall thickness) | Applicable temperature | Application |
|---|---|---|---|---|---|---|---|
| **ISU-T07 (included)** | T-E<br>E-E | 5.0MHz | 13.2mm | T-E mode: 1.5~200mm<br>E-E mode: 3~25mm | T-E mode: Ø25×3mm | -20~60°C | general use |
| **ISU-T04 (optional)** | T-E | 10.0MHz | 6mm | 0.7~20mm | Ø15×1mm | -20~60°C | for small tubes |
| **ISU-T06 (optional)** | T-E | 7.5MHz | 9mm | 0.7~50mm | Ø15×1.2mm | -20~60°C | for thin workpieces |
| **ISU-T08 (optional)** | T-E | 5.0MHz | 11mm | 0.8~300mm | Ø25×1.2mm | -20~60°C | general use |
| **ISU-T12 (optional)** | T-E | 2.0MHz | 17mm | 2~400mm | Ø40×3mm | -20~60°C | for casting iron |
| **ISU-T13 (optional)** | T-E | 5.0MHz | 15mm | 3~100mm | Ø25×2mm | 0~350°C | for high temperature |
| **ISU-T25 (optional)** | T-E | 1.0MHz | 26mm | 3~200mm | – | -20~60°C | for fiberglass and organic material |



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# ULTRASONIC THICKNESS GAUGE (FOR THICK WORKPIECES MADE OF ORGANIC MATERIALS) CODE ISU-710D

DATA OUTPUT

WITH A AND B SCAN

VIDEO






- For thick workpieces made of organic materials
- A scan, through the waveform, judges whether there are impurities, pores, cracks and so on inside, in order to avoid wrong measurement
- B scan, measures continuously, displays the thickness change on the screen
- Transducers can be automatically identified and zeroed
- Memory 10000 measurement values
- Data can be input to Excel and Word as keyboard signal
- Automatic or manual measurement
- When transducers are removed from workpieces, the measurement data are held on screen for easy viewing
- Set upper and lower limits for alarm when out-of-tolerance
- Automatic power off

A scan




B scan




**SPECIFICATION (ON STEEL)**

| | | |
|---|---|---|
| **Measuring range** | | 20~590mm |
| **Resolution** | | 0.1/0.01mm |
| **Accuracy** | | ±(0.04+H/1000)mm (H<100mm)<br>±H/333mm (H≥100mm)<br>H is the thickness to be measured in mm |
| **Transducer** | **type** | single element transducer |
| | **frequency** | 1.0MHz |
| | **diameter (Ød)** | 26mm |
| **Display** | | 320×240, color screen display |
| **Velocity** | | 1000~9999m/s |
| **Measuring frequency** | | 2 times/second and 10 times/second |
| **Operation temperature** | | main unit: -20~50°C<br>transducer: -20~60°C |
| **Output** | | USB |
| **Measuring unit** | | mm/inch |
| **Power supply** | | 2×1.5V AA batteries |
| **Dimension** | | 133×75×29mm |
| **Weight** | | 260g (including batteries) |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Transducer** | 1 pc |
| **Battery (AA)** | 2 pcs |
| **Couplant** | 1 bottle |
| **USB cable** | 1 pc |



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DATA OUTPUT

WITH A AND B SCAN

# ULTRASONIC THICKNESS GAUGE (FOR THIN WORKPIECES) CODE ISU-700D

VIDEO




- For thin workpieces
- A scan, through the waveform, judges whether there are impurities, pores, cracks and so on inside, in order to avoid wrong measurement
- B scan, measures continuously, displays the thickness change on the screen
- Transducers can be automatically identified and zeroed
- Memory 10000 measurement values
- Data can be input to Excel and Word as keyboard signal
- Automatic or manual measurement
- When transducers are removed from workpieces, the measurement data are held on screen for easy viewing
- Set upper and lower limits for alarm when out-of-tolerance
- Automatic power off

A scan




B scan




## SPECIFICATION (ON STEEL)

| | | |
|---|---|---|
| **Measuring range** | | Transmit-echo (T-E) mode: 1.5~20mm |
| | | Echo-echo (E-E) mode: 0.2~10mm |
| **Resolution** | | 0.1/0.01/0.001mm |
| **Accuracy** | | ±0.04mm (H<10mm)<br>±(0.04+H/1000)mm (H≥10mm)<br>H is the thickness to be measured in mm |
| **Transducer** | **type** | single element transducer |
| | **frequency** | 15.0MHz |
| | **diameter (Ød)** | 7.5mm |
| **Display** | | 320×240, color screen display |
| **Velocity** | | 1000~9999m/s |
| **Measuring frequency** | | 2 times/second and 10 times/second |
| **Operation temperature** | | main unit: -20~50°C<br>transducer: -20~60°C |
| **Output** | | USB |
| **Measuring unit** | | mm/inch |
| **Power supply** | | 2×1.5V AA batteries |
| **Dimension** | | 133×75×29mm |
| **Weight** | | 260g (including batteries) |

transducer protective sleeve (included)



## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Transducer** | 1 pc |
| **Transducer protective sleeve** | 1 pc |
| **Battery (AA)** | 2 pcs |
| **Couplant** | 1 bottle |
| **USB cable** | 1 pc |





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# ULTRASONIC THICKNESS GAUGE (THROUGH COATING) CODE ISU-300D

**PENETRATE NON-METALLIC COATING AND MEASURE THE THICKNESS OF METAL SUBSTRATE**

VIDEO

DATA OUTPUT

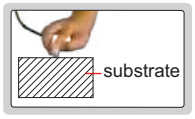
INSPECTION CERTIFICATE

- Two measuring modes, Echo-Echo (E-E) and Transmit-Echo (T-E):
  – E-E is applicable for non-metallic coating (such as paint, plastic resin, etc.) on metal substrates, can penetrate coating and measure the thickness of substrates
  – T-E is to measure the thickness of material without coating, such as metal, plastic, glass, nylon, resin, ceramics, ice, etc.
- Tolerance measurement
- Average calculation of maximum 9 readings
- Data can be input to Excel and Word as keyboard signal




## SPECIFICATION (ON STEEL)

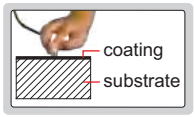
| | |
|---|---|
| **Measuring range** | refer to specification of transducers |
| **Resolution** | 0.1/0.01mm |
| **Accuracy** | ±0.04mm (H<10mm)<br>±(0.04+H/1000)mm (10≤H<100mm)<br>±H/333mm (H≥100mm)<br>H is the thickness to be measured in mm |
| **Velocity** | 1000~9999m/s |
| **Operation temperature of main unit** | -20~50°C |
| **Output** | USB |
| **Measuring unit** | mm/inch |
| **Power supply** | 2×1.5V AAA batteries |
| **Dimension** | 116×64×27mm |
| **Weight** | 220g |



Transmit-Echo mode (T-E)


transducer **ISU-T04** (**optional**)


transducer **ISU-T06** (**optional**)



Echo-Echo mode (E-E)


transducer **ISU-T12** (**optional**)


transducer **ISU-T13** (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Transducer ISU-T07** | 1 pc |
| **Battery (AAA)** | 2 pcs |
| **Couplant (for ISU-T04, ISU-T06, ISU-T07, ISU-T12)** | 1 bottle |
| **USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Transducer** | **ISU-T04, ISU-T06, ISU-T12, ISU-T13** |
| **Couplant (for ISU-T13)** | **ISU-HT5-COUPLANT** |

## SPECIFICATION OF TRANSDUCERS (ON STEEL)

| Code | Mode | Frequency | Diameter (Ød) | Measuring range | Minimum size of pipes for measurement (diameter × wall thickness) | Applicable temperature | Application |
|---|---|---|---|---|---|---|---|
| **ISU-T07 (included)** | T-E<br>E-E | 5.0MHz | 13.2mm | T-E mode: 1.5~200mm<br>E-E mode: 3~25mm | T-E mode: Ø25×3mm | -20~60°C | general use |
| **ISU-T04 (optional)** | T-E | 10.0MHz | 6mm | 0.7~20mm | Ø15×1mm | -20~60°C | for small tubes |
| **ISU-T06 (optional)** | T-E | 7.5MHz | 9mm | 0.7~50mm | Ø15×1.2mm | -20~60°C | for thin workpieces |
| **ISU-T12 (optional)** | T-E | 2.0MHz | 17mm | 2~400mm | Ø40×3mm | -20~60°C | for casting iron |
| **ISU-T13 (optional)** | T-E | 5.0MHz | 15mm | 3~100mm | Ø25×2mm | 0~350°C | for high temperature |



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INSPECTION CERTIFICATE

DATA OUTPUT

# ULTRASONIC THICKNESS GAUGE
# CODE ISU-250C

VIDEO




- Measure the thickness from one side of objects, suitable for pipes, tanks, etc.
- Applicable material: metal, plastic, glass, nylon, resin, ceramic, ice
- Tolerance measurement
- Average calculation of 9 readings
- Data can be input to Excel and Word as keyboard signal



## SPECIFICATION (ON STEEL)

| | |
|---|---|
| **Measuring range** | refer to specification of transducers |
| **Resolution** | 0.1/0.01mm |
| **Accuracy** | ±0.04mm (H<10mm)<br>±(0.04+H/1000)mm (10≤H<100mm)<br>±H/333mm (H≥100mm)<br>H is the thickness to be measured in mm |
| **Velocity** | 1000-9999m/s |
| **Operation temperature of main unit** | -20~50°C |
| **Output** | USB |
| **Measuring unit** | mm/inch |
| **Power supply** | 2×1.5V AAA batteries |
| **Dimension** | 64×116×27mm |
| **Weight** | 220g |




transducer **ISU-T06** (**optional**)


transducer **ISU-T13** (**optional**)


transducer **ISU-T04** (**optional**)


transducer **ISU-T12** (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Transducer ISU-T08** | 1 pc |
| **Battery (AAA)** | 2 pcs |
| **Couplant (for ISU-T04, ISU-T06, ISU-T08, ISU-T12)** | 1 bottle |
| **USB cable** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Transducer** | **ISU-T04, ISU-T06, ISU-T12, ISU-T13** |
| **Couplant (for ISU-T13)** | **ISU-HT5-COUPLANT** |

## SPECIFICATION OF TRANSDUCERS (ON STEEL)

| Code | Frequency | Diameter (Ød) | Measuring range | Minimum size of pipes for measurement (diameter × wall thickness) | Applicable temperature | Application |
|---|---|---|---|---|---|---|
| **ISU-T08 (included)** | 5.0MHz | 11mm | 0.8~300mm | Ø25×1.2mm | -20~60°C | general use |
| **ISU-T04 (optional)** | 10.0MHz | 6mm | 0.7~20mm | Ø15×1mm | -20~60°C | for small tubes |
| **ISU-T06 (optional)** | 7.5MHz | 9mm | 0.7~50mm | Ø15×1.2mm | -20~60°C | for thin workpieces |
| **ISU-T12 (optional)** | 2.0MHz | 17mm | 2~400mm | Ø40×3mm | -20~60°C | for casting iron |
| **ISU-T13 (optional)** | 5.0MHz | 15mm | 3~100mm | Ø25×2mm | 0~350°C | for high temperature |

# ULTRASONIC THICKNESS GAUGE (BASIC TYPE)
# CODE ISU-100D

VIDEO

ATTENTION: NOT SUITABLE FOR CASTINGS AND ALUMINUM WORKPIECES

INSPECTION CERTIFICATE

POPULAR MODEL






- Measure the thickness from one side of objects, suitable for pipes, tanks, etc.
- Applicable material: steel, stainless steel, glass, copper, brass, polystyrene, titanium, etc.

## SPECIFICATION (ON STEEL)

| | | |
|---|---|---|
| Measuring range | | 0.8~300mm |
| Resolution | | 0.1/0.01mm |
| Accuracy | | ±0.05mm (H<10mm)<br>±(0.05+H/1000)mm (10≤H<100mm)<br>±H/333mm (H≥100mm)<br>H is the thickness to be measured in mm |
| Transducer | frequency | 5MHz |
| | diameter (Ød) | 10.8mm |
| Minimum size of pipes | | 20×1.2mm (diameter×wall thickness) |
| Velocity | | 1000-9999m/s |
| Operation temperature | | main unit: -20~50°C<br>transducer: -20~60°C |
| Measuring unit | | mm/inch |
| Power supply | | 2×AAA batteries |
| Dimension | | 114×64×28mm |
| Weight | | 200g |



## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Transducer | 1 pc |
| Couplant | 1 bottle |
| Battery (AAA) | 2 pcs |



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STEP WEDGE BLOCKS CAN BE CUSTOMIZED

# STANDARD TEST BLOCKS FOR ULTRASONIC THICKNESS GAUGES

INSPECTION CERTIFICATE



cylinder block

- Supplied with manufacturer inspection certificate
- Material of step wedge blocks can be customized



**Cylinder block set (17 blocks are included)** **(mm)**

| Code | Material | Diameter | Thickness | Accuracy | QTY |
|---|---|---|---|---|---|
| ISU-ST | 45# | 20 | 0.5 | ±0.01 | 1 pc |
| | 45# | 20 | 1 | | 1 pc |
| | 45# | 20 | 1.2 | | 1 pc |
| | 45# | 20 | 1.5 | | 1 pc |
| | 45# | 20 | 2 | | 1 pc |
| | 45# | 20 | 3.3 | | 1 pc |
| | 45# | 20 | 5.5 | | 1 pc |
| | 45# | 20 | 7.7 | | 1 pc |
| | 45# | 20 | 10 | | 1 pc |
| | 45# | 20 | 15 | | 1 pc |
| | 45# | 20 | 20 | ±0.02 | 1 pc |
| | 45# | 20 | 25 | | 1 pc |
| | 45# | 20 | 50 | | 1 pc |
| | 45# | 20 | 75 | | 1 pc |
| | 45# | 20 | 100 | ±0.05 | 1 pc |
| | 45# | 20 | 150 | | 1 pc |
| | 45# | 20 | 200 | | 1 pc |



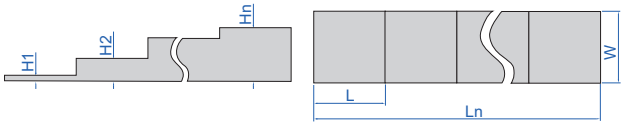
round tube block

**Round tube block set (2 blocks are included)** **(mm)**

| Code | Material | Outer diameter | Wall thickness | Accuracy | Length | QTY |
|---|---|---|---|---|---|---|
| ISU-SWT | 45# | 30 | 2 | ±0.02 | 40 | 1 pc |
| | 45# | 40 | 3 | ±0.02 | 40 | 1 pc |



step wedge block




**Step wedge blocks** **(mm)**

| Code | Material | QTY of steps (n) | Thickness | | | | | | | Accuracy | Width (W) | Length of each step (L) | Total length (Ln) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | H1 | H2 | H3 | H4 | H5 | H6 | H7 | | | | |
| ISU-S4A | 45# | 4 | 6.25 | 12.5 | 18.75 | 25 | - | - | - | ±0.02 | 20 | 20 | 80 |
| ISU-S4B | 45# | 4 | 5 | 10 | 15 | 20 | - | - | - | ±0.02 | 20 | 20 | 80 |
| ISU-S5A | 45# | 5 | 2.5 | 5 | 7.5 | 10 | 12.5 | - | - | ±0.02 | 20 | 20 | 100 |
| ISU-S5B | 45# | 5 | 2 | 4 | 6 | 8 | 10 | - | - | ±0.02 | 20 | 20 | 100 |
| ISU-S7A | 45# | 7 | 3 | 12.5 | 24 | 30 | 36 | 42 | 48 | ±0.02 | 40 | 40 | 280 |
| ISU-S7B | 45# | 7 | 1 | 1.5 | 2 | 4 | 6 | 8 | 10 | ±0.02 | 40 | 40 | 280 |



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## CONTACT/NON-CONTACT TACHOMETER
## CODE 9225-405

VIDEO

- 2 measuring methods, contact and non-contact
- Can measure rotary speed and line speed
- Automatically save the maximum value, minimum value and the last value, 500 data can be stored during continuous measurement
- Automatic power off


cone head (included)


cone cavity head (included)


reflection sticker (included)


wheel with 0.1m perimeter (included)


small cone head (included)


clamping sleeve (included)




**SPECIFICATION**

| Measuring method | | Non-contact | Contact |
|---|---|---|---|
| Measuring range | rotary speed | 2.5~99999RPM | 0.5~19999RPM |
| | line speed | — | 0.05~500m/min |
| Resolution | rotary speed | 0.1RPM (range 2.5~999.9RPM)<br>1RPM (range 1000~99999RPM) | 0.1RPM (range 0.5~999.9RPM)<br>1RPM (range 1000~19999RPM) |
| | line speed | — | 0.01m/min (range 0.05~99.99m/min)<br>0.1m/min (range 100~500m/min) |
| Accuracy | rotary speed | ±(0.05%n+1d)RPM<br>n is rotary speed, d is resolution | ±(0.4%n+1d)RPM (n<300RPM)<br>±(0.05%n+1d)RPM (n≥300RPM)<br>n is rotary speed, d is resolution |
| | line speed | — | ±(1%+1d)m/min d is resolution |
| Laser power | | class 3R, 3mW~4mW | — |
| Sampling time | | 0.6s (above 100RPM) | |
| Measuring distance | | 50~500mm | — |
| Operation temperature | | 0~40°C | |
| Power supply | | 3×AA batteries | |
| Dimension | | 206×71×36mm | |
| Weight | | 170g | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Reflection sticker (9220-RS) | 3 pcs |
| Wheel with 0.1m perimeter | 1 pc |
| Clamping sleeve | 1 pc |
| Cone head | 1 pc |
| Small cone head | 1 pc |
| Cone cavity head | 1 pc |
| Battery (AA) | 3 pcs |

## NON-CONTACT TACHOMETER
## CODE 9223-120

VIDEO

- Accurately measure the rotary speed without contact
- Automatically save the maximum value, minimum value and the last value, 500 data can be stored during continuous measurement





reflection sticker (included)

**SPECIFICATION**

| | |
|---|---|
| Measuring range | 2.5~99999RPM |
| Resolution | 0.1RPM (range 2.5~999.9RPM)<br>1RPM (range 1000~99999RPM) |
| Accuracy | ±(0.05%n+1d)RPM<br>n is rotary speed, d is resolution |
| Laser power | class 3R, 3mW~4mW |
| Sampling time | 0.6 second (above 100RPM) |
| Measuring distance | 50~500mm |
| Operation temperature | 0~40°C |
| Power supply | 3×AA batteries |
| Dimension | 180×71×29.9mm |
| Weight | 145g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Reflection sticker (9220-RS) | 3 pcs |
| Battery (AA) | 3 pcs |



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## CONTACT TACHOMETER
## CODE 9224-213

- Can measure rotary speed, line speed and line length
- Automatically save the maximum value, minimum value and the last value, 96 data can be stored during continuous measurement
- With backlight display





cone cavity head (included)



clamping sleeve (included)



cone head (included)



small cone head (included)

**SPECIFICATION**

| | | |
|---|---|---|
| Measuring range | rotary speed | 0.5~19999RPM |
| | line speed | 0.05~500m/min |
| | line length | 0.05~99999m |
| Resolution | rotary speed | 0.1RPM (range 0.5~999.9RPM)<br>1RPM (range 1000~19999RPM) |
| | line speed | 0.01m/min (range 0.05~99.99m/min)<br>0.1m/min (range 100~500m/min) |
| | line length | 0.02m |
| Accuracy | rotary speed | ±(0.4%n+1d)RPM (n<300RPM)<br>±(0.05%n+1d)RPM (n≥300RPM)<br>n is rotary speed, d is resolution |
| | line speed | ±(1%+1d)m/min d is resolution |
| | line length | ±(1%+1d)m d is resolution |
| Sampling time | | 0.8s (above 60RPM) |
| Operation temperature | | 0~40°C |
| Power supply | | 3×AA batteries |
| Dimension | | 171×71×35mm |
| Weight | | 162g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Wheel with 0.1m perimeter | 1 pc |
| Clamping sleeve | 1 pc |
| Cone head | 1 pc |
| Small cone head | 1 pc |
| Cone cavity head | 1 pc |
| Battery (AA) | 3 pcs |



wheel with 0.1m perimeter (included)

## DIGITAL LED TACHOMETER/STROBOSCOPE
## CODE ISQ-TS120K

- Make cyclical motion (rotation, vibration, etc.) objects to appear slow-moving or stationary
- On-line inspection or observation for moving objects
- Measure the rotation or vibration speed and frequency
- Can be triggered from outside by moving objects, make LED flash frequency same as the rotation or vibration



**SPECIFICATION**

| | | |
|---|---|---|
| Flash frequency range | | 60~120000FPM (flash per minute), 1~2000Hz |
| Resolution | FPM | 0.1FPM (<100000FPM), 1FPM (≥100000FPM) |
| | HZ | 0.01Hz (<200Hz), 0.1Hz (≥200Hz) |
| Setting accuracy | | ±0.01% |
| Phase shift increment | | 3° |
| Flash pulse duration time | | 0.1~2.5° |
| LED light | | 3 pcs CREE 10W lamp |
| LED life | | 3~5 years |
| Trigger mode | | internal and external |
| Power supply | | built-in rechargeable battery or AC/DC adapter |
| Dimension | | 208×70×60mm |
| Weight | | 380g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| AC/DC adapter | 1 pc |
| Proximity trigger | 1 pc |

proximity trigger (included)





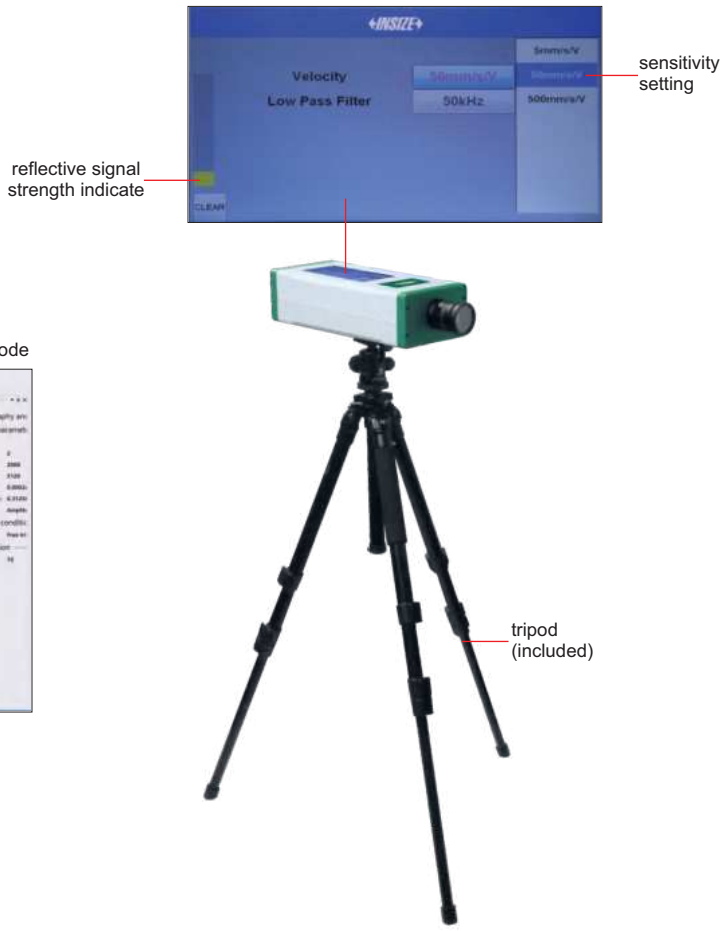
make LED flash frequency same as the rotation or vibration (power supply from AC/DC adapter when external trigger is used)



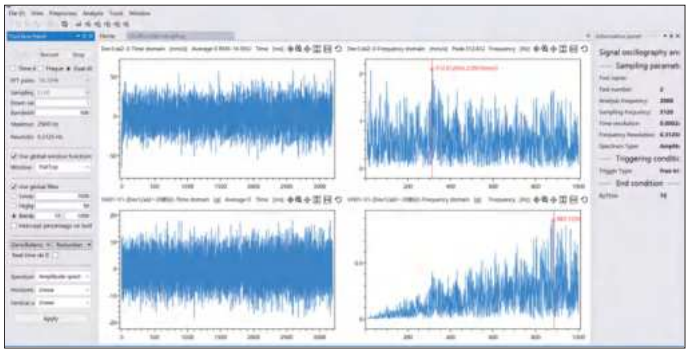
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# LASER VIBROMETER
# CODE 0030-LM15

VIDEO




computer software (included): time-domain, frequency-domain, dual-display mode





- Non-contact measurement, no additional mass influence
- All-in-one design, integrated optical and electrical systems
- Manual focusing
- Computer software is included

## SPECIFICATION

| | | |
|---|---|---|
| **Laser** | | output<4mW, wavelength 632.8nm, class 3A laser product |
| **Working distance** | | 0.35mm~10m (depending on surface) |
| **Speed decoder** | **bandwidth** | DC~20kHz |
| | **range** | ±50mm/s, ±500mm/s, ±5000mm/s (adjustable) |
| | **maximum speed resolution*** | 0.1μm/s/√Hz |
| **Maximum linearity error** | | ±1% |
| **Output voltage range** | | ±10V |
| **Output** | **digital signal** | ethernet port |
| | **analogue signal** | BNC port |
| **Low-pass filter** | | 500Hz, 2kHz, 20kHz |
| **Gear control and display** | | 7-inch colour touchscreen with interactive menu-guided setting |
| **Power supply** | | power adapter |
| **Operation temperature** | | 5°C~45°C |
| **Storage temperature** | | -10°C~65°C |
| **Dimension** | | 382×160×94mm |
| **Weight** | | 5.2kg |

* Maximum speed resolution is defined as the signal amplitude (RMS) measured at 10Hz with a signal-to-noise ratio of 0dB when a reflective film is applied at a distance of 2 meters

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit (including speed decoder)** | 1 pc |
| **Tripod** | 1 pc |
| **Power adapter** | 1 pc |
| **Software** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Laptop computer** | **0030-COMPUTER-E** |



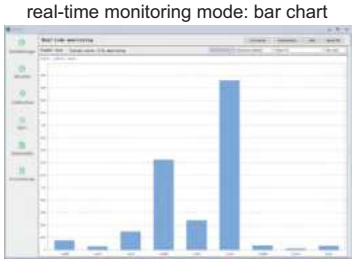
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VIDEO

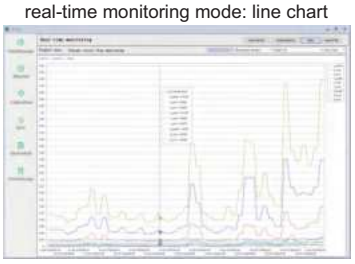
# VIBRATION METER
# CODE 0022-VM20



real-time monitoring mode: bar chart



real-time monitoring mode: line chart



software (included), monitor and collect data to PC software via USB cable, data can sent to Excel




- Can measure vibration frequency
- Can measure virtual value/peak value/peak-peak value of acceleration, velocity and displacement
- Suitable for factory inspection, status monitoring and fault diagnosis of mechanical equipments such as motors, pumps, fans, household appliances, compressors, smoke machines, generators, gearboxes, etc.
- Software is included: on-line monitoring, data storage

## SPECIFICATION

| Measuring parameter | acceleration (virtual/peak/peak-peak value) $a_{RMS,1}$, $a_{Peak,1}$, $a_{P-P,1}$, $a_{Peak}'$, $a_{P-P}'$ | velocity (virtual/peak/peak-peak value) $V_{RMS,1}$, $V_{Peak,1}$, $V_{P-P,1}$, $V_{Peak}'$, $V_{P-P}'$ | displacement (virtual/peak/peak-peak value) $d_{RMS,1}$, $d_{Peak,1}$, $d_{P-P,1}$, $d_{Peak}'$, $d_{P-P}'$ |
|---|---|---|---|
| Measuring range | 0.01~200m/s² (peak value) | 0.1~200mm/s (virtual value) | 0.01~2mm (peak-peak value) |
| Frequency range | 10Hz~5kHz | 10Hz~1kHz | 10Hz~500Hz |
| Amplitude frequency reponse | ±5% | | |
| Amplitude linearity | ±5% | | |
| Frequency accuracy | ±0.5% | | |
| Cut-off frequency (second-order high-pass filtering) | 8kHz sampling frequency: 3.16Hz、10.00Hz、31.60Hz、N/A (adjustable)<br>32kHz sampling frequency: 12.64Hz、40.00Hz、126.4Hz、N/A (adjustable) | | |
| Display | 1.96" 128×64 dot matrix OLED screen | | |
| Language | Chinese, English, Portuguese | | |
| Power | <80mA/5V | | |
| Power supply | 4×AAA batteries: 6.0V/1000mAh; AC/DC adapter: 5V/2A | | |
| Operation condition | temperature: -10°C~50°C; humidity: 25%RH~90%RH, non-condensing; pressure: 65kPa~108kPa | | |
| Dimension | 172×69×26mm | | |
| Weight | 240g | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Software | 1 pc |
| Accelerometer (including cable) | 1 pc |
| Magnetic base | 1 pc |
| M5 screw | 1 pc |
| Battery (AAA) | 4 pcs |
| AC/DC adapter | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Tripod | 0701-TR175 |

## VIBRATION PEN (THREE PARAMETERS)
## CODE 0020-A199

VIDEO



- Acceleration, velocity and displacement can be tested
- Automatic power off



**SPECIFICATION**

| Parameter | acceleration | velocity | displacement |
|---|---|---|---|
| Measuring range | 0.01~199.9m/s² (peak value) | 0.01~199.9mm/s (virtual value) | 0.001~1.999mm (peak~peak value) |
| Frequency | 10Hz~1kHz | 10Hz~1kHz | 10Hz~500Hz |
| Frequency response | ±5% (≥20Hz)<br>-20%~+10% (<20Hz) | | |
| Linearity | ±(5%+2unit) | | |
| Indeterminacy of sensitivity | ≤3% | | |
| Operation temperature | 0°C~40°C/32°F~104°F | | |
| Operation humidity | <85% | | |
| Power supply | 2×LR44 battery (for 10 hours working) | | |
| Dimension | 150x22x18mm | | |
| Weight | 55g | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| LR44 battery | 2 pcs |

## VIBRATION PEN
## CODE 9720-199

VIDEO



- Measure vibration of motors, fans, pumps, compressors and machine tools to prevent mechanical failure
- Small size, light weight, low energy consumption, easy operation, easy to carry
- One key control
- Automatic power off

**SPECIFICATION**

| Measured parameter | speed |
|---|---|
| Measuring range | 0.1~199.9mm/s |
| Frequency | 10Hz~1kHz |
| Accuracy | ±(5%±2)mm/s |
| Operation temperature | 0°C~40°C |
| Operation humidity | <85% |
| Power supply | 2×LR44 batteries (for 10 hours wroking) |
| Dimension | 150x22x18mm |
| Weight | 55g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| LR44 battery | 2 pcs |



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VIDEO

# PORTABLE VIBRATION CALIBRATOR
# CODE 0021-AS159

- Quick, easy calibration and checking of vibration measurement, monitoring and recording system






**SPECIFICATION**

| | |
|---|---|
| **Frequency** | 159.2Hz±1% |
| **Acceleration** | 10m/s²±3% (RMS) |
| **Distortion** | <5% |
| **Transverse vibration** | <5% |
| **Warm-up time** | <20s |
| **Maximum load** | 70g |
| **Mounting thread** | M5×0.8mm |
| **Operation temperature** | 0°C~40°C |
| **Operation humidity** | 10%RH~90%RH, non-condensing |
| **Power supply** | rechargeable lithium battery, working time≥5h |
| **Dimension** | Ø54.5×147mm |
| **Weight** | 620g |

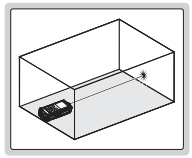
**STANDARD DELIVERY**

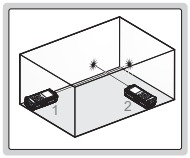
| | |
|---|---|
| **Main unit** | 1 pc |
| **Power adapter** | 1 pc |

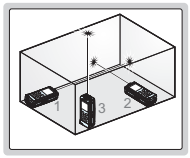
POPULAR MODEL

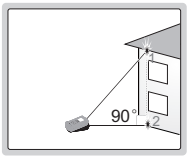
# LASER DISTANCE METERS

- High accuracy models: **9561-50B**, **9561-70B**
  Low accuracy models: **9561-50B-F**, **9561-70B-F**
- Large display with backlight
- Unit: m, ft, in, ft+in
- Distance, area, volume and height measurement
- Continuos measuring mode to track maximum and minimum value
- Memory of 30 measurement values
- Automatic power off: laser 30s, main unit 180s


distance measurement


area measurement


volume measurement



height measurement



**9561-50B**

**SPECIFICATION**

| **Code** | **9561-50B** | **9561-70B** | **9561-50B-F** | **9561-70B-F** |
|---|---|---|---|---|
| **Measuring range** | 0.2~50m | 0.2~70m | 0.2~50m | 0.2~70m |
| **Resolution** | 0.001m, 0.001ft, 1/16" | | | |
| **Accuracy** | ±(3+D/20)mm<br>D: measured distance, unit: m | | ±(5+D/20)mm<br>D: measured distance, unit: m | |
| **Laser type** | red laser, 630~670nm, class II, <1mW | | | |
| **Power supply** | 2×AAA batteries | | | |
| **Dimension (L×W×H)** | 115×50×28mm | | | |
| **Weight** | 95g | | | |

**STANDARD DELIVERY**

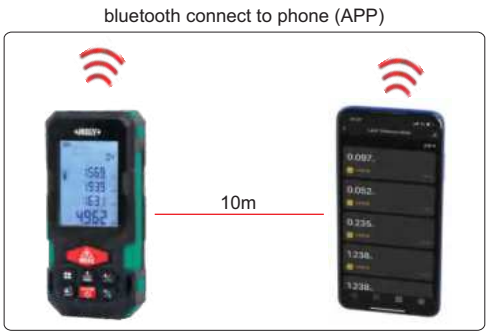
| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (AAA)** | 2 pcs |

# BLUETOOTH LASER DISTANCE METERS

BUILT-IN BLUETOOTH

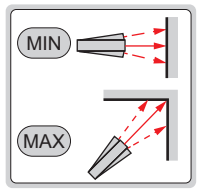


9564-D50

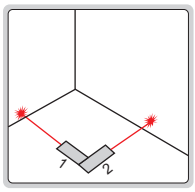


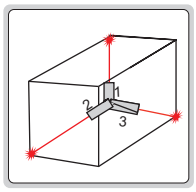


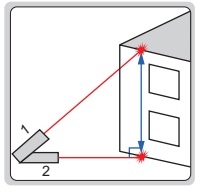

- Built-in bluetooth, transmission distance is 10 meters (no obstacles, no electromagnetic interference)
- Built-in angle sensor
- Display with backlight
- Distance, area, volume and height measurement
- Continuos measuring mode to track maximum and minimum value
- Unit: m, ft, in, ft+in
- Memory of 20 measurement values
- Automatic power off: laser 30s, main unit 180s

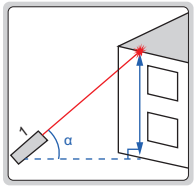


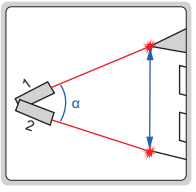
continuos measurement


area measurement


volume measurement


height measurement (1)


height measurement (2)


height measurement (3)

## SPECIFICATION

| Code | 9564-D50 | 9564-D60 |
|---|---|---|
| Measuring range | 0.2~100m | 0.2~120m |
| Resolution | 0.001m | <100m: 0.001m<br>100~120m: 0.01m |
| Accuracy | ±(2+D/20)mm<br>D: measured distance, unit: m | <100m: ±(2+D/20)mm<br>100~120m: ±10mm<br>D: measured distance, unit: m |
| Laser type | 490~670nm, class II, <1mW | |
| Accuracy of tilt angle* | ±(0.4°+0.01°×T)<br>T: operation temperature, unit: °C | |
| Power supply | 3×rechargeable batteries | |
| Operation temperature | 0~40°C | |
| Dimension (L×W×H) | 120×57×28mm | |
| Weight | 125g | |

*Angle between the laser beam and the horizontal line

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Battery (AAA) | 3 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Tripod | 0701-TR175 |

VIDEO

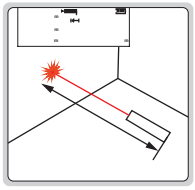
BUILT-IN BLUETOOTH

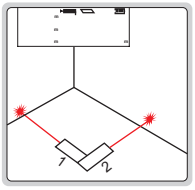
# MINI LASER DISTANCE METER
# CODE 9565-E40

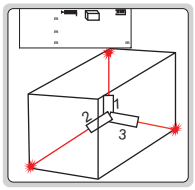


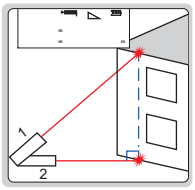



- Built-in bluetooth, transmission distance is 10 meters (no obstacles, no electromagnetic interference)
- Display with backlight
- Unit: m, ft, in, ft+in
- Distance, area, volume and height measurement
- Automatic power off: laser 30s, main unit 180s


distance measurement


area measurement


volume measurement


height measurement

bluetooth connect to phone (APP)




## SPECIFICATION

| | |
|---|---|
| **Measuring range** | 0.2~40m |
| **Resolution** | 0.001m, 0.001ft, 1/16" |
| **Accuracy** | ±(3+D/20)mm, D: measured distance, unit: m |
| **Laser type** | red laser, 630~670nm, class II, <1mW |
| **Charging interface** | USB (type-C) |
| **Dimension** | 180×28×40mm |
| **Weight** | 53g |

## STANDARD DELIVERY

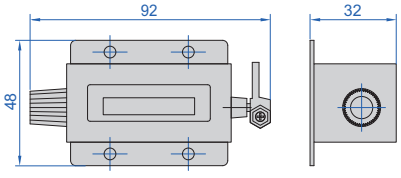
| | |
|---|---|
| **Main unit** | 1 pc |
| **USB charging cable** | 1 pc |

# STROKE COUNTER
# CODE 7600-6



- Accumulate and record the number of mechanical movements
- Rotate back to zero

Unit: mm




## SPECIFICATION

| Code | Number of digits | Range |
|---|---|---|
| **7600-6** | 6 | 0-999999 |

## WATERPROOF DIGITAL STOPWATCH
## CODE DSW-B024

WATERPROOF



- Single row display with backlight
- Count up to 23 hours 59 minutes and 59 seconds
- 2 recallable memory
- Time and calendar display with hour, minute, second, month, date and day

**SPECIFICATION**

| | | |
|---|---|---|
| Chronograph | range | 0~23 hours 59 minutes and 59 seconds |
| | resolution | 0.01s (<30mins)<br>1s (>30mins) |
| | accuracy | ±1.5s (day error) |
| Clock | display | 12/24 hour format |
| | function | alarm and hourly chime |
| Waterproof level | | 3bar (30meters) |
| Operation environment * | | 0°C~50°C |
| Power supply | | CR2032 battery |
| Dimension | | 76×64×22mm |
| Weight | | 62g |

* Underwater button operation is not supported

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| String | 1 pc |

## DIGITAL STOPWATCH
## CODE DSW-A010

VIDEO



- Split time, total time and continuous time can be displayed
- 10 groups of results can be read out from memory after resetting
- Scroll back and forth to read out the memory digits
- The fastest, slowest and average time can be displayed
- Able to record the split times (00-199)

**SPECIFICATION**

| | | |
|---|---|---|
| Measuring range | | 0~9 hours, 59 minutes, 59.99 seconds |
| Resolution | | 0.01s |
| Accuracy | | ±0.5s |
| Function | memory | 10 groups |
| | timer | up to 10 hours |
| | time | 12-hour or 24-hour time display, alarm can be set |
| Power supply | | LR44 battery |
| Screen dimension | | 33.6×13.6mm |
| Dimension | | 76×63×16mm (metal case) |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| String | 1 pc |



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VIDEO

## DIGITAL MOISTURE METER
## CODE 9341-50

- Suitable for wood, smooth cement, hard gypsum, mixed mortar, brick, etc.
- Measure moisture, temperature and relative humidity
- Temperature type: ambient, dew point, wet bulb
- Maximum and minimum modes
- Automatic power off




**SPECIFICATION**

| | | |
|---|---|---|
| **Measuring depth** | | 0~50mm |
| **Measuring range** | **moisture** | 0~60% |
| | **temperature** | -10~50°C/14~122°F |
| | **relative humidity** | 0~100%RH |
| **Accuracy** | **moisture** | ±2% |
| | **temperature** | ±2%/±3.6°F |
| | **relative humidity** | ±5%RH |
| **Resolution** | **moisture** | 0.1% |
| | **temperature** | 0.1°C/0.1°F |
| | **relative humidity** | 0.1%RH |
| **Sampling time** | | 0.5s for moisture |
| | | 1s for temperature and relative humidity |
| **Power supply** | | 2×AAA batteries |
| **Dimension** | | 130×56×29mm |
| **Weight** | | 206g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (AAA)** | 2 pcs |

VIDEO

## INDUCTIVE MOISTURE METER
## CODE 0120-IM24

- Suitable for wood, gypsum and cement
- MAX/MIN/HOLD mode
- Alarm function
- Low battery indication
- Auto power off



**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | 0~100% |
| **Resolution** | 1% |
| **Accuracy** | ±4% |
| **Detection depth** | 20~40mm |
| **Sampling time** | 0.5s |
| **Power supply** | 9V battery |
| **Dimension** | 185×55×38mm |
| **Weight** | 193g |

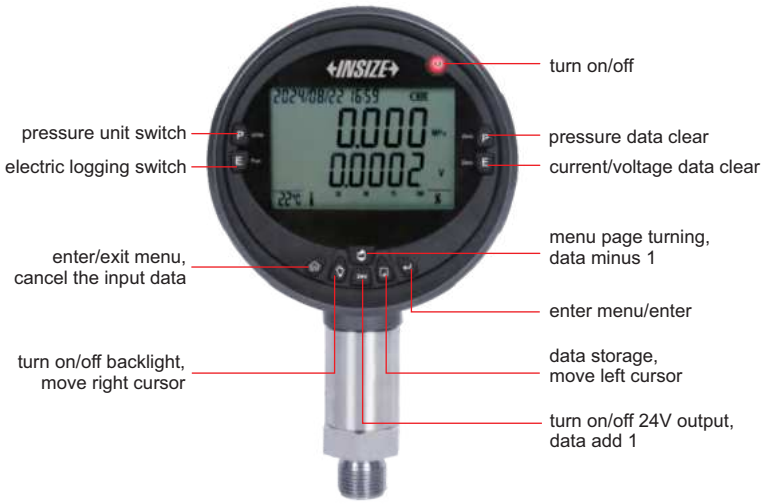
**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 1 pc |

# DIGITAL PRESSURE CALIBRATORS

INSPECTION CERTIFICATE

BACKLIGHT



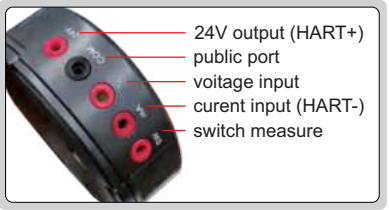

**5240-M20Y600**

- Calibration of general pressure gauges, precision pressure gauges, pressure transmitters, pressure switches, sphygmomanometers, pressure transducers and other pressure instruments and meters
- Large white backlight LCD display with multiple measurements shown at the same time
- With standard HART interface, built-in HART communication, It can calibrate HART pressure transmitter
- RS232 interface for uploading stored files
- 11 pressure units can be switched
- With automatic temperature compensation function
- With data storage function, the data will not be lost when the pressure calibrator is switched off
- Other additional functions: pressure percentage display, pressure leakage detection, multiple triggering of pressure switches, pressure peak recording, 24V DC output

| Range* | Connection* | | |
|---|---|---|---|
| | M20 | G1/2 | NPT1/2 |
| (-100-0)kPa/(-1~0)bar | 5240-M20Y010A | 5240-G12Y010A | 5240-N12Y010A |
| (0-100)kPa/(0~1)bar | 5240-M20Y010 | 5240-G12Y010 | 5240-N12Y010 |
| (0-160)kPa/(0~1.6)bar | 5240-M20Y016 | 5240-G12Y016 | 5240-N12Y016 |
| (0-250)kPa/(0~2.5)bar | 5240-M20Y025 | 5240-G12Y025 | 5240-N12Y025 |
| (0-400)kPa/(0~4)bar | 5240-M20Y04 | 5240-G12Y04 | 5240-N12Y04 |
| (0-600)kPa/(0~6)bar | 5240-M20Y06 | 5240-G12Y06 | 5240-N12Y06 |
| (0-1)MPa/(0~10)bar | 5240-M20Y10 | 5240-G12Y10 | 5240-N12Y10 |
| (0-1.6)MPa/(0~16)bar | 5240-M20Y16 | 5240-G12Y16 | 5240-N12Y16 |
| (0-2.5)MPa/(0~25)bar | 5240-M20Y25 | 5240-G12Y25 | 5240-N12Y25 |
| (0-4)MPa/(0~40)bar | 5240-M20Y40 | 5240-G12Y40 | 5240-N12Y40 |
| (0-6)MPa/(0~60)bar | 5240-M20Y60 | 5240-G12Y60 | 5240-N12Y60 |
| (0-10)MPa/(0~100)bar | 5240-M20Y100 | 5240-G12Y100 | 5240-N12Y100 |
| (0-16)MPa/(0~160)bar | 5240-M20Y160 | 5240-G12Y160 | 5240-N12Y160 |
| (0-25)MPa/(0~250)bar | 5240-M20Y250 | 5240-G12Y250 | 5240-N12Y250 |
| (0-40)MPa/(0~400)bar | 5240-M20Y400 | 5240-G12Y400 | 5240-N12Y400 |
| (0-60)MPa/(0~600)bar | 5240-M20Y600 | 5240-G12Y600 | 5240-N12Y600 |

*Other ranges and connection can be customized according to customer requirements

top




back




**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Power adapter | 1 pc |
| Current and voltage test line | 1 set |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Pressure gauge penumatic calibration pump | 5220-PP06 |
| Pressure gauge calibration pump | 5230-HP□□□ |
| Pressure adapter | 5220-PA-□□□ |

To be continued

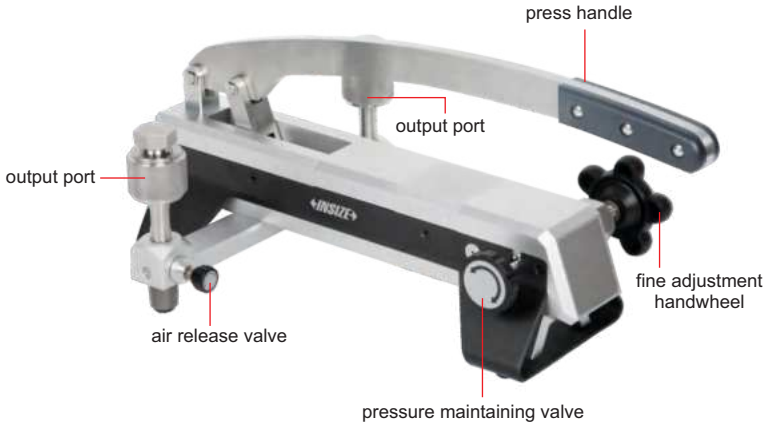
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**SPECIFICATION**

| | | |
|---|---|---|
| **Accuracy** | | 0.05%FS |
| **Overload pressure** | | 120%FS |
| **Long-term stability** | | ±0.1%FS/year |
| **Zero drift** | | ±0.1%FS |
| **Dial diameter** | | 120mm |
| **Pressure type** | | gauge pressure |
| **Unit** | | MPa, kPa, inHg, inH₂o, kgf/cm², mmH₂o, mmHg, mbar, bar, psi, Pa |
| **Electrical connection** | | measuring connection standard Ø4mm jack |
| **Current measurement** | **range** | (-30~30)mA |
| | **resolution** | 0.1μA |
| | **accuracy** | ±(0.01%RD+0.003%FS) |
| **Voltage measurement** | **range** | (-30~30)V |
| | **resolution** | 0.1μV |
| | **accuracy** | ±(0.01%RD+0.003%FS) |
| **Pressure switch-off measurement** | | voltage range 3V~24V (if with electric) |
| **Temperature measurement** | **range** | 0~50°C |
| | **accuracy** | ±1°C |
| **24V DC output** | | 24V±0.5V, 50mA (max) |
| **Operation environment** | **work temperature** | 0~50°C |
| | **humidity** | (0~90%)RH (non-condensing) |
| | **atmospheric pressure** | 0.86~1.01bar/(86~101)kPa |
| **Data interface** | | RS232 |
| **Power supply** | | rechargeable lithium battery, power adapter |
| **Dimension** | | header Ø120×45mm, overall length 190mm |
| **Weight** | | 0.70kg |



## PRESSURE GAUGE PENUMATIC CALIBRATION PUMP CODE 5220-PP06




application example




- Energy-saving operation
- Two quick-connect ports
- Screw type fine adjustment
- All parts are made of aluminium alloy
- Easy maintenance and repair

carrying case (**optional**)



**SPECIFICATION**

| | |
|---|---|
| **Pressure range** | (-0.095~6)MPa (-0.95~70)bar/(-14~1000)psi |
| **Adjustment resolution** | 10Pa |
| **Output port** | M20×1.5 female (Qty 2)* |
| **Medium** | air |
| **Dimension (L×W×H)** | 450×262×170mm |
| **Weight** | 5.5kg |

*Other output port (1/2G, 1/4G, 1/2NPT, 1/4NPT) can be customized

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **O-ring** | 20 pcs |

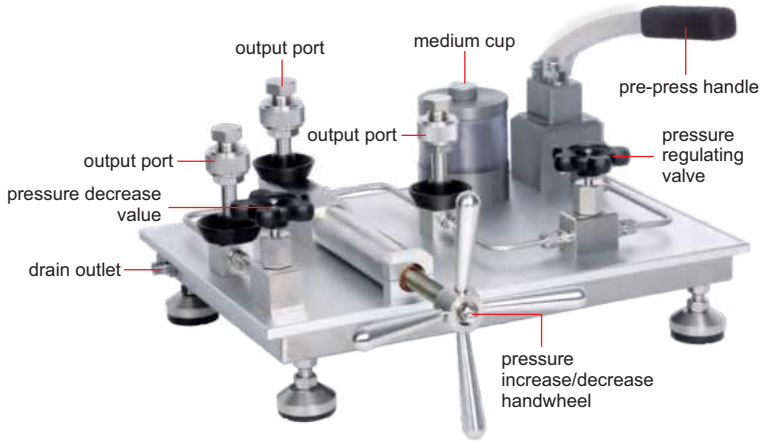
**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Pressure calibrator** | **5240-□□□** |
| **Pressure calibration adaptor** | **5220-PA-□□□** |
| **Carrying case** | **5220-CASE** |

# PRESSURE GAUGE CALIBRATION PUMPS

application example






- Portable design for laboratory and industrial field use
- Three quick-connect ports, two pressure gauge can be calibrated at the same time
- Stable pressure increase/decrease
- Media drain design, to aviod the dirty media pollution of the system
- The parts are made of stainless steel, stable and reliable quality
- Overall open structure, easy to maintain and repair

**5230-HP60W**

carrying case (**optional**)



**SPECIFICATION**

| Code | 5230-HP60W | 5230-HP60Y |
|---|---|---|
| Pressure range | (0~60)MPa/(0~600)bar/(0~9000)psi | |
| Adjustment resolution | 0.1kPa | mineral oil |
| Medium | pure water | |
| Output port | M20×1.5 female (Qty 3)* | |
| Reservoir volume | 0.38L | |
| Dimension (L×W×H) | 465×370×240mm | |
| Weight | 15kg | |

*Other output port (1/2G, 1/4G, 1/2NPT, 1/4NPT) can be customized

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| O-ring | 20 pcs |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Pressure calibrator | 5240-□□□ |
| Pressure calibration adaptor | 5220-PA-□□□ |
| Carrying case | 5220-CASE |

# PRESSURE GAUGE ADAPTERS

**5220-PA-SET**



- The adapters are designed for the conversion connection between different types and specifications of threads during the testing of pressure gauge
- The M20×1.5 male thread is converted to a variety of different specifications and types of threads, which can meet most of the conversion connection needs

**Set**

| Code | Including 38 adapters | Pressure range |
|---|---|---|
| 5220-PA-SET | 5220-PA-M20M, 5220-PA-M20F, 5220-PA-M16M, 5220-PA-M16F, 5220-PA-M14M<br>5220-PA-M14F, 5220-PA-M12M, 5220-PA-M12F, 5220-PA-M10M, 5220-PA-M10F<br>5220-PA-G12M, 5220-PA-G12F, 5220-PA-G38M, 5220-PA-G38F, 5220-PA-G14M<br>5220-PA-G14F, 5220-PA-G18M, 5220-PA-G18F, 5220-PA-ZG12M, 5220-PA-ZG12F<br>5220-PA-ZG38M, 5220-PA-ZG38F, 5220-PA-ZG14M, 5220-PA-ZG14F, 5220-PA-ZG18M<br>5220-PA-ZG18F, 5220-PA-N12M, 5220-PA-N12F, 5220-PA-N38M, 5220-PA-N38F<br>5220-PA-N14M, 5220-PA-N14F, 5220-PA-N18M, 5220-PA-N18F, 5220-PA-6HB<br>5220-PA-8HB, 5220-PA-10HB, 5220-PA-M20RA | (-1-250) bar |

To be continued



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Continued from previous page

**Individual**

| Code | Specification |
|---|---|
| 5220-PA-M20M | M20×1.5 male to M20×1.5 male |
| 5220-PA-M20F | M20×1.5 male to M20×1.5 female |
| 5220-PA-M16M | M20×1.5 male to M16×1.5 male |
| 5220-PA-M16F | M20×1.5 male to M16×1.5 female |
| 5220-PA-M14M | M20×1.5 male to M14×1.5 male |
| 5220-PA-M14F | M20×1.5 male to M14×1.5 female |
| 5220-PA-M12M | M20×1.5 male to M12×1.5 male |
| 5220-PA-M12F | M20×1.5 male to M12×1.5 female |
| 5220-PA-M10M | M20×1.5 male to M10×1.0 male |
| 5220-PA-M10F | M20×1.5 male to M10×1.0 female |
| 5220-PA-G12M | M20×1.5 male to G1/2 male |
| 5220-PA-G12F | M20×1.5 male to G1/2 female |
| 5220-PA-G38M | M20×1.5 male to G3/8 male |
| 5220-PA-G38F | M20×1.5 male to G3/8 female |
| 5220-PA-G14M | M20×1.5 male to G1/4 male |
| 5220-PA-G14F | M20×1.5 male to G1/4 female |
| 5220-PA-G18M | M20×1.5 male to G1/8 male |
| 5220-PA-G18F | M20×1.5 male to G1/8 female |
| 5220-PA-ZG12M | M20×1.5 male to ZG1/2 male |

| Code | Specification |
|---|---|
| 5220-PA-ZG12F | M20×1.5 male to ZG1/2 female |
| 5220-PA-ZG38M | M20×1.5 male to ZG3/8 male |
| 5220-PA-ZG38F | M20×1.5 male to ZG3/8 female |
| 5220-PA-ZG14M | M20×1.5 male to ZG1/4 male |
| 5220-PA-ZG14F | M20×1.5 male to ZG1/4 female |
| 5220-PA-ZG18M | M20×1.5 male to ZG1/8 male |
| 5220-PA-ZG18F | M20×1.5 male to ZG1/8 female |
| 5220-PA-N12M | M20×1.5 male to NPT1/2 male |
| 5220-PA-N12F | M20×1.5 male to NPT1/2 female |
| 5220-PA-N38M | M20×1.5 male to NPT3/8 male |
| 5220-PA-N38F | M20×1.5 male to NPT3/8 female |
| 5220-PA-N14M | M20×1.5 male to NPT1/4 male |
| 5220-PA-N14F | M20×1.5 male to NPT1/4 female |
| 5220-PA-N18M | M20×1.5 male to NPT1/8 male |
| 5220-PA-N18F | M20×1.5 male to NPT1/8 female |
| 5220-PA-6HB | M20×1.5 male to Ø6 hose barb |
| 5220-PA-8HB | M20×1.5 male to Ø8 hose barb |
| 5220-PA-10HB | M20×1.5 male to Ø10 hose barb |
| 5220-PA-M20RA | M20×1.5 male to right angle M20×1.5 female |

**Gas pressure connection hose**

| Code | Application | Pressure range |
|---|---|---|
| 5220-PA-GH | for remote calibration of gas pressure gauge, the gauge is connected to the calibrator | (-1-8) bar |



5220-PA-GH

**High gas pressure connection hose**

| Code | Application | Pressure range |
|---|---|---|
| 5220-PA-HGH | for remote calibration of high gas pressure gauge, the gauge is connected to a calibrator | (-1-40) bar |



5220-PA-HGH

**High liquid pressure connection hose**

| Code | Application | Pressure range |
|---|---|---|
| 5220-PA-LH | for remote calibration of high pressure liquid pressure gauge, the gauge is connected to the calibrator | (0-700) bar |



5220-PA-LH

**Gas-liquid separation filter**

| Code | Application | Pressure range |
|---|---|---|
| 5220-PA-SF | when calibrating gauge with air pressure sources, the filter impurities and excludes oil | (-1-250) bar |



5220-PA-SF

**Liquid filter**

| Code | Application | Pressure range |
|---|---|---|
| 5220-PA-LF | the filter impurities the pressure gauge lumen to prevent contamination of the pressure source | (0-700) bar |



5220-PA-LF

**Pressure gauge thread cleaner**

| Code | Application |
|---|---|
| 5220-PA-TC | remove sealing wrappings such as twine and raw tape from threaded connections |



5220-PA-TC

**Oil-water separator**

| Code | Application |
|---|---|
| 5220-PA-OWS | used to isolate the upper and lower two (or the same) liquid media, isolation film can also play a role in equipment maintenance and cleaning |



5220-PA-OWS

## DIGITAL PRESSURE GAUGES (DIAL DIAMETER 60mm)

INSPECTION CERTIFICATE | BACKLIGHT | IP50 WATERPROOF

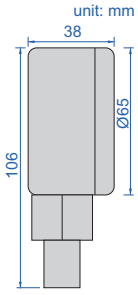
- The case is made of 304 stainless steel
- Large LCD screen, support unit switching
- Zero, backlight, on/off functions
- Pressure bar display, indicating current pressure percentage
- Built-in high-precision pressure sensor, high accuracy, high long-term stability
- Measurement of gases, liquids, oils and other media that do not corrode stainless steel
- Anti-electromagnetic interference design, conforms to EN61326 standard

| Range* | Connection* | | |
|---|---|---|---|
| | M14 | G1/4 | NPT1/4 |
| (0-1.6) MPa | 5202-M14Y16 | 5202-G14Y16 | 5202-N14Y16 |
| (0-6) MPa | 5202-M14Y60 | 5202-G14Y60 | 5202-N14Y60 |
| (0-25) MPa | 5202-M14Y250 | 5202-G14Y250 | 5202-N14Y250 |

*Other ranges and connection can be customized according to customer requirements




5202-M14Y60




**SPECIFICATION**

| | | |
|---|---|---|
| Accuracy | | 1%FS |
| Overload pressure | | 120% (≥10MPa); 150% (<10MPa) |
| Pressure type | | gauge pressure |
| Unit | | MPa, kPa, psi, kgf/cm², bar |
| Power supply | | 2×1.5V AAA batteries (for 12 months working) |
| Operation environment | work temperature | -10~60°C |
| | humidity | (0~100%)RH (non-condensing) |
| | storage temperature | -10~50°C |
| Dial diameter | | 60mm |
| Weight | | 0.23kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Battery (AAA) | 2 pcs |

## DIGITAL PRESSURE GAUGES (DIAL DIAMETER 80mm)

INSPECTION CERTIFICATE | BACKLIGHT | IP50 WATERPROOF

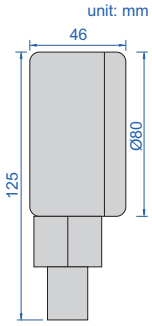
- The case is made of 304 stainless steel
- Large LCD screen, support unit switching
- Zero, backlight, on/off, Low voltage alarm, extreme value recording functions
- Pressure bar display, indicating current pressure percentage
- Built-in high-precision pressure sensor, high accuracy, high long-term stability
- Measurement of gases, liquids, oils and other media that do not corrode stainless steel
- Anti-electromagnetic interference design, conforms to EN61326 standard

| Range* | Connection* | | |
|---|---|---|---|
| | M20 | G1/2 | NPT1/2 |
| (0-1.6) MPa | 5203-M20Y16 | 5203-G12Y16 | 5203-N12Y16 |
| (0-6) MPa | 5203-M20Y60 | 5203-G12Y60 | 5203-N12Y60 |
| (0-25) MPa | 5203-M20Y250 | 5203-G12Y250 | 5203-N12Y250 |

*Other ranges and connection can be customized according to customer requirements




5203-M20Y60




**SPECIFICATION**

| | | |
|---|---|---|
| Accuracy | | 0.5%FS |
| Overload pressure | | 150% (>10MPa); 200% (≤10MPa) |
| Pressure type | | gauge pressure |
| Unit | | MPa, kPa, psi, kgf/cm², bar, mH₂O, inHg |
| Power supply | | 2×1.5V AAA batteries (for 12 months working) |
| Operation environment | work temperature | -10~60°C |
| | humidity | (0~100%)RH (non-condensing) |
| | storage temperature | -10~50°C |
| Dial diameter | | 80mm |
| Weight | | 0.38kg |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Battery (AAA) | 2 pcs |



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CAN BE CUSTOMIZED

## BOURDON TUBE PRESSURE GAUGES (LIQUID FILLED)

- Stainless steel case and bezel, copper alloy internals
- Shock-proof and pulse-proof
- Suitable for pneumatic systems, hydraulic systems and compressed air systems



5201-63B2Y10

| Dial size | Ø63mm | | |
|---|---|---|---|
| Process connection | 1/4BSP | 1/4ZG | 1/4NPT |
| Connector location | bottom | bottom | bottom |
| Range (0~10bar/0~150psi) | **5201-63B2Y10** | **5201-63Z2Y10** | **5201-63N2Y10** |

**SPECIFICATION**

| | |
|---|---|
| Accuracy class | 1.6 |
| Ambient temperature | -20~60°C |
| Medium temperature | ≤60°C |



## RADIATION DETECTOR CODE 0522-RF10

- Detect X ray,* β ray, γ ray radiation
- Measure radiation dose rate in real-time and record cumulative dose at the same time, display real-time dose rate curve
- Adjustable dose rate alarm and dose alarm threshold
- Data stored in built-in memory will not lose after power off
- Particle sound switch
- LCD display with backlight
- Battery level display and low battery indication
- Language: English, Chinese




**SPECIFICATION**

| | |
|---|---|
| Sensor | glass Geiger counter tube |
| Dose rate range | 0.1μSv/h~10mSv/h |
| Dose range | 0.00μSv~10Sv |
| Relative error | <10% (at 1mSv/h) |
| Sensitivity | >1cps/μSv/h (relative to $^{60}$Co) |
| Energy response | 48keV~1.5MeV |
| Working environment | -10°C~50°C |
| Power supply | 3×1.5V AAA batteries or USB-C |
| Power | <60mW |
| Dimension | 116×60×33mm |
| Weight | 145g |

*X ray radiation measurement is for reference only, cannot meet the energy response requirement

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |



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# EDDY CURRENT CONDUCTIVITY TESTER
# CODE 0420-EL60

DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO

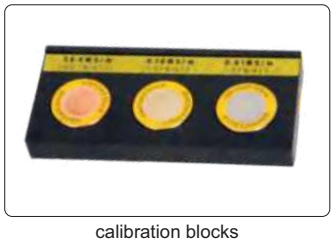



- Measure conductivity (MS/m, %IACS) and resistivity (Ω·mm²/m) of non-ferromagnetic metals or alloys with eddy current phase detection
- With temperature compensation, even when the temperature of the calibration block and the material are different, test results can be automatically compensated
- Lift-off compensation function ensures accurate results when there are non-conductive layers such as coatings, dust, rough surfaces, etc., and reduces measurement error caused by operation as well
- Measure with high speed and efficiency, results show on screen after probe touch with the material in 1 second
- Data can be saved manually or automatically and exported to Excel with computer software
- Wear-resistant and heat-resistant probe
- Unit switch
- Display with backlight
- Language: English, Chinese, Japanese



## SPECIFICATION

| | | |
|---|---|---|
| **Conductivity** | **range** | 0.3MS/m~65MS/m or 0.51%IACS~112%IACS |
| | **unit** | MS/m, %IACS |
| | **resolution** | 0.01 (<30MS/m or <30%IACS)<br>0.1 (30MS/m~65MS/m or 30%IACS~112%IACS) |
| | **accuracy** | ±0.5% (20°C); ±1% (0°C~50°C) |
| **Resistivity** | **range** | 0.01538Ω·mm²/m~3.33333Ω·mm²/m |
| | **unit** | Ω·mm²/m |
| | **resolution** | 0.00001Ω·mm²/m |
| | **accuracy** | ±0.5% (20°C); ±1% (0°C~50°C) |
| **Temperature** | **range** | 0°C~50°C |
| | **resolution** | 0.1°C |
| | **accuracy** | ±0.5°C |
| **Test frequency** | | 60kHz sinewave |
| **Probe diameter** | | Ø14mm |
| **Lift-off compensation** | | maximum 500μm |
| **Storage capacity** | | 16000 groups |
| **Interface** | | USB, RS232 protocol |
| **Calibration block** | | about 0.60MS/m, 4.10MS/m, 58.0MS/m<br>refer to values marked on the supplied blocks |
| **Operation environment** | | temperature: 0°C~50°C<br>humidity: <95%RH, no condensation |
| **Power supply** | | 3.7V rechargeable Li-ion battery |
| **Dimension** | | 230×97×60mm |
| **Weight** | | 370g |



calibration blocks
(included)



USB cable (included)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Probe (0420-TP01)** | 1 pc |
| **Calibration block (0420-CB01)** | 3 pcs |
| **USB cable** | 1 pc |
| **AC/DC adapter** | 1 pc |



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# DC TESLAMETERS

VIDEO

DATA OUTPUT




**0501-MA01**



standard magnet
(**optional**)



magnetic shielding cavity
(**optional**)



axial probe (**optional**)

- Measure magnetic induction of DC magnetic field
- Directly display the N/S polarity of the measured magnetic field
- One-key zero function: eliminate the influence of zero drift before measurement
- Maximum value hold: record the maximum value of the changing magnetic field
- Unit switch between mT or G (1mT=10G)
- Auto ranging
- Built-in USB interface for data transmission
- Display with backlight
- Auto power off

## SPECIFICATION

| Code | 0501-MA01 | 0501-MA05 |
|---|---|---|
| Range | 2000mT | |
| Resolution | 0.01mT (0~200mT)<br>0.1mT (200mT~2000mT) | |
| Accuray | ±1.0% | ±2.0% (≤1000mT)<br>±5.0% (1000mT~2000mT)) |
| Temperature coefficient | ±0.1%/K | |
| Zero drift | ±0.5mT/h | |
| Interface | USB | |
| Power supply | 3×1.5V AA batteries or USB | |
| Dimension (L×W×H) | 165×90×40mm | |
| Weight | 350g | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Radial probe (0501-PR) | 1 pc |
| Battery (AA) | 3 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Axial probe | **0501-PA** |
| Magnetic shielding cavity | **0501-SHIELD** |
| Standard magnet | **0501-CT**□□□, for verifying accuracy, not for calibration<br>(□□□ is DC magnetic field specification, 100~600mT customizable) |

# AC/DC TESLAMETERS

DATA OUTPUT

VIDEO



axial probe (**optional**)



- Switch between DC or AC measurement mode
- Display N/S polarity of DC magnetic field
- Zero function: eliminate the influence of zero drift before measurement
- Maximum value hold: record the maximum value of the changing magnetic field
- Auto ranging
- Relative measurement mode
- Set upper and lower alarm limit
- Built-in USB interface for data transmission
- Display with backlight
- Auto power off



radial probe (included)

**0502-MC01**

## SPECIFICATION

| Code | 0502-MC01 | 0502-MC02 |
|---|---|---|
| Range | 2500mT | |
| Resolution | 0.001mT (<30mT)<br>0.01mT (30~300mT)<br>0.1mT (300~2500mT) | |
| Unit | mT, G, Oe, kA/m (1mT=10G=10Oe=0.8kA/m) | |
| Accuracy | DC: ±1.0%<br>AC: ±5.0% | DC: ±2.0%<br>AC: ±5.0% |
| Frequency range | DC, 40~500Hz | |
| Temperature coefficient | ±0.1%/K | |
| Zero drift | ±0.1mT/h | |
| Interface | USB | |
| Operation environment | temperature: 0°C~45°C; humidity: 20%~80%RH, non-condensing | |
| Storage environment | temperature: -20°C~70°C; humidity: <85%RH, non-condensing | |
| Power supply | 3×1.5V AA batteries or USB | |
| Dimension (L×W×H) | 165×90×40mm | |
| Weight | 350g | |



magnetic shielding cavity (**optional**)



standard magnet (**optional**)

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Radial probe (0502-PR) | 1 pc |
| Battery (AA) | 3 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Axial probe | **0502-PA** |
| Magnetic shielding cavity | **0501-SHIELD** |
| Standard magnet | **0501-CT**□□□, for verifying accuracy, not for calibration<br>(□□□ is DC magnetic field specification, 100~600mT customizable) |

# LIGHT TRANSMITTANCE METER
# CODE 5804-LT21

VIDEO

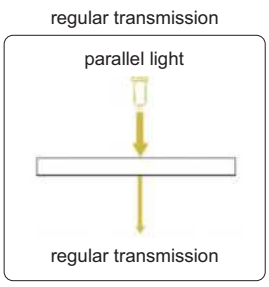




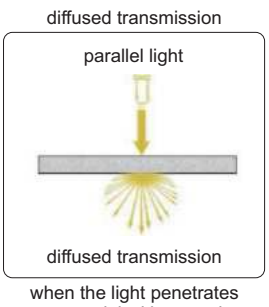




- Suitable for light transmittance testing of various “regular transmission materials”, such as building glasses, auto glasses, transparent films, plastic products, etc.
- With the design of parallel optical path of the light source and condensed light of the receiver, it can measure up to 100mm thickness
- Can measure the high transparent materials such as K9 glasses
- Two measuring modes, fixed base and handheld
- Conforming to CIE photopic luminosity function




when the light penetrates a flat and evenly textured transparent material, the light does not change its direction




when the light penetrates a material with a rough surface or uneven texture, the light spreads out

## SPECIFICATION

| | |
|---|---|
| **Optical source** | 380nm~760nm, conforming to CIE photopic luminosity function |
| **Measuring range** | 0.001%~99.8% |
| **Accuracy** | ±1% |
| **Resolution** | 0.001% (0%~10%) , 0.01% (10%~100%) |
| **Thickness to be measured** | <100mm |
| **Diameter to be measured** | >10mm |
| **Power supply** | 4×1.5V AAA batteries |
| **Dimension** | 75×140×25mm |
| **Weight** | 634g |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Transmitter** | 1 pc (connect to main unit) |
| **Receiver** | 1 pc (connect to main unit) |
| **Fixed base** | 1 pc |
| **1.5V AAA battery** | 4 pcs |



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## DIGITAL GLASS THICKNESS METER
## CODE 5805-GT22



- Laser reflection principle to measure the thickness of glass and internal air layer. Especially suitable for building laminated glasses, hollow glass windows, etc.
- To test the thickness of single layer glasses, multi-layer glasses, two glasses with one cavity, three glasses with two cavities, laminated glasses, laminated insulating glasses, etc.

**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | glass thickness (0~70mm), air layer (0~45mm) |
| **Accuracy** | ±0.1mm (measuring range≤63mm),<br>±0.2mm (measuring range>63mm) |
| **Resolution** | 0.01mm |
| **Display** | LCD |
| **Power supply** | 4×1.5V AAA batteries |
| **Dimension** | 130×72×33mm |
| **Weight** | 330g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Cross screwdriver** | 1 pc |
| **1.5V AAA battery** | 4 pcs |

## TRIPOD
## CODE 0701-TR175




- Detachable three-dimensional gimbal
- Adjustable height

**SPECIFICATION**

| | |
|---|---|
| **Height** | 47cm~175cm (adjustable) |
| **Load** | 3kg |
| **Material of foot tube** | aluminum alloy |
| **Dimension** | 500×130×130mm |
| **Weight** | 1.23kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |



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Infrared Thermal Imaging Cameras
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Infrared Thermometers
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Blackbody Radiation Sources
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Infrared And Penetration Thermometers
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Multi-channel Temperature Loggers
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Thermocouple Thermometers
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Thermometers
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Data Loggers For Temperature And Humidity
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Thermohygrometers
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Thermohygrometers
Page 1123




Large Screen Temperature And Humidity Meters
Page 1124



Temperature And Humidity Data Loggers
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# 35 ENVIRONMENT TESTING



**Portable Temperature Dry Block Calibrators**
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**Differential Pressure Manometers**
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**Anemometers**
**Page 1128**



**Hot Wire Anemometers**
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**Sound Level Meters**
**Page 1130-1132**



**Light Meters**
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**UV Light Meters**
**Page 1134-1135**



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DATA OUTPUT | IP54 WATERPROOF

# INFRARED THERMAL IMAGING CAMERA (BASIC TYPE)
# CODE 9132-T400

- Suitable for electric power, mechanical and electrical, heating ventilation and air conditioning, intelligent manufacturing, etc.
- High-sensitive infrared detector, resolution 256x192
- Support real-time super resolution technology, 4 times better image quality
- -20°C~550°C wide temperature measurement range, automatic switch
- Software is included: support file management, thermal image analysis, video analysis, report editing, etc.
- Mobile APP is included: support real-time data and video transmission





**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Power adapter | 1 pc |
| TYPE-C data cable | 1 pc |
| 4G USB flash disk | 1 pc |
| Software | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Tripod | 0701-TR175 |

VIDEO

front view



**SPECIFICATION**

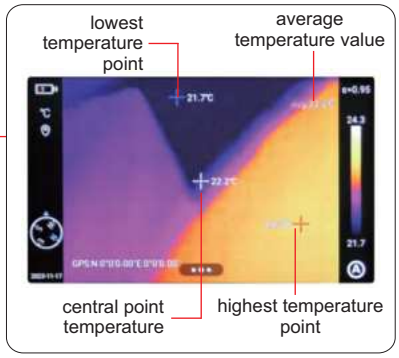
| | | |
|---|---|---|
| Imaging and optics | detector type | unrefrigerated vanadium oxide, 7.5μm~14μm |
| | infrared resolution | 256×192@12μm |
| | super resolution | upgrade to 512×384 |
| | thermal sensitivity/NETD | 45mK |
| | infrared frame rate | 25Hz/9Hz |
| | focal length | 3.2mm |
| | field of view | 56°×48° |
| | spatial resolution/IFOV | 3.75mrad |
| | minimum object distance | 0.1m |
| | distance to spot size/D:S | 266:1 |
| | focusing mode | focus-free |
| Measurement and analysis | measurement range | support auto-switching: -20°C~150°C, 0°C~550°C |
| | measurement accuracy | ±2°C or ±2%, whichever is greater |
| | analyzed target | center spot, fixed temperature measurement areas: small/medium/large |
| | temperature alarm | full screen temperature alarm with image and flash |
| | temperature measuring parameter | emissivity, reflected temperature, target distance |
| Image display | display screen | 2.4" LCD |
| | image mode | IR, VIS, MIF, PIP |
| | color palette | 6: iron red, white hot, arctic, rainbow 1, rainbow 2, hot iron |
| | image adjustment | level span mode: automatic, semi-automatic, manual |
| | digital camera | 2MP |
| Function | laser | laser indication |
| | recording function | photo and video |
| Storage and transmission | storage | built-in 16GB |
| | image storage | JPG with temperature information |
| | video storage | support real-time video transmission, IRGD with temperature information |
| | external interface | TYPE-C, 1/4" tripod interface |
| | WIFI | can be connected to the mobile terminal for image and real-time video transmission |
| Power supply | battery type | rechargeable lithium-ion battery, non-removable |
| | operation time | 11 hours |
| | charging mode | TYPE-C charging, capable of charging while using |
| | charging time | 90% of full charge in 2.5 hours |
| Environmental parameter | operation temperature | -15°C~50°C |
| | protection | IP54, 2m drop test |
| | certification | CE, ROHS |
| Physical parameter | weight | 375g |
| | dimension | 194×61.5×76mm |

# INFRARED THERMAL IMAGING CAMERA
# CODE 0231-IC650

DATA OUTPUT | IP54 WATERPROOF | VIDEO






- Suitable for electric power, metallurgy, petrochemical, scientific research and teaching, manufacturing, rail transit, building testing, electronic equipment overhaul, mechanical equipment maintenance, etc.
- Four image presentation: IR, VIS, MIF, PIP
- Real-time image can be photographed and video recorded
- Software is included: image browsing, image parameter editing, infrared image analysis, batch report generation, video editing, etc.
- WIFI real-time sharing, one-click connection to mobile device

**SPECIFICATION**

| | | |
|---|---|---|
| **Imaging and optics** | **detector type** | unrefrigerated vanadium oxide/7.5μm~14μm |
| | **infrared resolution** | 256×192@12μm |
| | **super resolution** | upgrade to 512×384 |
| | **thermal sensitivity/NETD** | <45mK |
| | **infrared frame rate** | 30Hz/9Hz |
| | **focal length** | 10.5mm |
| | **field of view** | 25°×19° |
| | **spatial resolution (IFOV)** | 1.7mrad |
| | **minimum object distance** | 0.1m |
| | **distance to spot size (D:S)** | 588:1 |
| | **focusing mode** | manual/automatic/continuous autofocus |
| | **digital zoom** | 1.1X~8X |
| | **shot recognition** | auto |
| | **laser ranging** | indication/ranging: 0.1m~40m |
| **Measurement and analysis** | **measurement range** | support auto-switching: -40°C~150°C, 0°C~650°C |
| | **measurement accuracy** | ±2°C or ±2%, whichever is greater |
| | **analyzed target** | spot×5, line×5, area×5 |
| | **tracking/alarm** | full screen maximum, minimum and average temperature tracking; the maxium, minimum and average temperature tracking of analyzed target; full screen temperature threshold alarm (image, voice and flash) |
| | **temperature measuring parameter** | emissivity, reflected temperature, target distance, humidity, atmospheric transmittance, optical transmittance, dew point |
| | **other** | isothermals, smart stroke, intelligently calculate the area |

To be continued



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Continued from previous page

| | | |
|---|---|---|
| Image display | display screen | 4.3", 800×480 pixel touch screen LCD |
| | digital camera | 5MP |
| | image mode | IR, VIS, MIF, PIP |
| | image adjustment | level span mode: automatic, semi-automatic, manual |
| | color palettes | white hot, iron red, arctic, rainbow 2, hot iron, rainbow 1, fulgurite, medical, tint, black hot, blue hot, sepia, green hot, ice and fire, amber, customized |
| Function | recording function | photo and video (infrared & visible light) |
| | cloud service | available |
| | other | customized physical button, intelligent diagnosis, OTA update |
| Storage and transmission | storage | local storage (64GB) and external 64GB SD |
| | image storage | JPG with temperature information |
| | video storage | MP4 (without temperature information), can be used to record audio synchronously; irgd (with temperature information), up to 30Hz for temperature analysis |
| | external interface | TYPE-C, SD card slot |
| | WIFI | can be connected to the mobile terminal for image and real-time video transmission |
| | bluetooth | bluetooth 5.0, support image transmission (only for Android) |
| Power system | battery type | lithium-ion rechargeable battery, working time≥5 hours |
| | charging mode | TYPE-C charging; PC/portable charger; capable of charging while using |
| | charging time | 90% of full charge in 2.5 hours |
| Environmental parameter | operation temperature | -20°C~50°C |
| | storage temperature | -40°C~60°C |
| | protection | IP54, 2-meter drop test |
| | certification | CE, FCC, ROHS |
| Physical parameter | hardware | illuminator, microphone, speaker, electronic compass, GPS |
| | dimension | 292×125×125mm |
| | weight | 1.15kg |



**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| 64G SD card | 1 pc |
| Lithium-ion battery | 2 pcs |
| Desktop charger | 1 pc |
| Power adapter | 1 pc |
| Software | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Tripod | 0701-TR175 |

DATA OUTPUT

IP54 WATERPROOF

## POCKET-SIZED THERMAL CAMERA
## CODE 0232-PC550

VIDEO





To be continued

Continued from previous page

- The 256×192 infrared detector produces crisp image
- The IR, VIS, PIP and MIF reveal temperature details
- -20°C to 550°C temperature range with auto-switching capability
- Software is included

**SPECIFICATION**



| | | |
|---|---|---|
| Imaging and optics | detector type | unrefrigerated vanadium oxide/7.5μm~14μm |
| | infrared resolution | 256×192@12μm |
| | thermal sensitivity/NETD | ≤45mK |
| | infrared frame rate | 25Hz/9HZ |
| | focal length | 3.2mm |
| | field of view | 56°×48° |
| | spatial resolution (IFOV) | 3.75mrad |
| | minimum object distance | 0.3m |
| | distance to spot size (D:S) | 266:1 |
| | focusing mode | focus-free |
| | digital zoom | 1.1x~8x |
| | laser ranging | ≤8m |
| Measurement and analysis | measurement range | support auto-switching: -20°C~150°C, 100°C~550°C |
| | measurement accuracy | ±2°C or ±2%, whichever is greater |
| | analyzed target | spot×2 (include center spot), area×3 |
| | tracking/alarm | full screen maximum/minimum temperature tracking;<br>the maxium or minimum temperature tracking of analyzed target;<br>full screen temperature threshold alarm (image and flash) |
| | temperature measuring parameter | emissivity, reflected temperature, target distance |
| | other | intelligently calculate the area |
| Image display | display screen | 3.5" LCD |
| | digital camera | 5MP |
| | image mode | IR, VIS, MIF, PIP |
| | image adjustment | level span mode: automatic, semi-automatic, manual |
| | color palettes | white hot, black hot, iron red, hot iron, rainbow, arctic |
| Function | recording function | photo |
| | cloud service | available |
| | other | customized physical buttonx2 |
| Storage and transmission | storage media | local storage (16GB) |
| | image storage | JPG with temperature information |
| | external interface | TYPE-C |
| | WIFI | can be connected to the mobile terminal for image transmission |
| Power system | battery type | rechargeable lithium-ion battery, working time≥4 hours |
| | charging mode | TYPE-C charging; PC/portable charger; capable of charging while using |
| | charging time | 90% of full charge in 2.5 hours |
| Environmental parameter | operation temperature | -10°C~50°C |
| | storage temperature | -40°C~70°C |
| | protection | IP54, 1m drop test |
| | certification | CE, FCC, ROHS |
| Physical parameter | hardware | illuminator, Laser (indication, ranging) |
| | dimension | 138×89×35mm |
| | weight | 296g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Power adapter | 1 pc |
| Software | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Tripod | 0701-TR175 |



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## INFRARED THERMOMETER (BASIC TYPE)
## CODE 0222-C520

POPULAR MODEL

- Unit: °C, °F
- Automatic data hold
- MAX/MIN/AVG/DIF mode
- High and low alarm
- Adjustable emissivity
- Low battery display
- Over range indicator
- Automatic power off



**SPECIFICATION**

| | |
|---|---|
| **Temperature range** | -50°C~500°C/-58°F~932°F |
| **Temperature accuracy** | ±3.0°C (at -50°C~0°C), ±2.0°C or ±2% (at 0°C~500°C) |
| | ±5.4°F (at -58°F~32°F), ±4.0°F or ±2% (at 32°F~932°F) |
| **Temperature resolution** | 0.1°C/0.2°F |
| **Distance to spot size (D:S)** | 12:1 |
| **Emissivity** | 0.10~1.00 (adjustable) |
| **Repeatability** | ±0.5°C or ±0.5%; ±1.0°F or ±0.5% |
| **Response time** | ≤500ms (95% of reading) |
| **Spectral response** | 8μm~14μm |
| **Positioning laser** | single-spot, class 2 laser product, output<1mW, wavelength 630nm~670nm |
| **Power supply** | 2×AAA batteries, working time≥6h |
| **Automatic power off** | about in 15 seconds |
| **Operation environment** | temperature: 0°C~50°C/32°F~122°F; humidity: <90%RH (non-condensing) |
| **Storage environment** | temperature: -20°C~60°C/-4°F~140°F; humidity: <90%RH (non-condensing) |
| **Dimension** | 148×85×46mm |
| **Weight** | 160g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (AAA)** | 2 pcs |

## INFRARED THERMOMETER (STANDARD TYPE)
## CODE 0213-A500

- Unit: °C, °F
- Dual-spot laser sighting
- Negativity display
- Automatic power off
- Automatic data hold
- Over range indicator
- Max/Min display



**SPECIFICATION**

| | |
|---|---|
| **Temperature range** | -20°C~380°C/-4°F~716°F |
| **Temperature accuracy** | ±2.5°C (at -20°C~20°C), ±2% or ±2.0°C (at 20°C~380°C) |
| | ±4.5°F (at -4°F~68°F), ±2% or ±3.6°F (at 68°F~716°F) |
| **Temperature resolution** | 0.1°C/0.1°F |
| **Distance to spot size (D:S)** | 12:1 |
| **Emissivity** | 0.95 (fixed) |
| **Repeatability** | ±1°C/1.8°F |
| **Response time** | 150ms |
| **Spectral response** | 8μm~14μm |
| **Positioning laser** | dual-spot, class 2 laser product, output<1mW, wavelength 630nm~670nm |
| **Operation temperature** | 0°C~50°C/32°F~122°F |
| **Operation humidity** | 10%RH~90%RH |
| **Storage temperature** | -10°C~60°C/14°F~140°F |
| **Storage humidity** | <80%RH |
| **Power supply** | 1×9V battery |
| **Dimension** | 137×73×38mm |
| **Weight** | 135g |

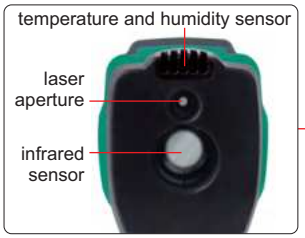
**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 1 pc |

## INFRARED THERMOMETER (MEDIUM TEMPERATURE TYPE)
## CODE 0215-A900

- Ambient temperature, dew point temperature and humidity detection
- Unit: °C, °F
- Circular laser sighting
- Display backlight
- Automatic power off
- Automatic data hold
- Adjustable emissivity
- High and low alarm

VIDEO






**SPECIFICATION**

| | | |
|---|---|---|
| Infrared sensor | temperature range | -30°C~800°C/-22°F~1472°F |
| | temperature resolution | 0.1°C |
| | | 0.1°F (-22°F~1000°F), other range 1°F |
| | temperature accuracy | ±3.0°C (at -30°C~20°C)<br>±(1% of reading +1)°C (at 20°C~450°C)<br>±(2% of reading )°C (at 450°C~800°C) |
| | distance to spot size (D:S) | 20:1 |
| | emissivity | 0.10~1.00 (adjustable) |
| | response time | <150ms |
| | spectral response | 8μm~14μm |
| | positioning laser | circular, class 2 laser product,<br>output<1mW, wavelength 630nm~670nm |
| Temperature and humidity sensor | ambient temperature range | 0°C~50°C/32°F~122°F |
| | dew point temperature range | 0°C~50°C/32°F~122°F |
| | temperature resolution | 0.1°C/0.1°F |
| | temperature accuracy | ±1.0°C/±1.8°F |
| | humidity range | 0%RH~100%RH |
| | humidity resolution | 0.1%RH |
| | humidity accuracy | ±5%RH (20%RH~80%RH),<br>other range ±7%RH |
| Automatic power off | | about in 10 seconds |
| Power supply | | 1×9V battery |
| Dimension | | 170×45×85mm |
| Weight | | 196g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Battery | 1 pc |

## INFRARED THERMOMETER (MEDIUM-HIGH TEMPERATURE TYPE)
## CODE 0216-B210

- Unit: °C, °F
- Circular laser sighting
- Over range indicator with LED and buzzer
- 99 data storage
- Auto interval measurement
- MAX/MIN/AVG/DIF display

VIDEO



**SPECIFICATION**

| | |
|---|---|
| Temperature range | -32°C~1300°C |
| Temperature accuracy | ±(1.5+0.1·\|t\|)°C (<0°C),<br>±1.5°C or ±1.5% (≥0°C) |
| Temperature resolution | 0.1°C (<1000°C), 1°C (≥1000°C) |
| Distance to spot size (D:S) | 30:1 |
| Emissivity | 0.10~1.00 (adjustable) |
| Repeatability | 0.7°C or 0.7% |
| Response time | ≤250ms (95% of reading) |
| Spectral response | 8μm~14μm |
| Positioning laser | circular, class 3R laser product,<br>output 1mW≤P<3mW, wavelength 630nm~670nm |
| Operation temperature | 0°C~50°C |
| Operation humidity | <90%RH (non-condensing) |
| Storage temperature | -20°C~60°C |
| Power supply | 1×9V battery |
| Dimension | 190×127×54mm |
| Weight | 310g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Battery | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| Tripod | 0701-TR175 |

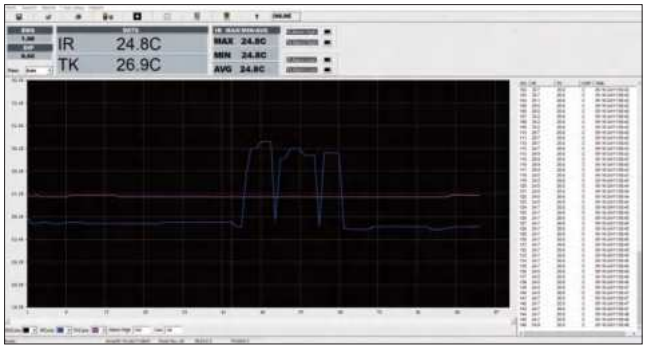


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DATA OUTPUT

# INFRARED THERMOMETER (HIGH TEMPERATURE TYPE)
# CODE 0218-B610

computer software (included):
connect to software via USB cable to collect, display and stored data








tripod (included)



K-type thermocouple (included)

- Unit: °C/°F
- MAX/MIN/AVG/DIF mode
- Trigger lock continuous measurement function
- Adjustable emissivity: 0.10~1.00
- 100 data storage
- High and low alarm
- Automatic data hold
- Low battery display
- Automatic power off
- Computer software is included

## SPECIFICATION

| | | |
|---|---|---|
| Infrared system | temperature range | -50°C~1850°C/-58°F~3362°F |
| | temperature accuracy | ±(2%·\|t\|+3.0°C) (at-50°C~20°C);<br>±(1%·t+1.0°C) (at 20°C~500°C);<br>±1.5% (at 500°C~1000°C);<br>±2.0% (at 1000°C~1850°C) |
| | temperature resolution | 0.1°C/°F (<1000°C/°F), 1°C/°F (≥1000°C/°F) |
| | distance to spot size (D:S) | 50:1 |
| | emissivity | 0.10~1.00 (adjustable) |
| | repeatability | ±1.5°C (at -50°C~20°C), ±0.5% or ±0.5°C (at 20°C~1850°C) |
| | response time | 150ms |
| | spectral response | 8μm~14μm |
| | positioning laser | dual-spot, class 2 laser product,<br>output<1mW, wavelength 630nm~670nm |
| K-Type thermocouple system (electrical signal ) | temperature range | -50°C~1370°C/-58°F~2498°F |
| | temperature accuracy | ±(1.5%·\|t\|+3°C) (at -50°C~1000°C)<br>±(1.5%·t+2°C) (at 1000°C~1370°C) |
| | temperature resolution | 0.1°C/°F (<1000°C/°F), 1°C/°F (≥1000°C/°F) |
| | repeatability | ±1.5% |
| Power supply | | 1×9V battery |
| Operation environment | | temperature: 0°C~50°C<br>humidity: 10%RH~90%RH (non-condensing) |
| Storage environment | | temperature: -10°C~60°C<br>humidity: <80%RH (non-condensing) |
| Dimension | | 204×155×52mm |
| Weight | | 315g |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 9V battery | 1 pc |
| USB cable | 1 pc |
| K-type thermocouple | 1 pc |
| Tripod | 1 pc |

## SPECIFICATION OF K-TYPE THERMOCOUPLE

| | |
|---|---|
| Temperature range | -40°C~250°C |
| Temperature accuracy | ±2.5°C |
| Length | 1m |





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## DUAL-CAVITY BLACKBODY RADIATION SOURCE
## CODE PIC-D155

VIDEO




### SPECIFICATION

| | |
|---|---|
| Temperature range | low range: -15°C~100°C; high range: 50°C~500°C |
| Resolution | 0.01°C (at -15°C~100°C), 0.1°C (at 100°C~500°C) |
| Stability | ≤(0.1°C or 0.1%\|t\|, whichever is greater)/10min* |
| Uniformity | ≤(0.15°C or 0.15%\|t\|, whichever is greater)* |
| Emissivity | >0.995 |
| Cavity size | low range: Ø65mm; high range: Ø50mm |
| Cavity depth | low range: 110mm; high range: 160mm |
| Cool down time | 30 minutes from ambient to -15°C |
| Heat up time | 60 minutes from ambient to 500°C |
| Power supply | 220V/50Hz |
| Power | 850W |
| Dimension | 380×295×320mm |
| Weight | 17.1kg |

*|t| is the absolute temperature value of blackbody radiation source

- Large target sizes of 50mm and 65mm for calibrating of infrared thermometers and infrared thermal imagers
- Contain two independent blackbody cavities
- The emissivity of blackbody radiation is better than 0.995
- 0.1 level temperature control meter with high accuracy
- Multi-point temperature correction function

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |

## INFRARED AND PENETRATION THERMOMETER
## CODE 0321-IT42

IP65 WATERPROOF

VIDEO



### SPECIFICATION

| | | |
|---|---|---|
| Infrared system | temperature range | -15°C~280°C/5°F~536°F |
| | temperature resolution | 0.1°C/0.1°F |
| | temperature accuracy | ±3.0°C (at -15°C~20°C), other range ±(1%+1.0)°C |
| | | ±5.4°F (at 5°F~68°F), other range ±(1%+1.8)°F |
| | distance to spot size (D:S) | 4:1 |
| | emissivity | 0.95 (fixed) |
| | spectral response | 8~14μm |
| Penetration system | temperature range | -40°C~200°C/-40°F~392°F |
| | temperature resolution | 0.1°C/0.1°F |
| | temperature accuracy | ±2.0°C (at -40°C~0°C), other range ±(1%+1.0)°C |
| | | ±3.6°F (at -40°F~32°F), other range ±(1%+1.8)°F |
| Repeatability | | <1.0°C |
| Measurement response time | | <500ms |
| Power supply | | 2×1.5V AAA batteries |
| Dimension | | 140×39×24mm |
| Weight | | 140g |

- Can measure the surface and inside temperature of objects
- Low battery display
- Display backlight
- High and low alarm
- Automatic data hold (infrared system)
- Automatic power off (infrared system)
- Unit: °C/°F

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Battery (AAA) | 2 pcs |



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# MULTI-CHANNEL TEMPERATURE LOGGERS

VIDEO

DATA OUTPUT



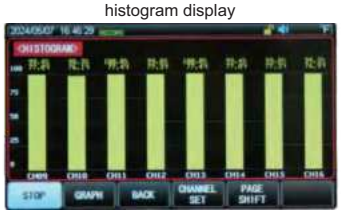
numerical display




graphical display




histogram display



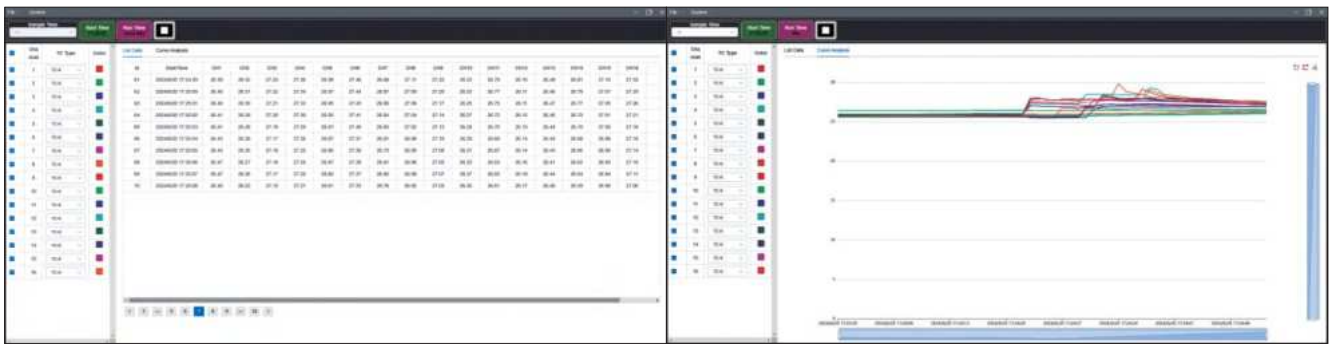



**0350-MC16**

K-type thermocouples (included)

- Suitable for home appliances, motors, electric heating appliances, thermostats, transformers, ovens, thermal protectors, power supplies, lighting, electric power, LED and other industries
- Unit: °C/°F/K
- Channels are compatible with thermocouple types K/N/E/J/T/R/S/B
- 4.3 inch true color LCD
- Direct numerical value reading, histogram and graphical display mode
- Upper and lower limit overrun alarm
- Independent correction per channel
- Automatic detection of open-circuit thermocouple
- Standard U disk interface, support real-time data storage
- Computer software is included

computer software (included): connect to PC software via RS232 cable or network cable to collect, display and save data as .csv format



To be continued

Continued from previous page



## SPECIFICATION

| Code | | 0350-MC08 | 0350-MC16 | 0350-MC32 | 0350-MC48 |
|---|---|---|---|---|---|
| Channel number | | 8 | 16 | 32 | 48 |
| Weight | | 3.5kg | 3.6kg | 3.7kg | 3.8kg |
| Thermocouple type | | K/J/T/E/N/S/R/B | | | |
| Temperature range (electrical signal ) | type K | -100°C~1350°C | | | |
| | type J | -100°C~1200°C | | | |
| | type T | -150°C~400°C | | | |
| | type E | -100°C~850°C | | | |
| | type N | -100°C~1300°C | | | |
| | type S | 0°C~1750°C | | | |
| | type R | 0°C~1750°C | | | |
| | type B | 600°C~1800°C | | | |
| Temperature accuracy* (electrical signal) | type K | ±1.2°C (at -100°C~0°C); ±0.8°C (at 0°C~1350°C) | | | |
| | type J | ±1.0°C (at -100°C~0°C); ±0.7°C (at 0°C~1200°C) | | | |
| | type T | ±1.0°C (at -150°C~0°C); ±0.8°C (at 0°C~400°C) | | | |
| | type E | ±0.9°C (at -100°C~0°C); ±0.7°C (at 0°C~850°C) | | | |
| | type N | ±1.5°C (at -100°C~0°C); ±0.9°C (at 0°C~1300°C) | | | |
| | type S | ±4.5°C (at 0°C~100°C); ±3.0°C (at 100°C~300°C); ±2.2°C (at 300°C~1750°C) | | | |
| | type R | ±4.5°C (at 0°C~100°C); ±3.0°C (at 100°C~300°C); ±2.2°C (at 300°C~1750°C) | | | |
| | type B | ±5.5°C (at 600°C~800°C); ±3.8°C (at 800°C~1000°C); ±2.5°C (at 1000°C~1800°C) | | | |
| Temperature resolution | | 0.01°C | | | |
| Test speed | | fast: 500ms, slow: 1s | | | |
| Cold junction | | accuracy: 0.5°C | | | |
| Interface | | communication interface: RS232C/LAN | | | |
| | | storage interface: USB (only U disk) | | | |
| Remote control | | baud rate supports up to 115200bps,<br>compatiable with SCPI protocol and ASCII transmission | | | |
| Power supply | | AC: 100V~240V, 50/60Hz<br>AC/DC adapter: 24V/1A (**optional**) | | | |
| Operation environment | | temperature: 10°C~40°C<br>humidity: 10%RH~90%RH (non-condensing) | | | |
| Storage environment | | temperature: 0°C~50°C<br>humidity: 10%RH~90%RH (non-condensing) | | | |
| Dimension | | 370×260×100mm | | | |

*Accuracy is specified for main unit in the ambient temperature between 15ºC and 35ºC, the above specification does not include thermocouple probe error

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| K-type thermocouple (0350-K01)** | 8/16/32/48 pcs |
| RS232 cable | 1 pc |
| Network cable | 1 pc |
| Software | 1 pc |

**Number of thermocouples corresponding to the number of channels

## SPECIFICATION OF K-TYPE THERMOCOUPLE ***

| Code | Range | Accuracy | Length |
|---|---|---|---|
| 0350-K01 | -20°C~200°C | ±1.5°C | 2m |

***Other models, temperature range and length of thermocouples can be customized

## OPTIONAL ACCESSORY

| | |
|---|---|
| AC/DC adapter | 0350-ADAPTER |

VIDEO

DATA OUTPUT

BUILT-IN BLUETOOTH

# THERMOCOUPLE THERMOMETER (FOUR CHANNELS)
# CODE 0323-CT47

- Unit: °C/°F/K
- Channels are compatible with 7 types of thermocouples K, J, T, E, R, S and N
- MAX/MIN/AVG/DIF mode
- 72000 data storage
- Offset value compensation
- Data hold function
- Display backlight
- Over range indicator
- Battery level display
- Automatic power off
- Built-in Bluetooth, mobile APP is included
- Computer software is included






## SPECIFICATION

| | |
|---|---|
| **Thermocouple type** | J/K/T/E/R/S/N |
| **Temperature range (electrical signal )** | K: -200°C~1372°C |
| | J: -210°C~1200°C |
| | T: -250°C~400°C |
| | E: -150°C~1000°C |
| | R: 0°C~1767°C |
| | S: 0°C~1767°C |
| | N: -200°C~1300°C |
| **Temperature accuracy* (electrical signal )** | ±(0.2%·\|t\|+0.5°C) (at -10°C~1767°C);<br>±(0.2%·\|t\|+1.0°C) (at -200°C~-10°C);<br>±(0.2%·\|t\|+2.5°C) (at -250°C~-200°C) |
| **Temperature resolution** | 0.1°C (<1000°C); 1°C (≥1000°C) |
| **Repeatability** | ±(0.1%·\|t\|+0.3°C) |
| **Response time** | 500ms |
| **Logging interval** | 1s~24h (adjustable) |
| **Memory capacity** | 72000 |
| **Data transmission** | TYPE-C USB, Bluetooth |
| **Power frequency anti-interference** | 50/60Hz |
| **Input protection** | 60Vmax |
| **Drop proof** | 1m |
| **Power supply** | 3×AAA alkaline batteries, working time>30h;<br>TYPE-C USB (only be connected to a PC power) |
| **Operation environment** | temperature: -10°C~50°C |
| | humidity: <90%RH (non-condensing) |
| **Storage environment** | temperature: -20°C~60°C |
| | humidity: <90%RH (non-condensing) |
| **Dimension** | 180×63×38mm |
| **Weight** | 250g (including batteries) |

*Accuracy is specified for ambient temperature between 18ºC and 28ºC, the above specification does not include thermocouple probe error

computer software (included): connect to PC software via USB cable to collect, display and stored data



mobile APP (included): connect to mobile APP via Bluetooth to collect, display and stored data, and can export the data stored on the device




## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (AAA)** | 3 pcs |
| **USB cable** | 1 pc |
| **K-type thermocouple (0323-K01)** | 4 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Tripod** | **0701-TR175** |

## SPECIFICATION OF K-TYPE THERMOCOUPLE**

| Code | Range | Accuracy | Length |
|---|---|---|---|
| **0323-K01** | -40°C~260°C | ±0.75% | 900mm |

**Other models, temperature range and length of thermocouples can be customized

## K-TYPE THERMOCOUPLE THERMOMETER (ECONOMIC TYPE)
## CODE 0320-K230

- Contact K-type thermocouple
- Unit: °C/°F
- Data hold function
- Low battery display
- Display backlight



### SPECIFICATION

| | |
|---|---|
| **Temperature range** | -50°C~200°C/-58°F~392°F |
| **Temperature accuracy** | ±2.0°C/±3.6°F |
| **Temperature resolution** | 0.1°C (at -50°C~199.9°C), 1°C (at -50°C~200°C) |
| | 0.1°F (at -58°F~199.9°F), 1°F (at -58°F~392°F) |
| **Sampling rate** | 2.5 times/sec |
| **Power supply** | 3×3V CR2450 batteries (for 300 hours working) |
| **Operation voltage** | 6.8V~10V |
| **Dimension** | 149×76×34mm |
| **Weight** | 220g |

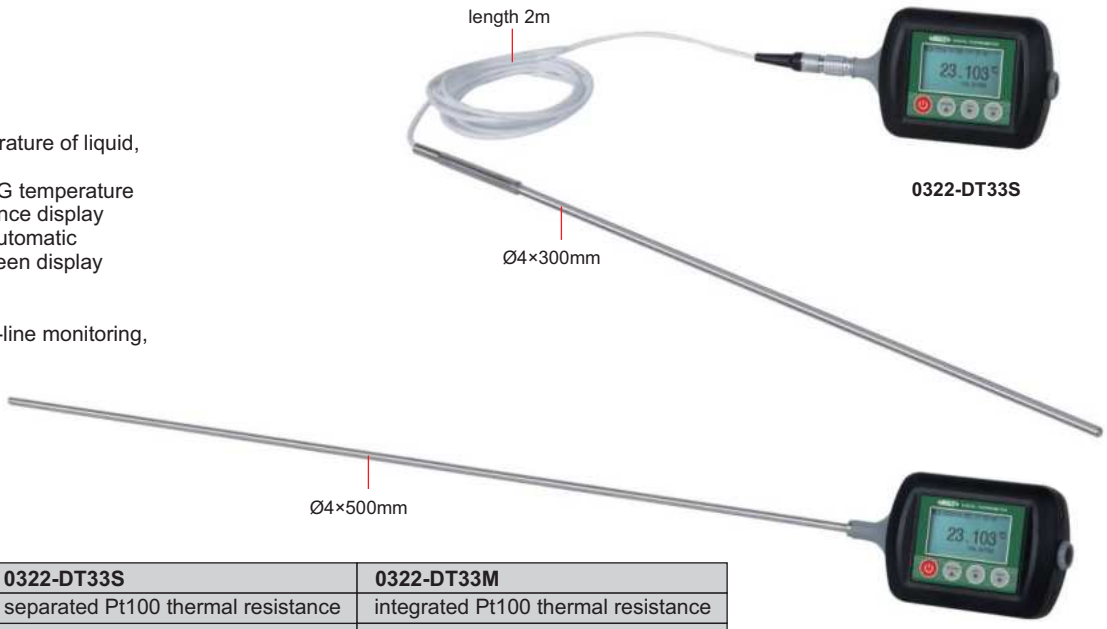
### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Thermocouple (K-type)** | 1 pc |
| **CR2450 battery** | 3 pcs |

## HIGH PRECISION DIGITAL THERMOMETERS

VIDEO

- Can measure the temperature of liquid, steam and gas
- Real time/MAX/MIN/AVG temperature display, real time resistance display
- Built-in gravity sensor, automatic horizontal or vertical screen display
- Display backlight
- Automatic power off
- Software is included: on-line monitoring, data storage




**0322-DT33S**

**0322-DT33M**

### SPECIFICATION

| **Code** | **0322-DT33S** | **0322-DT33M** |
|---|---|---|
| **Sensor type** | separated Pt100 thermal resistance | integrated Pt100 thermal resistance |
| **Sensor dimension** | Ø4×300mm | Ø4×500mm |
| **Weight** | 147g | 115g |
| **Measuring range** | -30°C~300°C/-22°F~572°F | |
| **Resolution** | 0.1°C/0.01°C/0.001°C (adjustable)<br>0.1°F/0.01°F/0.001°F (adjustable) | |
| **Accuracy** | ±0.5°C/±0.9°F | |
| **Annual stability** | ±0.2°C/±0.36°F | |
| **Response time** | <60s | |
| **Memory capacity** | 100,000 | |
| **Logging interval** | 1s~99s | |
| **Power supply** | rechargeable lithium battery, working time≥40h | |
| **Operation environment** | temperature: -10°C~50°C/14°F~122°F<br>humidity: 0%RH~95%RH (non-condensing) | |

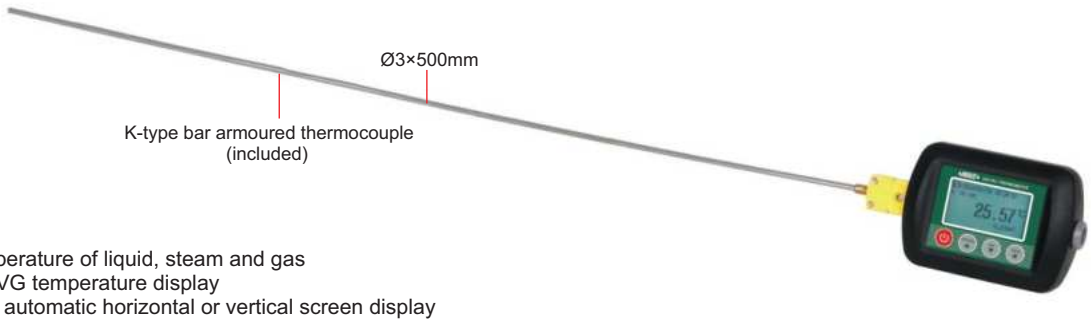
### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Software** | 1 pc |
| **Power adapter** | 1 pc |



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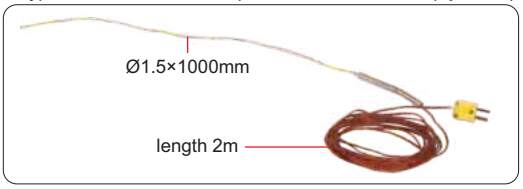
# DIGITAL THERMOMETER (HIGH TEMPERATURE TYPE)
# CODE 0324-DT11



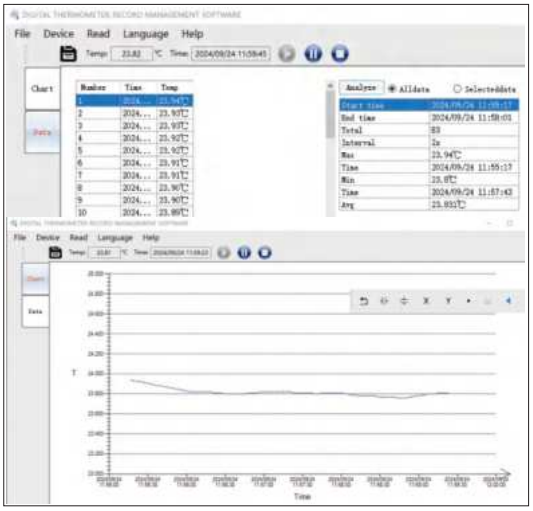

- Can measure the temperature of liquid, steam and gas
- Real time/MAX/MIN/AVG temperature display
- Built-in gravity sensor, automatic horizontal or vertical screen display
- Display backlight
- Automatic power off
- Software is included: on-line monitoring, data storage



K-type armoured thermocouple with extension wire (**optional**)




computer software (included): connect to PC software via data cable to collect, display and stored data



## SPECIFICATION OF MAIN UNIT

| | |
|---|---|
| **Thermocouple type** | K/E/N/T/S |
| **Temperature range** | K: -200°C~1372°C |
| | E: -200°C~1000°C |
| | N: -200°C~1300°C |
| | T: -200°C~400°C |
| | S: -50°C~1768°C |
| **Temperature accuracy *** | K: ±0.8°C (at -200°C~0°C); ±0.6°C (at 0°C~1372°C) |
| | E: ±0.7°C (at -200°C~0°C); ±0.5°C (at 0°C~1000°C) |
| | N: ±0.8°C (at -200°C~0°C); ±0.6°C (at 0°C~1300°C) |
| | T: ±0.8°C (at -200°C~0°C); ±0.6°C (at 0°C~400°C) |
| | S: ±1.5°C (at -50°C~0°C); ±1.2°C (at 0°C~1768°C) |
| **Temperature resolution** | 0.1°C/0.01°C (adjustable) |
| **Annual stability** | ±8μV |
| **Memory capacity** | 100,000 |
| **Logging interval** | 2s~99s |
| **Power supply** | rechargeable lithium battery, working time≥40h |
| **Operation environment** | temperature: -10°C~50°C |
| | humidity: 0%RH~95%RH (non-condensing) |
| **Dimension** | 60×63×83mm |
| **Weight** | 88g |

*Accuracy is specified for ambient temperature between 18ºC and 28ºC, the above specification includes the error of the cold junction compensation and does not include the error of thermocouple sensor

## SPECIFICATION OF SENSOR**

| Code | Product | Range*** | Accuracy | Dimension | Extension cord |
|---|---|---|---|---|---|
| **0324-KB1** | K-type bar armoured thermocouple | -40°C~1100°C | class 1: ±1.5°C or ±0.4%·t | Ø3×500mm | / |
| **0324-KE2** | K-type armoured thermocouple with extension wire | -40°C~1100°C | class 1: ±1.5°C or ±0.4%·t | Ø1.5×1000mm | 2m |

**Other models, temperature ranges and dimensions of thermocouples can be customized

***Sensors are consumables and are recommended to be used within 1000°C, beyond that the service life will be reduced

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **K-type bar armoured thermocouple (0324-KB1)** | 1 pc |
| **Software** | 1 pc |
| **Power adapter** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **K-type armoured thermocouple with extension wire** | **0324-KE2** |

# DATA LOGGER FOR TEMPERATURE AND HUMIDITY (BUILT-IN SENSOR) CODE 0311-3070

IP54 WATERPROOF

DATA OUTPUT

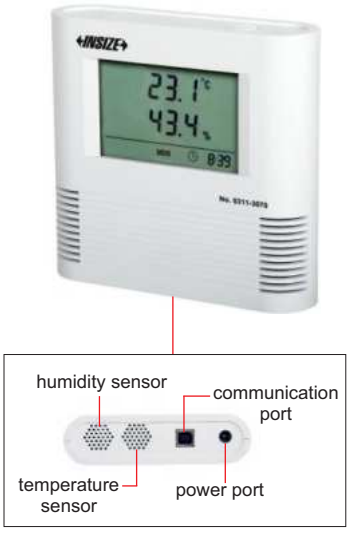
VIDEO



- Signal acquisition, display, storage, analysis function
- Low power consumption
- Built-in high-precision temperature and humidity sensor
- Software is included



stand (included)



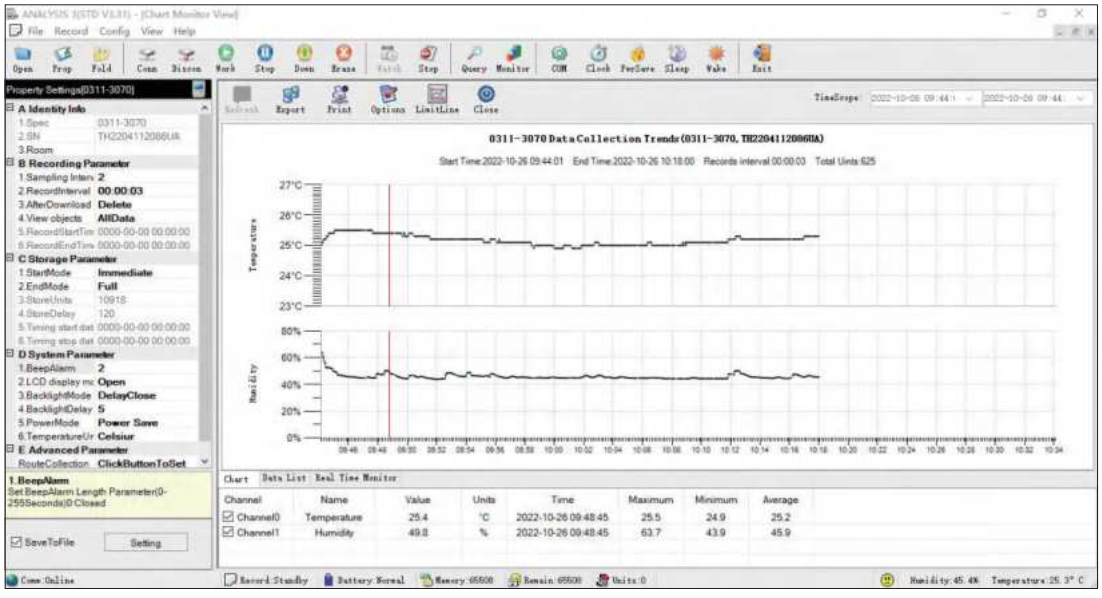

## SPECIFICATION

| | |
|---|---|
| Temperature range | -30°C~70°C/-22°F~158°F |
| Temperature accuracy | ±0.3°C (at 23°C±2°C), other range ±0.5°C |
| | ±0.6°F (at 73.4°F±3.6°F), other range ±0.9°F |
| Temperature resolution | 0.1°C/0.2°F |
| Humidity range | 0%RH~100%RH |
| Humidity accuracy | ±3%RH (at 10%RH~85%RH), other range ±5%RH |
| Humidity resolution | 0.1%RH |
| Memory capacity | 10918 |
| Alarm | function: alarm when over high or low limit<br>method: display+buzz+backlight |
| Sampling interval | 2s, 5s, 10s, 30s, 60s, 255s (adjustable) |
| Logging interval | 2 seconds~24 hours (adjustable) |
| Start with delay | 1~120 seconds (adjustable) |
| Start mode | start immediately/delay start/timing start |
| End mode | Full/FIFO/preset/timing end |
| Timing start/end | random start/end with format YYMMDD HHMMSS |
| Interface | USB |
| Time battery | CR2032 |
| Power supply | 3.6V lithium battery (ER14505) or 5~24V DC |
| Dimension | 123×117×33mm |
| Weight | 260g |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Software and USB cable | 1 pc |
| Power adapter | 1 pc |
| Time battery | 1 pc |
| Lithium battery | 1 pc |

software (included), record and download data to PC software via USB cable






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VIDEO

IP64 WATERPROOF

DATA OUTPUT

# MINI DATA LOGGER FOR TEMPERATURE AND HUMIDITY (BUILT-IN SENSOR) CODE 0317-TH37

- Built-in high-precision sensor
- 15000 memory for long-term logging
- Unit: °C/°F
- Display backlight
- Over range indicator
- Battery level display
- Computer software is included





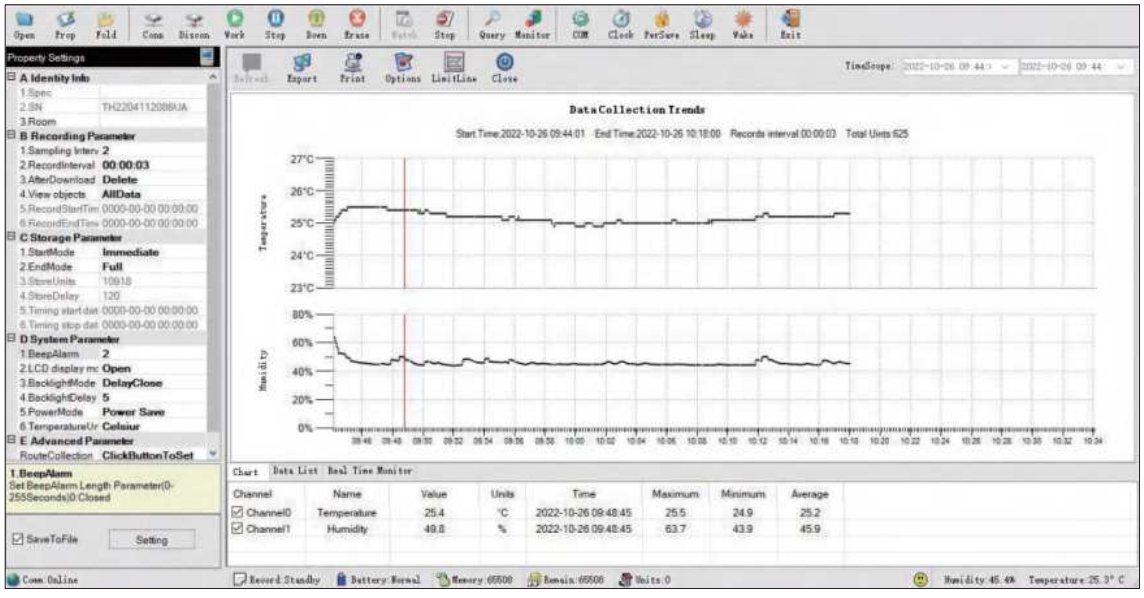
## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| USB cable | 1 pc |
| Software | 1 pc |
| 4G USB flash disk | 1 pc |

## SPECIFICATION

| | |
|---|---|
| Temperature range | -30°C~70°C/-22°F~158°F |
| Temperature accuracy | ±0.5°C/±0.9°F |
| Temperature resolution | 0.1°C/0.2°F |
| Humidity range | 0%RH~100%RH |
| Humidity accuracy | ±3%RH (at 10%RH~85%RH, testing temperature: 23°C±2°C);<br>±5%RH (at 0%RH~10%RH and 85%RH~100%RH, testing temperature: 23°C±2°C) |
| Humidity resolution | 0.1%RH |
| Memory size | 15,000 |
| Alarm | function: alarm when over high or low limit<br>method: display+backlight |
| Sampling interval | 2s, 5s, 10s, 30s, 60s, 255s |
| Logging interval | 2s~24h (adjustable) |
| Start with delay time | 1s~120s (adjustable) |
| Start mode | key operation/start immediately/time-lapse start/timing start |
| End mode | key operation/Full/FIFO/presetting units/timing end |
| Interface | Mini USB |
| Power supply | 3.6V rechargeable lithium battery, working time: 1 year (with sample rate of 60s) |
| Storage temperature | -50°C~90°C |
| Dimension | 86.2×64.2×25.4mm |
| Weight | 81g |

software (included), record and download data to PC software via USB cable



## MINI TEMPERATURE AND HUMIDITY METER
## CODE 0319-TH60

VIDEO

POPULAR MODEL

- 3.5" LCD screen
- Temperature/humidity/time/comfort display
- Highest/lowest temperature and humidity memory function
- Unit: °C/°F




**SPECIFICATION**

| | |
|---|---|
| **Temperature range** | 0°C~55°C/32°F~131°F |
| **Temperature resolution** | 0.1°C/0.1°F |
| **Temperature accuracy** | ±0.5°C/±0.9°F |
| **Humidity range** | 0%RH~99%RH (non-condensing) |
| **Humidity resolution** | 1%RH |
| **Humidity accuracy** | ±5%RH (at 10%RH~90%RH), other range ±7%RH |
| **Power supply** | 2×3V CR2032 batteries |
| **Dimension** | 88×70×12mm |
| **Weight** | 62g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (CR2032)** | 2 pcs |

## THERMOHYGROMETER (BASIC TYPE)
## CODE 0316-TH62

- Temperature/humidity/time display
- High and low alarm
- Low battery display
- Display backlight
- Environment comfort display




**SPECIFICATION**

| | |
|---|---|
| **Temperature range** | -20°C~60°C |
| **Temperature accuracy** | ±0.5°C (at 26°C~42°C), other range ±1.0°C |
| **Temperature resolution** | 0.1°C |
| **Humidity range** | 10%RH~99%RH (non-condensing) |
| **Humidity accuracy** | ±5%RH (45%RH~79%RH), other range ±7%RH |
| **Humidity resolution** | 0.1%RH |
| **Sampling interval** | 3s |
| **Power supply** | 2×AAA batteries |
| **Dimension** | 117×94×23mm |
| **Weight** | 149g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (AAA)** | 2 pcs |



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IP50
DUSTPROOF

## DIGITAL THERMOHYGROMETER (ADVANCED TYPE)
## CODE 9362-TH27

- Measure humidity, ambient temperature and dew-point temperature
- Max/Min/Average mode
- Alarm function
- IP50 protection grade




**SPECIFICATION**

| | |
|---|---|
| **Sensor model** | NTC thermistor/humidity capacitance/digital sensor |
| **Temperature range** | -20°C~70°C/-4°F~158°F |
| **Temperature accuracy** | ±0.5°C/±0.9°F |
| **Temperature resolution** | 0.1°C/0.2°F (minimum adjustable unit is 0.2°F in setting mode) |
| **Humidity range** | 0~100%RH |
| **Humidity accuracy** | ±5%RH |
| **Humidity resolution** | 0.1%RH |
| **Sampling interval** | 5s |
| **Power supply** | 1.5V AAA battery |
| **Dimension** | 95×107×18mm |
| **Weight** | 105g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (AAA)** | 1 pc |

## THERMOHYGROMETER (EXTERNAL SENSOR)
## CODE 0313-TH48

- External sensor, 3m cable
- Time/temperature/humidity display
- Temperature and humidity upper and lower limit alarm function
- Unit: °C/°F
- Low battery alarm




**SPECIFICATION**

| | |
|---|---|
| **Temperature range** | -40°C~80°C/-40°F~176°F |
| **Temperature accuracy** | ±0.5°C (at -20°C~60°C), ±1.0°C (at 60°C~80°C), ±2°C (at -40°C~-20°C), |
| | ±2°F(at -20°F~176°F), ±3°F (at -40°F~-20°F) |
| **Temperature resolution** | 0.1°C (at -20°C~80°C ), other range 1°C |
| | 0.1°F (at -20°F~100°F), other range 1°F |
| **Humidity range** | 0%RH~99.9%RH |
| **Humidity accuracy** | ±5%RH (at 10°C~60°C), other range ±7%<br>±5%RH (at 50°F~140°F), other range ±7% |
| **Humidity resolution** | 0.1%RH |
| **Sensitivity attenuation value** | temperature: <0.1°C/year (<0.2°F/year)<br>humidity: <1%RH/year |
| **Sampling interval** | 5 seconds |
| **Power supply** | built-in rechargeable lithium battery (USB 5V charging) working time at least one month |
| **Dimension** | 88×88×21mm |
| **Weight** | 174g |

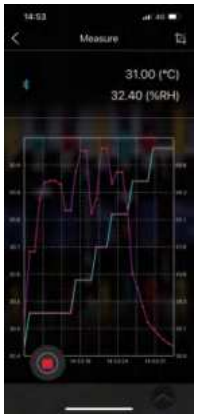
**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **USB charging cable** | 1 pc |

## THERMOHYGROMETER
## CODE 0310-H26

VIDEO

App measurement




App record






- Measure humidity, ambient temperature, dew point temperature and wet dulb temperature
- Min/Max, data hold function
- Bluetooth 4.0
- Auto power off
- Supplied with APP for Apple and Android

### SPECIFICATION

| Function | Measuring range | Resolution | Accuracy |
|---|---|---|---|
| Ambient temperature | 0°C~50°C<br>32°F~122°F | 0.1°C/0.1°F | ±1.0°C/±1.8°F |
| Wet dulb temperature | 0°C~50°C<br>32°F~122°F | | |
| Dew point temperature | 0°C~50°C<br>32°F~122°F | | |
| Humidity | 0%RH~80%RH | 0.1%RH | ±5.0%RH |
| Auto power off | 30 minutes | | |
| Data port | Bluetooth 4.0 | | |
| Power supply | 9V battery | | |
| Dimension | 204×54×36mm | | |
| Weight | 172g | | |

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Battery | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Tripod | 0701-TR175 |

## THERMOHYGROMETER
## CODE 0315-HT164

BUILT-IN BLUETOOTH

- Real-time value/maximum/minimum display
- Unit: °C/°F
- Display backlight
- Automatic power off
- Low battery display
- Over range indicator
- Built-in bluetooth, mobile APP is included

APP (included)






### SPECIFICATION

| | |
|---|---|
| Temperature range | -10°C~60°C |
| Temperature accuracy | ±1.0°C |
| Temperature resolution | 0.1°C |
| Humidity range | 0%RH~99.9%RH |
| Humidity accuracy | ±5.0%RH |
| Humidity resolution | 0.1%RH |
| Sampling interval | 1s |
| Power supply | 3×AAA batteries, working time≥12h |
| Operation environment | temperature: 0°C~40°C |
| | humidity: <90%RH (non-condensing) |
| Storage environment | temperature: -20°C~60°C |
| | humidity: <75%RH (non-condensing) |
| Dimension | 137×55×28mm |
| Weight | 102g |

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Battery (AAA) | 3 pcs |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Tripod | 0701-TR175 |



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- Environment comfort display: COMFORT, WET, DRY
- Time/temperature/humidity display
- Highest/lowest temperature and humidity memory function
- Alarm clock function
- Unit: °C, °F

## TEMPERATURE AND HUMIDITY METER (ECONOMIC TYPE) CODE 0312-TH50



VIDEO



**SPECIFICATION**

| | |
|---|---|
| **Temperature range** | 0°C~50°C/32°F~122°F |
| **Temperature accuracy** | ±1.0°C (at 5°C~40°C), other range ±1.5°C |
| | ±1.8°F (at 41°F~104°F), other range ±2.7°F |
| **Temperature resolution** | 0.1°C/0.1°F |
| **Humidity range** | 10%RH~90%RH |
| **Humidity accuracy** | ±5%RH (at 40%RH~80%RH), other range ±8%RH |
| **Humidity resolution** | 1%RH |
| **Power supply** | 1×AAA 1.5V battery |
| **Dimension** | 108×60×15mm |
| **Weight** | 74g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 1 pc |

## LARGE SCREEN TEMPERATURE AND HUMIDITY METERS




**0314-H533A**




**0314-H533B**

VIDEO

- High definition LED large screen display: temperature, humidity, time
- Exceeding limit alarm: buzzer alarm, digit/light flash alarm
- Installation method: wall mounted or ring type

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit (including sensor)** | 1 pc |

**SPECIFICATION**

| **Code** | **0314-H323A** | **0314-H323B** | **0314-H423A** | **0314-H423B** | **0314-H533A** | **0314-H533B** | **0314-H643A** | **0314-H643B** |
|---|---|---|---|---|---|---|---|---|
| **Dimension** | 300×200×36mm | | 400×265×36mm | | 500×330×36mm | | 600×400×36mm | |
| **Sensor type** | integrated | separated | integrated | separated | integrated | separated | integrated | separated |
| **Power consumption** | 5W | | 5W | | 9W | | 10W | |
| **Weight** | 1.3kg | | 2kg | | 3kg | | 4kg | |
| **Sensor** | integrated: plastic probe case (not dustproof, not waterproof)<br>separated: metal probe case (dustproof, waterproof), cable length 1m (can be customized, within 20m) | | | | | | | |
| **Temperature range** | integrated: -20°C~60°C; separated: -40°C~85°C | | | | | | | |
| **Temperature resolution** | integrated: 0.1°C (at 0°C~60°C), other range 1°C<br>separated: 0.1°C (at 0°C~85°C), other range 1°C | | | | | | | |
| **Temperature accuracy** | integrated: ±0.5°C (at 0°C~60°C), other range ±2°C<br>separated: ±0.5°C (at 0°C~85°C), other range ±2°C | | | | | | | |
| **Humidity range** | 5%RH~95%RH | | | | | | | |
| **Humidity resolution** | 0.1%RH | | | | | | | |
| **Humidity accuracy** | ±3%RH (@25°C) | | | | | | | |
| **Long-term stability** | temperature≤0.1°C/year; humidity≤1%RH/year | | | | | | | |
| **Repeatability** | temperature≤0.1°C; humidity≤0.5%RH | | | | | | | |
| **Sampling speed** | 1s | | | | | | | |
| **Response time** | 3 minutes to reach 90% of the final value | | | | | | | |
| **Time accuracy** | ±15s/month (@25°C±2°C) | | | | | | | |
| **Power supply** | AC100~240V (50/60Hz) | | | | | | | |
| **Power cable length** | 1.8m | | | | | | | |
| **Operation condition** | temperature: -20°C~60°C; humidity: 5%~95% (non-condensing) | | | | | | | |

# TEMPERATURE AND HUMIDITY DATA LOGGER
# CODE THL-A01

VIDEO




- Suitable for testing the temperature field, humidity field, uniformity and volatility of various temperature (humidity) environment experimental equipment, industrial furnaces and verification furnaces
- 24 channels can be independently configured as thermocouple, platinum resistance, humidity sensor and analog input mode
- Each channel provides an accuracy advantage over 0.15°C thermocouple for cold-end compensation
- Support voltage, resistance, temperature, humidity and other data formats display, storage and output
- Support Wireless Network, RS232 communication mode: Wireless Network can remotely browse real-time data and download stored data, RS232 communication protocol based on RSCII code for encoding and reading data
- Built-in 8G large capacity memory, data can be exported via USB port

**SPECIFICATION OF TEMPERATURE AND HUMIDITY DATA LOGGER**

| | Type (electrical signal) | Range | Resolution | Accuracy |
|---|---|---|---|---|
| Temperature | PT100 | -200 ~950°C | 0.001°C | 0.05°C at 0°C |
| | | | | 0.08°C at 300°C |
| | | | | 0.12°C at 600°C |
| | K | -200°C~1300°C | 0.01°C | 0.5°C |
| | J | -200°C~900°C | | 0.5°C |
| | T | -200°C~400°C | | 0.5°C |
| | E | -200°C~1000°C | | 0.5°C |
| | N | -200°C~1300°C | | 0.5°C |
| | B | 250°C~1820°C | | 0.8°C at 1000°C |
| | R | 0°C~1768°C | | 0.7°C at 1000°C |
| | S | 0°C~1768°C | | 0.9°C at 1000°C |
| Humidity | – | 0%RH~100%RH | 0.01%RH | 0.1%RH |
| Voltage | range: 100mV | -10mV~100mV | 0.1μV | 0.01% of reading+0.008% of full scall |
| | range: 1V | 0V~1V | 0.1mV | 0.01% of reading+0.008% of full scall |
| Resistance | range: 400Ω | 0Ω~400Ω | 0.1mΩ | 0.004% of reading+0.004% of full scall |
| Sampling mode | 24-channel synchronous sampling | | | |
| Sampling speed | 0.2s/24 channel | | | |
| Memory | 8G | | | |
| Output | USB, wireless, RS232 | | | |
| Operation environment | temperature: 5°C~35°C | | | |
| | humidity: 0%RH~85%RH (non-condensing) | | | |
| Storage environment | temperature: 5°C~35°C | | | |
| | humidity: 0%RH~85%RH (non-condensing) | | | |
| Power supply | power adapter | | | |
| Dimension | 250×180×75mm | | | |
| Weight | 1.7kg | | | |

To be continued



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Continued from previous page


K-type thermocouple (**optional**)


humidity sensor (**optional**)


platinum resistance PT100 (**optional**)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Power adapter** | 1 pc |
| **16G USB flash disk** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Platinum resistance PT100** | **THL-A01-PT100** |
| **K-type thermocouple** | **THL-A01-K** |
| **Humidity sensor** | **THL-A01-H** |



**SPECIFICATION OF SENSOR (OPTIONAL)**

| Product | Code | Range | Accuracy |
|---|---|---|---|
| platinum resistance PT100 | **THL-A01-PT100** | -80~300°C | class A: ±(0.150°C+0.002·\|t\|) |
| K-type thermocouple | **THL-A01-K** | 300~1000°C | class 1: ±1.5°C (at 300°C~375°C), ±0.004·t (at 375°C~1000°C) |
| humidity sensor | **THL-A01-H** | 0%RH~100%RH | 0.8%RH (at 23°C) |

VIDEO

# PORTABLE MEDIUM TEMPERATURE DRY BLOCK CALIBRATOR CODE DBC-M660

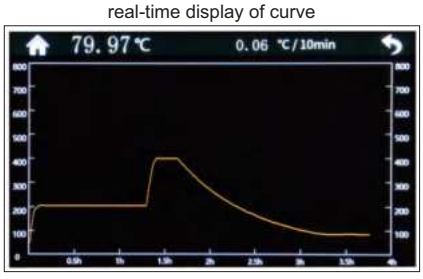



- Used for temperature calibration in industrial or laboratory
- Unit: °C, °F
- Language: English, Chinese
- Overheat protection
- Multi-point temperature correction function
- Automatic tuning of temperature control parameters
- Segmented PID control, one-button heating, full-automatic temperature control

**SPECIFICATION**

| | | |
|---|---|---|
| **Temperature range** | 50°C~660°C | |
| **Horizontal temperature field** | ≤0.2°C | |
| **Vertical temperature field** | within 40mm from the bottom of the well | ≤0.5°C (at 50°C~300°C) |
| | | ≤1.0°C (at 300°C~660°C) |
| **Temperature fluctuation** | ±0.15°C | |
| **Temperature resolution** | 0.01°C | |
| **Control method** | touch screen | |
| **Soaking block** | insertion aperture: Ø4.5mm, Ø6.5mm, Ø8mm, Ø10mm (can be customized) | |
| **Well depth** | 170mm | |
| **Power** | 600W | |
| **Power supply** | 220V/50Hz | |
| **Dimension** | 285×170×335mm | |
| **Weight** | 9.4kg | |

real-time display of curve



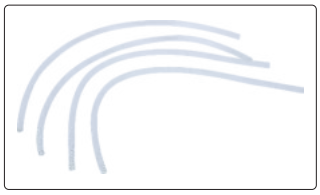

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Soaking block** | 1 pc |

# DIFFERENTIAL PRESSURE MANOMETER
# CODE 0140-DP05

DATA OUTPUT

VIDEO



soft tubes (included)





- Offset and differential measurement
- Record maximum/minimum/average value with relative timestamp
- Built-in USB interface for data transmission
- Unit: kPa, psi, in$H_2O$, bar, mbar, inHg, mmHg, oz/in$^2$, ft$H_2O$, cm$H_2O$, kg/cm$^2$
- Zero adjust
- Data hold
- Display with backlight
- Low battery indication
- Automatic power off
- Safety rating: CAT III 600V

## SPECIFICATION

| | |
|---|---|
| **Measurement range** | -34.47kPa~34.47kPa |
| **Maximum pressure** | 137.9kPa |
| **Unit** | kPa |
| **Resolution** | 0.01 |
| **Accuracy** | ±0.3%FSO (25°C) |
| **Repeatability** | ±0.2% (Max. ±0.5%FSO) |
| **Linearity/hysteresis** | ±0.29%FSO |
| **Response time** | 0.5s typical |
| **Operation temperature** | 0°C~50°C |
| **Power supply** | 1×9V 6F22 battery or AC/DC adapter |
| **Dimension** | 165×90×40mm |
| **Weight** | 350g |

## STANDARD DELIVERY

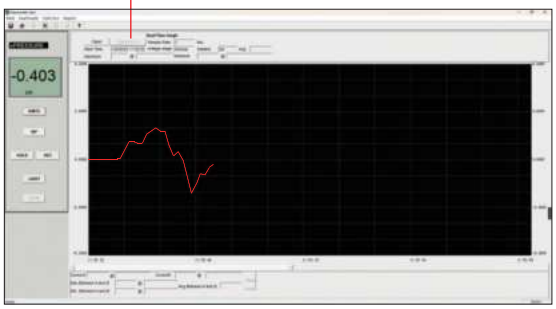
| | |
|---|---|
| **Main unit** | 1 pc |
| **AC/DC adapter** | 1 pc |
| **9V battery** | 1 pc |
| **Software and USB cable** | 1 pc |
| **Soft tubes** | 4 pcs |

## OPTIONAL ACCESSORY

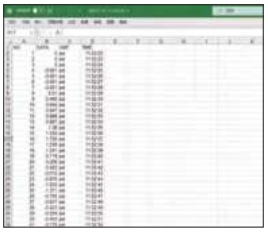
| | |
|---|---|
| **Tripod** | **0701-TR175** |

software (included), connect to PC via USB cable

export data




display realtime value and curve



export data to Excel

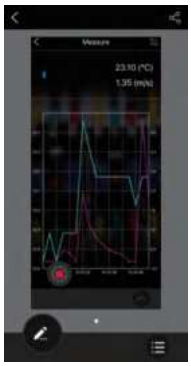


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VIDEO

# ANEMOMETER
# CODE 0110-1125

App measurement



App record








- Measure air velocity and temperature
- Min/Max, data hold function
- Bluetooth 4.0
- Auto power off
- Supplied with APP for Apple and Android

**SPECIFICATION**

| | Unit | Measuring range | Resolution | Accuracy |
|---|---|---|---|---|
| **Air velocity** | m/s | 1.1~25.0 | 0.01 | ±(3%+0.3) |
| | km/h | 4~90 | 0.1 | ±(3%+1) |
| | ft/min | 220~4920 | 1 | ±(3%+40) |
| | MPH | 2.5~56.0 | 0.1 | ±(3%+0.4) |
| | knots | 2.2~48.0 | 0.1 | |
| **Air temperature** | °C | 0~50 | 0.1 | ±2 |
| | °F | 32~122 | 0.1 | ±4 |
| **Sensors** | air velocity sensor, NTC-type precision thermistor | | | |
| **Sampling time** | 0.5s | | | |
| **Operation altitude** | max 2000m | | | |
| **Operation environment** | 0~50°C, 0~80%RH | | | |
| **Storage environment** | -10~60°C, 0~80%RH | | | |
| **Auto power off** | 10 minutes | | | |
| **Data port** | bluetooth 4.0 | | | |
| **Power supply** | 9V battery | | | |
| **Dimension** | 213×54×36mm | | | |
| **Weight** | 172g | | | |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Tripod** | **0701-TR175** |



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# HOT WIRE ANEMOMETER
# CODE 0111-HW30

VIDEO



sensor



- Measure with platinum resistance sensor, high accuracy and stability
- Retractable aluminum alloy rod with slim probe, split design for convenient operation
- Maximum/minimum/average mode
- Over-range indication
- Display with backlight
- Low battery indication
- Automatic power off

## SPECIFICATION

| Function | Range | Accuracy | | Resolution |
|---|---|---|---|---|
| Wind velocity | 0~30m/s | ±(4%+0.1m/s) | specified environment temperature: 15°C~30°C | 0.01 (0~9.99)<br>0.1 (10.0~999.9)<br>1 (1000~9999) |
| | 0~108km/h | ±(4%+0.4km/h) | | |
| | 0~58.3kn | ±(4%+0.2kn) | | |
| | 0~5906fpm | ±(4%+20fpm) | | |
| | 0~67.1mph | ±(4%+0.3mph) | | |
| | 0~11bft | ±1bft | | 1 |
| Wind temperature | 0°C~40°C | ±0.5°C | specified wind velocity: ≥1.5m/s | 0.1 |
| | -20°C~0°C, 40°C~70°C | ±0.8°C | | 0.1 |
| Wind flow | maximum range: 9999×10² | | | |
| | unit: m³/min, CFM, L/s | | | |
| | area setting: area, circle (set radius), rectangle (set length and width) | | | |
| Retractable rod length | 1.2m | | | |
| Storage capacity | 99 groups | | | |
| Operation environment | temperature: 0°C~40°C, humidity: ≤80%RH (no condensation) | | | |
| Storage environment | temperature: -20°C~60°C, humidity: ≤80%RH (no condensation) | | | |
| Power supply | 3×AAA battery | | | |
| Dimension | 181×63×40mm | | | |
| Weight | 350g | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Battery (AAA) | 3 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Tripod | 0701-TR175 |



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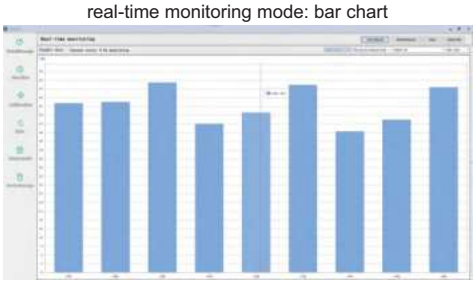
VIDEO

# SOUND LEVEL METER (ADVANCED TYPE)
# CODE 0011-FA25

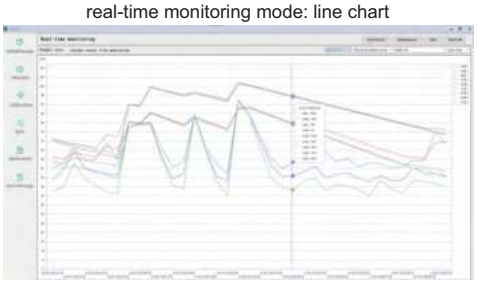


software (included), monitor and collect data to PC software via USB cable, data can sent to Excel

real-time monitoring mode: bar chart



real-time monitoring mode: line chart






- Integral function: 1s~24h (adjustable)
- Wide frequency range, large dynamic range, low background noise
- Parallel time weight and frequency weight
- Single range without shifting
- Software is included: on-line monitoring, data storage

## SPECIFICATION

| | |
|---|---|
| **Accuracy** | IEC 61672-1:2013 class 2 |
| **Microphone** | 1/2 inch prepolarized condenser microphone |
| **Measuring range** | 25dB (A)~141dB (A); 35dB (C)~141dB (C); 50dB (Z)~141dB (Z)<br>other frequency linear ranges: 31.5Hz: 26dB (A)~101dB (A); 12.5kHz: 25dB (A)~136dB (A) |
| **Frequency** | 20Hz~12.5kHz |
| **Self-generated electrical noise** | <17dB (A), <23dB (C), <33dB (Z) |
| **Frequency weighting** | parallel A, C, Z weightings |
| **Time weighting** | parallel F (Fast), S (Slow), I (Impulse) weightings |
| **Measuring function** | Lp, Leq,t, Leq,T, Lmax, Lmin, Lpeak, SEL |
| **Integral time** | 1s-24h (adjustable) |
| **Start mode** | button/clock/limit/interval |
| **Power setting** | power on or off regularly |
| **Data storage** | 4MB FLash RAM<br>4 sets of parameter templates, 128 measurement point names; 64 calibration records |
| **Language** | Chinese, English, Portuguese |
| **Power** | <80mA/5V |
| **Power supply** | 4×AAA batteries (for 10 hours working)<br>AC/DC adapter: 5V/2A |
| **Operation condition** | temperature: -10°C~50°C<br>humidity: 25%RH~90%RH, non-condensing<br>pressure: 65kPa~108kPa |
| **Dimension** | 230×69×26mm |
| **Weight** | 180g |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Software** | 1 pc |
| **Windscreen** | 1 pc |
| **Battery (AAA)** | 4 pcs |
| **AC/DC adapter** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Tripod** | **0701-TR175** |

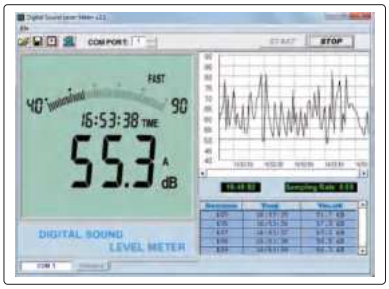
## DIGITAL SOUND LEVEL METER
## CODE 9351-130

DATA OUTPUT

- Automatically select best range: 30~80dB, 40~90dB, 50~100dB, 60~110dB, 70~120dB, 80~130dB
- Over range indicator
- Real time, average, maximum modes
- Memory 16000 measurement values
- AC signal output: 0.707 Vrms at FS, impedance approx. 600Ω
  DC signal output: 10mV/dB, impedance approx.100Ω
- Automatic power off



software flash disk (included)



software (included), display measurement values and graph, save and output data



### SPECIFICATION

| | |
|---|---|
| Measuring range | 30~130dB |
| Accuracy | ±2dB |
| Resolution | 0.1dB |
| Sampling time | 0.5s for digital, 0.05s for analogue |
| Response time | fast: 125ms, slow: 1s |
| Frequency | 30Hz~8kHz |
| Frequency weighting | A/C |
| Microphone | electret condenser type |
| Output | RS232, AC/DC |
| Power supply | 6×AAA batteries |
| Dimension | 265×80×69mm |
| Weight | 317g |

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Software and RS232 cable | 1 pc |
| Output connector | 1 pc |
| Battery (AAA) | 6 pcs |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Tripod | 0701-TR175 |

## SOUND LEVEL METER (BASIC TYPE)
## CODE 0010-A35

App measurement



App record




- Auto range selection
- Over range indication
- Display backlight
- Min/Max, data hold function
- Bluetooth 4.0
- Auto power off
- Supplied with APP for Apple and Android



### SPECIFICATION

| | |
|---|---|
| Frequency | 31.5Hz~8kHz |
| Measuring range | 35dB~130dB |
| Accuracy | ±3.0dB (ref 94dB@1kHz) |
| Resolution | 0.1dB |
| Frequency weighting | A and C |
| Display update | 2 times/sec |
| Microphone | 1/2 inch electret condenser microphone |
| Power supply | 9V battery |
| Operation temperature and humidity | 0°C~40°C/32°F~104°F, 10%RH~90%RH |
| Dimension | 185×54×36mm |
| Weight | 184g |

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Battery | 1 pc |
| Windscreen | 1 pc |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Tripod | 0701-TR175 |



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## DIGITAL SOUND LEVEL METER (ADVANCED TYPE)
## CODE 9353-413

- Automatic range conversion
- Over range indicator
- Maximum mode
- Data hold
- AC signal output: 0.707Vrms, impedance approx.100Ω
  DC signal output: 20mV/dB, impedance approx.1kΩ




**SPECIFICATION**

| | |
|---|---|
| **Measuring range** | 40dB~130dB (ref.20μPa) |
| **Frequency** | 20Hz~12.5kHz |
| **Resolution** | 0.1dB |
| **Accuracy** | IEC 61672-1:2013 class 2 |
| **Frequency weighting** | A weighting |
| **Response time** | fast (125ms), slow (1s) |
| **Microphone** | pre polarization condenser microphone |
| **Refercner direction** | axial direction of condenser microphone |
| **Power supply** | 4×1.5V AAA batteries |
| **Dimension** | 210×68×27mm |
| **Weight** | 240g |

**STANDARD DELIVERY**

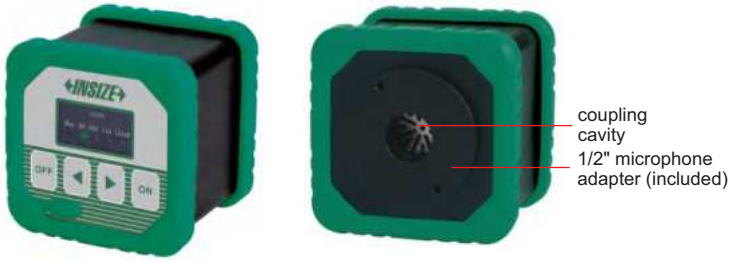
| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (AAA)** | 4 pcs |
| **Precision screwdriver** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Tripod** | **0701-TR175** |

## SOUND CALIBRATOR
## CODE 0012-SC20

- According to IEC 60942:2017
- Calibrate and test the sound pressure sensitivity of class 2 sound level meter, check and adjust the overall sensitivity of acoustic measuring device or system
- Single frequency, multiple sound pressure levels: 1000Hz, 94dB/104dB/114dB/124dB




**SPECIFICATION**

| | |
|---|---|
| **Accuracy** | IEC 60942:2017 class 2 |
| **Nominal sound pressure level** | 94dB,104dB,114dB,124dB |
| **Acceptance limit for sound pressure level** | 0.4dB |
| **Nominal frequency** | 1000Hz |
| **Acceptance limit for frequency** | 1.7% |
| **Total distortion+noise** | 3.0% |
| **Warm-up time** | <15s |
| **Operation environment** | temperature: -10°C~50°C<br>humidity: 25%RH~90%RH<br>pressure: 65kPa~108kPa |
| **Power supply** | rechargeable lithium battery, working time≥5h |
| **Dimension** | 58×58×58mm |
| **Weight** | 170g |



1/4" microphone adapter (included)



wrench (included)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit (including 1/2" microphone adapter )** | 1 pc |
| **1/4" microphone adapter** | 1 pc |
| **Wrench** | 1 pc |
| **Power adapter** | 1 pc |

# LIGHT METER (ECONOMIC TYPE)
# CODE 0131-A120

VIDEO




- Photosensor can rotate 90° clockwise and 180° counterclockwise
- Build-in calibration filters ensure the accuracy when working in different colors
- Data hold function
- Lux/FC unit switch
- Low battery alarm

## SPECIFICATION

| | | | | |
|---|---|---|---|---|
| **Measuring range** | 0.1~199.9Lux | 1~1999Lux | 10~19990Lux | 100~199900Lux |
| **Resolution** | 0.1Lux | 1Lux | 10Lux | 100Lux |
| **Measuring range** | 0.01~19.99FC | 0.1~199.9FC | 1~1999FC | 10~19990FC |
| **Resolution** | 0.01FC | 0.1FC | 1FC | 10FC |
| **Accuracy** | ±(4%+10d), range<20000Lux/2000FC<br>±(5%+10d), range≥20000Lux/2000FC<br>(d is resolution, calibrated with standard incandescent lamp at color temperature 2856K) | | | |
| **Repeatability** | ±2% | | | |
| **Sampling time** | 0.5s | | | |
| **Operation environment** | 0~40°C, 0~70%RH | | | |
| **Storage environment** | -10~50°C, 0~80%RH | | | |
| **Power supply** | 9V battery | | | |
| **Dimension** | 185×68×38mm | | | |
| **Weight** | 130g | | | |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Tripod** | **0701-TR175** |



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## LIGHT METER (ECONOMIC TYPE)
## CODE 0130-L110

VIDEO

- Suitable for measuring illuminance in various occasions
- Data hold function
- Fast switching of measuring range, easy to operate



### SPECIFICATION

| | | | |
|---|---|---|---|
| **Measuring range** | 1~1999Lux | 10~19990Lux | 100~100000Lux |
| **Resolution** | 1Lux | 10Lux | 100Lux |
| **Accuracy** | ±(4%+10d), range<10000Lux<br>±(5%+10d), range≥10000Lux<br>(d is resolution, calibrated with standard incandescent lamp at color temperature 2856K) | | |
| **Repeatability** | ±2% | | |
| **Sampling time** | 0.5s | | |
| **Operation environment** | 0~40°C, 0~70%RH | | |
| **Storage environment** | -10~50°C, 0~80%RH | | |
| **Power supply** | 9V battery | | |
| **Photodetector dimension** | 105×58×28mm | | |
| **Main unit dimension** | 130×72×30mm | | |
| **Weight** | 170g | | |

### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery** | 1 pc |

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## UV LIGHT METER
## CODE 0132-UV199

VIDEO

- Self-recognize probes
- Real-time value, maximum value, minimum value, average value, time, energy value are displayed at the same time




### PROBE SPECIFICATION

| | | | |
|---|---|---|---|
| **Probe code** | **0132-UVA1** (included) | **0132-UVC0 (optional)** | **0132-UVCWP1 (optional)** |
| **Application** | general purpose low power UVA intensity and energy measurement | intensity and energy measurement of 254nm UV sterilization mercury lamp | intensity and energy measurement of 254nm UV sterilization mercury lamp |
| **Spectral response** | λp=365nm<br>315nm-400nm | λp=254nm<br>230nm-280nm | |
| **Power measuring range** | 0~200000μW/cm² | | |
| **Resolution** | 0.1μW/cm² | | |
| **Energy measuring range** | 0-9999999μJ/cm² | | |
| **Measuring accuracy** | ±10% | | |
| **Record time** | 0-99999s | | |
| **Sampling speed** | 6 times/second | | |
| **Measuring unit** | μW/cm² (default), mW/cm², W/m² | | |
| **Test hole diameter** | Ø10mm | | |
| **Probe size** | 39×32×15mm | Ø39×15mm | Ø50×20mm |
| **Waterproof depth** | — | — | 1m |

To be continued



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Continued from previous page



| Probe code | 0132-UVCLED0 (optional) | 0132-UVB0 (optional) | 0132-UVA0 (optional) |
|---|---|---|---|
| Application | measurement of 260nm-285nm UV LED sterilization lamp | general purpose UVB intensity and energy measurement | intensity and energy measurement of light source of high pressure mercury lamp in UV curing industry |
| Spectral response | 280nm-315nm * | λp=310nm ** 280nm-315nm | λp=365nm 315nm-400nm |
| Power measuring range | 0~200000μW/cm² | | 0~2000mW/cm² |
| Resolution | 0.1μW/cm² | | 0.1mW/cm² |
| Energy measuring range | 0-9999999μJ/cm² | | |
| Measuring accuracy | ±10% | | |
| Record time | 0-99999s | | |
| Sampling speed | 6 times/second | | 2048 times/second |
| Measuring unit | μW/cm² (default), mW/cm², W/m² | | mW/cm² (default), W/m² |
| Test hole diameter | Ø10mm | | |
| Probe size | Ø39×15mm | | 39×32×15mm |

*Wide spectral range, avoid using in strong light

**Suitable for measuring UVB light source with wavelength 297nm, 308nm, and 313nm

| Probe code | 0132-UVALED0 (optional) | 0132-UVALED1 (optional) | 0132-UVALED3 (optional) |
|---|---|---|---|
| Application | intensity and energy measurement of area light source of UV LED in UV curing industry | intensity and energy measurement of point light source of UV LED in UV curing industry | general purpose UVA+UVV LED intensity and energy measurement, low power measuring range |
| Spectral response | calibrated with 395nm UV LED 340nm-420nm | | |
| Power measuring range | 0~20000mW/cm² | | 0~200000μW/cm² |
| Resolution | 1mW/cm² | | 0.1μW/cm² |
| Energy measuring range | 0-9999999μJ/cm² | | |
| Measuring accuracy | ±10% | | |
| Record time | 0-99999s | | |
| Sampling speed | 2048 times/second | | 6 times/second |
| Measuring unit | mW/cm² (default), W/cm², W/m² | | μW/cm² (default), mW/cm², W/m² |
| Test hole diameter | Ø10mm | Ø1mm | Ø10mm |
| Probe size | 39×32×15mm | | |

**MAIN UNIT SPECIFICATION**

| | |
|---|---|
| Display | 240×160 LCD |
| Power supply | 4 AAA alkaline batteries |
| Dimension | 148×76×26mm |
| Weight | 194g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Probe 0132-UVA1 | 1 pc |
| Battery | 4 pcs |



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# LIQUID AND GAS TESTING

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**Conductivity/TDS/Salinity Testers**
**Page 1137-1140**



**pH Testers**
**Page 1141-1144**



**Water Quality Testers**
**Page 1145**



**Online Refractivity Sensors**
**Page 1146**



**Refractometers**
**Page 1147-1148**



**Handheld Airborne Particle Counters**
**Page 1149**



**Dry Laser Particle Size Analyzers**
**Page 1150**



**Opacimeters**
**Page 1151**



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# PEN-TYPE CONDUCTIVITY/TDS/SALINITY TESTER
# CODE 0412-EB32

VIDEO

- Can measure the conductivity, TDS and salinity
- Suitable for water quality testing, aquaculture, food processing, scientific research, etc.
- The same series of electrodes can be replaced with each other
- Automatic temperature compensation
- With the stabilizing and locking functions of the reading
- Can be used normally in any environment with the background light
- Auto power off
- Probe protection level: IP67
- Lightweight, easy to carry and operate




## SPECIFICATION

| | |
|---|---|
| **Measuring range** | conductivity 0~200.0μS/cm, 0~2000μS/cm, 0~20.00mS/cm |
| | TDS 0~100.0ppm, 0~1000ppm, 0~10.00ppt |
| | salinity 0~10.00ppt |
| | temperature 0~50°C |
| **Resolution** | conductivity 0.1μS/cm, 1μS/cm, 0.01mS/cm |
| | TDS 0.1ppm, 1ppm, 0.01ppt |
| | salinity 0.01ppt |
| | temperature 0.1°C |
| **Accuracy** | conductivity ±1%FS |
| | temperature ±0.5°C |
| **Calibration mode** | 1~3 points |
| **Power supply** | 4×1.5V AAA batteries |
| **Dimension** | 178×40×40mm |
| **Weight** | 133g |


electrodes can be replaced

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Standard solution** | 2 bottles |
| **Test cup** | 2 pcs |
| **1.5V AAA battery** | 4 pcs |
| **Platinum black needle electrode** | 1 pc |



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IP65
WATERPROOF

# PORTABLE CONDUCTIVITY/TDS METER
# CODE 0411-0200

VIDEO






- Reading mode: auto-read and continuous-read
- Automatic/manual temperature compensation
- Auto-hold feature senses and locks the measurement endpoint
- Cell constant is settable
- 1 point calibration with standard recognition
- Data capacity up to 200 sets for each parameter
- IP65 dust/waterproof
- Auto power off


standard solution (included)


wristband (included)

## SPECIFICATION

| | | |
|---|---|---|
| Conductivity | range | 0.00μS/cm~200mS/cm |
| | resolution | 0.01μS/cm minimum |
| | electronic unit accuracy | ±1.0%FS |
| | measurement accuracy | ±1.5%FS |
| | reference temperature | 25°C/77°F |
| | calibration point | 1 |
| | standard recognition | 84μS/cm, 1413μS/cm, 12.88mS/cm |
| TDS | range | 0.00mg/L~300g/L |
| | resolution | 0.01mg/L minimum |
| | accuracy | ±1.0%FS |
| Temperature | range | -5~110°C/23~230°F |
| | resolution | 0.1°C/0.2°F |
| | accuracy | ±0.4°C/±0.7°F |
| Input | | electrode with 5-pin aviation connector |
| Power supply | | rechargeable battery |
| Dimension | | 80×225×35mm |
| Weight | | 400g |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Electrode | 1 pc |
| Electrode holder | 2 pcs |
| Wristband | 1 pc |
| Silicone rubber case | 1 pc |
| AC/DC adapter and charging cable | 1 pc |
| Standard solution | 1 bottle |

# PORTABLE CONDUCTIVITY METER
# CODE 0413-EC33

VIDEO



standard solution (included)



glass conductivity electrode (**optional**)



high conductivity electrode (**optional**)



plastic conductivity elctrode (included)

- 1~4 points automatic calibration, with calibration guidance and automatic inspection function
- The meter can recognize conductivity standard solutions automatically
- Manual and automatic temperature compensation functions for more accurate measurement
- The meter can be switched between conductivity and TDS
- 50 sets of data storage
- Featuring a foldable stand, suitable for multi scenario applications
- Probe protection level: IP57

## SPECIFICATION

| | | |
|---|---|---|
| **Conductivity** | **range** | 0~200mS/cm, divided into five ranges (0.00~19.99)μS/cm, (20.0~199.9)μS/cm, (200~1999)μS/cm, (2.00~19.99)mS/cm, (20.0~199.9)mS/cm |
| | **resolution** | 0.01/0.1/1μS/cm, 0.01/0.1mS/cm |
| | **accuracy** * | ±(1.0%FS+1d) |
| | **temperature compensation** | 0°C~100°C (manual or automatic) |
| | **calibration mode** | 1~4 points |
| | **electrode constant** | 0.1/1/10cm$^{-1}$ |
| **TDS** | **range** | (0~100)g/L |
| | **resolution** | 0.01/0.1/1mg/L, 0.01/0.1g/L |
| | **accuracy** * | ±(1.0%FS+1d) |
| | **TDS conversion factor** | 0.40~1.00 |
| **Temperature** | **range** | 0°C~100°C |
| | **resolution** | 0.1°C |
| | **accuracy** * | ±(0.5°C+1d) |
| **Standard solution** | | 84μS/cm, 1413μS/cm, 12.88mS/cm |
| **Power supply** | | 3×1.5V AA batteries |
| **Dimension** | | 86×196×33mm |
| **Weight** | | 286g |

*d is the resolution

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Standard solution** | 3 bottles |
| **1.5V AA battery** | 3 pcs |
| **Plastic conductivity electrode** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Glass conductivity electrode** | **0413-EC33-01** |
| **High conductivity electrode** | **0413-EC33-10** |



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VIDEO

DATA OUTPUT

# CONDUCTIVITY METER
# CODE 0414-ED34






- Equipped with rugged platinum-black conductivity electrode (K=1), rugged platinum-black coating, not only increases the surface area of the electrode and reduces the polarisation effect, but also improves the adhesion of the platinum-black to the metal, corrosion-resistant POM housing, built-in thermistor, automatic temperature compensation
- GLP data storage and management, USB data output
- 1~4 points automatic calibration, with calibration guidance and automatic inspection function
- The meter can recognize conductivity standard solutions automatically
- Manual and automatic temperature compensation functions for more accurate measurement
- The meter can switch conductivity, TDS, salinity
- Equipped with flexible electrode holder, easy to operate with one hand



standard solution (included)

**SPECIFICATION**

| | | |
|---|---|---|
| Conductivity | range | (0.00~19.99)µS/cm, (20.0~199.9)µS/cm<br>(200~1999)µS/cm, (2.00~19.99)mS/cm, (20.0~199.9)mS/cm |
| | resolution | 0.01/0.1/1µS/cm, 0.01/0.1mS/cm |
| | accuracy * | ±(1.0%FS+1d) |
| | temperature compensation | 0°C~50°C (manual or automatic) |
| | calibration mode | 1~4 points |
| | electrode constant | 0.1/1/10cm$^{-1}$ |
| TDS | range | (0~100)g/L |
| | resolution | 0.01/0.1/1mg/L, 0.01/0.1g/L |
| | accuracy * | ±(1.0%FS+1d) |
| | TDS conversion factor | 0.40~1.00 |
| Temperature | range | 0°C~100°C |
| | resolution | 0.1°C |
| | accuracy * | ±(0.5°C+1d) |
| Salinity | range | (0~100)ppt |
| Data storage | | 200 groups of USB data |
| Standard solution | | 84µS/cm, 1413µS/cm, 12.88mS/cm |
| Power supply | | AC/DC adapter (9V) |
| Dimension | | 195×215×100mm |
| Weight | | 950g |

*d is the resolution

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Standard solution | 3 bottles |
| Power adapter | 1 pc |
| Plastic conductivity electrode | 1 pc |
| Flexible electrode holder | 1 pc |
| USB flash disk | 1 pc |
| USB cable | 1 pc |

# PEN-TYPE pH TESTER
# CODE 0432-HB22

VIDEO



pH “bulb type” electrode (included)

- 3 types of pH electrodes: bulb type, plane type and puncture type
- Suitable for water quality testing, sewage treatment, food and cosmetics testing, agriculture and scientific research, etc.
- Can measure the ORP, the same series of electrodes can be replaced with each other
- Automatic temperature compensation
- Alarm function: the red backlight displays alarm mode
- With the stabilizing and locking functions of the reading
- Probe protection level: IP67
- Can be used normally in any environment with three colors of backlight
- Auto power off
- Lightweight, easy to carry and operate



ORP “platinum needle” electrode (**optional**)



pH “plane type” electrode (**optional**)





pH “puncture type” electrode (**optional**)



## SPECIFICATION

| | |
|---|---|
| **Measuring range** | -2.00~16.00pH |
| | temperature 0~50°C |
| | ORP -1000mV~+1000mV |
| **Resolution** | 0.01pH |
| | temperature 0.1°C |
| | ORP 1mV |
| **Accuracy** | ±0.02pH |
| | temperature ±0.5°C |
| | ORP ±0.2%FS |
| **Calibration mode** | 1~3 points |
| **Standard solution** | USA (pH buffers: 4.00, 7.00, 10.01)<br>NIST (pH buffers: 4.01, 6.86, 9.18) |
| **Power supply** | 4×1.5V AAA batteries |
| **Dimension** | 178×40×40mm |
| **Weight** | 133g |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Standard solution** | 3 bottles (USA) |
| **Test cup** | 3 pcs |
| **KCl powder** | 1 bottle |
| **1.5V AAA battery** | 4 pcs |
| **pH bulb type electrode** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **pH plane type electrode** | **0432-HB-F** |
| **pH puncture type electrode** | **0432-HB-P** |
| **ORP electrode** | **0432-HB-O** |



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VIDEO

IP65 WATERPROOF

# PORTABLE pH METER
# CODE 0431-0018







wristband (included)


KCl powder (included)


standard solution (included)

- Reading mode: auto-read and continuous-read
- Automatic/manual temperature compensation
- Auto-hold feature senses and locks the measurement endpoint
- 1 or 2 points calibration with standard recognition
- Data capacity up to 200 sets for each parameter
- IP65 dust/waterproof
- Auto power off

**SPECIFICATION**

| | | |
|---|---|---|
| pH | range | -2.00~18.00pH |
| | resolution | 0.01pH |
| | electronic unit accuracy | ±0.01pH |
| | measurement accuracy | ±0.02pH |
| | calibration point | 1 or 2 |
| | standard recognition | NIST pH buffers: 4.01, 7.00, 10.01 |
| Voltage | range | -1999~1999mV |
| | resolution | 1mV |
| | accuracy | ±0.1%FS |
| Temperature | range | -5~110°C/23~230°F |
| | resolution | 0.1°C/0.2°F |
| | accuracy | ±0.4°C/±0.7°F |
| Inputs | | pH electrode: BNC (Q9) |
| | | temp. probe: 4-pin aviation connector |
| Power supply | | rechargeable battery |
| Dimension | | 80×225×35mm |
| Weight | | 400g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Electrode | 1 pc |
| Electrode holder | 2 pcs |
| Wristband | 1 pc |
| Silicone rubber case | 1 pc |
| AC/DC adapter and charging cable | 1 pc |
| Standard solution | 3 bottles |
| KCl powder | 1 bottle |

# PORTABLE pH METER
# CODE 0430-HA21

VIDEO



plastic pH elctrode
(included)



hydrofluoric acid/strong
acid resistant glass
pH electrode unit (**optional**)

- 1~3 points automatic calibration, with calibration guidance and automatic inspection function
- Manual and automatic temperature compensation functions for more accurate measurement
- The meter provides three types of reading stability criteria
- 50 sets of data storage
- Featuring a foldable stand, suitable for multi scenario applications
- Probe protection level: IP57



standard solution (included)

## SPECIFICATION

| | | |
|---|---|---|
| pH | range | 0.00~14.00pH |
| | resolution | 0.1/0.01pH |
| | accuracy * | ±(0.01pH+1d) |
| | temperature compensation | 0°C~100°C (manual or automatic) |
| | calibration mode | 1~3 points |
| mV | range | -1000mV~+1000mV |
| | resolution | 1mV |
| | accuracy * | ±(0.2%FS+1d) |
| Temperature | range | 0°C~100°C |
| | resolution | 0.1°C |
| | accuracy * | ±(0.5°C+1d) |
| Standard solution | | pH buffers: 4.00, 7.00, 10.01 |
| Power supply | | 3×1.5V AA batteries |
| Dimension | | 86×196×33mm |
| Weight | | 292g |

*d is the resolution

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Standard solution | 3 bottles |
| 1.5V AA battery | 3 pcs |
| Plastic pH electrode | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Hydrofluoric acid/strong acid resistant glass pH electrode | 0430-HA21-A |
| Strong alkali/high salt/high temperature pH electrode | 0430-HA21-B |



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VIDEO

DATA OUTPUT

# BENCHTOP pH METER
# CODE 0434-HD24






- Equipped with glass pH electrode, using a special gelation process, the solution inside the electrode will not flow, no air bubbles even when inverted, and the electrode glass adopts a thick film process, so there is no need to worry about the sphere rupture caused by ordinary collision
- GLP data storage and management, USB data output
- 1~3 points automatic calibration, with calibration guidance and automatic inspection function
- Automatic recognition of pH buffers, automatic display of slope at the end of calibration
- Manual and automatic temperature compensation functions for more accurate measurement
- Equipped with flexible electrode holder, easy to operate with one hand



standard solution (included)

## SPECIFICATION

| | | |
|---|---|---|
| pH | range | -2.00~20.00pH |
| | resolution | 0.1/0.01pH |
| | accuracy* | ±(0.01pH+1d) |
| | temperature compensation | 0°C~100°C (manual or automatic) |
| | calibration mode | 1~3 points |
| mV | range | -2000mV~+2000mV |
| | resolution | 1mV |
| | accuracy* | ±(0.1%FS+1d) |
| Temperature | range | 0°C~100°C |
| | resolution | 0.1°C |
| | accuracy * | ±(0.5°C+1d) |
| Data storage | | 200 groups of USB data |
| Standard solution | | USA (pH buffers: 4.00, 7.00, 10.01)<br>NIST (pH buffers: 4.01, 6.86, 9.18)<br>China series, user-defined solutions |
| Power supply | | AC/DC adapter (9V) |
| Dimension | | 195×215×100mm |
| Weight | | 950g |

*d is the resolution

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Standard solution | 3 bottles (USA) |
| Power adapter | 1 pc |
| Glass pH electrode | 1 pc |
| Temperature electrode | 1 pc |
| Flexible electrode holder | 1 pc |
| USB flash disk | 1 pc |
| USB cable | 1 pc |

# WATER QUALITY TESTER
# CODE 0410-EA31

VIDEO

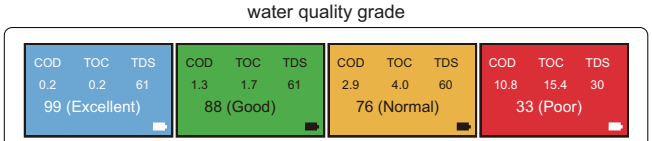


- Suitable for measuring tap water, purified water, underground water, surface water (unpolluted) and other drinking water, to determine microorganisms and pesticide residues in water
- Use UV absorption method to measure COD, TOC, UV275 parameters of drinking water, and measure the conductivity to determine TDS of drinking water
- Can simultaneously measure 6 parameters: COD (chemical oxygen demand), TOC (total organic carbon), UV275 (ultraviolet wavelength 275nm), TDS (total dissolved solids), EC (electric conductivity), T (temperature) for comprehensive evaluation of water quality
- With intelligent scoring feature: 4 colors backlight indicate 4 grades of water quality
- Automatic temperature compensation
- Probe protection level: IP67

## SPECIFICATION

| | | |
|---|---|---|
| Measuring range | COD | 0~50 mg/L |
| | TOC | 0~50 mg/L |
| | Conductivity | 0~4000 uS/cm |
| | TDS | 0~2000 ppm |
| | UV275 | 0~1 au/cm |
| | Temperature | 0-50°C |
| Resolution | COD | 0.01 mg/L |
| | TOC | 0.01 mg/L |
| | Conductivity | 1 uS/cm |
| | TDS | 1 ppm |
| | UV275 | 0.001 au/cm |
| | Temperature | 0.1°C |
| Accuracy | COD | 0~5mg/L , ±0.5mg/L<br>5~50mg/L , ±10% |
| | TOC | 0~5mg/L , ±0.5mg/L<br>5~50mg/L , ±10% |
| | Conductivity | ±3.5%FS |
| | TDS | ±3.5%FS |
| | UV275 | 0~0.1au/cm, ±0.01au/cm<br>0.1~1au/cm, ±10% |
| | Temperature | ±1°C |
| Power supply | | 2×1.5V AAA batteries |
| Dimension | | 157×37×14mm |
| Weight | | 68g |

water quality grade




| COD (mg/L) | TOC (mg/L) | TDS (ppm) | Colour | Score | Grade |
|---|---|---|---|---|---|
| 0~0.75 | 0~1.25 | 0~250 | blue | 90~100 | Excellent |
| 0.75~1.5 | 1.25~2.5 | 250~500 | green | 80~90 | Good |
| 1.5~3 | 2.5~5 | 500~1000 | yellow | 60~80 | Normal |
| 3~7.5 | 5~12.5 | 1000~2000 | red | 0~60 | Poor |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Pure water calibration cup | 1 pc |



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VIDEO

BUILT-IN BLUETOOTH

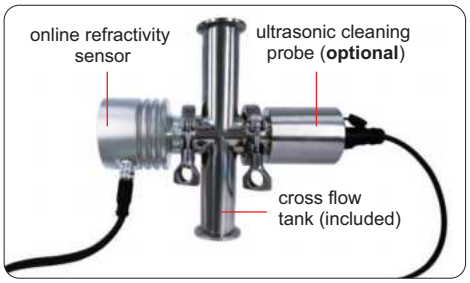
IP67 WATERPROOF

# ONLINE REFRACTIVITY SENSORS



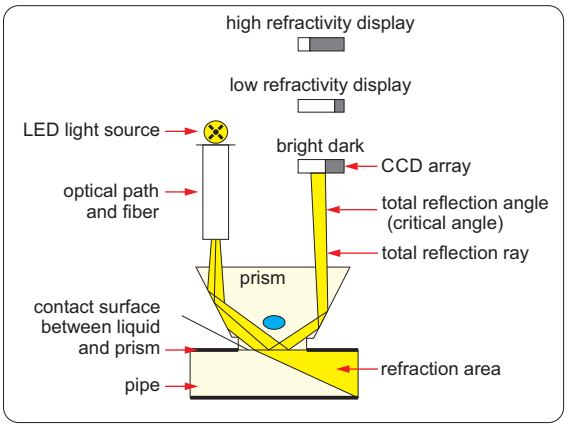



5806-ZX10




- Based on the principle of light refraction and total reflection, measure the concentration of coolant, sugar liquid and other liquids in real time
- High measuring accuracy and wide measuring range
- Automatic temperature compensation
- Built-in bluetooth
- Screw thread, flange, chuck and other installation methods can be customized
- Use sapphire prism, high hardness and wear-resistant
- Resistance to dirty, easy to clean
- Protection level of probe part: IP67

measuring principle




## SPECIFICATION

| Code | 5806-ZX10 | 5806-ZX20 |
|---|---|---|
| Type | flat-top | round-top (self-cleaning) |
| Measuring range | Brix 0.00~90.00% | |
| | refractivity 1.33299~1.51782 | |
| | temperature 0~60°C | |
| Accuracy | Brix ±0.20% | |
| | refractivity ±0.00030 | |
| | temperature ±0.5°C | |
| Resolution | Brix 0.01% | |
| | refractivity 0.00001 | |
| | temperature 0.1°C | |
| Measuring mode | immersion | |
| Pressure resistance | ≤ 1MPa | |
| Measuring speed | 1time/5s | |
| Output (customizable) | analog output: (4~20)mA for Brix (0.00~90.00)% | |
| | digital output: RS485 | |
| Power supply | DC 24V±10%, working current <100mA | |
| Dimension | Ø88×109mm | Ø88×133mm |
| Weight | 827g | 882g |

application example



## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Cross flow tank | 1 pc |
| Clamp | 4 pcs |
| Polytef gasket | 6 pcs |
| Connector | 2 pcs |
| Wall piece | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Ultrasonic cleaning probe | 5806-ZX-UCP |
| High pressure water/air cleaning device | 5806-ZX-HPC |
| Automatic brush cleaning system | 5806-ZX-AC |

## SEA WATER BAUME METER
## CODE 5808-SW25

- Rapid measurement of sea water and salt water concentration
- Suitable for measuring the content of NaCl in aqueous solutions, snowmelt, brine, sea water and other saline solutions
- Automatic temperature compensation
- Display content and refractive index
- Automatic power off



VIDEO

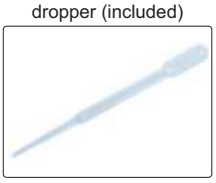
**SPECIFICATION**

| | |
|---|---|
| Measuring range | -1.00~25.00°Bé (1.3270~1.3950RI) |
| Accuracy | ±0.2°Bé (±0.0003RI) |
| Resolution | 0.01°Bé (0.0001RI) |
| Power supply | 1×AAA battery |
| Dimension | 121×58×25mm |
| Weight | 90g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Dropper | 1 pc |
| Battery (AAA) | 1 pc |

dropper (included)



## DIGITAL REFRACTOMETER
## CODE ISQ-DRM31

SUITABLE FOR WATER BASED COOLANT

- Quickly measure the concentration of coolant, sugar solution, juice and drinks
- Two measurement modes: single measurement and automatic average multiple measurement
- Two units: brix and refractive index
- Refer to the refraction factor of coolant, for example: the refraction factor of grinding emulsion is 2.1, the reading value is 6%, so the actual concentration is (2.1×6%)=12.6%
- Automatic power off



VIDEO

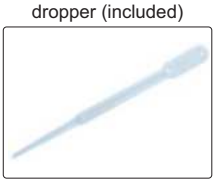
**SPECIFICATION**

| | |
|---|---|
| Measuring range | 0~50% (1.3330~1.4200RI) |
| Accuracy | ±0.2% (±0.0003RI) |
| Resolution | 0.1% (0.0001RI) |
| Power supply | 1×AAA battery |
| Dimension | 121×58×25mm |
| Weight | 90g |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Dropper | 1 pc |
| Battery (AAA) | 1 pc |

dropper (included)



## MINI DIGITAL REFRACTOMETER
## CODE 5801-A55

SUITABLE FOR WATER BASED COOLANT

- Quickly measure the concentration of coolant
- Automatic temperature compensation
- Brix and refractive index can be displayed
- Refer to the refraction coefficient of coolant, for example: the refraction coefficient of grinding emulsion is 2.1, the reading value is 6%, so the actual concentration is (2.1×6%)=12.6%
- Automatic power off



VIDEO

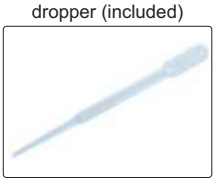
**SPECIFICATION**

| | |
|---|---|
| Measuring range | 0~50% (1.3330~1.4200RI) |
| Accuracy | ±0.2% (±0.0003RI) |
| Resolution | 0.1% (0.0001RI) |
| Power supply | built-in 3.7V rechargeable lithium battery |
| Dimension | 147×46×27mm |
| Weight | 115g (including battery) |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Dropper | 1 pc |

dropper (included)





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VIDEO

SUITABLE FOR WATER BASED COOLANT

## PORTABLE REFRACTOMETERS

- Quickly measure the concentration of coolant, sugar solution, juice and drinks
- Refer to the refraction factor of coolant, for example:
  the refraction factor of grinding emulsion is 2.1,
  the reading value is 6%, so the actual concentration is (2.1×6%)=12.6%




ISQ-RM30

**SPECIFICATION**

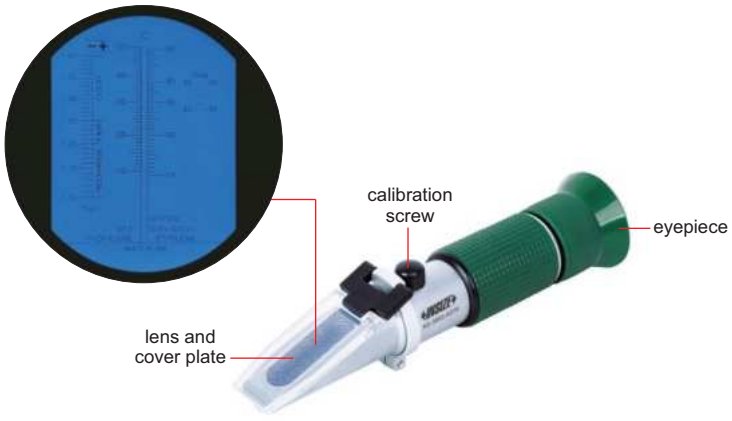
| Code | ISQ-RM10 | ISQ-RM30 | ISQ-RM80 |
|---|---|---|---|
| Measuring range | 0~10% | 0~32% | 0~80% |
| Accuracy (20°C) | ±0.1% | ±0.2% | ±0.5% |
| Resolution | 0.1% | 0.2% | 0.5% |
| Dimension | 27×40×184mm | 27×40×160mm | 27×40×137mm |
| Weight | 230g | 207g | 187g |



VIDEO

## PORTABLE REFRACTOMETER FOR AUTOMOTIVE LIQUID CODE 5802-A510

- Measure the freezing point of the antifreeze and the concentration of urea in diesel exhaust fluid
- Measure the specific gravity of battery fluid

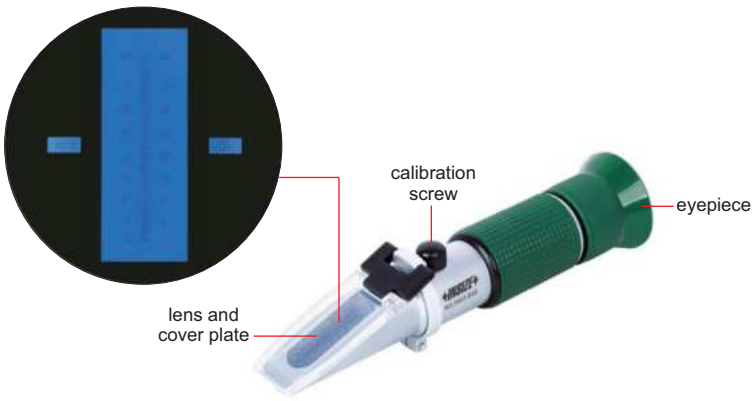



**SPECIFICATION**

| Measuring object | ethylene glycol | propylene glycol | urea | battery fluid |
|---|---|---|---|---|
| Measuring range | -50~0°C | -50~0°C | 30~35% | 1.10~1.40kg/l |
| Accuracy | ±5°C | ±5°C | ±1% | ±0.02kg/l |
| Resolution | 1°C | 1°C | 1% | 0.01kg/l |
| Dimension | 27×40×160mm | | | |
| Weight | 172g | | | |

## PORTABLE REFRACTOMETER FOR DIESEL EXHAUST FLUID CODE 5803-B40

- Measure the concentration of urea in diesel exhaust fluid
- Wide measuring range




**SPECIFICATION**

| Measuring range | 0~40% |
|---|---|
| Accuracy | ±0.2% (20°C) |
| Resolution | 0.2% |
| Dimension | 27×40×160mm |
| Weight | 170g |



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# HANDHELD AIRBORNE PARTICLE COUNTER
# CODE 0811-CA01

DATA OUTPUT

VIDEO



high efficiency filter
(included)



- Widely used in electronic production clean room testing, filter leakage detection, monitor biological safety, HVAC systems, computer rooms, food packaging environments, pharmaceutical and medical device production environments, hospital clean operating rooms, automotive spraying environments, etc.
- Using semiconductor laser sensor
- Measures the size and number of dust particles per unit volume of air in clean environments, and can be set to alarm at different purification levels
- Simultaneous counting of six counting channels (0.3μm, 0.5μm, 1μm, 3μm, 5μm, 10μm), and can be stored according to the room number respectively, according to the calculation of the upper confidence limit of 95% for each room (UCL value)
- It can be connected to a PC data acquisition system for remote control

## SPECIFICATION

| | | |
|---|---|---|
| Sampling flow | range | 2.83L/min (0.1ft³) |
| | accuracy | ±5% |
| Particle | particle diameter passage | 0.3μm, 0.5μm, 1μm, 3μm, 5μm, 10μm, simultaneous counting of six particle diameters |
| | repeatability | ≤10%FS |
| | error of particle sizes | ±30% (0.5μm, 5μm) |
| | accuracy | ±30%FS (0.5μm) |
| Self-cleaning time | | ≤10min |
| Delay sampling time | | 0~99s |
| Sampling time | | 1s~9999s |
| Sampling mode | | single, repeated, continuous, calculate, remote |
| Unit conversion | | m³, ft³ |
| Counting mode | | cumulative value, difference value, concentration value |
| UCL setting* | | sampling points (A): set from 2 to 9, sampling times per point (L): set from 2 to 9, location: set from 0 to 999 |
| Alarm setting | | the instrument is equipped with a cleanroom level alarm function, which will alarm when it exceeds the standard of class 100, 1000, 10000, 100000, 300000, 1000000, and will also alarm when the battery voltage is too low |
| Data storage | | store 1000 sets of data (including particle size, data, environmental data, time, sample volume, data location), no data loss after power failure |
| Environmental requirement | | temperature: 0~40°C, relative humidity: 20~90%, no condensation, the instrument should be used in a non-corrosive air environment |
| Power supply | | 16.8V rechargeable Li-ion battery, working time 8h |
| Dimension | | 230×130×450mm |
| Weight | | 600g |

* upper confidence limit of 95%

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Isokinetic sampling port | 1 pc |
| High efficiency filter | 1 pc |
| Communication cable | 1 set |
| Adapter | 1 pc |
| USB disk | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Printer | 0811-CA01-PRINTER |
| Temperature and humidity sensors | 0811-CA01-THW |
| Tripod | 0701-TR175 |



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# DRY LASER PARTICLE SIZE ANALYZER (BASIC TYPE)
# CODE 0815-D300






- According to GB/T 19077-2016, ISO 13320:2009
- Suitable for any powdered material, particularly good for materials which react with water, or shape change in liquids
- It can be used for metal and non-metal powder, cements, pharmaceuticals, fillers, catalysts, additives, lubricants, coal powder, mud and sand, dust, foodstuffs, graphites, photographic materials, calcium carbonate, kaolin and other powdery materials
- Using air as the dispersing medium and the principle of turbulent dispersion, ensure that the sample is thoroughly dispersed
- Based on the MIE scattering theory, converging Fourier transform optical path, and with He-Ne laser photodetectors
- Just need put in the sample, dust collection, air supply, feeding are all done automatically

## SPECIFICATION

| | | |
|---|---|---|
| **Measuring range** | | 0.1μm~300μm |
| **Channels number** | | 56pcs |
| **Accuracy*** | | ≤1% |
| **Repeatability*** | | ≤1% |
| **Dispersion method** | | dry-turbulence dispersion |
| **Dispersing medium** | | compressed air |
| **Test speed** | | <1min for each time |
| **Software function** | **analysis mode** | free distribution, R-R distribution, logarithm normal distribution, mesh number classification |
| | **statistic method** | volume distribution, quantity distribution |
| | **statistic comparison** | several testing results of samples, different batches of samples testing result, samples before and after processing, test result of samples in different time |
| | **user-defined analysis** | figure out percentage according to the particle size<br>figure out particle size according to the percentage<br>figure out percentage according to the particle size range |
| | **operation mode** | automatically control air flow speed, dispersion, test and analysis |
| | **test report** | word, excel, photo (bmp), text etc. |
| **Power supply** | | 220V, 50Hz |
| **Dimension** | | main unit: 765×450×325mm |
| | | dispersion unit: 260×285×135mm |
| **Weight** | | 36kg |

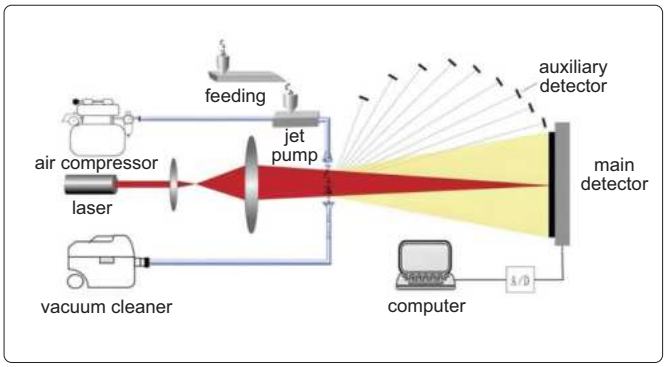
* Deviation of D50 on standard sample

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Air compressor** | 1 pc |
| **Dust collector** | 1 pc |
| **Diamond standard sample** | 1 pc |
| **Sampling spoon** | 2 pcs |
| **Computer** | 1 pc |
| **Toolkit*** | 1 set |

* Including mirror paper, screwdriver, fuse, PTFE thread seal tape, brush, rubber suction bulb

test principle



# OPACIMETER
# CODE TSM-C11E


standard filter (included)



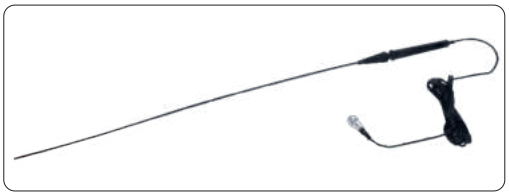

VIDEO

- According to ISO11614
- Used to test the visible contaminants in emissions (exhaust smoke) from the compression combustion (diesel) engine. Suitable for environmental protection, motor vehicle testing, engine manufacturing, automobile manufacturing and automobile repair
- LCD display and touch screen, can test "opacity" and "light absorption coefficient", simple and intuitive
- With "free acceleration test" and "transient test" function, automatic data processing
- Use sampling (split) test and “air curtain” protection technology, prevent the optical system from being polluted by exhaust smoke
- Test chamber is controlled under constant temperature, prevent the moisture condensation and temperature fluctuation for accurate measurements
- Automatic preheating and zeroing
- RS232 serial port communicates with external computer

## SPECIFICATION

| | | |
|---|---|---|
| Measuring range | opacity Ns | 0~99.9% |
| | light absorption coefficient K | 0~16.0m$^{-1}$ |
| | rotary speed | 300~8000rpm |
| | oil temperature | 0~120℃ |
| Resolution | opacity Ns | 0.1% |
| | light absorption coefficient K | 0.01m$^{-1}$ |
| | rotary speed | 1rpm |
| | oil temperature | 1℃ |
| Accuracy | opacity Ns | ±2% |
| | light absorption coefficient K | ±0.05m$^{-1}$ |
| | rotary speed | ±1% |
| | oil temperature | ±2°C |
| Warm-up | | 15min |
| Effective length of optical path | | 215mm |
| Equivalent length of optical path | | 430mm |
| Environment | temperature | 5~40°C |
| | relative humidity | 5~95%RH |
| Power supply | | AC220V 50Hz |
| Dimension | control unit | 370×280×220mm |
| | measurement unit | 435×230×360mm |
| Weight | control unit | 5.5kg |
| | measurement unit | 6.5kg |


speed adaptor (**optional**)


oil temperature sensor (**optional**)

## STANDARD DELIVERY

| | | |
|---|---|---|
| Main unit | Control unit | 1 pc |
| | Measurement unit | 1 pc |
| Sampling probe | | 1 pc |
| Connection cable | | 1 pc |
| Standard filter | | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Printer | TSM-C11-PRINT |
| Speed adaptor | TSM-C11-S |
| Oil temperature sensor | TSM-C11-T |
| Software and RS-232C cable | TSM-C11-SOFTWARE |



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Balances
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Density Balances
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Moisture Analyzers
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Weighing Scales
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Electronic Pocket Scales
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Platform Scales
Page 1171



Parcel Scales
Page 1172



Floor Scales
Page 1173



Forklift Scales
Page 1174



Electronic Crane Scales
Page 1175-1179



Weights
Page 1182-1185



GSM Cutters
Page 1185

# ELECTRONIC ANALYTICAL BALANCES

DATA OUTPUT

VIDEO



printer (**optional**)

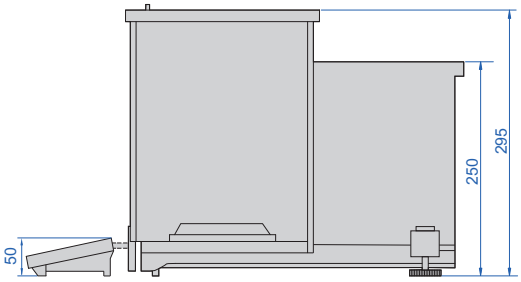


calibration weight
(included in **8310-120M**, **8310-210M** and **8310-320M**)

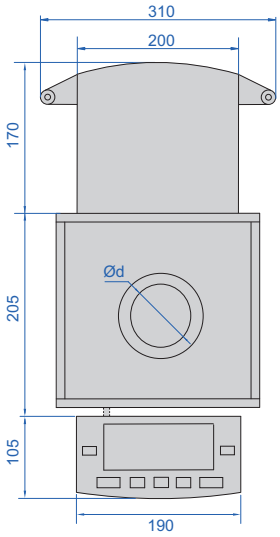


**8310-320A**

- Rear electromagnetic sensor
- Separated display unit and weighing unit, reduce vibration error
- Digital processing technology improves reading stability and response speed for micro sample addition, sample weight and balance reading is consistent
- Unit: g, oz, ct, lb
- Weighing, counting, taring, percentage
- Data output




Unit: mm




## SPECIFICATION

| Code | 8310-120M | 8310-210M | 8310-320M | 8310-120A | 8310-210A | 8310-320A |
|---|---|---|---|---|---|---|
| Calibration | external calibration | | | internal calibration | | |
| Maximum weighing | 120g | 210g | 320g | 120g | 210g | 320g |
| Minimum weighing | 10mg | 10mg | 10mg | 10mg | 10mg | 10mg |
| Resolution (d) | 0.1mg | 0.1mg | 0.1mg | 0.1mg | 0.1mg | 0.1mg |
| Verification interval (e) | 1mg | 1mg | 1mg | 1mg | 1mg | 1mg |
| Accuracy (m is load) | m≤50g: ±0.5mg;<br>50g<m≤200g: ±1mg;<br>m>200g: ±1.5mg | | | m≤50g: ±0.5mg;<br>50g<m≤200g: ±1mg;<br>m>200g: ±1.5mg | | |
| Repeatability | ±0.1mg | | | | | |
| Linearity | ±0.2mg | | | | | |
| Stabilization time | 2.5s | | | | | |
| Weighing pan size (Ød) | Ø90mm | | | | | |
| Output | RS232 | | | | | |
| Operation temperature | 10~30°C | | | | | |
| Operation humidity | 20~85%RH | | | | | |
| Power supply | power adapter (12V/2A) | | | | | |
| Dimension (L×W×H) | 480×310×320mm | | | | | |
| Weight | 6kg | | | | | |

## OPTIONAL ACCESSORY

| | |
|---|---|
| RS232 cable | 8304-CABLE* |
| Printer | 8303-PRINTER |

*Used to connect with computers



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DATA OUTPUT

VIDEO

# ELECTRONIC ANALYTICAL BALANCES (BASIC TYPE)





8304-120

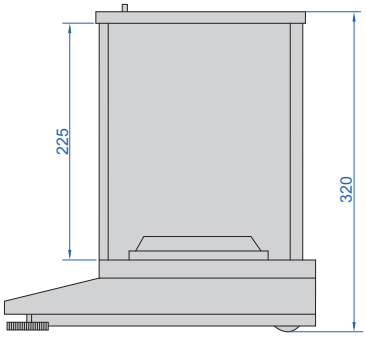


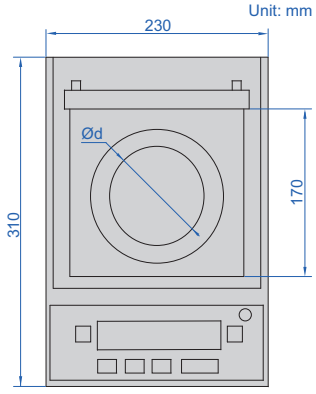
calibration weight (included)



printer (**optional**)

Unit: mm




- Downward-mounted electromagnetic sensor
- Weighing, counting, taring, percentage
- LCD display, with backlight
- Data output
- Unit: g, ct, oz, lb

## SPECIFICATION

| Code | 8304-120 | 8304-220 |
|---|---|---|
| Maximum weighing | 120g | 220g |
| Minimum weighing | 10mg | 10mg |
| Resolution (d) | 0.1mg | 0.1mg |
| Verification interval (e) | 1mg | 1mg |
| Accuracy (m is load) | m≤50g: ±0.5mg;<br>50g<m≤120g: ±1mg | m≤50g: ±0.5mg;<br>50g<m≤200g: ±1mg;<br>m>200g: ±1.5mg |
| Repeatability | ±0.2mg | |
| Linearity | ±0.2mg | |
| Stabilization time | 2.5s | |
| Output | RS232 | |
| Weighing pan size (Ød) | Ø90mm | |
| Operation temperature | 10~30°C | |
| Operation humidity | 20~85%RH | |
| Power supply | power adapter (12V/2A) | |
| Dimension (L×W×H) | 230×310×320mm | |

## OPTIONAL ACCESSORY

| | |
|---|---|
| RS232 cable | 8304-CABLE * |
| Printer | 8303-PRINTER |
| Data output cable (keyboard format) | 7302-8304 page 22 |

*Used to connect with computers

# ELECTRONIC PRECISION BALANCES

DATA OUTPUT



8303-520

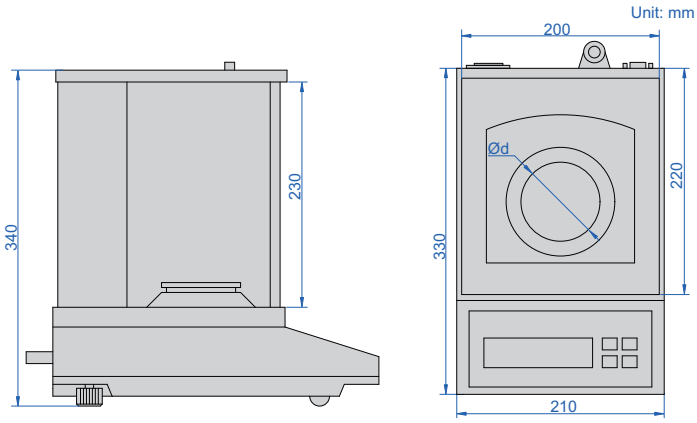


class F1 calibration weight (included)



printer (**optional**)

- Aluminum alloy shell, wind shield, three side glass sliding doors
- Electromagnetic balance sensor
- Unit: g, ct, ozt, oz, gn, dwt, mg
- Weighing, counting, taring
- Data output
- With a hook at the bottom




## SPECIFICATION

| Code | 8303-220 | 8303-320 | 8303-520 | 8303-620 | 8303-1020 | 8303-1520 | 8303-2020 |
|---|---|---|---|---|---|---|---|
| Maximum weighing | 220g | 320g | 520g | 620g | 1020g | 1520g | 2020g |
| Minimum weighing | 20mg | 20mg | 100mg | 100mg | 100mg | 100mg | 100mg |
| Resolution (d) | 1mg | 1mg | 1mg | 1mg | 1mg | 1mg | 1mg |
| Verification interval (e) | 10mg | 10mg | 10mg | 10mg | 10mg | 10mg | 10mg |
| Accuracy (m is load) | m≤50g: ±5mg<br>50g<m≤200g: ±10mg<br>m>200g: ±15mg | | m≤500g: ±5mg<br>m>500g: ±10mg | | | | m≤500g: ±5mg<br>500g<m≤2000g: ±10mg<br>m>2000g: ±15mg |
| Weighing pan size (Ød) | Ø80mm | | | | Ø120mm | | |
| Operation temperature | 15~30°C | | 18~23°C | | | | |
| Operation humidity | 40%~80%RH | | 50%~70%RH | | | | |
| Power supply | 220V, 50/60Hz | | | | | | |
| Dimension (L×W×H) | 330×210×340mm | | | | | | |

## OPTIONAL ACCESSORY

| | |
|---|---|
| RS232 cable | **8301-CABLE** * |
| Printer | **8303-PRINTER** |
| Data output cable (keyboard format) | **7302-8001** page 22 |
| Wireless transmitter (receiver is needed) | **7315-8301** page 8 |

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DATA OUTPUT | TOUCH SCREEN | INTERNAL CALIBRATION

# ELECTRONIC PRECISION BALANCES



VIDEO



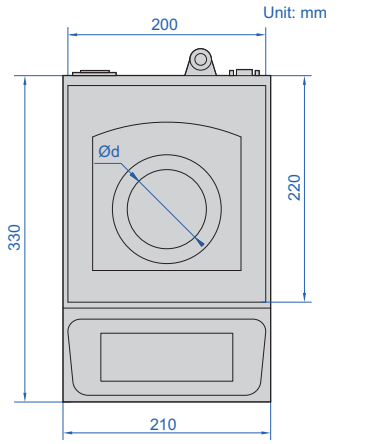
class F1 calibration weight (included)

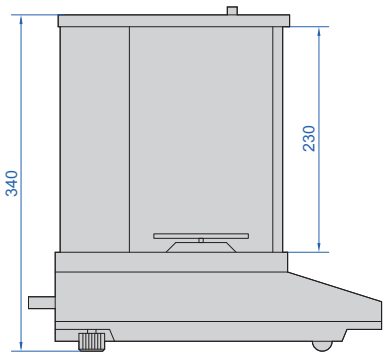


printer (**optional**)



**8319-320**




- Built-in calibration weights, automatic internal calibration
- Large touchscreen display
- Weighing, counting, taring, percentage display, density detection
- Aluminium alloy shell, wind shield, three side glass sliding doors
- Unit: g, ct, ozt, oz, gn, dwt, mg
- Electromagnetic balanced sensor
- With a hook at the bottom
- Data output

## SPECIFICATION

| Code | 8319-220 | 8319-320 | 8319-520 | 8319-620 | 8319-1020 | 8319-1520 |
|---|---|---|---|---|---|---|
| Maximum weighing | 220g | 320g | 520g | 620g | 1020g | 1520g |
| Minimum weighing | 20mg | 20mg | 100mg | 100mg | 100mg | 100mg |
| Resolution (d) | 1mg | 1mg | 1mg | 1mg | 1mg | 1mg |
| Verification interval (e) | 10mg | 10mg | 10mg | 10mg | 10mg | 10mg |
| Accuracy (m is load) | m≤50g: ±5mg<br>50g<m≤200g: ±10mg<br>m>200g: ±15mg | | m≤500g: ±5mg<br>m>500g: ±10mg | | | |
| Weighing pan size (Ød) | Ø80mm | | | | Ø120mm | |
| Operation temperature | 15~30°C | | 18~23°C | | | |
| Operation humidity | 40%~80%RH | | 50%~70%RH | | | |
| Power supply | 220V, 50/60Hz | | | | | |
| Dimension (L×W×H) | 330×210×340mm | | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Calibration weight | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| RS232 cable | 8301-CABLE * |
| Printer | 8303-PRINTER |
| Data output cable (keyboard format) | 7302-8001 page 22 |
| Wireless transmitter (receiver is needed) | 7315-8301 page 8 |

*Used to connect with computers

# ELECTRONIC BALANCES

DATA OUTPUT



**8301-3000**

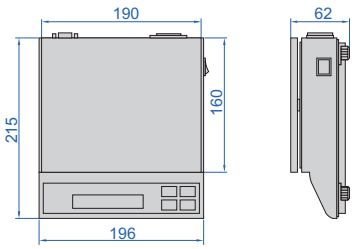


windshield
(included in **8301-300**, **8301-600** and **8301-1200**)



calibration weight
(included in **8301-300**, **8301-600** and **8301-1200**)

Unit: mm




- Automatic zero when power on
- Unit: g (gram), ct (carat), ozt (troy ounce)
- Weighing, counting, taring
- Overload alarm
- Data output

## SPECIFICATION

| Code | 8301-300 | 8301-600 | 8301-1200 | 8301-3000 | 8301-6000 |
|---|---|---|---|---|---|
| Maximum weighing | 300g | 600g | 1200g | 3000g | 6000g |
| Minimum weighing | 0.2g | 0.2g | 0.2g | 2g | 2g |
| Resolution (d) | 0.01g | 0.01g | 0.01g | 0.1g | 0.1g |
| Verification interval (e) | 0.1g | 0.1g | 0.1g | 1g | 1g |
| Accuracy (m is load) | m≤50g: ±0.05g; 50g<m≤200g: ±0.1g; m>200g: ±0.15g | | m≤500g: ±0.05g; m>500g: ±0.1g | m≤500g: ±0.5g; 500g<m≤2000g: ±1g; m>2000g: ±1.5g | |
| Weighing pan size | Ø135mm | | | 190×160mm | |
| Operation temperature | 0~40°C | | | | |
| Operation humidity | ≤80%RH | | | | |
| Power supply | 220V, 50/60Hz | | | | |
| Dimension (L×W×H) | 215×196×62mm | | | | |

## OPTIONAL ACCESSORY

| | |
|---|---|
| RS232 cable | **8301-CABLE*** |
| Data output cable (keyboard format) | **7302-8001** page 22 |
| Wireless transmitter (receiver is needed) | **7315-8301** page 8 |

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VIDEO

DATA OUTPUT

# ELECTRONIC BALANCES (STANDARD TYPE)



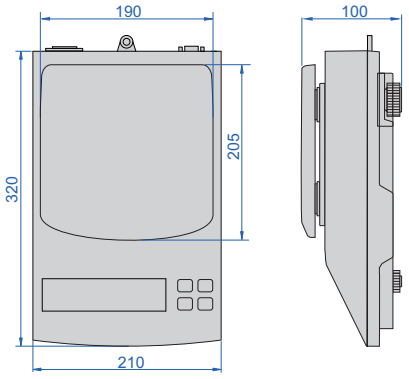
**8305-5000**

- LCD with back light
- Unit: g, ct, ozt, oz, GN, dwt, lb, kg
- Weighing, counting, taring
- With a hook at the bottom
- Data output



calibration weight
(included in **8305-2000** and **8305-3000**)

Unit: mm




**SPECIFICATION**

| Code | 8305-2000 | 8305-3000 | 8305-5000 | 8305-6000 |
|---|---|---|---|---|
| Maximum weighing | 2kg | 3kg | 5kg | 6kg |
| Minimum weighing | 0.5g | 0.5g | 0.5g | 0.5g |
| Resolution (d) | 0.01g | 0.01g | 0.01g | 0.01g |
| Verification interval (e) | 0.1g | 0.1g | 0.1g | 0.1g |
| Accuracy (m is load) | m≤0.5kg: ±0.05g;<br>0.5kg<m≤2kg: ±0.1g | m≤0.5kg: ±0.05g;<br>0.5kg<m≤2kg: ±0.1g<br>m>2kg: ±0.15g | m≤0.5kg: ±0.05g;<br>0.5kg<m≤2kg: ±0.1g<br>m>2kg: ±0.15g | m≤0.5kg: ±0.05g;<br>0.5kg<m≤2kg: ±0.1g<br>m>2kg: ±0.15g |
| Weighing pan size | 190×205mm | | | |
| Output | RS232 | | | |
| Operation temperature | 0~40°C | | | |
| Operation humidity | ≤80%RH | | | |
| Power supply | 220V, 50/60Hz | | | |
| Dimension (L×W×H) | 320×210×100mm | | | |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| RS232 cable | **8301-CABLE*** |
| Printer | **8303-PRINTER** |
| Data output cable (keyboard format) | **7302-8001** page 22 |
| Wireless transmitter (receiver is needed) | **7315-8301** page 8 |

*Used to connect with computers



printer (**optional**)

# INDUSTRIAL ELECTRONIC BALANCES (BASIC TYPE)

POPULAR MODEL

VIDEO



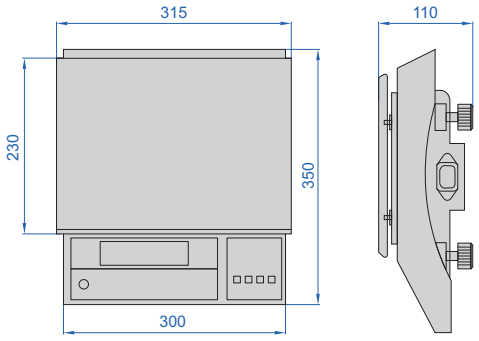
printer (**optional**)



**8306-20AD**

- Double weighing pan in stainless steel and plastic
- Weighing, simple counting, taring
- Strain balance sensor
- LCD display, with backlight
- Unit: g, lb, ct, oz
- Overload alarm

Unit: mm




**SPECIFICATION**

| | |
|---|---|
| **Operation temperature** | -10~40°C |
| **Operation humidity** | ≤85%RH |
| **Dimension of pan** | 315×230mm |
| **Power supply** | rechargeable lead acid battery (6V/4Ah) |
| **Output** | ≤2s |

| Code | Maximum weighing | Resolution (d) | Minimum weighing | Verification interval (e) | Number of verification interval (n) | Accuracy (m is load) | Output |
|---|---|---|---|---|---|---|---|
| **8306-10** | 10kg | 1g | 20g | 10g | 1000 | m≤5kg: ±5g; m>5kg: ±10g | no |
| **8306-15** | 15kg | 1g | 20g | 10g | 1500 | m≤5kg: ±5g; m>5kg: ±10g | |
| **8306-20** | 20kg | 1g | 20g | 10g | 2000 | m≤5kg: ±5g; m>5kg: ±10g | |
| **8306-30** | 30kg | 1g | 20g | 10g | 3000 | m≤5kg: ±5g;<br>5kg<m≤20kg: ±10g;<br>m>20kg: ±15g | |
| **8306-5A** | 5kg | 0.1g | 5g | 1g | 5000 | ±0.5g | |
| **8306-10A** | 10kg | 0.1g | 5g | 1g | 10000 | m≤5kg: ±0.5g; m>5kg: ±1g | |
| **8306-15A** | 15kg | 0.1g | 5g | 1g | 15000 | m≤5kg: ±0.5g; m>5kg: ±1g | |
| **8306-20A** | 20kg | 0.1g | 5g | 1g | 20000 | m≤5kg: ±0.5g; m>5kg: ±1g | |
| **8306-10D** | 10kg | 1g | 20g | 10g | 1000 | m≤5kg: ±5g; m>5kg: ±10g | RS232 |
| **8306-15D** | 15kg | 1g | 20g | 10g | 1500 | m≤5kg: ±5g; m>5kg: ±10g | |
| **8306-20D** | 20kg | 1g | 20g | 10g | 2000 | m≤5kg: ±5g; m>5kg: ±10g | |
| **8306-30D** | 30kg | 1g | 20g | 10g | 3000 | m≤5kg: ±5g;<br>5kg<m≤20kg: ±10g;<br>m>20kg: ±15g | |
| **8306-5AD** | 5kg | 0.1g | 5g | 1g | 5000 | ±0.5g | |
| **8306-10AD** | 10kg | 0.1g | 5g | 1g | 10000 | m≤5kg: ±0.5g; m>5kg: ±1g | |
| **8306-15AD** | 15kg | 0.1g | 5g | 1g | 15000 | m≤5kg: ±0.5g; m>5kg: ±1g | |
| **8306-20AD** | 20kg | 0.1g | 5g | 1g | 20000 | m≤5kg: ±0.5g; m>5kg: ±1g | |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **RS232 cable** | **8306-CABLE** * |
| **Printer** | **8306-PRINTER** |

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VIDEO

DATA OUTPUT

# INDUSTRIAL ELECTRONIC BALANCES





alarm light (**optional**)



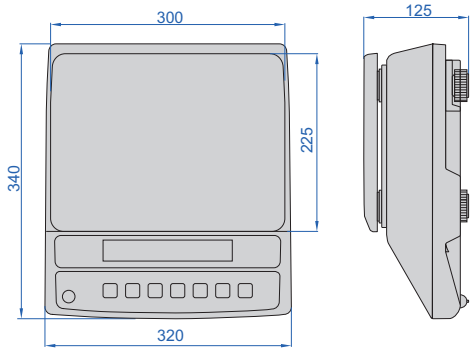
printer (**optional**)



**8307-15K**

- Zero-setting, weighing, counting, checking alarm
- Subtracting tare value, accumulation, percentage display
- Overload alarm
- LCD display, with backlight
- Automatic power off
- Data output
- Unit: kg, lb, g, oz, t (ola)

Unit: mm




**SPECIFICATION**

| | |
|---|---|
| **Operation temperature** | -10~40°C |
| **Operation humidity** | 30%~80%RH |
| **Dimension of pan** | 300×225mm |
| **Power supply** | rechargeable lead acid battery (6V/4Ah) |
| **Output** | RS232 |

| Code | Maximum weighing | Resolution (d) | Minimum weighing | Verification interval (e) | Number of verification interval (n) | Accuracy (m is load) |
|---|---|---|---|---|---|---|
| **8307-6K** | 6kg | 0.05g | 2.5g | 0.1g | 60000 | m≤500g: ±0.05g; 500g<m≤2kg: ±0.1g; m>2kg: ±0.15g |
| **8307-15K** | 15kg | 0.1g | 5g | 1g | 15000 | m≤5kg: ±0.5g; m>5kg: ±1g |
| **8307-30K** | 30kg | 0.2g | 10g | 1g | 30000 | m≤5kg: ±0.5g; 5kg<m≤20kg: ±1g; m>20kg: ±1.5g |
| **8307-3KA** | 3kg | 0.05g | 2.5g | 0.1g | 30000 | m≤500g: ±0.05g; 500g<m≤2kg: ±0.1g; m>2kg: ±0.15g |
| **8307-6KA** | 6kg | 0.1g | 5g | 1g | 6000 | m≤5kg: ±0.5g; m>5kg: ±1g |
| **8307-15KA** | 15kg | 0.2g | 10g | 1g | 15000 | m≤5kg: ±0.5g; m>5kg: ±1g |
| **8307-30KA** | 30kg | 0.5g | 25g | 1g | 30000 | m≤5kg: ±0.5g; 5kg<m≤20kg: ±1g; m>20kg: ±1.5g |
| **8307-3KB** | 3kg | 0.1g | 2g | 1g | 3000 | m≤500g: ±0.5g; 500g<m≤2kg: ±1g; m>2kg: ±1.5g |
| **8307-6KB** | 6kg | 0.2g | 10g | 1g | 6000 | m≤5kg: ±0.5g; m>5kg: ±1g |
| **8307-15KB** | 15kg | 0.5g | 25g | 1g | 15000 | m≤5kg: ±0.5g; m>5kg: ±1g |
| **8307-30KB** | 30kg | 1g | 20g | 10g | 3000 | m≤5kg: ±5g; 5kg<m≤20kg: ±10g; m>20kg: ±15g |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Alarm light** | **8001-ALARM** |
| **Printer** | **8001-PRINTER** |
| **Data output cable (keyboard format)** | **7302-8001** page 22 |
| **Wireless transmitter (receiver is needed)** | **7315-8001** page 8 |

# INDUSTRIAL ELECTRONIC BALANCES

DATA OUTPUT

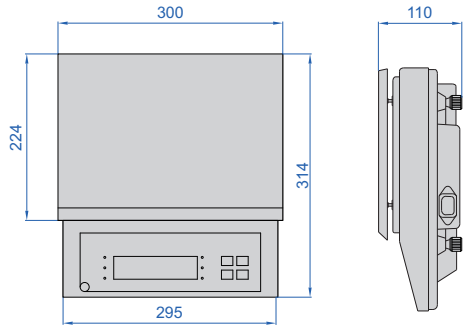
VIDEO

- Double weighing pan in stainless steel and plastic
- Automatic calibration, zero tracking, weighing, counting, taring
- Aluminium alloy base
- Strain balance sensor
- Data output
- Unit: kg, lb



**8308-30KB**

Unit: mm




**SPECIFICATION**

| | |
|---|---|
| **Operation temperature** | 0~40°C |
| **Operation humidity** | ≤80%RH |
| **Dimension of pan** | 300×224mm |
| **Power supply** | rechargeable lead acid battery (6V/4Ah) |
| **Output** | RS232 |

| Code | Maximum weighing | Resolution (d) | Minimum weighing | Verification interval (e) | Number of verification interval (n) | Accuracy (m is load) |
|---|---|---|---|---|---|---|
| **8308-3K** | 3kg | 0.1g | 2g | 1g | 3000 | m≤500g: ±0.5g; 500g<m≤2kg: ±1g; m>2kg: ±1.5g |
| **8308-6K** | 6kg | 0.1g | 2g | 1g | 6000 | m≤500g: ±0.5g; 500g<m≤2kg: ±1g; m>2kg: ±1.5g |
| **8308-10K** | 10kg | 1g | 20g | 10g | 1000 | m≤5kg: ±5g; m>5kg: ±10g |
| **8308-15K** | 15kg | 0.5g | 25g | 1g | 15000 | m≤5kg: ±0.5g; m>5kg: ±1g |
| **8308-20K** | 20kg | 1g | 20g | 10g | 2000 | m≤5kg: ±5g; m>5kg: ±10g |
| **8308-30K** | 30kg | 1g | 20g | 10g | 3000 | m≤5kg: ±5g; 5kg<m≤20kg: ±10g; m>20kg: ±15g |
| **8308-3KA** | 3kg | 0.5g | 10g | 1g | 3000 | m≤500g: ±0.5g; 500g<m≤2kg: ±1g; m>2kg: ±1.5g |
| **8308-6KA** | 6kg | 0.5g | 10g | 1g | 6000 | m≤500g: ±0.5g; 500g<m≤2kg: ±1g; m>2kg: ±1.5g |
| **8308-15KA** | 15kg | 1g | 20g | 10g | 1500 | m≤5kg: ±5g; m>5kg: ±10g |
| **8308-30KA** | 30kg | 5g | 100g | 10g | 3000 | m≤5kg: ±5g; 5kg<m≤20kg: ±10g; m>20kg: ±15g |
| **8308-10KB** | 10kg | 0.1g | 5g | 1g | 10000 | m≤5kg: ±0.5g; m>5kg: ±1g |
| **8308-20KB** | 20kg | 0.1g | 5g | 1g | 15000 | m≤5kg: ±0.5g; m>5kg: ±1g |
| **8308-30KB** | 30kg | 0.1g | 5g | 1g | 30000 | m≤5kg: ±0.5g; 5kg<m≤20kg: ±1g; m>20kg: ±1.5g |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **RS232 cable** | **8301-CABLE*** |
| **Printer** | **8303-PRINTER** |
| **Data output cable (keyboard format)** | **7302-8001** page 22 |
| **Wireless transmitter (receiver is needed)** | **7315-8301** page 8 |

*Used to connect with computers



printer (**optional**)

CAN BE CUSTOMIZED | TOUCH SCREEN | HIGH ACCURACY | DATA OUTPUT

VIDEO

# INDUSTRIAL ELECTRONIC BALANCES (ADVANCED TYPE)



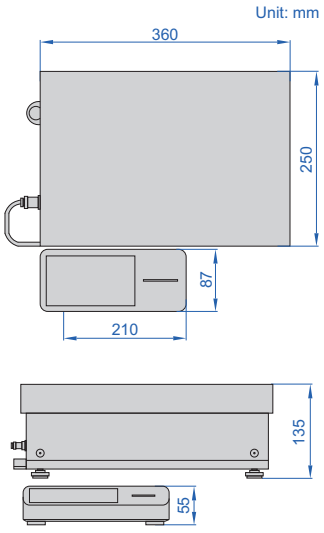
8309-35



printer (**optional**)



charge pal (**optional**)




- Electromagnetic balanced sensor
- Compensates for zero stability and weighing accuracy by loading accurately at multiple temperature points
- Stainless steel weighing pan, acid and corrosion resistant
- Manual screen off, screen saver
- Weighing, counting, taring
- Overload alarm
- Unit: g, kg, lb, ct, oz
- Password protection
- Data output

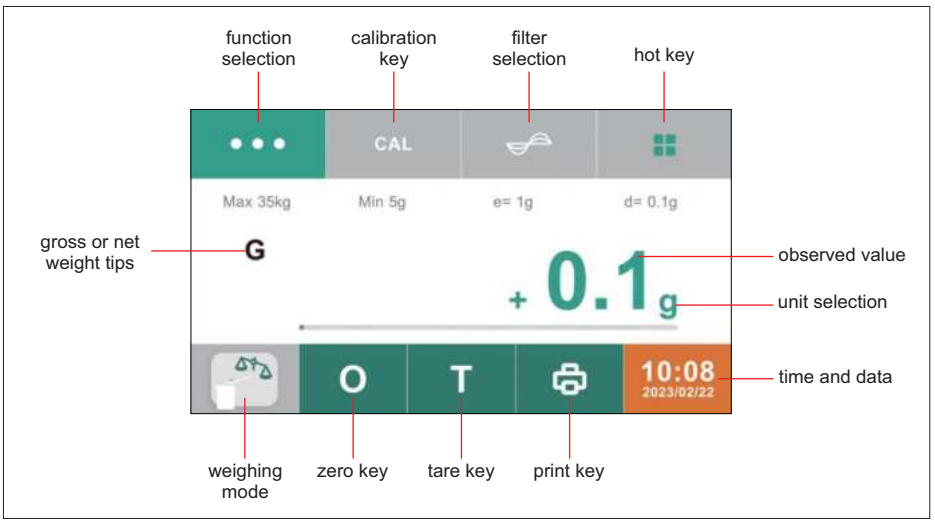
**SPECIFICATION**

| Code | 8309-16 | 8309-20 | 8309-30 | 8309-35 | 8309-16A | 8309-20A | 8309-30A | 8309-35A |
|---|---|---|---|---|---|---|---|---|
| Maximum weighing | 16kg | 20kg | 30kg | 35kg | 16kg | 20kg | 30kg | 35kg |
| Resolution (d) | 0.1g | | | | 0.05g | | | |
| Verification interval (e) | 1g | | | | 0.1g | | | |
| Accuracy | ±0.1g | | ±0.2g | | ±0.05g | | ±0.1g | |
| Repeatability | ±0.1g | | | | ±0.05g | | | |
| Linearity | ±0.1g | | | | ±0.05g | | | |
| Weight of calibration | 10kg | | 20kg | | 10kg | | 20kg | |
| Calibration method | external calibration | | | | | | | |
| Minimum weighing | 5g | | | | | | | |
| Stabilization time | ≤1.5s | | | | | | | |
| Operation temperature | 10~30°C | | | | | | | |
| Operation humidity | 30%~80%RH | | | | | | | |
| Weighing pan size | 360×250mm | | | | | | | |
| Power supply | power adapter (5V/2A) | | | | | | | |
| Data interface | DB9, Type-C, RS485 | | | | | | | |
| Communication protocols | compatible with SBI (RS232) and SICS communication protocols | | | | | | | |

To be continued

Continued from previous page

weighing test interface




**Measurement functions:**

Weighing
This application determines the weight of the object to be weighed within the specific weighing range of the device

Mixing
The application allows up to 99 ingredients for a mixture or recipe to be placed sequentially in a container. After each placement of an ingredient, the balance will automatically tare the weight and can display the individual or total weight of the ingredients

Statistic
The application can save up to 99 weighing values and calculated values, and perform statistical evaluations

Component
The application can sum up to 99 weighing values, can weigh components in different containers, and can tare each container before weighing each component

Density
The application can determine the density of solid materials based on the buoyancy method (**powder density cannot be tested, no density components are supplied as standard**)

Percentage
This application allows the determination of the percentage or percentage difference of the weighed object based on a reference weight

Transition
The application can multiply the weighing value with a customizable coefficient to obtain a converted measurement, the last entered coefficient is saved when the power supply is interrupted

Animal weighing
The application is suitable for moving weights (e.g. live animals) and for weighing in unstable environments, where a measuring cycle with a defined number of measurements is performed automatically for each object to be weighed, the average value is determined from the individual measurements and displayed as a result

Check weighing
The application checks that the weighing value is within the specified upper and lower limits and determines the test result, allowing weighing of a specific rated weight

Peak holding
This application determines the maximum weighing value (peak value) of a sample and displays the value for up to 5 seconds after the balance has been unloaded

Counting
The application counts almost identical piece weights by comparing them to a reference sample

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **RS232 cable*** | 1 pc |
| **Touch screen indicator** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Printer** | **8309-PRINTER** |
| **Charge pal** | **1155-5-POB** |

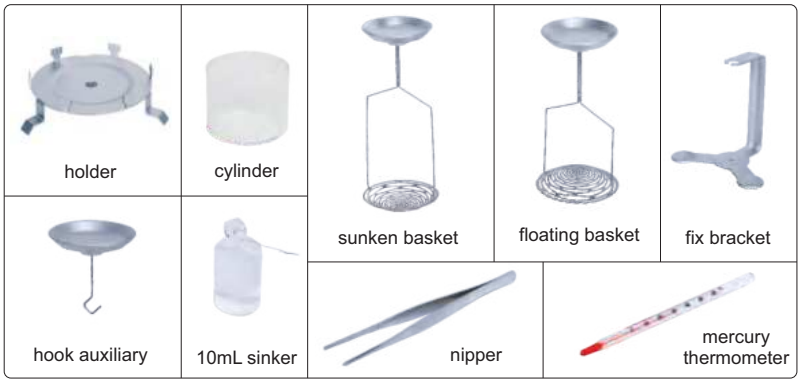
*Used to connect computers

# ELECTRONIC DENSITY BALANCES

VIDEO

DATA OUTPUT

density accessories (included)






**8102-320**

- Suitable for measuring the density of solids and liquids
- Aluminium alloy shell, wind shield, three side glass sliding doors
- With a hook at the bottom
- Weighing, counting, taring, percentage display
- Built-in calibration weights, automatic internal calibration
- Unit: g, ct, ozt, oz, gn, dwt, mg
- Electromagnetic balanced sensor
- Large touchscreen display
- Data output

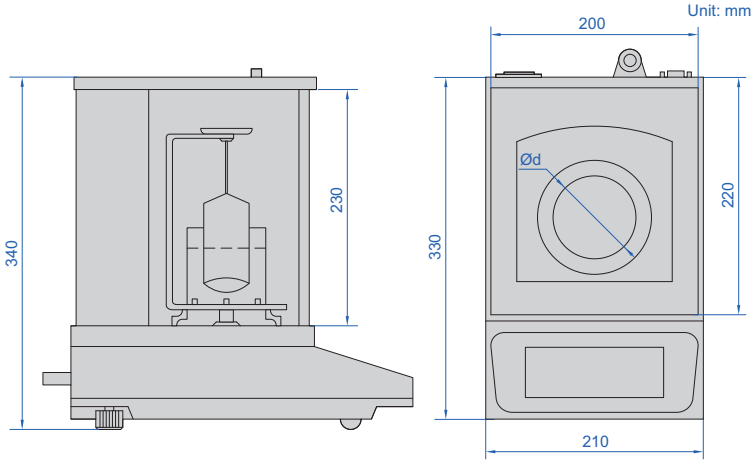


class F1 calibration weight (included)



printer (**optional**)

Unit: mm




## SPECIFICATION

| Code | 8102-220 | 8102-320 | 8102-520 | 8102-620 | 8102-1020 | 8102-1520 |
|---|---|---|---|---|---|---|
| Maximum weighing | 220g | 320g | 520g | 620g | 1020g | 1520g |
| Minimum weighing | 20mg | 20mg | 100mg | 100mg | 100mg | 100mg |
| Resolution (d) | 1mg | 1mg | 1mg | 1mg | 1mg | 1mg |
| Verification interval (e) | 10mg | 10mg | 10mg | 10mg | 10mg | 10mg |
| Accuracy (m is load) | m≤50g: ±5mg; 50g<m≤200g: ±10mg; m>200g: ±15mg | | m≤500g: ±5mg; m>500g: ±10mg | | | |
| Weighing pan size (Ød) | Ø80mm | | | | Ø120mm | |
| Operation temperature | 15~30°C | | 18~23°C | | | |
| Operation humidity | 40%~80%RH | | 50%~70%RH | | | |
| Power supply | 220V, 50/60Hz | | | | | |
| Dimension (L×W×H) | 330×210×340mm | | | | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Calibration weight | 1 pc |
| Density accessories | 1 set |

## OPTIONAL ACCESSORY

| | |
|---|---|
| RS232 cable | 8301-CABLE* |
| Printer | 8303-PRINTER |
| Data output cable (keyboard format) | 7302-8001 page 22 |
| Wireless transmitter (receiver is needed) | 7315-8301 page 8 |
| Infrared and penetration thermometer | 0321-IT42 |

*Used to connect computers



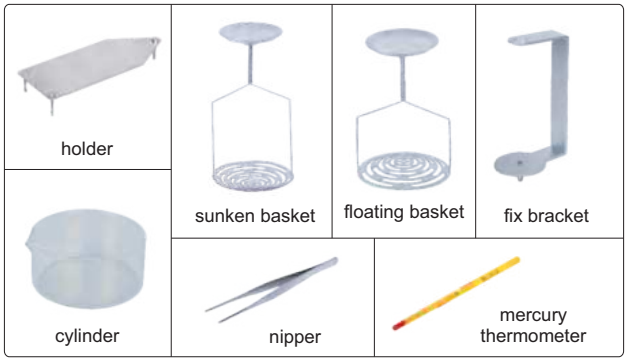
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# ELECTRONIC DENSITY BALANCES

DATA OUTPUT

VIDEO

density accessories (included)






**8103-120**

- Suitable for measuring the density of solids and liquids
- Transparent glass windshield, bottom with lower weighing hooks
- Weighing, counting, taring, percentage display
- Unit: ct, oz, g, lb
- Rear electromagnetic sensor
- LCD display, with backlight
- Highly accurate and sensitive temperature and humidity sensors reduce the effect of ambient humidity and the sensitivity to temperature changes
- Separated display unit and weighing unit, reduce vibration error
- Data output

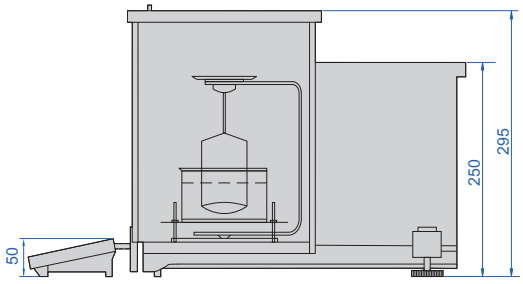


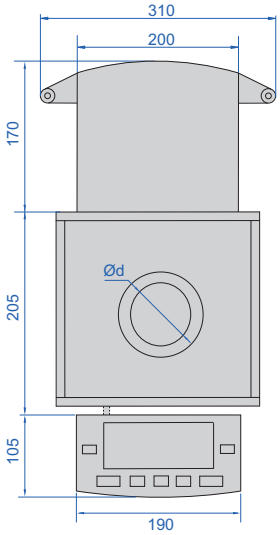
class F1 calibration weight (included)



printer (**optional**)

Unit: mm




## SPECIFICATION

| Code | 8103-120 | 8103-210 |
|---|---|---|
| Maximum weighing | 120g | 210g |
| Minimum weighing | 10mg | 10mg |
| Resolution (d) | 0.1mg | 0.1mg |
| Verification interval (e) | 1mg | 1mg |
| Accuracy (m is load) | m≤50g: ±0.5mg; m>50g: ±1mg | m≤50g: ±0.5mg; 50g<m≤200g: ±1mg; m>200g: ±1.5mg |
| Sample weight | >10g | |
| Weighing pan size (Ød) | Ø90mm | |
| Repeatability | ±0.1mg | |
| Linearity | ±0.2mg | |
| Stabilization time | 2.5s | |
| Operation temperature | 13~25°C | |
| Operation humidity | 40~80%RH | |
| Output | RS232 | |
| Power supply | power adapter (12V/2A) | |
| Dimension (LxWxH) | 480×310×320mm | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Calibration weight | 1 pc |
| Density accessories | 1 set |

## OPTIONAL ACCESSORY

| | |
|---|---|
| RS232 cable | 8301-CABLE* |
| Printer | 8303-PRINTER |
| Infrared and penetration thermometer | 0321-IT42 |

*Used to connect computers



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DATA OUTPUT

# ELECTRONIC ANTIMAGNETIC BALANCES

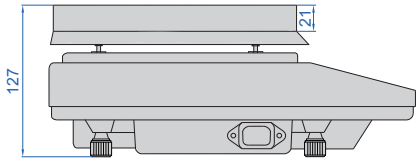


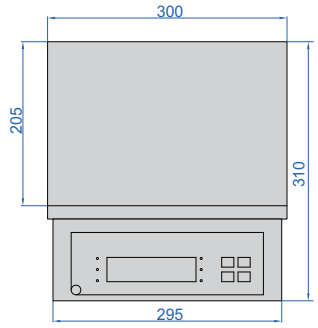


**8106-30KG**

- Automatic calibration, zero tracking, weighing, counting, taring
- Aluminium alloy base, wooden pallet
- Data output
- Strain balance Sensor
- Unit: kg, lb

Unit: mm




**SPECIFICATION**

| Code | 8106-3KG | 8106-6KG | 8106-10KG | 8106-20KG | 8106-30KG |
|---|---|---|---|---|---|
| Maximum weighing | 3kg | 6kg | 10kg | 20kg | 30kg |
| Minimum weighing | 2g | 2g | 20g | 20g | 20g |
| Resolution (d) | 0.1g | 0.1g | 1g | 1g | 1g |
| Verification interval (e) | 1g | 1g | 10g | 10g | 10g |
| Accuracy (m is load) | m≤500g: ±0.5g;<br>500g<m≤2kg: ±1g;<br>m>2kg: ±1.5g | | m≤5kg: ±5g;<br>m>5kg: ±10g | | m≤5kg: ±5g;<br>5kg<m≤20kg: ±10g<br>m>20kg: ±15g |
| Operation temperature | 0~40°C | | | | |
| Operation humidity | ≤80%RH | | | | |
| Power supply | 220V, 50/60Hz | | | | |
| Dimension of pan | 205×300mm | | | | |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| RS232 cable | 8301-CABLE* |
| Printer | 8303-PRINTER |
| Data output cable (keyboard format) | **7302-8001** page 22 |
| Wireless transmitter (receiver is needed) | **7315-8301** page 8 |

*Used to connect with computers



printer (**optional**)

# MOISTURE ANALYZERS

DATA OUTPUT

VIDEO








**8701-RM40**



calibration weight
(included)

- LCD screen
- High sensitivity temperature and humidity sensor
- Ring halogen lamp heating evenly, shorten drying time

## SPECIFICATION

| Code | | 8701-RM20 | 8701-RM30 | 8701-RM40 |
|---|---|---|---|---|
| Maximum weighing | | 120g | 120g | 120g |
| Resolution (d) | | 5mg | 1mg | 0.1mg |
| Accuracy for moisture | sample<10g | ±10% | ±0.5% | ±0.2% |
| | sample≥10g | ±5% | ±0.3% | ±0.1% |
| Operation temperature | | 13~25°C | | |
| Verification interval | | 2.5s | | |
| Warm-up time | | 20~30 minutes | | |
| Weighing pan size | | Ø90mm | | |
| Heating source | | halogen lamp (450W) | | |
| Range for heating temperature | | 60~200°C | | |
| Heating time setting | | 0~99 minutes | | |
| Heating mode | | standard heating, step heating, rapid heating | | |
| Shutdown mode | | automatic shutdown, manual shutdown, timed shutdown | | |
| Output | | RS232C | | |
| Power supply | | 220V, 50/60Hz | | |
| Dimension (L×W×H) | | 330×210×340mm | | |

## STANDARD DELIEVERY

| | |
|---|---|
| Main unit | 1 pc |
| Weight | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| RS232 cable | 8304-CABLE * |
| Printer | 8303-PRINTER |

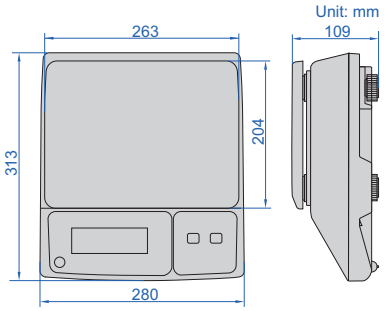
*Used to connect with computers

## WEIGHING SCALES (OIML CERTIFICATE)

- LCD display, with backlight
- Zero-setting, subtracting tare value
- Overload alarm
- Automatic power off
- OIML certificate (No. 0200-NAWI-04601)



**8002-30M**




**SPECIFICATION**

| Code | 8002-6M | 8002-15M | 8002-30M | 8002-6MD | 8002-15MD | 8002-30MD |
|---|---|---|---|---|---|---|
| Maximum weighing | 3/6kg | 6/15kg | 15/30kg | 3/6kg | 6/15kg | 15/30kg |
| Minimum weighing | 20g | 40g | 100g | 20g | 40g | 100g |
| Resolution (d) | 1/2g | 2/5g | 5/10g | 1/2g | 2/5g | 5/10g |
| Verification interval (e) | 2g | 5g | 10g | 2g | 5g | 10g |
| Accuracy (m is load) | m≤3kg: ±1g<br>3kg<m≤6kg: ±2g | m≤6kg: ±2g<br>6kg<m≤15kg: ±5g | m≤15kg: ±5g<br>15kg<m≤30kg: ±10g | m≤3kg: ±1g<br>3kg<m≤6kg: ±2g | m≤6kg: ±2g<br>6kg<m≤15kg: ±5g | m≤15kg: ±5g<br>15kg<m≤30kg: ±10g |
| Output | no | | | RS232 | | |
| Operation temperature | -10~40°C | | | | | |
| Power supply | rechargeable battery (6V/3.2Ah), power adapter (12V/500mA) | | | | | |
| Dimensions of pan | 263×204mm | | | | | |

## WEIGHING SCALES (HIGH PRECISION)

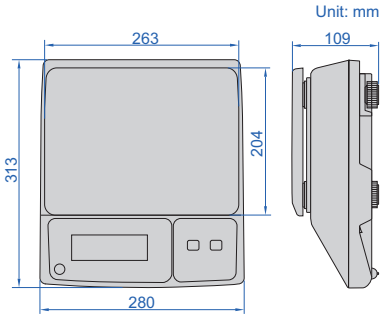


printer (**optional**)

- LCD display, with backlight
- Zero-setting, subtracting tare value
- Overload alarm
- Automatic power off



**8001-30**




**SPECIFICATION**

| Code | 8001-6 | 8001-15 | 8001-30 | 8001-6D | 8001-15D | 8001-30D |
|---|---|---|---|---|---|---|
| Maximum weighing | 6kg | 15kg | 30kg | 6kg | 15kg | 30kg |
| Minimum weighing | 4g | 10g | 20g | 4g | 10g | 20g |
| Resolution (d) | 0.2g | 0.5g | 1g | 0.2g | 0.5g | 1g |
| Accuracy (m is load) | m≤1kg: ±1g<br>1kg<m≤4kg: ±2g<br>m>4kg: ±3g | m≤2.5kg: ±2.5g<br>2.5kg<m≤10kg: ±5g<br>m>10kg: ±7.5g | m≤5kg: ±5g<br>5kg<m≤20kg: ±10g<br>m>20kg: ±15g | m≤1kg: ±1g<br>1kg<m≤4kg: ±2g<br>m>4kg: ±3g | m≤2.5kg: ±2.5g<br>2.5kg<m≤10kg: ±5g<br>m>10kg: ±7.5g | m≤5kg: ±5g<br>5kg<m≤20kg: ±10g<br>m>20kg: ±15g |
| Units | kg, lb | | | kg | | |
| Output | no | | | RS232 | | |
| Operation temperature | -10~40°C | | | | | |
| Power supply | rechargeable lead acid battery (6V/3.2Ah) | | | | | |
| Dimensions of pan | 263×204mm | | | | | |

**OPTIONAL ACCESSORY** (for scales with RS232)

| | |
|---|---|
| Printer | **8001-PRINTER** |
| Data output cable (keyboard format) | **7302-8001** page 22 |
| Wireless transmitter (receiver is needed) | **7315-8001** page 8 |

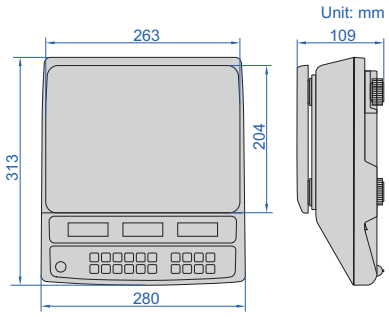
## COUNTING SCALES



printer (**optional**)



**8101-30**




- LCD display, with backlight
- Zero-setting, subtracting tare value, counting, accumulation, checking alarm
- Overload alarm
- Units: kg, g, lb, tj, hj, lb-oz

**SPECIFICATION**

| Code | 8101-6 | 8101-15 | 8101-30 | 8101-6D | 8101-15D | 8101-30D |
|---|---|---|---|---|---|---|
| Maximum weighing | 6kg | 15kg | 30kg | 6kg | 15kg | 30kg |
| Minimum weighing | 4g | 10g | 20g | 4g | 10g | 20g |
| Resolution (d) | 0.2g | 0.5g | 1g | 0.2g | 0.5g | 1g |
| Accuracy (m is load) | m≤1kg: ±1g<br>1kg<m≤4kg: ±2g<br>m>4kg: ±3g | m≤2.5kg: ±2.5g<br>2.5kg<m≤10kg: ±5g<br>m>10kg: ±7.5g | m≤5kg: ±5g<br>5kg<m≤20kg: ±10g<br>m>20kg: ±15g | m≤1kg: ±1g<br>1kg<m≤4kg: ±2g<br>m>4kg: ±3g | m≤2.5kg: ±2.5g<br>2.5kg<m≤10kg: ±5g<br>m>10kg: ±7.5g | m≤5kg: ±5g<br>5kg<m≤20kg: ±10g<br>m>20kg: ±15g |
| Output | no | | | RS232 | | |
| Operation temperature | -10~40°C | | | | | |
| Power supply | rechargeable battery (6V/3.2Ah), power adapter (12V/500mA) | | | | | |
| Dimensions of pan | 263×204mm | | | | | |

**OPTIONAL ACCESSORY** (for scales with RS232)

| Printer | 8001-PRINTER |
|---|---|

## WEIGHING SCALES (ECONOMIC TYPE)

VIDEO

- Unit: g, oz, lb, tl



**8003-3**

**SPECIFICATION**

| Code | 8003-3 | 8003-6 | 8003-10 |
|---|---|---|---|
| Maximum weighing | 3kg | 6kg | 10kg |
| Minimum weighing | 2g | 10g | 20g |
| Resolution (d) | 0.1g | 0.5g | 1g |
| Accuracy | ±0.5g | ±2.5g | ±5g |
| Weighing pan size | 157×157mm | | |
| Operation temperature | 5~35°C | | |
| Power supply | 2×AAA batteries, power adapter | | |
| Dimension (L×W) | 160×225mm | | |



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ATTENTION:
LOW ACCURACY

## ELECTRONIC POCKET SCALE (ECONOMIC TYPE)

- LCD display, with backlight
- Zero-setting, subtracting tare value, counting
- Overload alarm
- Automatic power off



8602-200

**SPECIFICATION**

| Code | 8602-200 |
|---|---|
| Maximum weighing | 200g |
| Minimum weighing | 0.2g |
| Resolution (d) | 0.02g |
| Accuracy (m is load) | 0.2g≤m≤2g: ±0.06g; 2g<m≤60g: ±0.1g<br>60g<m≤100g: ±0.14g; m>100g: ±0.28g |
| Units | g, oz, dwt, ozt |
| Dimension of pan | 55×64mm |
| Dimension (L×W×H) | 120×70×17mm |
| Operation temperature | -10~40°C |
| Power supply | 2×CR2032 batteries |

use of pan



ATTENTION:
LOW ACCURACY

## ELECTRONIC POCKET SCALE (ECONOMIC TYPE)

- LCD display, with backlight
- Zero-setting, subtracting tare value, counting
- Overload alarm
- Automatic power off



8601-100

**SPECIFICATION**

| Code | 8601-100 |
|---|---|
| Maximum weighing | 100g |
| Minimum weighing | 0.1g |
| Resolution (d) | 0.01g |
| Accuracy (m is load) | 0.1g≤m≤1g: ±0.03g; 1g<m≤30g: ±0.05g<br>30g<m≤50g: ±0.07g; m>50g: ±0.14g |
| Units | g, oz, dwt, ozt |
| Dimension of pan | 55×64mm |
| Dimension (L×W×H) | 108×65×21mm |
| Operation temperature | -10~40°C |
| Power supply | 2×AAA batteries |

use of pan





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# PLATFORM SCALES

DATA OUTPUT

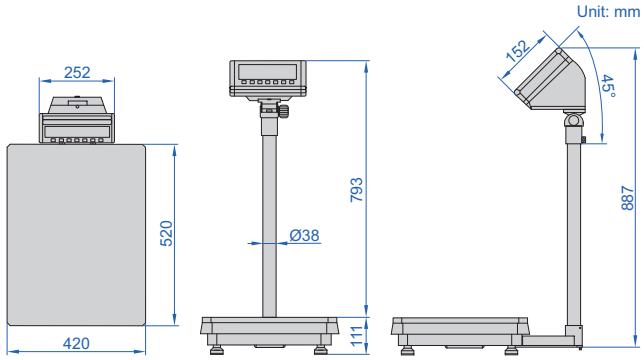
CAN BE CUSTOMIZED



**8501-AL150**



printer (**optional**)




- LCD large screen display with LED backlight
- Weighing, overweight alarm, counting, keyboard lock, accumulating, auto zero and animal scale
- Unit: kg, g, lb, oz

**SPECIFICATION**

| Code | 8501-AL60 | 8501-AL150 | 8501-AL300 |
|---|---|---|---|
| Maximum weighing | 60kg | 150kg | 300kg |
| Minimum weighing | 100g | 200g | 400g |
| Resolution (d) | 5g | 10g | 20g |
| Accuracy | ±10g | ±20g | ±30g |
| Operation temperature | -10~40°C | | |
| Material | platform: stainless steel, base: die-cast aluminum | | |
| Dimension of platform | 420×520mm | | |
| Power supply | rechargeable lead acid battery (6V/4Ah) | | |
| Output | RS232 | | |
| Weight | 18.3kg | | |

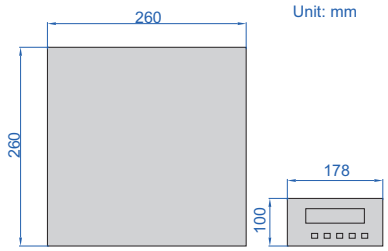
**OPTIONAL ACCESSORY**

| Printer | 8001-PRINTER |
|---|---|
| Data output cable (keyboard format) | **7302-8001** page 22 |
| Wireless transmitter (receiver is needed) | **7315-8001** page 8 |



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# PARCEL SCALES






8502-30

- Weighting, counting, subtracting tare value
- LED display, adjustable brightness
- Low voltage indication
- Automatic power off
- Overload indication
- Unit: kg, lb

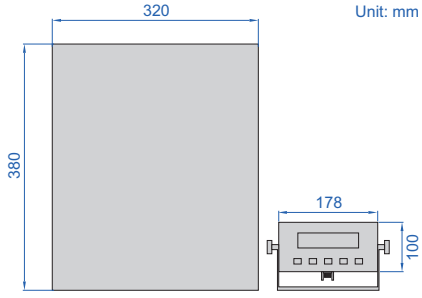
**OPTIONAL ACCESSORY**

| | |
|---|---|
| Cast iron weights | 8913 |

**SPECIFICATION**

| Code | 8502-30 | 8502-50 | 8502-60 | 8502-75 |
|---|---|---|---|---|
| Maximum weighing | 30kg | 50kg | 60kg | 75kg |
| Minimum weighing | 2g | 20g | 20g | 20g |
| Resolution (d) | m≤3kg: 0.1g;<br>3kg<m≤30kg: 1g | 1g | 1g | 1g |
| Accuracy<br>(m is load) | m≤3kg: ±0.3g;<br>3kg<m≤30kg: ±3g | ±3g | ±3g | ±3g |
| Weight of calibration | 20kg | 50kg | 50kg | 50kg |
| Weighing pan size | 260×260mm | | | |
| Material | platform: ABS plastic, base: die-cast aluminum | | | |
| Operation temperature | 5~35°C | | | |
| Operation humidity | 30%~80%RH | | | |
| Power supply | power adapter (6V/300mA) or 4×1.5V AA batteries | | | |

# PARCEL SCALES






8503-30

- Weighting, counting, subtracting tare value
- LCD display, with backlight
- Overload indication
- Automatic power off
- Low voltage indication
- Unit: kg, lb

**OPTIONAL ACCESSORY**

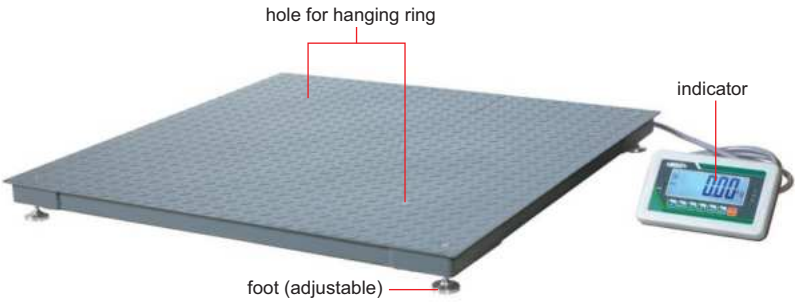
| | |
|---|---|
| Cast iron weights | 8913 |

**SPECIFICATION**

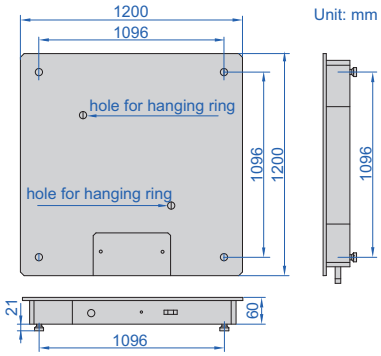
| Code | 8503-30 | 8503-60 | 8503-120 | 8503-200 |
|---|---|---|---|---|
| Maximum weighing | 30kg | 60kg | 120kg | 200kg |
| Minimum weighing | 20g | 100g | 200g | 400g |
| Resolution (d) | 1g | 5g | 10g | 20g |
| Accuracy | ±3g | ±15g | ±30g | ±60g |
| Weight of calibration | 20kg | 50kg | 100kg | 200kg |
| Weighing pan size | 320×380mm | | | |
| Material | platform: stainless steel, base: die-cast aluminum | | | |
| Operation temperature | 5~35°C | | | |
| Operation humidity | 30%~80%RH | | | |
| Power supply | power adapter (6V/300mA) or 4×1.5V AA batteries | | | |

# FLOOR SCALES

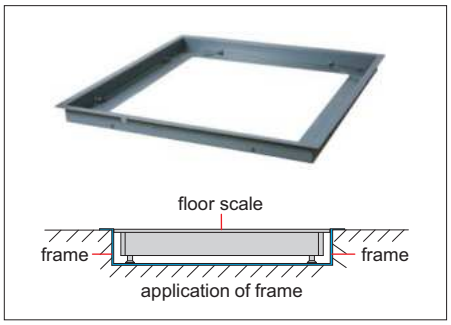
DATA OUTPUT




**8401-1T1212**



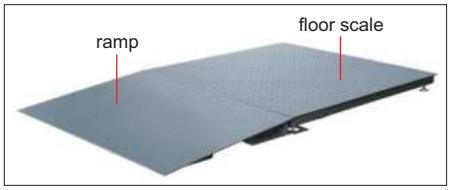

- LCD large screen display with automatic backlight
- Zero, overweight alarm, deduction, unit conversion, accumulating, animal scale, etc.
- Unit: kg, g, lb, oz
- OIML approved load cell




frame (**optional**)



stand (**optional**)




ramp (**optional**)



printer (**optional**)

## SPECIFICATION

| Code | 8401-1T1212 | 8401-2T1212 | 8401-3T1212 |
|---|---|---|---|
| Maximum weighing | 1t | 2t | 3t |
| Minimum weighing | 10kg | 20kg | 20kg |
| Resolution (d) | 0.5kg | 1kg | 1kg |
| Verification interval (e) | 0.5kg | 1kg | 1kg |
| Accuracy (m is load) | m≤250kg: ±0.25kg; 250kg<m≤1000kg: ±0.5kg | m≤500kg: ±0.5kg; 500kg<m≤2000kg: ±1kg; m>2000kg: ±1.5kg | |
| Load cell | 4 pcs 350Ω | | |
| Operation temperature | -10~40°C | | |
| Material | mild steel | | |
| Dimension of platform | 1200×1200mm | | |
| Power supply | rechargeable lead acid battery (6V/4Ah) | | |
| Output | RS232 | | |
| Weight | 140kg | | |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Indicator | 1 pc |
| AC/DC adapter | 1 pc |
| Stainless steel foot | 4 pcs |
| Hanging ring | 2 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Ramp | 8401-1212-1 |
| Frame | 8401-1212-2 |
| Stand | 8401-STAND |
| Printer | 8001-PRINTER |



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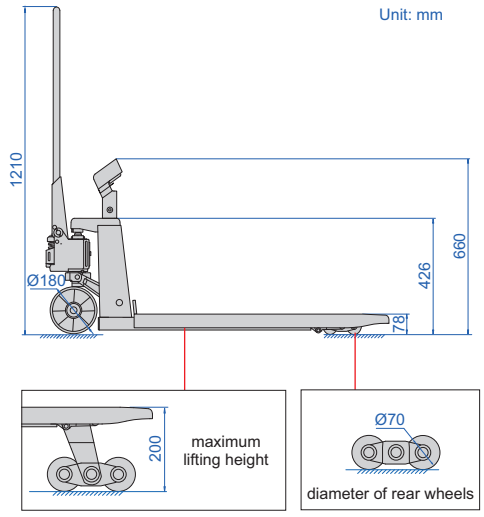
# FORKLIFT SCALES



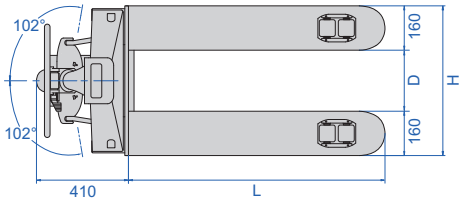
VIDEO




**8801-A20**




- Zero-setting, subracting tare value, counting, check weighing
- Automatic screen off, automatic power off
- Low voltage indication, overload indication
- Weight hold, weight totalisation, percentage display
- LED large screen display
- Unit: kg, lb



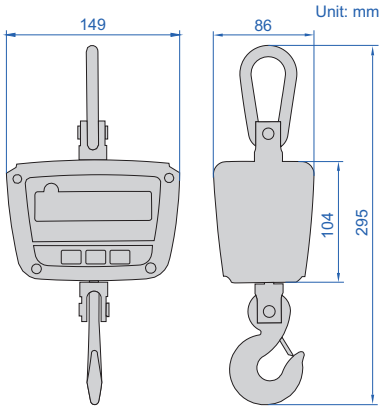

**SPECIFICATION**

| Code | 8801-A15 | 8801-A20 | 8801-A25 | 8801-B15 | 8801-B20 | 8801-B25 |
|---|---|---|---|---|---|---|
| Maximum weighting | 1500kg | 2000kg | 2500kg | 1500kg | 2000kg | 2500kg |
| Minimum weighting | 10kg | 20kg | 20kg | 10kg | 20kg | 20kg |
| Resolution | 0.5kg | 1kg | 1kg | 0.5kg | 1kg | 1kg |
| Accuracy | ±1kg | ±1kg | ±2kg | ±1kg | ±1kg | ±2kg |
| Forklift arm length (L) | 1150mm | | | 1220mm | | |
| Forklift arm distance (D) | 220mm | | | 360mm | | |
| Overall forklift width (H) | 540mm | | | 680mm | | |
| Weight | 98kg | | | 105kg | | |
| Material | mild steel | | | | | |
| Indicator power supply | rechargeable lead acid battery (6V/4Ah) | | | | | |
| Operation temperature | -10~50°C | | | | | |
| Operation humidity | 30%~90%RH | | | | | |
| Limited load | 2500kg | 3000kg | 3000kg | 2500kg | 3000kg | 3000kg |

## DIRECT VIEW ELECTRONIC CRANE SCALES

IP65 WATERPROOF

- Dust/waterproof level: IP65
- LED display, remote control
- Low voltage indicator
- Unit: kg, lb
- Automatic power off
- Overload alarm
- 360° safe rotary hook and shackle
- Aluminum alloy die casting case with high strength








remote controller (included)

8201-150KG

**SPECIFICATION**

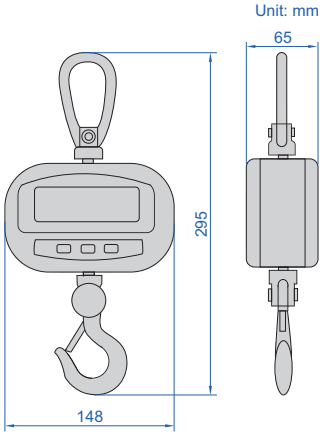
| Code | 8201-50KG | 8201-150KG | 8201-300KG |
|---|---|---|---|
| Maximum weighing | 50kg | 150kg | 300kg |
| Minimum weighing | 0.4kg | 1.0kg | 2.0kg |
| Resolution (d) | 0.02kg/0.01kg | 0.05kg/0.02kg | 0.10kg/0.05kg |
| Verification interval (e) | 0.02kg | 0.05kg | 0.10kg |
| Accuracy | ±0.02kg | ±0.05kg | ±0.10kg |
| Operation temperature | -10~40°C | | |
| Operation humidity | 30%~90%RH | | |
| Overload alarm | 100%FS+9e | | |
| Maximum safe load | 125%FS | | |
| Limited overload | 400%FS | | |
| Power supply | rechargeable battery 6V/3Ah (for 40 hours working) | | |
| Stable reading time | ≤8s | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Remote controller | 1 pc |
| Battery charger | 1 pc |

## DIRECT VIEW ELECTRONIC CRANE SCALES (BASIC TYPE)

- LED display, remote control
- Low voltage indicator
- Unit: kg, lb
- Automatic power off
- Overload alarm
- 360° safe rotary hook and shackle
- Plastic case








remote controller (included)

8202-150KG

**SPECIFICATION**

| Code | 8202-50KG | 8202-150KG | 8202-300KG |
|---|---|---|---|
| Maximum weighing | 50kg | 150kg | 300kg |
| Minimum weighing | 0.4kg | 1.0kg | 2.0kg |
| Resolution (d) | 0.02kg/0.01kg | 0.05kg/0.02kg | 0.10kg/0.05kg |
| Verification interval (e) | 0.02kg | 0.05kg | 0.10kg |
| Accuracy | ±0.02kg | ±0.05kg | ±0.10kg |
| Operation temperature | -10~40°C | | |
| Operation humidity | 30%~90%RH | | |
| Overload alarm | 100%FS+9e | | |
| Maximum safe load | 125%FS | | |
| Limited overload | 400%FS | | |
| Power supply | 4×1.5V AA batteries (for 40 hours working) | | |
| Stable reading time | ≤8s | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Remote controller | 1 pc |

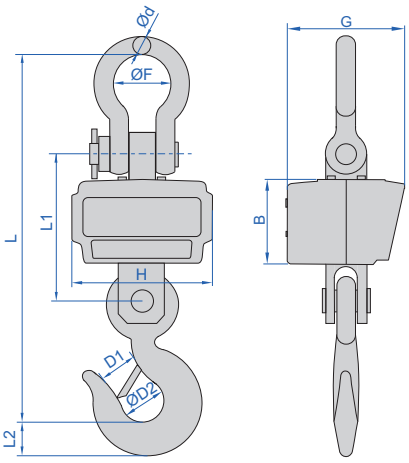


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# ELECTRONIC CRANE SCALES

VIDEO

- Zeroing, taring, weighing
- LED display, remote control
- Low voltage indicator
- Unit: kg, lb
- Overload alarm
- Automatic power off
- Aluminum alloy die casting case with high strength






8204-CS3T



remote controller (included)

(mm)

| Code | B | G | H | L | L1 | L2 | D1 | ØD2 | Ød | ØF |
|---|---|---|---|---|---|---|---|---|---|---|
| 8204-CS06T | 120 | 163 | 198 | 420 | 190 | 33 | 40 | 47 | 21 | 76 |
| 8204-CS1T | 120 | 163 | 198 | 420 | 190 | 33 | 40 | 47 | 21 | 76 |
| 8204-CS2T | 120 | 163 | 198 | 420 | 190 | 33 | 50 | 47 | 21 | 76 |
| 8204-CS3T | 120 | 163 | 198 | 462 | 196 | 40 | 50 | 50 | 23 | 76 |
| 8204-CS5T | 120 | 163 | 198 | 511 | 204 | 47 | 52 | 60 | 26 | 80 |
| 8204-CS10T | 135 | 181 | 206 | 589 | 239 | 66 | 52 | 70 | 36 | 90 |
| 8204-CS15T | 135 | 181 | 206 | 727 | 257 | 77 | 60 | 85 | 47 | 135 |

**SPECIFICATION**

| | |
|---|---|
| Overload alarm | 100%FS+9e |
| Maximum safe load | 150%FS |
| Limited overload | 400%FS |
| Stable reading time | ≤8s |
| Power supply | rechargeable battery 6V/4Ah (for 40 hours working) |
| Operation temperature | -10~40°C |
| Operation humidity | ≤85%RH |

| Code | 8204-CS06T | 8204-CS1T | 8204-CS2T | 8204-CS3T |
|---|---|---|---|---|
| Maximum weighing | 600kg | 1000kg | 2000kg | 3000kg |
| Minimum weighing | 5kg | 10kg | 20kg | 30kg |
| Resolution (d) | 0.2kg/0.1kg | 0.5kg/0.2kg | 1kg/0.5kg | 1kg/0.5kg |
| Verification interval (e) | 0.2kg | 0.5kg | 1kg | 1kg |
| Accuracy (m is load) | m≤100kg: ±0.1kg;<br>50kg<m≤200kg: ±0.2kg;<br>m>200kg: ±0.3kg | m≤250kg: ±0.25kg;<br>250kg<m≤1000kg: ±0.5kg | m≤500kg: ±0.5kg;<br>500kg<m≤2000kg: ±1kg | m≤500kg: ±0.5kg;<br>500kg<m≤2000kg: ±1kg;<br>m>2000kg: ±1.5kg |

| Code | 8204-CS5T | 8204-CS10T | 8204-CS15T |
|---|---|---|---|
| Maximum weighing | 5000kg | 10000kg | 15000kg |
| Minimum weighing | 50kg | 100kg | 100kg |
| Resolution (d) | 2kg/1kg | 5kg/2kg | 5kg/2kg |
| Verification interval (e) | 2kg | 5kg | 5kg |
| Accuracy (m is load) | m≤1000kg: ±1kg;<br>1000kg<m≤4000kg: ±2kg;<br>m>4000kg: ±3kg | m≤2500kg: ±2.5kg;<br>2500kg<m≤10000kg: ±5kg | m≤2500kg: ±2.5kg;<br>2500kg<m≤10000kg: ±5kg;<br>m>10000kg: ±7.5kg |

To be continued

Continued from previous page



handheld display (**optional**)



large display (**optional**)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Remote controller** | 1 pc |
| **Battery charger** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Handheld display** | **8204-INDICATOR** (must be supplied with scales together) |
| **Large display** | **8204-SCREEN** (must be supplied with scales together) |

## ELECTRONIC CRANE SCALES (BASIC TYPE)

VIDEO

- Zeroing, taring, weighing
- LED display, remote control
- Low voltage indicator
- Unit: kg, lb
- Overload alarm
- Automatic power off
- Aluminum alloy die casting case with high strength

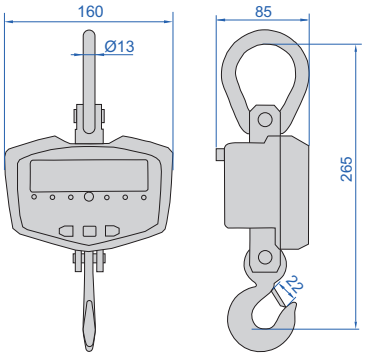


**8203-CW05T**



remote controller (included)

Unit: mm




**SPECIFICATION**

| Code | 8203-CW03T | 8203-CW05T | 8203-CW1T |
|---|---|---|---|
| Maximum weighing | 300kg | 500kg | 1000kg |
| Minimum weighing | 2kg | 4kg | 10kg |
| Resolution (d) | 0.1kg/0.05kg | 0.2kg/0.1kg | 0.5kg/0.2kg |
| Verification interval (e) | 0.1kg | 0.2kg | 0.5kg |
| Accuracy (m is load) | m≤50kg: ±0.05kg; 50kg<m≤200kg: ±0.1kg; m>200kg: ±0.15kg | m≤100kg: ±0.1kg; 100kg<m≤400kg: ±0.2kg; m>400kg: ±0.3kg | m≤250kg: ±0.25kg; 250kg<m≤1000kg: ±0.5kg |
| Overload alarm | 100%FS+9e | | |
| Maximum safe load | 150%FS | | |
| Limited overload | 400%FS | | |
| Stable reading time | ≤8s | | |
| Power supply | 3×1.5V AA batteries | | |
| Operation temperature | -10~40°C | | |
| Operation humidity | 30%~90%RH | | |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Remote controller** | 1 pc |

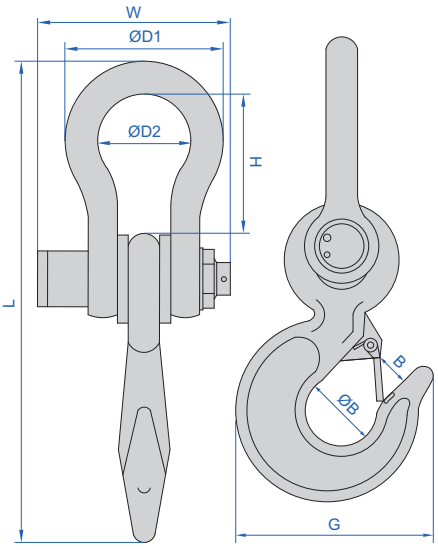


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# WIRELESS ELECTRONIC CRANE SCALES

VIDEO

IP65 WATERPROOF






remote controller (included)



**8205-3T**



wireless printer (**optional**)

- Wireless zero-setting, subracting tare value, totalization
- Remote reading
- Wireless transmission distance up to 100 meters
- Low voltage indication, overload alarm
- Unit: kg, lb
- Automatic power off



large display (**optional**)



wireles receiver (**optional**)

**SPECIFICATION**

| | |
|---|---|
| **Overload alarm** | 100%FS+9e |
| **Maximum safe load** | 150%FS |
| **Limited overload** | 400%FS |
| **Stable reading time** | ≤8s |
| **Power supply** | rechargeable battery 4.2V/1A (for 40 hours working) |
| **Operation temperature** | -10~40°C |
| **Operation humidity** | ≤85%RH |

**(mm)**

| Code | L | H | ØD1 | ØD2 | W | G | B | ØB |
|---|---|---|---|---|---|---|---|---|
| **8205-2T** | 319 | 88 | 132 | 72 | 198 | 126 | 34 | 48 |
| **8205-3T** | 319 | 88 | 132 | 72 | 198 | 126 | 34 | 48 |
| **8205-5T** | 407 | 105 | 160 | 88 | 219 | 161 | 42 | 57 |
| **8205-10T** | 465 | 105 | 170 | 95 | 246 | 202 | 46 | 65 |
| **8205-15T** | 520 | 130 | 215 | 120 | 263 | 203 | 60 | 77 |
| **8205-20T** | 621 | 135 | 251 | 142 | 294 | 284 | 75 | 105 |
| **8205-30T** | 770 | 205 | 325 | 180 | 356 | 305 | 85 | 125 |
| **8205-50T** | 1020 | 340 | 360 | 200 | 436 | 470 | 135 | 170 |

| Code | 8205-2T | 8205-3T | 8205-5T | 8205-10T |
|---|---|---|---|---|
| **Maximum weighing** | 2t | 3t | 5t | 10t |
| **Minimum weighing** | 10kg | 20kg | 40kg | 100kg |
| **Resolution (d)** | 1kg/0.5kg | 1kg/0.5kg | 2kg/1kg | 5kg |
| **Accuracy (m is load)** | m≤0.5t: ±0.5kg;<br>m>0.5t: ±1kg | m≤0.5t: ±0.5kg;<br>0.5t<m≤2t: ±1kg;<br>m>2t: ±1.5kg | m≤1t: ±1kg;<br>1t<m≤4t: ±2kg;<br>m>4t: ±3kg | m≤2.5t: ±2.5kg;<br>m>2.5t: ±5kg |

| Code | 8205-15T | 8205-20T | 8205-30T | 8205-50T |
|---|---|---|---|---|
| **Maximum weighing** | 15t | 20t | 30t | 50t |
| **Minimum weighing** | 100kg | 200kg | 200kg | 400kg |
| **Resolution (d)** | 5kg | 10kg | 10kg | 20kg |
| **Accuracy (m is load)** | m≤2.5t: ±2.5kg;<br>2.5t<m≤10t: ±5kg;<br>m>10t: ±7.5kg | m≤5t: ±5kg;<br>m>5t: ±10kg | m≤5t: ±5kg;<br>5t<m≤20t: ±10kg;<br>m>20t: ±15kg | m≤10t: ±10kg;<br>10t<m≤40t: ±20kg;<br>m>40t: ±30kg |

To be continued

Continued from previous page

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Remote controller** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Wireless printer** | **8205-PRINTER** (must be supplied with scales together) |
| **Large display** | **8205-SCREEN** (must be supplied with scales together) |
| **Wireless receiver (serial port signal, connect to computers)** | **8205-RECEIVER** (must be supplied with scales together) |

## HANG SCALES

CAN BE CUSTOMIZED

VIDEO



hang scale pull rings (**optional**)

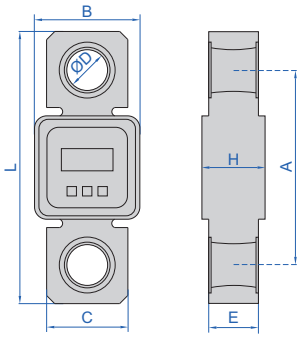
- Unit: kg, N
- LED display, remote control
- Zeroing, taring, weighing, totalization
- Peak (max.) and tracking mode
- Low voltage indicator
- Built-in buzzer
- Automatic power off
- Overload alarm



remote controller (included)



**8206-3T**




**SPECIFICATION**

| | |
|---|---|
| **Operation temperature** | -10~55°C |
| **Operation humidity** | ≤85%RH |
| **Material** | alloy steel |
| **Power supply** | 3×1.5V AA batteries |
| **Stable reading time** | ≤8s |
| **Limited overload** | 300%FS |
| **Maximum safe load** | 150%FS |
| **Overload alarm** | 100%FS+9e |

| Code | Dimension (mm) | | | | | | |
|---|---|---|---|---|---|---|---|
| | L | B | C | H | E | A | ØD |
| **8206-05T** | 204 | 99 | 46 | 50 | 30 | 158 | 26 |
| **8206-1T** | 204 | 99 | 46 | 50 | 30 | 158 | 26 |
| **8206-2T** | 204 | 99 | 46 | 50 | 30 | 158 | 26 |
| **8206-3T** | 204 | 99 | 46 | 54 | 30 | 158 | 26 |
| **8206-5T** | 222 | 99 | 60 | 58 | 35 | 162 | 31 |
| **8206-10T** | 268 | 104 | 80 | 62 | 49 | 192 | 41 |
| **8206-15T** | 304 | 110 | 92 | 66 | 58 | 212 | 46.5 |
| **8206-20T** | 344 | 120 | 120 | 66 | 66 | 232 | 56.5 |
| **8206-30T** | 394 | 132 | 132 | 73 | 73 | 264 | 66 |
| **8206-50T** | 500 | 150 | 150 | 100 | 100 | 340 | 80 |

| Code | Maximum weighing | | Minimum weighing | | Resolution (d) | | Verification interval (e) | Accuracy | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | mass values | force values | mass values | force values | mass values | force values | | mass values | force values | |
| **8206-05T** | 0.5t | 5kN | 4kg | 40N | 0.2kg/0.1kg | 2N/1N | 0.2kg | ±0.2kg | ±1% | 1.6kg |
| **8206-1T** | 1t | 10kN | 10kg | 100N | 0.5kg/0.2kg | 5N/2N | 0.5kg | ±0.5kg | | 2kg |
| **8206-2T** | 2t | 20kN | 20kg | 200N | 1kg/0.5kg | 10N/5N | 1kg | ±1kg | | 2.1kg |
| **8206-3T** | 3t | 30kN | 20kg | 200N | 1kg/0.5kg | 10N/5N | 1kg | ±1.5kg | | 2.3kg |
| **8206-5T** | 5t | 50kN | 40kg | 400N | 2kg/1kg | 20N/10N | 2kg | ±2kg | | 3.6kg |
| **8206-10T** | 10t | 100kN | 100kg | 1kN | 5kg/2kg | 50N/20N | 5kg | ±5kg | | 6.2kg |
| **8206-15T** | 15t | 150kN | 100kg | 1kN | 5kg/2kg | 50N/20N | 5kg | ±7.5kg | | 9.5kg |
| **8206-20T** | 20t | 200kN | 200kg | 2kN | 10kg/5kg | 100N/50N | 10kg | ±10kg | | 15kg |
| **8206-30T** | 30t | 300kN | 200kg | 2kN | 10kg/5kg | 100N/50N | 10kg | ±15kg | | 21.9kg |
| **8206-50T** | 50t | 500kN | 400kg | 4kN | 20kg/10kg | 200N/100N | 20kg | ±20kg | | 45.5kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Remote controller** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Hang scale pull rings** | page 1181 |



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CAN BE CUSTOMIZED

# WIRELESS HANG SCALES



VIDEO



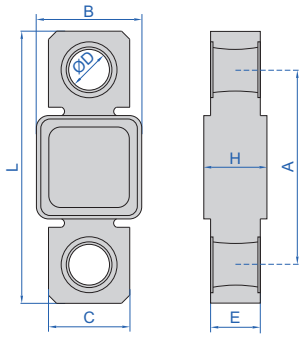
hang scale pull rings (**optional**)



**8207-3T**



LCD remote controller (included)




- Unit: kg, N
- LCD handheld display, remote control
- Wireless zero-setting, subracting tare value, totalization
- Peak (max.) and tracking mode
- Wireless transmission distance up to 100 meters
- Low voltage indicator
- Built-in buzzer
- Automatic power off
- Overload alarm

**SPECIFICATION**

| | |
|---|---|
| **Operation temperature** | -10~55°C |
| **Operation humidity** | ≤85%RH |
| **Material** | alloy steel |
| **Power supply** | 3×1.5V AA batteries |
| **Stable reading time** | ≤8s |
| **Limited overload** | 300%FS |
| **Maximum safe load** | 150%FS |
| **Overload alarm** | 100%FS+9e |

| Code | Dimension (mm) | | | | | | |
|---|---|---|---|---|---|---|---|
| | L | B | C | H | E | A | ØD |
| **8207-05T** | 204 | 99 | 46 | 50 | 30 | 158 | 26 |
| **8207-1T** | 204 | 99 | 46 | 50 | 30 | 158 | 26 |
| **8207-2T** | 204 | 99 | 46 | 50 | 30 | 158 | 26 |
| **8207-3T** | 204 | 99 | 46 | 54 | 30 | 158 | 26 |
| **8207-5T** | 222 | 99 | 60 | 58 | 35 | 162 | 31 |
| **8207-10T** | 268 | 104 | 80 | 62 | 49 | 192 | 41 |
| **8207-15T** | 304 | 110 | 92 | 66 | 58 | 212 | 46.5 |
| **8207-20T** | 344 | 120 | 120 | 66 | 66 | 232 | 56.5 |
| **8207-30T** | 394 | 132 | 132 | 73 | 73 | 264 | 66 |
| **8207-50T** | 500 | 150 | 150 | 100 | 100 | 340 | 80 |

| Code | Maximum weighing | | Minimum weighing | | Resolution (d) | | Verification interval (e) | Accuracy | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | mass values | force values | mass values | force values | mass values | force values | | mass values | force values | |
| **8207-05T** | 0.5t | 5kN | 4kg | 40N | 0.2kg/0.1kg | 2N/1N | 0.2kg | ±0.2kg | ±1% | 1.6kg |
| **8207-1T** | 1t | 10kN | 10kg | 100N | 0.5kg/0.2kg | 5N/2N | 0.5kg | ±0.5kg | | 2kg |
| **8207-2T** | 2t | 20kN | 20kg | 200N | 1kg/0.5kg | 10N/5N | 1kg | ±1kg | | 2.1kg |
| **8207-3T** | 3t | 30kN | 20kg | 200N | 1kg/0.5kg | 10N/5N | 1kg | ±1.5kg | | 2.3kg |
| **8207-5T** | 5t | 50kN | 40kg | 400N | 2kg/1kg | 20N/10N | 2kg | ±2kg | | 3.6kg |
| **8207-10T** | 10t | 100kN | 100kg | 1kN | 5kg/2kg | 50N/20N | 5kg | ±5kg | | 6.2kg |
| **8207-15T** | 15t | 150kN | 100kg | 1kN | 5kg/2kg | 50N/20N | 5kg | ±7.5kg | | 9.5kg |
| **8207-20T** | 20t | 200kN | 200kg | 2kN | 10kg/5kg | 100N/50N | 10kg | ±10kg | | 15kg |
| **8207-30T** | 30t | 300kN | 200kg | 2kN | 10kg/5kg | 100N/50N | 10kg | ±15kg | | 21.9kg |
| **8207-50T** | 50t | 500kN | 400kg | 4kN | 20kg/10kg | 200N/100N | 20kg | ±20kg | | 45.5kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **LCD remote controller** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Hang scale pull rings** | page 1181 |

## HANG SCALE PULL RINGS

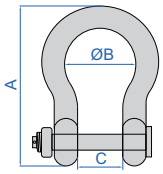
- Used with **8206** series and **8207** series hang scales



**8290-1**

application






**SPECIFICATION**

| Code | Material | Dimension (mm) | | | Adapted products |
|---|---|---|---|---|---|
| | | A | ØB | C | |
| **8290-1** | alloy steel | 76 | 169 | 107 | 8207-05T, 8207-1T, 8207-2T, 8207-3T, 8206-05T, 8206-1T, 8206-2T, 8206-3T |
| **8290-2** | | 80 | 192 | 122 | 8206-5T, 8207-5T |
| **8290-3** | | 90 | 241 | 145 | 8206-10T, 8207-10T |
| **8290-4** | | 135 | 318 | 202 | 8206-15T, 8207-15T |
| **8290-5** | | 150 | 355 | 220 | 8206-20T, 8207-20T |
| **8290-6** | | 150 | 448 | 279 | 8206-30T, 8207-30T |
| **8290-7** | | 214 | 504 | 313 | 8206-50T, 8207-50T |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pair |

## PORTABLE CRANE SCALE CODE 8604-40

**ATTENTION: LOW ACCURACY**

- Zero-setting, subtracting tare value
- Automatic power off
- LCD display, with backlight
- Unit: kg
- Overload indication



**SPECIFICATION**

| | |
|---|---|
| **Maximum weighing** | 40kg |
| **Minimum weighing** | 1kg |
| **Resolution (d)** | 50g |
| **Accuracy** | ±50g |
| **Operation temperature** | -10~45°C |
| **Operation humidity** | 30%~90%RH |
| **Limited load** | 50kg |
| **Power supply** | 2×AAA batteries |



built-in measuring tape (included)

## TUBE FORCE GAUGES

**REFER TO PAGE 981 FOR DETAILS**



**8603-100**

INSPECTION CERTIFICATE

# WEIGHTS





1kg 200g 500mg 200mg 100mg

- Supplied with manufacturer inspection certificate

**CLASS SELECTION**

| Resolution of the weighing instruments | Required class of weights |
|---|---|
| 0.001mg | E1 |
| 0.01mg | E2 |
| 0.1mg | E2/F1 |
| 1mg | F2 |
| 0.01g/0.1g | M1 |

**OIML R111-2004 TOLERANCE**

| Weight | E2 | F1 | F2 | M1 |
|---|---|---|---|---|
| 1mg | 0.006mg | 0.020mg | 0.06mg | 0.20mg |
| 2mg | 0.006mg | 0.020mg | 0.06mg | 0.20mg |
| 5mg | 0.006mg | 0.020mg | 0.06mg | 0.20mg |
| 10mg | 0.008mg | 0.025mg | 0.08mg | 0.25mg |
| 20mg | 0.010mg | 0.03mg | 0.10mg | 0.3mg |
| 50mg | 0.012mg | 0.04mg | 0.12mg | 0.4mg |
| 100mg | 0.016mg | 0.05mg | 0.16mg | 0.5mg |
| 200mg | 0.020mg | 0.06mg | 0.20mg | 0.6mg |
| 500mg | 0.025mg | 0.08mg | 0.25mg | 0.8mg |
| 1g | 0.03mg | 0.10mg | 0.3mg | 1.0mg |
| 2g | 0.04mg | 0.12mg | 0.4mg | 1.2mg |
| 5g | 0.05mg | 0.16mg | 0.5mg | 1.6mg |
| 10g | 0.06mg | 0.20mg | 0.6mg | 2.0mg |
| 20g | 0.08mg | 0.25mg | 0.8mg | 2.5mg |
| 50g | 0.10mg | 0.3mg | 1.0mg | 3.0mg |
| 100g | 0.16mg | 0.5mg | 1.6mg | 5.0mg |
| 200g | 0.3mg | 1.0mg | 3.0mg | 10mg |
| 500g | 0.8mg | 2.5mg | 8.0mg | 25mg |
| 1kg | 1.6mg | 5.0mg | 16mg | 50mg |
| 2kg | 3.0mg | 10mg | 30mg | 100mg |
| 5kg | 8.0mg | 25mg | 80mg | 250mg |
| 10kg | 16mg | 50mg | 160mg | 500mg |
| 20kg | 30mg | 100mg | 300mg | 1000mg |

| Weight | Class and material | | | | | | Shape |
|---|---|---|---|---|---|---|---|
| | E2 (non-magnetic stainless steel) | F1 (non-magnetic stainless steel) | F1 (304 stainless steel) | F2 (304 stainless steel) | M1 (304 stainless steel) | M1 (2Cr13 stainless steel) | |
| 1mg | 8911-1MGE2 | 8911-1MGF1 | 8911-1MGF1S | 8911-1MGF2 | 8911-1MGM1 | 8911-1MGM1C | sheet |
| 2mg | 8911-2MGE2 | 8911-2MGF1 | 8911-2MGF1S | 8911-2MGF2 | 8911-2MGM1 | 8911-2MGM1C | |
| 5mg | 8911-5MGE2 | 8911-5MGF1 | 8911-5MGF1S | 8911-5MGF2 | 8911-5MGM1 | 8911-5MGM1C | |
| 10mg | 8911-10MGE2 | 8911-10MGF1 | 8911-10MGF1S | 8911-10MGF2 | 8911-10MGM1 | 8911-10MGM1C | |
| 20mg | 8911-20MGE2 | 8911-20MGF1 | 8911-20MGF1S | 8911-20MGF2 | 8911-20MGM1 | 8911-20MGM1C | |
| 50mg | 8911-50MGE2 | 8911-50MGF1 | 8911-50MGF1S | 8911-50MGF2 | 8911-50MGM1 | 8911-50MGM1C | |
| 100mg | 8911-100MGE2 | 8911-100MGF1 | 8911-100MGF1S | 8911-100MGF2 | 8911-100MGM1 | 8911-100MGM1C | |
| 200mg | 8911-200MGE2 | 8911-200MGF1 | 8911-200MGF1S | 8911-200MGF2 | 8911-200MGM1 | 8911-200MGM1C | |
| 500mg | 8911-500MGE2 | 8911-500MGF1 | 8911-500MGF1S | 8911-500MGF2 | 8911-500MGM1 | 8911-500MGM1C | |
| 1g | 8911-1GE2 | 8911-1GF1 | 8911-1GF1S | 8911-1GF2 | 8911-1GM1 | 8911-1GM1C | cylinder |
| 2g | 8911-2GE2 | 8911-2GF1 | 8911-2GF1S | 8911-2GF2 | 8911-2GM1 | 8911-2GM1C | |
| 5g | 8911-5GE2 | 8911-5GF1 | 8911-5GF1S | 8911-5GF2 | 8911-5GM1 | 8911-5GM1C | |
| 10g | 8911-10GE2 | 8911-10GF1 | 8911-10GF1S | 8911-10GF2 | 8911-10GM1 | 8911-10GM1C | |
| 20g | 8911-20GE2 | 8911-20GF1 | 8911-20GF1S | 8911-20GF2 | 8911-20GM1 | 8911-20GM1C | |
| 50g | 8911-50GE2 | 8911-50GF1 | 8911-50GF1S | 8911-50GF2 | 8911-50GM1 | 8911-50GM1C | |
| 100g | 8911-100GE2 | 8911-100GF1 | 8911-100GF1S | 8911-100GF2 | 8911-100GM1 | 8911-100GM1C | |
| 200g | 8911-200GE2 | 8911-200GF1 | 8911-200GF1S | 8911-200GF2 | 8911-200GM1 | 8911-200GM1C | |
| 500g | 8911-500GE2 | 8911-500GF1 | 8911-500GF1S | 8911-500GF2 | 8911-500GM1 | 8911-500GM1C | |
| 1kg | 8911-1KGE2 | 8911-1KGF1 | 8911-1KGF1S | 8911-1KGF2 | 8911-1KGM1 | 8911-1KGM1C | |
| 2kg | 8911-2KGE2 | 8911-2KGF1 | 8911-2KGF1S | 8911-2KGF2 | 8911-2KGM1 | 8911-2KGM1C | |
| 5kg | 8911-5KGE2 | 8911-5KGF1 | 8911-5KGF1S | 8911-5KGF2 | 8911-5KGM1 | 8911-5KGM1C | |
| 10kg | 8911-10KGE2 | 8911-10KGF1 | 8911-10KGF1S | 8911-10KGF2 | 8911-10KGM1 | 8911-10KGM1C | |
| 20kg | 8911-20KGE2 | 8911-20KGF1 | 8911-20KGF1S | 8911-20KGF2 | 8911-20KGM1 | 8911-20KGM1C | |
| 25kg | 8911-25KGE2 | 8911-25KGF1 | 8911-25KGF1S | 8911-25KGF2 | 8911-25KGM1 | 8911-25KGM1C | |

# WEIGHT SETS

INSPECTION CERTIFICATE



- Supplied with manufacturer inspection certificate



8910-5KGF1

## CLASS AND MATERIAL

| Specification | Code | | | | |
|---|---|---|---|---|---|
| | E2 (non-magnetic stainless steel) | F1 (non-magnetic stainless steel) | F1 (304 stainless steel) | F2 (304 stainless steel) | M1 (304 stainless steel) |
| 1mg~100g | 8910-100GE2 | 8910-100GF1 | 8910-100GF1S | 8910-100GF2 | 8910-100GM1 |
| 1mg~200g | 8910-200GE2 | 8910-200GF1 | 8910-200GF1S | 8910-200GF2 | 8910-200GM1 |
| 1mg~500g | 8910-500GE2 | 8910-500GF1 | 8910-500GF1S | 8910-500GF2 | 8910-500GM1 |
| 1mg~1kg | 8910-1KGE2 | 8910-1KGF1 | 8910-1KGF1S | 8910-1KGF2 | 8910-1KGM1 |
| 1mg~2kg | 8910-2KGE2 | 8910-2KGF1 | 8910-2KGF1S | 8910-2KGF2 | 8910-2KGM1 |
| 1mg~5kg | 8910-5KGE2 | 8910-5KGF1 | 8910-5KGF1S | 8910-5KGF2 | 8910-5KGM1 |

## SPECIFICATION AND SHAPE

| Weight | Specification | | | | | |
|---|---|---|---|---|---|---|
| | 1mg~100g | 1mg~200g | 1mg~500g | 1mg~1kg | 1mg~2kg | 1mg~5kg |
| 1mg | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ |
| 2mg | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* |
| 5mg | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ |
| 10mg | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ |
| 20mg | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* |
| 50mg | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ |
| 100mg | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ |
| 200mg | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* | ⬟ ⬟* |
| 500mg | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ | ⬟ |
| 1g | ▮ | ▮ | ▮ | ▮ | ▮ | ▮ |
| 2g | ▮ ▮* | ▮ ▮* | ▮ ▮* | ▮ ▮* | ▮ ▮* | ▮ ▮* |
| 5g | ▮ | ▮ | ▮ | ▮ | ▮ | ▮ |
| 10g | ▮ | ▮ | ▮ | ▮ | ▮ | ▮ |
| 20g | ▮ ▮* | ▮ ▮* | ▮ ▮* | ▮ ▮* | ▮ ▮* | ▮ ▮* |
| 50g | ▮ | ▮ | ▮ | ▮ | ▮ | ▮ |
| 100g | ▮ | ▮ | ▮ | ▮ | ▮ | ▮ |
| 200g | | ▮ ▮* | ▮ ▮* | ▮ ▮* | ▮ ▮* | ▮ ▮* |
| 500g | | | ▮ | ▮ | ▮ | ▮ |
| 1kg | | | | ▮ | ▮ | ▮ |
| 2kg | | | | | ▮ ▮* | ▮ ▮* |
| 5kg | | | | | | ▮ |
| Quantity | 21 pcs | 23 pcs | 24 pcs | 25 pcs | 27 pcs | 28 pcs |
| Total range | 1mg~211.11g | 1mg~611.11g | 1mg~1111.11g | 1mg~2111.11g | 1mg~6111.11g | 1mg~11111.11g |

⬟ sheet ▮ cylinder

⬟* sheet, with mark ▮* cylinder, with mark

INSPECTION CERTIFICATE

## STAINLESS STEEL WEIGHTS





aluminum box (included)



8912-10KM1

- Supplied with manufacturer inspection certificate

**SPECIFICATION**

| Weight | Class | | |
|---|---|---|---|
| | F1 | F2 | M1 |
| 500g | 8912-500F1 | 8912-500F2 | 8912-500M1 |
| 1kg | 8912-1KF1 | 8912-1KF2 | 8912-1KM1 |
| 2kg | 8912-2KF1 | 8912-2KF2 | 8912-2KM1 |
| 5kg | 8912-5KF1 | 8912-5KF2 | 8912-5KM1 |
| 10kg | 8912-10KF1 | 8912-10KF2 | 8912-10KM1 |
| 15kg | 8912-15KF1 | 8912-15KF2 | 8912-15KM1 |
| 20kg | 8912-20KF1 | 8912-20KF2 | 8912-20KM1 |
| 25kg | 8912-25KF1 | 8912-25KF2 | 8912-25KM1 |

**OIML R111-2004 TOLERANCE**

| Weight | F1 | F2 | M1 |
|---|---|---|---|
| 500g | 2.5mg | 8.0mg | 25mg |
| 1kg | 5.0mg | 16mg | 50mg |
| 2kg | 10mg | 30mg | 100mg |
| 5kg | 25mg | 80mg | 250mg |
| 10kg | 50mg | 160mg | 500mg |
| 20kg | 100mg | 300mg | 1000mg |

**CLASS SELECTION**

| Resolution of the weighing instruments | Required class of weights |
|---|---|
| 0.1mg | F1 |
| 1mg | F2 |
| 0.01g/0.1g | M1 |

INSPECTION CERTIFICATE

## CAST IRON WEIGHTS



8913-10M2

- Supplied with manufacturer inspection certificate

**SPECIFICATION**

| Weight | Class | |
|---|---|---|
| | M1 | M2 |
| 1kg | 8913-1M1 | 8913-1M2 |
| 2kg | 8913-2M1 | 8913-2M2 |
| 5kg | 8913-5M1 | 8913-5M2 |
| 10kg | 8913-10M1 | 8913-10M2 |
| 20kg | 8913-20M1 | 8913-20M2 |
| 25kg | 8913-25M1 | 8913-25M2 |
| 50kg | 8913-50M1 | 8913-50M2 |
| 100kg | 8913-100M1 | 8913-100M2 |
| 200kg | 8913-200M1 | 8913-200M2 |
| 500kg | 8913-500M1 | 8913-500M2 |
| 1000kg | 8913-1000M1 | 8913-1000M2 |

**OIML R111-2004 TOLERANCE**

| Weight | M1 | M2 |
|---|---|---|
| 1kg | 50mg | 160mg |
| 2kg | 100mg | 300mg |
| 5kg | 250mg | 800mg |
| 10kg | 500mg | 1600mg |
| 20kg | 1000mg | 3000mg |
| 50kg | 2500mg | 8000mg |
| 100kg | 5000mg | 16000mg |
| 200kg | 10000mg | 30000mg |
| 500kg | 25000mg | 80000mg |
| 1000kg | 50000mg | 160000mg |

**CLASS SELECTION**

| Resolution of the weighing instruments | Required class of weights |
|---|---|
| 0.01g/0.1g | M1 |
| 0.1g | M2 |

# SINGLE HOOK WEIGHTS

CAN BE CUSTOMIZED

ATTENTION: THE GRAVITATIONAL ACCELERATION G OF THE FORCE WEIGHTS IS TAKEN AS 9.8m/s²

INSPECTION CERTIFICATE



- Supplied with manufacturer inspection certificate



8914-1KF2



8914-2KF2

### SINGLE HOOK WEIGHTS FOR MASS VALUES

| Weight | Class and material | | |
|---|---|---|---|
| | F1 (304 stainless steel) | F2 (304 stainless steel) | M1 (2Cr13 stainless steel) |
| 1g | 8914-1GF1 | 8914-1GF2 | 8914-1GM1 |
| 2g | 8914-2GF1 | 8914-2GF2 | 8914-2GM1 |
| 5g | 8914-5GF1 | 8914-5GF2 | 8914-5GM1 |
| 10g | 8914-10GF1 | 8914-10GF2 | 8914-10GM1 |
| 20g | 8914-20GF1 | 8914-20GF2 | 8914-20GM1 |
| 50g | 8914-50GF1 | 8914-50GF2 | 8914-50GM1 |
| 100g | 8914-100GF1 | 8914-100GF2 | 8914-100GM1 |
| 200g | 8914-200GF1 | 8914-200GF2 | 8914-200GM1 |
| 500g | 8914-500GF1 | 8914-500GF2 | 8914-500GM1 |
| 1kg | 8914-1KGF1 | 8914-1KGF2 | 8914-1KGM1 |
| 2kg | 8914-2KGF1 | 8914-2KGF2 | 8914-2KGM1 |
| 5kg | 8914-5KGF1 | 8914-5KGF2 | 8914-5KGM1 |
| 10kg | 8914-10KGF1 | 8914-10KGF2 | 8914-10KGM1 |
| 15kg | 8914-15KGF1 | 8914-15KGF2 | 8914-15KGM1 |
| 20kg | 8914-20KGF1 | 8914-20KGF2 | 8914-20KGM1 |

### SINGLE HOOK WEIGHTS FOR FORCE VALUES

| Weight | Class and material | | |
|---|---|---|---|
| | F1 (304 stainless steel) | F2 (304 stainless steel) | M1 (2Cr13 stainless steel) |
| 1N | 8914-1NF1 | 8914-1NF2 | 8914-1NM1 |
| 2N | 8914-2NF1 | 8914-2NF2 | 8914-2NM1 |
| 5N | 8914-5NF1 | 8914-5NF2 | 8914-5NM1 |
| 10N | 8914-10NF1 | 8914-10NF2 | 8914-10NM1 |
| 20N | 8914-20NF1 | 8914-20NF2 | 8914-20NM1 |
| 50N | 8914-50NF1 | 8914-50NF2 | 8914-50NM1 |
| 100N | 8914-100NF1 | 8914-100NF2 | 8914-100NM1 |
| 200N | 8914-200NF1 | 8914-200NF2 | 8914-200NM1 |

### OIML R111-2004 TOLERANCE

| Weight | F1 | F2 | M1 |
|---|---|---|---|
| 1g | 0.10mg | 0.3mg | 1.0mg |
| 2g | 0.12mg | 0.4mg | 1.2mg |
| 5g | 0.16mg | 0.5mg | 1.6mg |
| 10g | 0.20mg | 0.6mg | 2.0mg |
| 20g | 0.25mg | 0.8mg | 2.5mg |
| 50g | 0.3mg | 1.0mg | 3.0mg |
| 100g | 0.5mg | 1.6mg | 5.0mg |
| 200g | 1.0mg | 3.0mg | 10mg |
| 500g | 2.5mg | 8.0mg | 25mg |
| 1kg | 5.0mg | 16mg | 50mg |
| 2kg | 10mg | 30mg | 100mg |
| 5kg | 25mg | 80mg | 250mg |
| 10kg | 50mg | 160mg | 500mg |
| 20kg | 100mg | 300mg | 1000mg |

### CLASS SELECTION

| Resolution of the weighing instruments | Required class of weights |
|---|---|
| 0.1mg | F1 |
| 1mg | F2 |
| 0.01g/0.1g | M1 |

# GSM (GRAMS PER SQUARE METER) CUTTER CODE 8390-100

- Suitable for cutting round samples of woolen, cotton, knitted fabrics, etc.





### SPECIFICATION

| | |
|---|---|
| Area | 100cm² |
| Thickness | 4mm |
| Blade | 4 pcs |
| Material | aluminum |
| Mat | rubber mat |
| Dimension (L×W×H) | 160×160×115mm |
| Weight | 2kg |



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# RELIABILITY TESTING 38



Salt Spray Test Chambers
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# SALT SPRAY TEST CHAMBERS

CUSTOMIZABLE CHAMBER SIZE

COMPLY WITH ISO STANDARD SALT SPRAY TEST REQUIREMENT

VIDEO




SFT-T350

- Adopting plastic precision nozzle and cone spraying device, even mist falling, fast, long nozzle life, no crystallisation
- Spraying time can be controlled internally without the need for an external time relay
- Adjustment of brine flow and compressed air pressure by means of a flow meter and a high-pressure valve to ensure uniform salt spray deposition
- Adopt manual water filling system, water level is insufficient to automatically replenish the function, to ensure that the test is not interrupted
- USB port for download curves and historical data

## SPECIFICATION

| | | | | | |
|---|---|---|---|---|---|
| Advanced type | Code | SFT-T350 | SFT-U680 | SFT-E305 | SFT-S410 |
| | test condition | suitable for NSS (Neutral), AASS (Acid), CASS (Copper Accelerated) test | | | |
| Basic type | Code | SFT-S210R | SFT-G550 | SFT-L965 | SFT-V125 |
| | test condition | NSS (Neutral), AASS (Acid) test only | | | |
| Chamber dimension (W×H×D) | | 900×600×500mm | 1200×850×500mm | 1600×850×550mm | 2000×950×600mm |
| Chamber volume | | 270L | 480L | 740L | 1440L |
| Saline tank volume | | 25L | 90L | 90L | 120L |
| Chamber temperature | | (NSS, AASS) test temperature: 35°C±1°C/(CASS) test temperature: 50°C±1°C | | | |
| Saturated barrel temperature | | (NSS, AASS) test temperature: 47°C±1°C/(CASS) test temperature: 63°C±1°C | | | |
| Saline temperature | | (NSS, AASS) test temperature: 35°C±1°C/(CASS) test temperature: 50°C±1°C | | | |
| Heat type | | advanced type: thermal radiation heat/basic type: steam heat | | | |
| Test fluid | | NSS: pure water+NaCl (pH 6.5~7.2), AASS: pure water+NaCl+$CH_3COOH$ (pH 3.0~3.3) CASS: pure water+NaCl+$CuCl_2$ (pH 3.0~3.3) | | | |
| Compressed air pressure | | 0.2MPa | 0.6MPa | 0.6MPa | 0.6MPa |
| Power | | 2kW | 3kW | 4kW | 4.5kW |
| Power supply | | AC 220V, 1Ø, 50Hz | | | |
| External dimension (W×H×D) | | 1460×910×500mm | 1900×1150×1500mm | 2300×1150×1550mm | 2700×1350×1600mm |
| Weight (basic type) | | 108kg | 485kg | 585kg | 760kg |
| Weight (advanced type) | | 105kg | 385kg | 480kg | 580kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Sample holder | 1 group |
| Sodium chloride NaCl | 2 bottles |
| 10L salt water preparation cup | 1 pc |
| 80cm² collection cup | 2 pcs |
| 50cm glass measure cylinder | 2 pcs |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Nozzle | SFT-S210R-NOZZLE |
| Brine filter | SFT-S210R-FILTER |

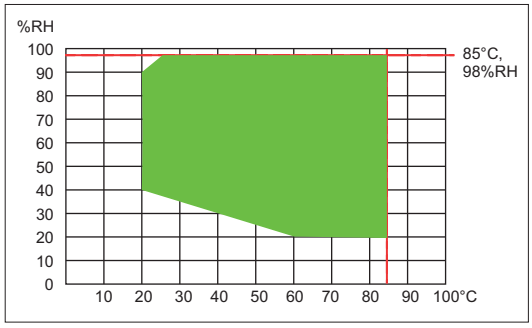


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# DESKTOP TEMPERATURE AND HUMIDITY CHAMBER
# CODE THT-Z158

VIDEO

temperature and humidity control range chart







- Table design, quiet and small
- Equipped with operation system with 7 inch touch screen controller
- Intelligent refrigeration and dehumidification system, it can save 30~45% of electricity compared with traditional machines
- Output excel data report through USB port

**SPECIFICATION**

| | | |
|---|---|---|
| **Chamber dimension (W×H×D)** | | 300×350×300mm |
| **Chamber volume** | | 30L |
| **Temperature range** | | -40~120°C |
| **Humidity range** | | 20%RH~98%RH |
| **Temperature deviation** | | ±2.0°C |
| **Temperature fluctuation** | | ±0.5°C |
| **Temperature uniformity** | | ≤2.0°C |
| **Humidity deviation** | | ±3.0%RH (at 75%RH~98%RH), ±5.0%RH (at 20%RH~75%RH) |
| **Humidity fluctuation** | | ±3.0%RH |
| **Humidity uniformity** | | ≤5.0%RH (at 75%RH~98%RH), ≤7.0%RH (at 20%RH~75%RH) |
| **Heating rate** | | 1°C/min~3°C/min |
| **Cooling rate** | | 0.7°C/min~1°C/min |
| **Operation environment** | **temperature** | 5~35°C |
| | **humidity** | ≤85%RH |
| **Material** | **case material** | cold rolled steel plate+varnish |
| | **chamber material** | SUS#304 stainless steel |
| | **thermal insulation material** | polyurethane foam |
| **Cooling system** | | air-cold compressor |
| **Protector** | | compressor overload protection switch, refrigerant high pressure protection switch, ceramic fuse, water plate of water shortage protection switch, electromagnetic switch, air burn protection switch, alarm |
| **Power supply** | | AC220, 50/60Hz, 2kW |
| **External dimension (W×H×D)** | | 550×850×1050mm |
| **Weight** | | 125kg |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Test hole** | 1 pc |
| **Shelf** | 2 pcs |

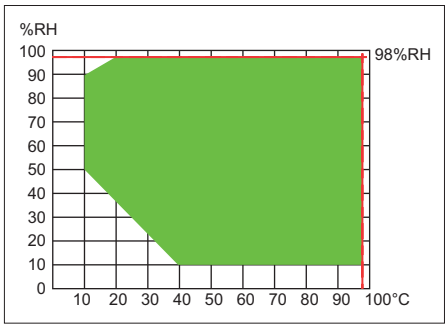


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# TEMPERATURE AND HUMIDITY CHAMBERS

VIDEO

temperature and humidity control range chart






THT-A101T

- The chamber is equipped with an independent operation system with 7-inch or 10.1-inch touch screen contuoller
- Intelligent refrigeration and dehumidification system, combined with energy-saving control algorithm, can adjust the refrigeration level and save energy. Compared with traditional machines, it can save 30~45% of electricity
- It can output excel data report through USB port

## SPECIFICATION

| Code | | THT-A101T | THT-A102T | THT-A103T | THT-A104T | THT-A105T |
|---|---|---|---|---|---|---|
| Chamber dimension (W×H×D) | | 500×600×500mm | 500×500×400mm | 500×750×600mm | 700×850×700mm | 1000×1000×1000mm |
| Chamber volume | | 150L | 100L | 225L | 416L | 1000L |
| Temperature range | | -40~150°C | | | | |
| Humidity range | | 10~98%RH | | | | |
| Temperature/humidity fluctuation | | ±0.5°C, ±2.5%RH | | | | |
| Temperature/humidity uniformity | | <2°C, 5%RH | | | | |
| Temperature/humidity stability | | 0.2°C, 2%RH | | | | |
| Temperature/humidity deviation | | ±2°C, 3%RH | | | | |
| Warm up time | | about 3°C/min | | | | |
| Cooling time | | about 1°C/min | | | | |
| Material | case material | cold rolled steel plate+varnish | | | | |
| | chamber material | SUS#304 stainless steel | | | | |
| | thermal insulation material | rigid polyurethane foam | | | | |
| Cooling system | | compressor | | | | |
| Protector | | no fuse switch, compressor overpressure, overheat protection, overtemperature protection, overload protection, dry burning protection, water shortage protection, etc. | | | | |
| Power supply | | AC220V, 50Hz, 4.5kW | AC220V, 50Hz, 2kW | AC380V, 3Ø, 50Hz, 4kW | AC380V, 3Ø, 50Hz, 3.5kW | AC380V, 3Ø, 50Hz, 3.5kW |
| Dimension (W×H×D) | | 800×1660 ×1400mm | 750×1550 ×1170mm | 850×1750 ×1200mm | 950×1850 ×1400mm | 1300×1950 ×1850mm |
| Weight | | 365kg | 285kg | 385kg | 510kg | 950kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Test hole | 1 pc |
| Shelf | 2 pcs |

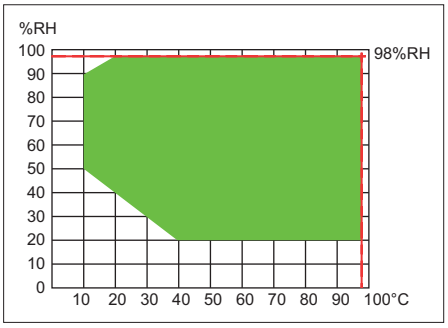


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# PROGRAMMABLE TEMPERATURE AND HUMIDITY CHAMBER (ADVANCED TYPE) CODE HTT-A150

VIDEO

temperature and humidity control range diagram






- The chamber is equipped with a standalone operation system and uses a 7-inch human-machine interface touch screen programmable controller
- Adopt advanced balanced temperature and humidity control system, dynamic PID and steam partial pressure control, HFC environmental refrigerant
- Remote control and data acquisition can be performed through the RS232 interface, and CSV data files can be directly exported to a USB flash drive

## SPECIFICATION

| | | |
|---|---|---|
| **Chamber dimension (W×H×D)** | | 500×600×500mm |
| **Chamber volume** | | 150L |
| **Temperature range** | | -40~150°C |
| **Humidity range** | | 20~98%RH |
| **Temperature/humidity deviation** | | ±2.0°C, ±2.5%RH |
| **Temperature/humidity fluctuation** | | ±0.5°C, ±2.0%RH |
| **Temperature/humidity uniformity** | | ±2.0°C, ±3.0%RH |
| **Warm up time** | | 2.0~3.0°C/min (empty) |
| **Cooling time** | | 1.0~1.5°C/min (empty) |
| **Cooling system** | | compressor |
| **Material** | **case material** | double-sided galvanized steel plate+spray treatment |
| | **chamber material** | SUS#304 stainless steel |
| | **thermal insulation** | rigid polyurethane foam |
| **Protector** | | total power supply phase sequence and out-of-phase protection, leakage protection, load short-circuit protection, adjustable over-temperature protection, humidification system water-deficit protection, compressor over-pressure protection, etc. |
| **Power supply** | | AC380V, 50Hz, 5kW |
| **Dimension (W×H×D)** | | 765×1670×1575mm |
| **Weight** | | 370kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Test hole** | 1 pc |
| **Shelf** | 2 pcs |



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# ELECTRODYNAMIC VIBRATION SYSTEMS

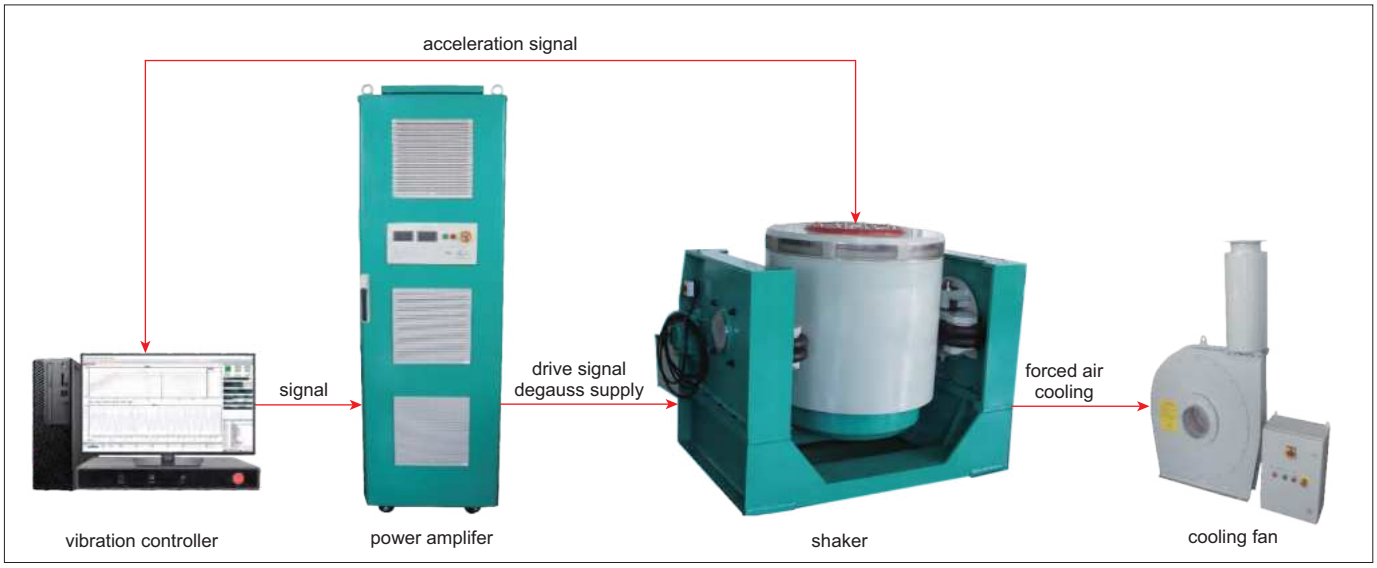
VIDEO

- According to ISO 5344
- Suitable for a variety of typical vibration and simulated transport tests for small and medium-sized automotive part, electronic component, household appliance and so on
- Light weight and good rigidity, high first-order resonant frequency
- High-efficiency, low-noise fan cooling, long-time continuous operation
- Power amplifier modular design, complete system interlocking protection function

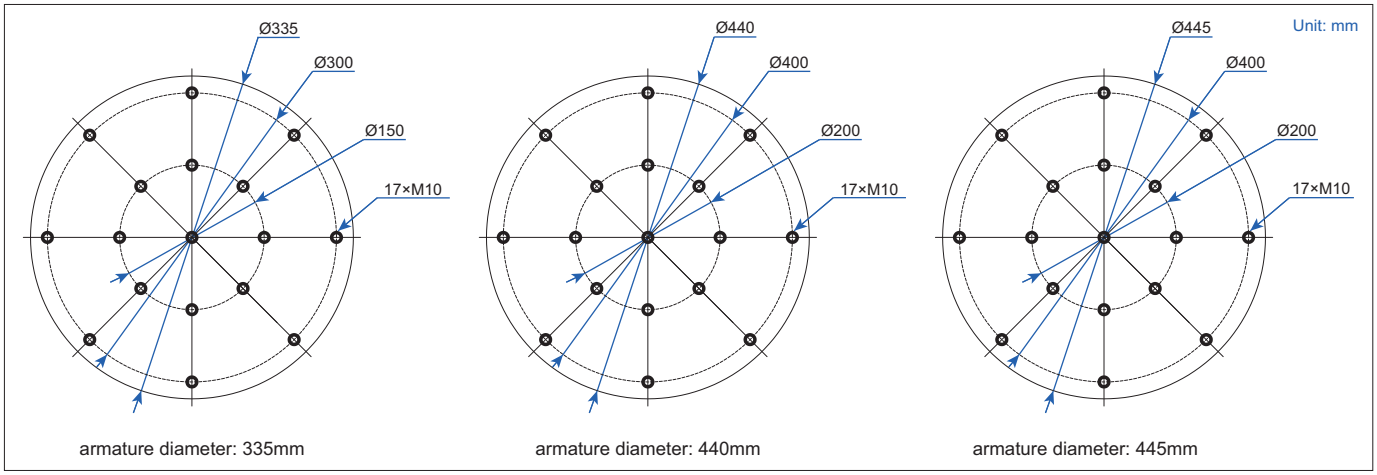



**EDV-AC2400**

**working principle**




**armature insert pattern**




To be continued

Continued from previous page

## SPECIFICATION*

| Code | | EDV-AC1100 | EDV-AC2400 | EDV-AC3000 | EDV-AC4000 | EDV-AC5000 |
|---|---|---|---|---|---|---|
| System parameter | rated sine/random force | 1100kgf | 2400/2200kgf | 3000kgf | 4000kgf | 5000kgf |
| | shock force | 3300kgf | 4800kgf | 6000kgf | 8000kgf | 10000kgf |
| | frequency range | 5Hz~3500Hz | 5Hz~3000Hz | | | 5Hz~2800Hz |
| | Max. acceleration | 85g | 100g | | | |
| | Max. velocity | 2.0m/s | | | | |
| | Max. displacement (P-P) | 51mm | | | | |
| | Max. load | 300kg | | 500kg | | 1000kg |
| Shaker | armature diameter | 335mm | | 440mm | | 445mm |
| | armature resonance | 3000Hz±5% | 2600Hz±5% | 2500Hz±5% | | 2400Hz±5% |
| | effective armature mass | 13kg | 24kg | 30kg | | 50kg |
| | inserts size | M10 | | | | |
| | load attachment points | 17 | | | | |
| | natural frequency | <3Hz (thrust axis) | | | | |
| | stray magnetic field | ≤1mT (at 152mm above table) | | | | |
| | dimension | 940×715×780mm | 1160×880×1050mm | 1270×980×1135mm | | 1650×1130×1280mm |
| | weight | 1000kg | 1700kg | 2500kg | | 4500kg |
| Power amplifier | rated output capacity | 10KVA | 20KVA | 30KVA | 40KVA | 50KVA |
| | signal to noise ratio | ≥75dB | ≥65dB | | | |
| | amplifier efficiency | ≥90% | | | | |
| | system protection | multiple | | | | |
| | dimension | 610×900×1550mm | 610×900×2000mm | | | |
| | weight | 400kg | 460kg | 500kg | 520kg | 560kg |
| Cooling fan | power | 4KVA | 7.5KVA | | 15KVA | |
| | air flow | 0.33$m^3$/s | 0.46$m^3$/s | | 1.1$m^3$/s | |
| | air pressure | 0.0035 (MPa) | 0.0088 (MPa) | | 0.0077 (MPa) | |
| | air duct diameter/length | Ø120×4000mm | Ø200×4500mm | | | |
| | dimension | 610×750×1450mm | 700×950×1500mm | | 1050×897×1970mm | |
| | weight | 120kg | 180kg | | 320kg | |
| Operation temperature | | temperature: 0°C~40°C | | | | |
| Operation humidity | | humidity: 0%RH~90%RH (non-condensing) | | | | |
| System power supply | | 3Ø AC 400V±10%, 50/60Hz | | | | |
| System power | | 22KVA | 42KVA | 56KVA | 76KVA | 95KVA |
| Compressed air requirement | | 0.6MPa | | | | |

*Can be customized according to test requirements

## STANDARD DELIVERY

| | | |
|---|---|---|
| Main unit | shaker | 1 pc |
| | amplifier | 1 pc |
| | cooling fan | 1 pc |

## OPTIONAL ACCESSORY **

| | |
|---|---|
| Vibration controller | customizable |
| Accelerometer | |
| Head expander | |
| Slip table | |
| Automatic reversing device | |
| Fixture | |
| Heat insulation board | |
| Temperature and humidity chamber | |

**Can be customized according to test requirements



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# ELECTRONIC TESTING



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AC/DC Digital Power Meters
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DC Resistance Testers
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Handheld DC Ohmmeters
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LCR Meters
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AC Ground Resistance Testers
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AC/DC Withstanding Voltage Insulation Testers
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Insulation Resistance Testers
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Earth Resistance Testers
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DC Power Supplies
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Digital Multimeters
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Digital AC/DC Clamp Meters
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Voltage Testers
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Soldering Irons
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Soldering Stations
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# DIGITAL OSCILLOSCOPE
# CODE 9530-WA10



passive probe (included)



- Analogue bandwidth: 100MHz
- Memory depth: 64kpts
- Sampling rate per channel: 1GSa/s (non-interleaved mode)
- Waveform capture rate: 5,000wfms/s
- Automatic measurement of multiple waveform parameters
- Multiple frequency standard square waves can be output:10Hz, 100Hz, 1kHz, 10kHz
- Sampling mode: real-time sampling and equivalent sampling
- Lissajous method: measuring the phase of a waveform

## SPECIFICATION

| | |
|---|---|
| **Analogue bandwidth** | 100MHz |
| **Channel** | 2 |
| **Maximum real-time sampling rate** | 1GSa/s (non-interleaved mode) |
| **Rise time** | ≤3.5ns |
| **Memory depth** | 64kpts |
| **Waveform capture rate** | 5000wfms/s |
| **Vertical scale (V/div)** | 1mV/div~20V/div |
| **Time base scale (s/div)** | 2ns/div~50s/div |
| **Storage method** | setup, wave, bitmap |
| **Trigger type** | edge, pulse, alternate, slope, video |
| **Trigger mode** | auto, normal, single |
| **Trigger coupling** | DC, AC, HF, LF, noise |
| **Cursor measurement** | time, voltage, tracking |
| **Parameter measurement** | automatic measurement of multiple waveform parameters |
| **Mathematical operation** | +, -, ×, ÷, FFT, filter |
| **Digital filter** | low pass, high pass, band pass, band stop |
| **Setting** | internal: 20 groups, USB: 200 groups |
| **Waveform** | internal: 20 groups, USB: 200 groups |
| **Recorded frame** | 1000 frames of screen data |
| **Interface** | USB Host, USB Device, Pass/Fail |
| **Maximum input voltage** | 300Vrms, the transient over voltage is 1000 Vpk. |
| **Probe compensator output** | voltage: about 3Vp-p<br>frequency: 10Hz,100Hz,1kHz, 10kHz |
| **Power supply** | AC 100V~240V, 50-60Hz |
| **Dimension (L×W×H)** | 306mm×138mm×124mm |
| **Weight** | 2.5kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Passive probe** | 2 pcs |
| **USB cable** | 1 pc |



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# AC/DC DIGITAL POWER METER
# CODE 9670-PM70

VIDEO



- Basic accuracy: 0.2%
- AC/DC universal, input signal bandwidth: DC, 15Hz-5kHz
- High measurement speed, up to 0.1s refresh rate
- Voltage and current ratio function
- Sound and light alarm for voltage, current, power over the limits
- Standard RS232 interface to support test automation and data transmission

**SPECIFICATION**

| | | |
|---|---|---|
| **Measurement parameters** | | voltage (U), current (I), active power (P), reactive power (Q), apparent power (S), power factor (λ), phase angle (Ø), voltage frequency (f), voltage peak (Vpk), current peak (Apk), electric energy (Wh), current integration (Ah), electric energy time (Time) |
| **Wiring method** | | single phase |
| **Voltage range** | | 15/30/60/150/300/600V |
| **Current range** | | 100mA/200mA/500mA/1A/2A/5A/10A/20A |
| **Voltage** | **display range** | 0.15V~600V |
| | **accuracy (at 23±5˚C)** | DC, 15Hz≤f≤5kHz: ±(0.1%×display+0.1%×range) |
| **Current** | **display range** | 0.5mA~20A |
| | **accuracy (at 23±5˚C)** | DC, 15Hz≤f≤5kHz: ±(0.1%×display+0.1%×range) |
| **Active power** | **display range** | 1.0mW~12kW |
| | **accuracy (at 23±5˚C)** | DC, 15Hz≤f≤5kHz: PF>0.5: ±(0.1%×display+0.1%×range)<br>PF≤0.5: ±(0.25%×display+0.25%×range) |
| **Frequency** | **display range** | 15Hz~5kHz |
| | **accuracy (at 23±5˚C)** | ±(0.1%xdisplay) (voltage amplitude should be greater than 10% of range) |
| **Electric energy** | **display range** | 0~9999MWh |
| | **accuracy (at 23±5˚C)** | ±(0.5%×display) |
| **Current integration** | **display range** | 0~9999MAh |
| | **accuracy (at 23±5˚C)** | ±(0.5%×display) |
| **Power factor** | | ±(0.010~1.000) |
| **Ratio range (voltage, current)** | | 0.1~6000 |
| **Interface** | | RS232 interface, supports MODBUS and ASCII code protocols |
| **Power supply** | | AC 100V~240V, 50/60Hz |
| **Dimension (L×W×H)** | | 281×213×99mm |
| **Weight** | | 2550g |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **RS232 communication cable** | 1 pc |



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# DC RESISTANCE TESTER
# CODE 9651-RM20



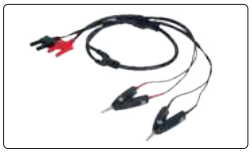


test probe **9651-TL** (**optional**)

- Maximum reading: 220000
- Basic accuracy: 0.05%
- 3.5 inch LCD screen
- Temperature compensation function
- Short-circuit zeroing calibration
- Bad contact detection
- Comparator: pass or fail judge
- Keyboard lock function



temperature probe (included)



test clip (included)



RS232 communication cable (included)

**SPECIFICATION**

| Function | Range | Resolution | Accuracy ("d" is the least reading) |
|---|---|---|---|
| **Slow test** | 20mΩ | 0.001mΩ | ±(0.1%+3d) |
| | 200mΩ/2Ω/20Ω/200Ω/ 2kΩ/20kΩ/200kΩ | 0.001mΩ/0.00001Ω/0.0001Ω/0.001Ω/ 0.00001kΩ/0.0001kΩ/0.001kΩ | ±(0.05%+2d) |
| | 2MΩ | 0.0001MΩ | ±(0.1%+5d) |
| **Medium speed test** | 20mΩ | 0.001mΩ | ±(0.2%+5d) |
| | 200mΩ/2Ω/20Ω/200Ω/ 2kΩ/20kΩ/200kΩ | 0.001mΩ/0.00001Ω/0.0001Ω/0.001Ω/ 0.00001kΩ/0.0001kΩ/0.001kΩ | ±(0.1%+3d) |
| | 2MΩ | 0.0001MΩ | ±(0.2%+5d) |
| **Fast test** | 20mΩ | 0.01mΩ | ±(0.8%+5d) |
| | 200mΩ/2Ω/20Ω/200Ω/ 2kΩ/20kΩ/200kΩ | 0.01mΩ/0.0001Ω/0.001Ω/0.01Ω/ 0.0001kΩ/0.001kΩ/0.01kΩ | ±(0.5%+5d) |
| | 2MΩ | 0.001MΩ | ±(0.8%+5d) |
| **Range mode** | auto range, manual range and nominal range | | |
| **Test speed** | slow: 3t/s, medium speed: 18t/s, fast: 60t/s | | |
| **Trigger** | internal trigger, manual trigger, external trigger | | |
| **Interface** | handler interface, RS232 interface, RS485 interface, USB interface and temperature compensation interface | | |
| **Power supply** | AC 100V~240V, 50Hz/60Hz | | |
| **Dimension (L×W×H)** | 307×264×107mm | | |
| **Weight** | 2.5kg | | |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **RS232 communication cable** | 1 pc |
| **Temperature probe** | 1 pc |
| **Test clip** | 1 pc |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Test probe** | **9651-TL** |



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# DC RESISTANCE TESTER
# CODE 9654-LW50

VIDEO



- Maximum reading: 5000
- Basic accuracy: 0.2%
- 0.8 inch high brightness digital tube
- Full-range short-circuit zero function
- Comparator function: upper and lower limit alarms



test clip (included)

**SPECIFICATION**

| Function | Range | Resolution | Accuracy ("d"is the least reading) |
|---|---|---|---|
| Slow test | 50mΩ | 0.01mΩ | ±(0.2%+5d) |
| | 500mΩ | 0.1mΩ | ±(0.2%+3d) |
| | 5Ω/50Ω/500Ω/5kΩ | 0.001Ω/0.01Ω/0.1Ω/0.001 kΩ | ±(0.2%+2d) |
| | 50kΩ | 0.01kΩ | ±(0.2%+3d) |
| | 200kΩ | 0.1kΩ | ±(0.2%+5d) |
| Fast test | 50mΩ | 0.01mΩ | ±(0.5%+5d) |
| | 500mΩ/5Ω/50Ω/500Ω/ 5kΩ/50kΩ | 0.1mΩ/0.001Ω/0.01Ω/ 0.1Ω/0.001kΩ/0.01kΩ | ±(0.5%+3d) |
| | 200kΩ | 0.1kΩ | ±(0.5%+5d) |
| Range mode | auto range and manual range | | |
| Test speed | slow: 3t/s, fast: 10t/s | | |
| Beep | OK, NG | | |
| Power supply | AC 220V±10%, 50Hz | | |
| Dimension (L×W×H) | 259×220×85mm | | |
| Weight | 2.1kg | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Test clip | 1 pc |

# HANDHELD DC OHMMETER
# CODE 9650-HA20

VIDEO

- Maximum reading: 20000
- Basic accuracy: 0.05%
- 3.5 inch LCD screen with adjustable backlight
- Temperature compensation function
- Full-range short-circuit zero function
- Comparator function: upper and lower limit alarms
- Data hold
- Keyboard lock function
- Automatic power off




test clip (included)

## SPECIFICATION

| Function | | Range | Resolution | Accuracy ("d"is the least reading) |
|---|---|---|---|---|
| High current mode | Slow & medium speed test | 20mΩ | 0.01mΩ | ±(0.5%+3d) |
| | | 200mΩ/2Ω/20Ω/200Ω/ 2kΩ/20kΩ/200kΩ | 0.01mΩ/0.0001Ω/0.001Ω/0.01Ω/ 0.0001kΩ/0.001kΩ/0.01kΩ | ±(0.05%+1d) |
| | | 2MΩ | 0.0001MΩ | ±(0.5%+1d) |
| | | 20MΩ | 0.01MΩ | ±(1%+3d) |
| | Fast speed test | 20mΩ | 0.01mΩ | ±(0.5%+5d) |
| | | 200mΩ/2Ω/20Ω/200Ω/ 2kΩ/20kΩ/200kΩ | 0.01mΩ/0.0001Ω/0.001Ω/0.01Ω/ 0.0001kΩ/0.001kΩ/0.01kΩ | ±(0.1%+3d) |
| | | 2MΩ | 0.0001MΩ | ±(1%+3d) |
| | | 20MΩ | 0.01MΩ | ±(2%+5d) |
| Low current mode * | Slow, medium, fast speed test | 20mΩ | 0.01mΩ | ±(0.5%+5d) |
| | | 200mΩ/2Ω/20Ω/200Ω/ 2kΩ/20kΩ/200kΩ | 0.01mΩ/0.0001Ω/0.001Ω/0.01Ω/ 0.0001kΩ/0.001kΩ/0.01kΩ | ±(0.1%+3d) |
| | | 2MΩ | 0.0001MΩ | ±(1%+3d) |
| | | 20MΩ | 0.01MΩ | ±(2%+5d) |
| Range mode | | auto range, manual range and nominal range | | |
| Test speed | | slow: 3t/s, medium speed: 15t/s, fast: 30t/s | | |
| Trigger | | internal trigger, manual trigger, remote trigger | | |
| Interface | | Mini USB interface, compatible with SCPI command | | |
| Power supply | | rechargeable lithium battery (operation time ≥ 8 hours) | | |
| Dimension | | 130×210×38mm | | |
| Weight | | 700g | | |

* When using the 2MΩ and 20MΩ ranges, it is recommended to select the high current mode

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Power adapter | 1 pc |
| Mini USB communication cable | 1 pc |
| Test clip | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Test probe | 9650-TL |



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# LCR METER
# CODE 9653-YS01

VIDEO





kelvin clip lead
(include)



test fixture
(include)

- 3.5-inch TFT LCD display
- Basic accuracy: 0.05%
- Auto level control
- Calibration function: full-scale open circuit and short-circuit sweep frequency clear, three groups of users point frequency calibration
- List test: cyclic scanning of up to 10 groups of frequency or level is performed and the results are compared to the set values
- Comparator: 11-level sorting function, up to 999,999 measured parts can be counted



SMD test fixture
(**optional**)



short-circuit plate
(included)



SMD tweezer lead
(**optional**)



SMD tweezer lead
(**optional**)

## SPECIFICATION

| | |
|---|---|
| **Parameters** | Cs-Rs, Cs-D, Cp-Rp, Cp-D, Lp-Rp, Lp-Q, Ls-Rs, Ls-Q, G-B, R-X, Z-θrad, Z-θdeg, DCR |
| **Monitor parameters** | Z, D, Q, θrad, θdeg, R, X, G, B, Y, Vac, Iac, Δ, Δ% |
| **Test frequency** | 10Hz~100kHz |
| **Signal level** | voltage: 10mV~2V; current: 100μA~20mA |
| **DC bias** | -2.5V~+2.5V |
| **Source resistance** | 30Ω, 50Ω, 100Ω |
| **Range** | auto range, manual range and nominal range, 9 levels of ranges |
| **Maximum reading** | main parameter: 999999; secondary parameter: 999999 |
| **Test speed** | fast: 40 t/s; medium speed: 10 t/s; slow: 3 t/s |
| **Comparator** | 11-level sorting, 9-level GD, 1-level NG, 1-level AUX |
| **Interface** | RS232 interface, RS485 interface, USB interface, HANDLER interface |
| **Power supply** | AC 100V~240V, 50/60Hz |
| **Dimension (L×W×H)** | 350×264×107mm |
| **Weight** | 2.6kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Kelvin clip lead** | 1 pc |
| **Test fixture** | 1 pc |
| **Short-circuit plate** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **SMD test fixture** | **9653-ST01** |
| **SMD tweezer lead** | **9653-ST02** |
| **SMD tweezer lead** | **9653-ST03** |



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DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO

# HANDHELD LCR METER
# CODE 9652-RC02



SMD tweezer lead
(included)



short-circuit plate
(included)



kelvin clip lead
(included)

- Automatic measure inductance (L), capacitance (C), resistance (R), impedance (Z), quality factor (Q), dissipation factor (D), phase (θ) and DC resistance (DCR)
- Internal trigger
- Data hold
- Full range open and short compensation
- Equivalent circuit: series and parallel
- Compare main parameter with nominal value and display percent deviation
- Built in USB-C interface for data transmission and charging
- Language: English, Chinese
- LCD touch screen with adjustable backlight
- Automatic power off

## SPECIFICATION

| | |
|---|---|
| **Measuring parameters** | C-D, C-Q, C-R, L-D, L-Q, L-R, L-Rdc, R-Q, R-X, R-Rdc, Rdc, Z-D, Z-Q, Z-θr, Z-θd |
| **Range** | 8 levels, auto range or hold range |
| **Basic accuracy** | 0.2% |
| **Test frequency** | 50Hz, 60Hz, 100Hz, 120Hz, 200Hz, 400Hz, 500Hz, 1kHz, 2kHz, 4kHz, 5kHz, 10kHz, 20kHz, 40kHz, 50kHz, 100kHz accuracy: 0.02% |
| **Signal level** | 0.1V, 0.3V, 0.7V, 1V; accuracy: 10% |
| **Test speed** | slow 2.5 times/sec, fast 10 times/sec |
| **Interface** | USB-C interface: support HID and VCOM communication, compatible with SCPI command |
| **Operation environment** | 0°C~40°C, <80%RH |
| **Working time** | 50% brightness: 9h; 100% brightness : 7h |
| **Power supply** | rechargeable Li-ion battery |
| **Power** | <1.5W |
| **Dimension** | 195×90×41mm |
| **Weight** | 380g |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Kelvin clip lead** | 1 pc |
| **SMD tweezer lead** | 1 pc |
| **Short-circuit plate** | 1 pc |



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# AC GROUND RESISTANCE TESTER
# CODE 9460-GR40

VIDEO



- 5-inch LCD touch screen display
- Comparator function: sound and light alarms for upper and lower limit
- User correction function
- Keyboard lock function



test clamps (included)

## SPECIFICATION

| | | |
|---|---|---|
| **Current** | **range** | AC 5A~40A |
| | **resolution** | 0.1A |
| | **accuracy** | ±(2%+5d) |
| **Resistance test** | **range** | 0~600mΩ |
| | **resolution** | 0.1mΩ |
| | **accuracy** | ±(2%+5d) |
| **Frequency** | | 50Hz, 60Hz |
| **Output voltage** | | ≤6V |
| **Output power** | | when the input voltage is 110V, the output power≤75VA;<br>when the input voltage is 220V, the output power≤150VA |
| **Time** | | 0~999.9s |
| **Interface** | | HANDLER interface, RS-232C interface |
| **Power supply** | | AC 110V/220V, 50Hz/60Hz |
| **Dimension (L×W×H)** | | 320×250×120mm |
| **Weight** | | 7kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Test clamp** | 2 pcs |



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# AC/DC WITHSTANDING VOLTAGE INSULATION TESTER
# CODE 9453-ST01

VIDEO


high voltage test clips (included)


high voltage test rod
(included)


RS232 communication cable
(included)



- 5-inch LCD touch screen display
- Arc detection function
- Electric shock protection function
- 10 test files can be stored, each file can be edited with 16 test steps
- Standard communication interface to meet automation test requirements
- Applications: home appliance, transformer, electrical device, component

## SPECIFICATION

| | | | |
|---|---|---|---|
| Withstand voltage test | output voltage | range | AC: 5kV; DC: 6kV |
| | | resolution (d) | 0.001kV |
| | | accuracy | ±(2%+5d) |
| | test current | range | AC: 10mA; DC: 5mA |
| | | resolution (d) | AC: 0.001mA~0.01mA; DC: 0.1μA~0.01mA |
| | | accuracy | ±(2%+5d) |
| Insulation resistance test | output voltage | range | 1kV |
| | | resolution (d) | 0.001kV |
| | | accuracy | ±(1%+2d) |
| | test resistance | range | 10GΩ |
| | | resolution (d) | 0.001MΩ~0.01GΩ |
| | | accuracy | output voltage≥500V, test resistance 1MΩ-1GΩ: ±(5%+5d);<br>output voltage≥500V, test resistance 1GΩ-10GΩ: ±(10%+5d);<br>output voltage<500V, test resistance 0.1MΩ-1GΩ: ±(10%+5d) |
| Discharge function | | | discharge after testing |
| Arc detection | | | 1~9 level (AC/DC), factory default is 5 |
| Time | | | voltage rising time: 0.1s~999.9s;<br>voltage falling time: 0.1s~999.9s;<br>voltage testing time: 0.1s~999.9s |
| Interface | | | HANDLER interface, RS232C interface, USB interface |
| Operation environment | | | temperature: 10°C~40°C; relative humidity: ≤70% |
| Power supply | | | AC 110V/220V, 50Hz/60Hz |
| Dimension (L×W×H) | | | 450×270×130mm |
| Weight | | | 9.2kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| High voltage test clip | 2 pcs |
| High voltage test rod | 1 pc |
| RS232 communication cable | 1 pc |



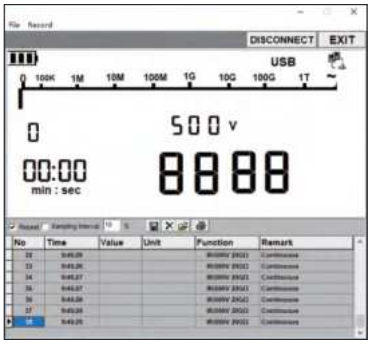
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# INSULATION RESISTANCE TESTER
# CODE 9454-SR35

DATA OUTPUT

VIDEO

computer software (included): connects to PC via USB cable, displays and stores data






- Continuous measurement, comparative measurement
- Timed measurement, polarization index measurement
- AC and DC voltage measurement
- Data storage, USB interface data transmission
- High voltage output warning, automatic discharge
- Battery level indication
- Backlight display function
- Auto power off function

**SPECIFICATION**

| | | | | | |
|---|---|---|---|---|---|
| **Insulation resistance** | **test voltage** * | 500V | 1000V | 2500V | 5000V |
| | **range** | 0.5MΩ~20MΩ | 1MΩ~40GΩ | 2.5MΩ~100GΩ | 5MΩ~1000GΩ |
| | **resolution** | 0.5MΩ~99.9MΩ: 0.1MΩ<br>100MΩ~999MΩ: 1MΩ<br>1GΩ~9.99GΩ: 0.01GΩ<br>10GΩ~1000GΩ: 0.1GΩ | | | |
| | **accuracy** ** | 0.5MΩ~99.9MΩ: ±(3%+5d)<br>100MΩ~9.99GΩ: ±(5%+5d)<br>10GΩ~99.9GΩ: ±(10%+5d)<br>100GΩ~1000GΩ: ±(20%+5d) | | | |
| **DC voltage** | **range** | ±(30~600)V | | | |
| | **resolution** | 1V | | | |
| | **accuracy** | ±(2%+3d) | | | |
| **AC voltage (50/60Hz)** | **range** | (30~600)V | | | |
| | **resolution** | 1V | | | |
| | **accuracy** | ±(2%+3d) | | | |
| **Short-circuit current** | | >3.0mA | | | |
| **Operation environment** | | temperature: -10°C~40°C; humidity: ≤85%RH | | | |
| **Power supply** | | 8 LR14 batteries or power adapter | | | |
| **Dimension** | | 202×155×94mm | | | |
| **Weight** | | 1.28kg | | | |

* Open-circuit voltage: DC voltage 0%~+20%
** Insulation resistance of 100GΩ or more should be measured under 50% RH humidity

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Alligator clip test lead** | 3 pcs |
| **Battery (LR14)** | 8 pcs |
| **Power adapter** | 1 pc |
| **USB cable** | 1 pc |



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## INSULATION RESISTANCE TESTER
## CODE 9452-IR21

VIDEO

- Continuous measurement: press and rotate the test button to measure continuously
- Alarm function: the tester alerts with buzzer when the insulation resistance is less than 4MΩ
- Over-range indication
- Data hold
- High-voltage output alert
- Auto backlight display
- Low battery indication
- Auto power off





test clips (included)



test leads (included)

**SPECIFICATION**

| | | | | | |
|---|---|---|---|---|---|
| **Insulation resistance** | **test voltage*** | 100V | 250V | 500V | 1000V |
| | **range** | 100MΩ | 500MΩ | 2.00GΩ | 5.00GΩ |
| | **resolution** | 0.00MΩ~9.99MΩ: 0.01MΩ<br>10.0MΩ~99.9MΩ: 0.1MΩ<br>100MΩ~999MΩ: 1MΩ<br>1.00GΩ~5.00GΩ: 0.01GΩ | | | |
| | **accuracy** | 0~99.9MΩ: ±(3%+5d);<br>100MΩ~5.00GΩ: ±(5%+5d) | | | |
| **AC voltage** ** | **range** | 30~750V (50/60Hz) | | | |
| | **resolution** | 1V | | | |
| | **accuracy** | ±(2%+3d) | | | |
| **Short-circuit current** | | <2.0mA | | | |
| **Operation environment** | | temperature: 0°C~35°C; humidity: <75%RH | | | |
| **Power supply** | | 6×1.5V AA batteries or AC/DC adapter (**optional**) | | | |
| **Dimension** | | 184×115×75mm | | | |
| **Weight** | | 600g | | | |

*Open-circuit voltage: DC voltage 0~+10%
** Data hold and backlight display function are not applicable for AC voltage measurement

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Test lead** | 2 pcs |
| **Test clip** | 2 pcs |
| **Battery (AA)** | 6 pcs |

**OPTIONAL ACCESSORY**

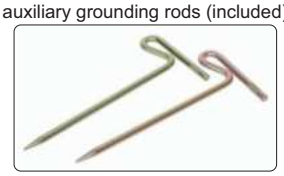
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|---|---|
| **AC/DC adapter** | **9452-AP** |

## EARTH RESISTANCE TESTER
## CODE 0716-ER120

VIDEO

- Timed measurement function
- Auto power off
- Display with backlight
- Data hold
- Low battery indication

auxiliary grounding rods (included)





**SPECIFICATION**

| Function | Range | Resolution | Accuracy ("d" is the least reading) |
|---|---|---|---|
| **Earth resistance** | 20Ω | 0.01Ω | ±(2%+10d) |
| | 200Ω/2000Ω | 0.1Ω/1Ω | ±(2%+3d) |
| **AC earth voltage** | 1000V | 1V | ±(2%+5d) |
| **DC voltage** | 1500V | 1V | ±(1%+5d) |
| **Test methods** | 2-wire testing, 3-wire testing | | |
| **Power supply** | 8×1.5V AA batteries | | |
| **Dimension** | 178×110×59mm | | |
| **Weight** | 600g | | |

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Test lead** | 5 pcs |
| **Auxiliary grounding rod** | 2 pcs |
| **Battery (AA)** | 8 pcs |

## DC POWER SUPPLY
## CODE 9914-BP506

VIDEO



### SPECIFICATION

| | | |
|---|---|---|
| Rate output voltage | | 0~50V |
| Rate output current | | 0~6A |
| Maximum output power | | 150W |
| Voltage | setting resolution | 10mV |
| | setting accuracy | ≤0.5%+50mV |
| | readback resolution | 10mV |
| | readback accuracy | ≤0.5%+50mV |
| | load regulation | ≤0.05%+5mV |
| | line regulation | ≤0.1%+3mV |
| | ripple | ≤5mVrms |
| Current | setting resolution | 1mA |
| | setting accuracy | ≤0.5%+5mA |
| | readback resolution | 1mA |
| | readback accuracy | ≤0.5%+5mA |
| | load regulation | ≤0.1%+3mA |
| | line regulation | ≤0.1%+3mA |
| | ripple | ≤20mArms |
| OVP | | 0~55V |
| OCP | | 0~6.5A |
| Work condition | | temperature: 0°C~40°C, humidity: ≤75%RH |
| Storage condition | | temperature: -20°C~50°C, humidity: ≤90%RH |
| Cool system | | fan cool |
| Power supply | | 110V/220V±10%, 50Hz/60Hz |
| Dimension | | 200×80×155mm |
| Weight | | 1.23kg |

- Four-digit LED display
- Independent voltage and current control knob
- Output switch control
- Panel locking function to prevent misoperation
- USB interface for power supply
- OVP/OCP protection
- 3 shortcut keys for presetting

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Test lead | 2 pcs |

## PEN-TYPE DIGITAL MULTIMETER
## CODE 9241-ML200

VIDEO

- Auto/manual ranging
- Maximum mode
- Data hold
- NCV detection
- Low battery indication
- Auto power off
- Safety rating: CAT III 600V

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Test lead | 1 pc |
| Clip | 2 pcs |
| Battery (AAA) | 2 pcs |



test lead (included)



clips (included)



### SPECIFICATION

| Function | Range | Resolution | Accuracy |
|---|---|---|---|
| DC Voltage | 200mV/2V/20V/200V/600V | 0.1mV/1mV/10mV/0.1V/1V | ±(0.7%+2) |
| AC Voltage | 200mV/2V/20V/200V | 0.1mV/1mV/10mV/0.1V | ±(0.8%+3) |
| | 600V | 1V | ±(1.0%+3) |
| DC Current | 20mA/200mA | 10μA/0.1mA | ±(1.5%+3) |
| AC Current | 20mA/200mA | 10μA/0.1mA | ±(2.0%+3) |
| Resistance | 200Ω | 0.1Ω | ±(1.0%+3) |
| | 2kΩ/20kΩ/200kΩ/2MΩ | 1Ω/10Ω/0.1kΩ/1kΩ | ±(1.0%+1) |
| | 20MΩ | 10kΩ | ±(1.0%+5) |
| Logic level test | <1.5V (green LED on); 1.5~3.5V (green & red LED off); >3.5V (red LED on) | | |
| Diode | open circuit voltage 1.5V | | |
| Continuity buzzer | <50Ω | | |
| Power supply | 2×1.5V AAA batteries | | |



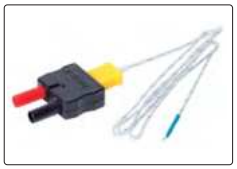
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# DIGITAL MULTIMETER
# CODE 9216-F520





test leads (included)



temperature probe and adapter (included)

- 2000 counts digital display
- Auto ranging (except 200mV AC)
- Data hold
- Max hold
- Display with backlight
- Low battery indication
- Auto power off
- Safety rating: CAT III 600V

**SPECIFICATION**

| Function | Range | Resolution | Accuracy ("d" is the least reading) |
|---|---|---|---|
| DC Voltage | 200mV | 0.1mV | ±(0.5%+2d) |
| | 2V/20V/200V | 0.001V/0.01V/0.1V | ±(1.0%+2d) |
| | 600V | 1V | ±(1.2%+2d) |
| AC Voltage (50~60Hz) | 200mV | 0.1mV | ±(1.5%+30d) |
| | 2V | 0.001V | ±(1.2%+3d) |
| | 20V/200V | 0.01V/0.1V | ±(1.5%+3d) |
| | 600V | 1V | ±(2.0%+4d) |
| DC Current | 200μA | 0.1μA | ±(1.0%+3d) |
| | 2000μA/20mA/200mA | 1μA/0.01mA/0.1mA | ±(1.5%+3d) |
| | 10A | 0.01A | ±(2.5%+5d) |
| AC Current (50~60Hz) | 200μA | 0.1μA | ±(1.5%+5d) |
| | 2000μA/20mA/200mA | 1μA/0.01mA/0.1mA | ±(1.8%+5d) |
| | 10A | 0.01A | ±(3.0%+7d) |
| Resistance | 200Ω | 0.1Ω | ±(1.2%+4d) |
| | 2kΩ | 0.001kΩ | ±(1.0%+2d) |
| | 20kΩ/200kΩ/2MΩ | 0.01kΩ/0.1kΩ/0.001MΩ | ±(1.2%+2d) |
| | 20MΩ | 0.01MΩ | ±(2.0%+3d) |
| Temperature (type-K) | -50°C to 1000°C | 1°C | ±(3.0%+5°C) |
| | -58°F to 1832°F | 1°F | ±(3.0%+8°F) |
| Diode test | test current: 0.3mA typical | 1mV | ±(10%+5d) |
| Continuity check | less than 100Ω | | |
| Power supply | 9V battery | | |
| Dimension (L×W×H) | 150×70×48mm | | |
| Weight | 255g | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Thermocouple adapter | 1 pc |
| Temperature probe | 1 pc |
| 9V battery | 1 pc |
| Test lead | 2 pcs |



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## MINI DIGITAL MULTIMETER (BASIC TYPE)
## CODE 9242-ML100A

POPULAR MODEL

VIDEO

- Portable size with protective case
- 1999 counts digital display
- Data hold
- Display with backlight
- Low battery indication
- Auto power off
- Safety rating: CAT II 600V





test leads (included)

**SPECIFICATION**

| Function | Range | Resolution | Accuracy ("d" is the least reading) |
|---|---|---|---|
| DC Voltage | 200.0mV | 0.1mV | ±(0.7%+3d) |
| | 2000mV | 1mV | ±(0.5%+2d) |
| | 20.00V/200.0V/600V | 0.01V/0.1V/1V | ±(0.7%+3d) |
| AC Voltage (40~400Hz) | 200.0V/600V | 0.1V/1V | ±(1.2%+3d) |
| DC Current | 200.0μA/200.0mA | 0.1μA/0.1mA | ±(1.0%+2d) |
| | 10.00A | 0.01A | ±(1.2%+5d) |
| Resistance | 200.0Ω | 0.1Ω | ±(1.0%+2d) |
| | 2000Ω/20.00kΩ/200.0kΩ | 1Ω/0.01kΩ/0.1kΩ | ±(0.8%+2d) |
| | 20.00MΩ | 0.01MΩ | ±(1.2%+3d) |
| Battery test | 1.5V/9V/12V battery check | | |
| Diode test | open circuit voltage: 2.1V DC | | |
| Continuity test | <50Ω | | |
| Power supply | 2×1.5V AAA batteries | | |
| Dimension (LxWxH) | 134×77×47mm | | |
| Weight | 206g | | |

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Battery (AAA) | 2 pcs |
| Test lead | 2 pcs |

## SMART DIGITAL MULTIMETER
## CODE 9247-190



test leads (included)

VIDEO




- Automatically identify test modes for AC voltage/DC voltage/resistance/continuity
- NCV detection and judge the strength by light and buzzer
- Self-calibration when power on to ensure accuracy
- LIVE firewire recognition
- Display with backlight
- True RMS measurement
- Data hold
- Low battery indication
- Auto power off
- Safety rating: CAT III 600V

**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Test lead | 2 pcs |
| Battery (CR2032) | 2 pcs |

**SPECIFICATION**

| Function | Range | Resolution | Accuracy |
|---|---|---|---|
| DC Voltage | 60mV/600mV/6V/60V/600V | 0.01mV/0.1mV/0.001V/0.01V/0.1V | ±(0.5%+3) |
| AC Voltage | 60mV/600mV/6V/60V/600V | 0.01mV/0.1mV/0.001V/0.01V/0.1V | ±(1.0%+3) |
| DC Current | 6000μA/60mA/600mA | 1μA/0.01mA/0.1mA | ±(1.2%+5) |
| AC Current | 6000μA/60mA/600mA | 1μA/0.01mA/0.1mA | ±(1.5%+5) |
| Resistance | 600Ω/6kΩ/60kΩ/600kΩ | 0.1Ω/0.001kΩ/0.01kΩ/0.1kΩ | ±(1.0%+5) |
| | 6MΩ/60MΩ | 0.001MΩ/0.01MΩ | ±(1.5%+3) |
| Capacitance | 6nF/60nF/600nF/6μF/60μF/600μF | 0.001nF/0.01nF/0.1nF/0.001μF/0.01μF/0.1μF | ±(4.0%+5) |
| | 6mF/60mF | 0.001mF/0.01mF | ±(5.0%+5) |
| Frequency | 10Hz/100Hz/1000Hz/10kHz/100kHz/1000kHz | 0.001Hz/0.01Hz/0.1Hz/0.001kHz/0.01kHz/0.1kHz | ±(1.0%+5) |
| | 10MHz | 0.001MHz | ±(3.0%+5) |
| Duty cycle | 1~99% | 0.1% | ±(3.0%+5) |
| Diode measurement | open circuit voltage 2.0V | | |
| Continuity measurement | <50Ω | | |
| Power supply | 2×3V CR2032 batteries | | |
| Dimension (L×W×H) | 133×68×18mm | | |
| Weight | 178g | | |



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# DIGITAL MULTIMETER (WITH JACK INDICATOR LIGHT)
# CODE 9246-180



- Jack indicator light: jacks flash green to indicate the corresponding jacks for test leads
- NCV detection and judge the strength by light and buzzer
- Self-calibration when power on to ensure accuracy
- LIVE firewire recognition
- Double color backlight (orange backlight prompts high voltage or current: the orange backlight automatically lights up when voltage is higher than 80V or the current is higher than 1A)
- Large range capacitance meter 100mF
- True RMS measurement
- Battery test function
- Max/Min mode
- Data hold
- Low battery indication
- Auto power off
- Safety rating: CAT III 1000V, CAT IV 600V



test leads (included)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Test lead** | 2 pcs |
| **Battery (AA)** | 2 pcs |

**SPECIFICATION**

| Function | Range | Resolution | Accuracy |
|---|---|---|---|
| **DC Voltage** | 600mV/6V/60V/600V/1000V | 0.1mV/0.001V/0.01V/0.1V/1V | ±(0.5%+3) |
| **AC Voltage** | 6V/60V/600V/750V | 0.001V/0.01V/0.1V/1V | ±(0.8%+5) |
| **DC Current** | 60μA/60mA/600mA/10A | 0.01μA/0.01mA/0.1mA/0.01A | ±(1.2%+3) |
| **AC Current** | 60mA/600mA/10A | 0.01mA/0.1mA/0.01A | ±(1.5%+3) |
| **Resistance** | 600Ω/6kΩ/60kΩ/600kΩ | 0.1Ω/0.001kΩ/0.01kΩ/0.1kΩ | ±(1.0%+3) |
| | 6MΩ/60MΩ | 0.001MΩ/0.01MΩ | ±(1.5%+3) |
| **Capacitance** | 10nF/100nF/1000nF/10μF/100μF/1000μF | 0.001nF/0.01nF/0.1nF/0.001μF/0.01μF/0.1μF | ±(4.0%+5) |
| | 10mF/100mF | 0.001mF/0.01mF | ±(5.0%+5) |
| **Frequency** | 10Hz/100Hz/1000Hz/10kHz/100kHz/1000kHz | 0.001Hz/0.01Hz/0.1Hz/0.001kHz/0.01kHz/0.1kHz | ±(1.0%+3) |
| | 10MHz | 0.001MHz | ±(3.0%+3) |
| **Duty cycle** | 1~99% | 0.1% | ±(3.0%+3) |
| **Diode measurement** | forward DC current 2.5mA, reverse DC voltage 3.0V | | |
| **Continuity measurement** | <30Ω | | |
| **Power supply** | 2×1.5V AA batteries | | |
| **Dimension (L×W×H)** | 188×88×50mm | | |
| **Weight** | 424g | | |



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# BLUETOOTH DIGITAL MULTIMETER
# CODE 9219-KV220

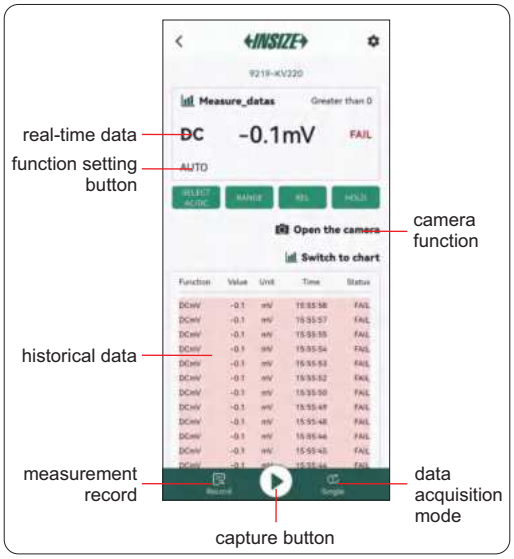
DATA OUTPUT

VIDEO

- Built-in bluetooth
- Mobile app is included
- 9999 counts digital display
- True RMS measurement
- Display with backlight
- Relative measurement mode
- Auto/manual ranging
- Auto power off
- Data hold
- NCV detection
- Low battery indication
- Safety rating: CAT III 600V



app (included)






test leads (included)



temperature probe (included)

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Test lead** | 2 pcs |
| **Temperature probe** | 1 pc |
| **Battery (AAA)** | 3 pcs |

**SPECIFICATION**

| Function | Range | | Resolution | Accuracy ("d" is the resolution) |
|---|---|---|---|---|
| **DC Voltage** | 9.999mV/99.99mV | | 0.001mV/0.01mV | ±(0.7%+8d) |
| | 999.9mV/9.999V/99.99V/999.9V | | 0.1mV/0.001V/0.01V/0.1V | ±(0.5%+3d) |
| **AC Voltage (40~400Hz)** | 9.999mV/99.99mV | | 0.001mV/0.01mV | ±(1.0%+3d) |
| | 999.9mV/9.999V/99.99V/999.9V | | 0.1mV/0.001V/0.01V/0.1V | ±(0.8%+3d) |
| **DC Current** | 999.9μA | | 0.1μA | ±(0.8%+3d) |
| | 999.9mA/9.999A | | 0.1mA/0.001A | ±(1.0%+3d) |
| **AC Current (40~400Hz)** | 999.9μA | | 0.1μA | ±(1.0%+3d) |
| | 999.9mA/9.999A | | 0.1mA/0.001A | ±(1.2%+3d) |
| **Resistance** | 999.9Ω/9.999kΩ/99.99kΩ/999.9kΩ | | 0.1Ω/0.001kΩ/0.01kΩ/0.1kΩ | ±(0.8%+2d) |
| | 9.999MΩ | | 0.001MΩ | ±(1.5%+3d) |
| | 99.99MΩ | | 0.01MΩ | ±(2.0%+5d) |
| **Capacitance** | 9.999nF | | 0.001nF | ±(4.0%+10d) |
| | 9.999nF/99.99nF/999.9nF/9.999μF /99.99μF/999.9μF | | 0.001nF/0.01nF/0.1nF/0.001μF /0.01μF/0.1μF | ±(4.0%+5d) |
| | 9.999mF | | 0.001mF | ±(10.0%) |
| **Frequency** | 99.99Hz~9.999MHz | | 0.01Hz~0.001MHz | ±(0.1%+5d) |
| **Temperature** | -40~1000°C | -40~0°C | 1°C | ±4°C |
| | | >0~100°C | 1°C | ±(1.0%+5d) |
| | | >100~1000°C | 1°C | ±(2.0%+5d) |
| | -40~1832°F | -40~32°F | 1°F | ±5°F |
| | | >32~212°F | 1°F | ±(1.5%+5d) |
| | | >212~1832°F | 1°F | ±(2.5%+5d) |
| **Duty cycle** | 0.1%~99.9% | | 0.1% | ±(3%+5d) |
| **Diode test** | open circuit voltage 3.3V, test current 1.5mA | | | |
| **Continuity check** | <30Ω | | | |
| **Power supply** | 3×1.5V AAA batteries | | | |
| **Dimension (L×W×H)** | 187×88×56mm | | | |
| **Weight** | 400g | | | |



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VIDEO

DATA OUTPUT

# DIGITAL MULTIMETER
# CODE 9215-E510

- 22000 counts digital display
- Data transmission via USB
- True RMS measurement
- Data hold
- Peak/Max/Min mode
- Low pass filter function
- NCV detection
- Low battery indication
- Auto power off
- Safety rating: CAT III 1000V, CAT IV 600V



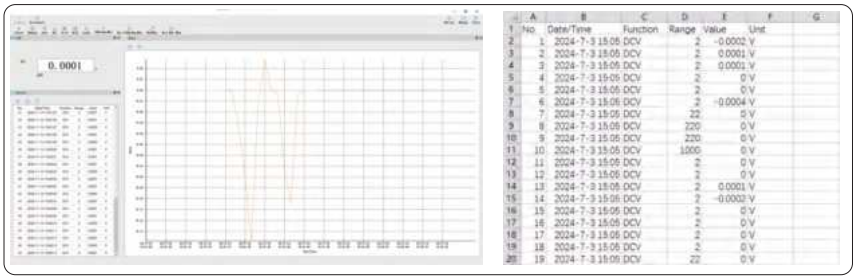
USB connection cable (included)



conversion plug (transistor) (included)



computer software (included): connect to PC software via USB cable to collect, display and store data



**STANDARD DELIVERY**

| | |
|---|---|
| Main unit | 1 pc |
| Test lead | 2 pcs |
| USB connection cable | 1 pc |
| Conversion plug (transistor) | 1 pc |
| Battery (AAA) | 4 pcs |

**SPECIFICATION**

| Function | Range | Resolution | Accuracy ("d" is the resolution) |
|---|---|---|---|
| DC Voltage | 220mV | 0.01mV | ±(0.1%+5d) |
| | 2.2V/22V/220V | 0.1mV/0.001V/0.01V | ±(0.05%+5d) |
| | 1000V | 0.1V | ±(0.1%+5d) |
| AC Voltage | 220mV | 0.01mV | ±(1.0%+10d), 40Hz~1kHz |
| | | | ±(1.5%+30d), 1kHz~10kHz |
| | 2.2V/22V | 0.1mV/1mV | ±(0.8%+10d), 40Hz~1kHz |
| | | | ±(1.2%+50d), 1kHz~10kHz |
| | 220V | 10mV | ±(0.8%+10d), 40Hz~1kHz |
| | | | ±(2.0%+50d), 1kHz~10kHz |
| | 1000V | 0.1V | ±(1.2%+10d), 40Hz~1kHz |
| | | | ±(3.0%+50d), 1kHz~10kHZ |
| DC Current | 220μA/2200μA/22mA/220mA | 0.01μA/0.1μA/0.001mA/0.01mA | ±(0.5%+10d) |
| | 20A | 0.001A | ±(1.2%+50d) |
| AC Current | 220μA/2200μA | 0.01μA/0.1μA | ±(0.8%+10d), 40Hz~1kHz |
| | | | ±(3.0%+50d), 1kHz~10kHz |
| | 22mA/220mA/20A | 0.001mA/0.01mA/0.001A | ±(1.2%+10d), 40Hz~1kHz |
| | | | ±(3.0%+50d), 40Hz~1kHz |
| Resistance | 220Ω/2.2kΩ/22kΩ/220kΩ | 0.01Ω/0.0001kΩ/0.001kΩ/0.01kΩ | ±(0.5%+10d) |
| | 2.2MΩ | 0.0001MΩ | ±(0.8%+10d) |
| | 22MΩ | 0.001MΩ | ±(1.5%+10d) |
| | 220MΩ | 0.01MΩ | ±(3.0%+50d) |
| Capacitance | 22nF/220nF/2.2μF/22μF | 0.001nF/0.01nF/0.0001μF/0.001μF | ±(3.0%+5d) |
| | 220μF/2.2mF | 0.01μF/0.0001mF | ±(4.0%+5d) |
| | 22mF | 0.001mF | ±(10%+5d) |
| | 220mF | 0.01mF | ±(20%+5d) |
| Frequency | 10Hz~220MHz | 0.01Hz~0.01MHz | ±(0.01%+5d) |
| Duty cycle | 0.1%~99.9% | 0.1% | ±(2.0%+5d) |
| Transistor hFE | range: 1β~1000β | | |
| Diode test | open circuit voltage: 3V | | |
| Continuity check | <50Ω | | |
| Power supply | 4×1.5V AAA batteries | | |
| Dimension | 186×89×49mm | | |
| Weight | 400g | | |

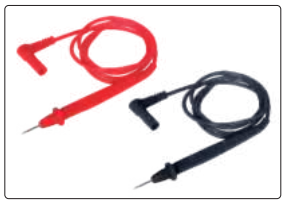


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# DIGITAL AC/DC CLAMP METER
# CODE 9315-CF210

VIDEO





test leads (included)

- 4000 counts display
- 28mm jaw opening
- NCV detection with light and sound alarm
- True RMS measurement
- Auto ranging
- REL (zero) function
- Data hold
- Polarity indication
- LCD screen with backlight
- Low battery indication
- Auto power off
- Safety rating: CAT III 300V/CAT II 600V

**STANDARD DELIVERY**

| | |
|---|---|
| **Main unit** | 1 pc |
| **Battery (AAA)** | 2 pcs |
| **Test lead** | 2 pcs |

**SPECIFICATION**

| Function | Range | Resolution | Accuracy ("d" is the least reading) |
|---|---|---|---|
| **DC Current** | 40.00A/400.0A | 0.01A/0.1A | ±(2.0%+5d) |
| **AC Current** * | 40.00A/400.0A | 0.01A/0.1A | ±(2.0%+5d) |
| **DC Voltage** | 400.0mV | 0.1mV | ±(0.7%+3d) |
| | 4.000V/40.00V/400.0V/600V | 0.001V/0.01V/0.1V/1V | ±(0.5%+2d) |
| **AC Voltage*** | 4.000V | 0.001V | ±(1.0%+5d) |
| | 40.00V/400.0V/600V | 0.01V/0.1V/1V | ±(0.8%+5d) |
| **AC Voltage frequency** | 10Hz~60kHz | 0.01Hz~0.01kHz | ±(0.5%+2d) |
| **Resistance** | 400.0Ω | 0.1Ω | ±(1.0%+2d) |
| | 4.000kΩ/40.00kΩ/400.0kΩ | 0.001kΩ/0.01kΩ/0.1kΩ | ±(0.8%+2d) |
| | 4MΩ/40MΩ | 0.001MΩ/0.01MΩ | ±(2.5%+5d) |
| **Capacitance** | 40.00nF/400.0nF/4.000μF/ 40.00μF/400.0μF | 0.01nF/0.1nF/0.001μF/ 0.01μF/0.1μF | ±(4.0%+5d) |
| | 4.000mF/40.00mF | 0.001mF/0.01mF | ±10.0% |
| **Frequency** | 10Hz~10MHz | 0.01Hz~0.01MHz | ±(0.1%+4d) |
| **Duty cycle** | 0.1%~99.0% | 0.1% | ±(3.0%+5d) |
| **Diode test** | open circuit voltage: 4V | | |
| **Continuity check** | <30Ω | | |
| **Power supply** | 2×1.5V AAA batteries | | |
| **Dimension (L×W×H)** | 215×75×37mm | | |
| **Weight** | 235g | | |

* AC voltage/current frequency response: 45Hz~400Hz, true RMS display



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## AC PHASE AND VOLTAGE DETECTOR
## CODE 9723-400

VIDEO

- Non-contact detection of phase sequence, high and low voltage, wire distinction
- Low battery indication
- Auto power off
- Flashlight



**SPECIFICATION**

| | |
|---|---|
| **Phase sequence detection** | screen shows clockwise or counterclockwise |
| **High and low voltage detection** | beep: slow~fast<br>backlight: green~red<br>analog bar: low~high |
| **Wire distinction** | green backlight indicates neutral wire<br>red backlight indicates live wire |
| **Power supply** | 2×1.5V AAA batteries |
| **Dimension** | 157×27×23mm |
| **Weight** | 32g |

## DIGITAL VOLTAGE TESTER
## CODE 9721-250

- Direct AC test (contact): 12-250V two way display: voltage displays on LCD screen and neon lamp lights up (when voltage>80V)
- Induction AC test (non-contact): 12-250V to detect power source or recognize the phase line, ground line and break point
- Direct DC test (contact): 6-36V instant sense and display
- Work without battery
- Tester tip: CRV material



**SPECIFICATION**

| | |
|---|---|
| **Range** | AC: 12-250V; DC: 6-36V |
| **Neon lamp life** | 30000 times |
| **Dimension** | 133×21×19mm |
| **Weight** | 22g |

## VOLTAGE TESTER
## CODE 9722-250

- Tester tip: CRV material



**SPECIFICATION**

| | |
|---|---|
| **Range** | AC: 100-250V |
| **Neon lamp life** | 30000 times |
| **Dimension** | 145×Ø15mm |
| **Weight** | 21g |

# INTELLIGENT CORDLESS SOLDERING IRON
# CODE 0710-SD420

VIDEO



soldering tip **0710-SK** (included)



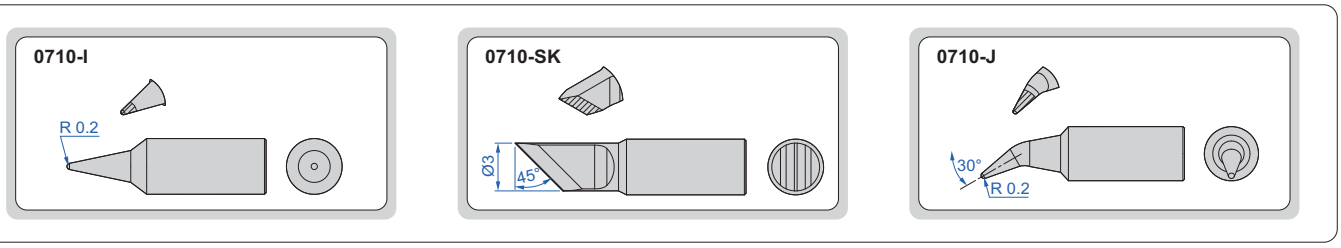
soldering tip **0710-J** (included)



- Built-in lithium battery, easy to carry
- Integral precision soldering tip, fast heating speed
- Automatic sleep function
- Temperature calibration function

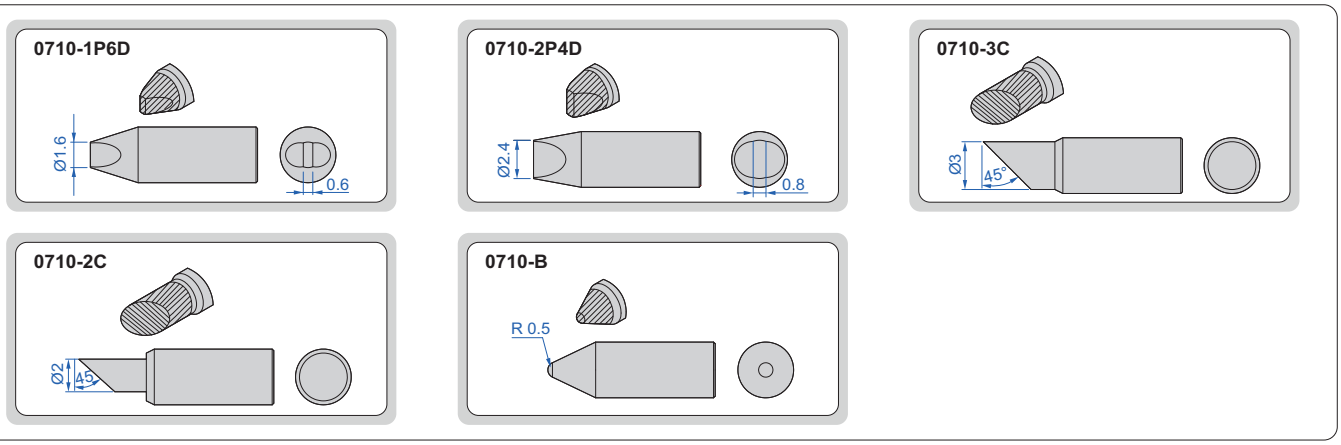
**soldering tips** (included)

Unit: mm




**soldering tips (optional)**

Unit: mm




## SPECIFICATION

| | |
|---|---|
| **Display screen** | OLED |
| **Temperature range** | 100°C~420°C |
| **Power** | 10W |
| **Work hours** | 30 minutes (indicates V-P when the battery is low) |
| **Power supply** | rechargeable lithium battery: 3.7V, 2600mAh |
| **Dimension** | 198×27×21mm |
| **Weight** | 85g |



soldering iron stand (included)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Soldering tip (0710-I)** | 1 pc |
| **Soldering tip (0710-J)** | 1 pc |
| **Soldering tip (0710-SK)** | 1 pc |
| **Soldering iron stand** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Soldering tip** | **0710-1P6D** |
| **Soldering tip** | **0710-2P4D** |
| **Soldering tip** | **0710-3C** |
| **Soldering tip** | **0710-2C** |
| **Soldering tip** | **0710-B** |



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# LEAD FREE SOLDERING STATION
# CODE 0711-SS480

VIDEO

- Fast heat-up and temperature return of the welding table
- Quickly switch between 3 different temperatures
- Temperature calibration function
- Compatible with general-purpose soldering nozzles, easy to use and economical



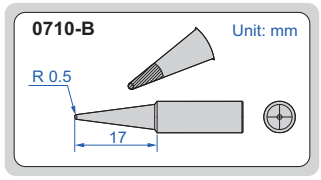

## SPECIFICATION

| | |
|---|---|
| Display screen | LCD |
| Temperature range | 100°C~480°C |
| Temperature stability | ±2°C (when the air is still and no load) |
| Power | 70W (MAX) |
| Tip to ground potential | <2mV |
| Tip to ground resistance | <2Ω |
| Power supply | AC 220V, 50Hz |
| Dimension | 87×140×119mm |
| Weight | 1.75kg |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Soldering tip (0711-B) | 1 pc |
| Soldering iron stand | 1 pc |

**soldering tips** (included)

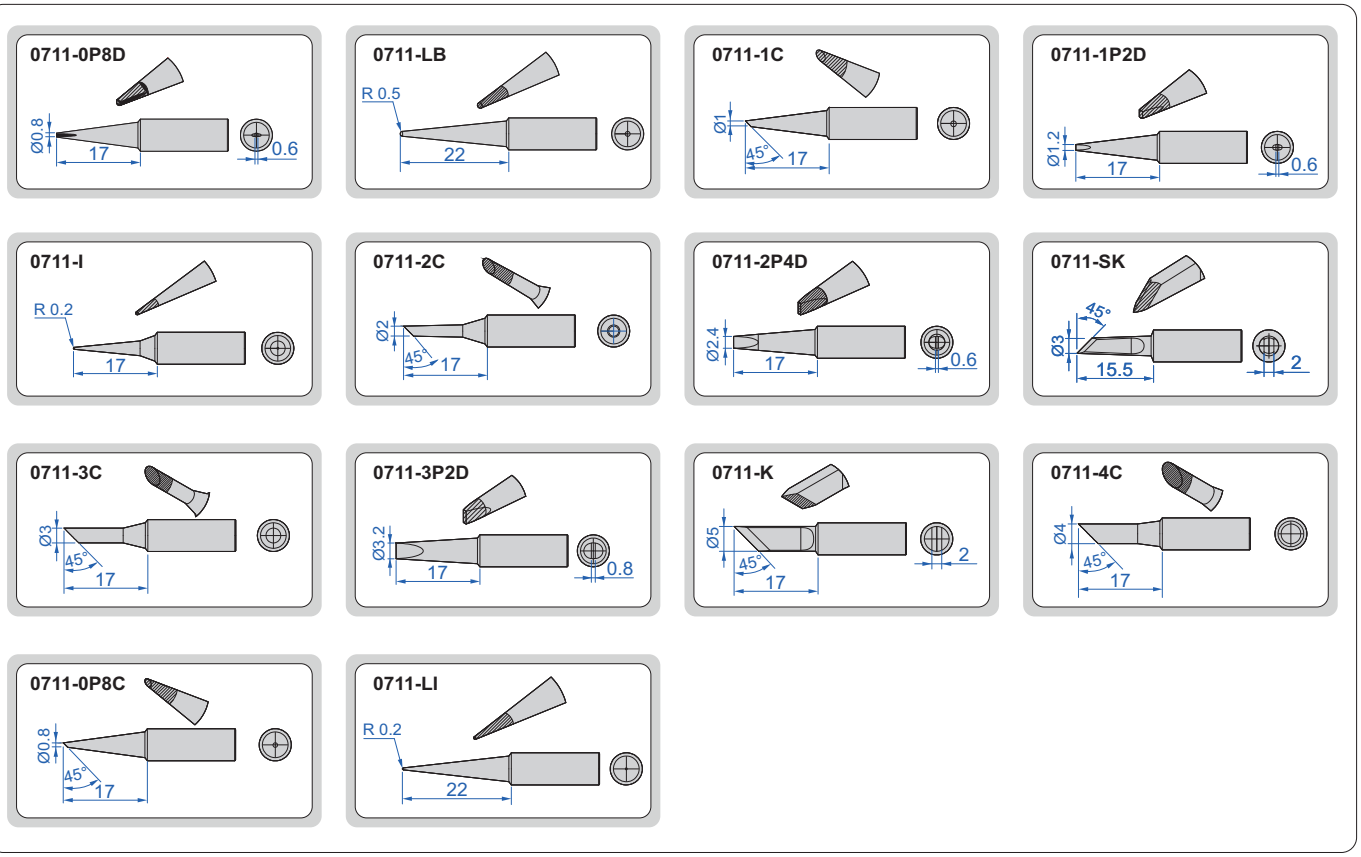



## OPTIONAL ACCESSORY

| | |
|---|---|
| Soldering tip | 0711-0P8D |
| Soldering tip | 0711-1P2D |
| Soldering tip | 0711-2P4D |
| Soldering tip | 0711-3P2D |
| Soldering tip | 0711-LB |
| Soldering tip | 0711-I |
| Soldering tip | 0711-1C |
| Soldering tip | 0711-2C |
| Soldering tip | 0711-3C |
| Soldering tip | 0711-4C |
| Soldering tip | 0711-0P8C |
| Soldering tip | 0711-K |
| Soldering tip | 0711-LI |
| Soldering tip | 0711-SK |

**soldering tips (optional)**

Unit: mm



# INTELLIGENT LEAD FREE SOLDERING STATION
# CODE 0712-SS450

- Fast heat-up and temperature return of the welding table
- Quickly switch between 3 different temperatures
- Temperature calibration function
- Automatic sleep function
- Unit: °C/°F

VIDEO

soldering tip **0712-SK** (included)



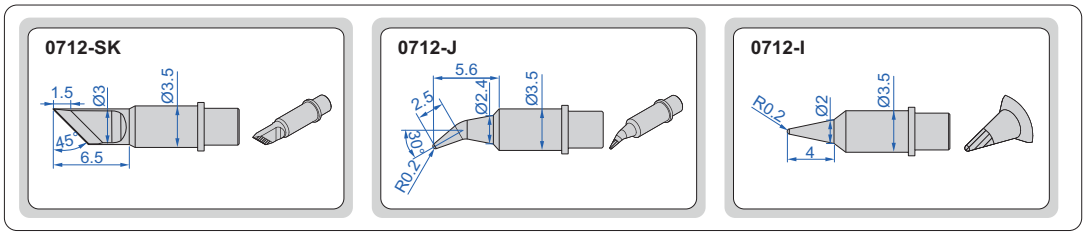
soldering tip **0712-J** (included)





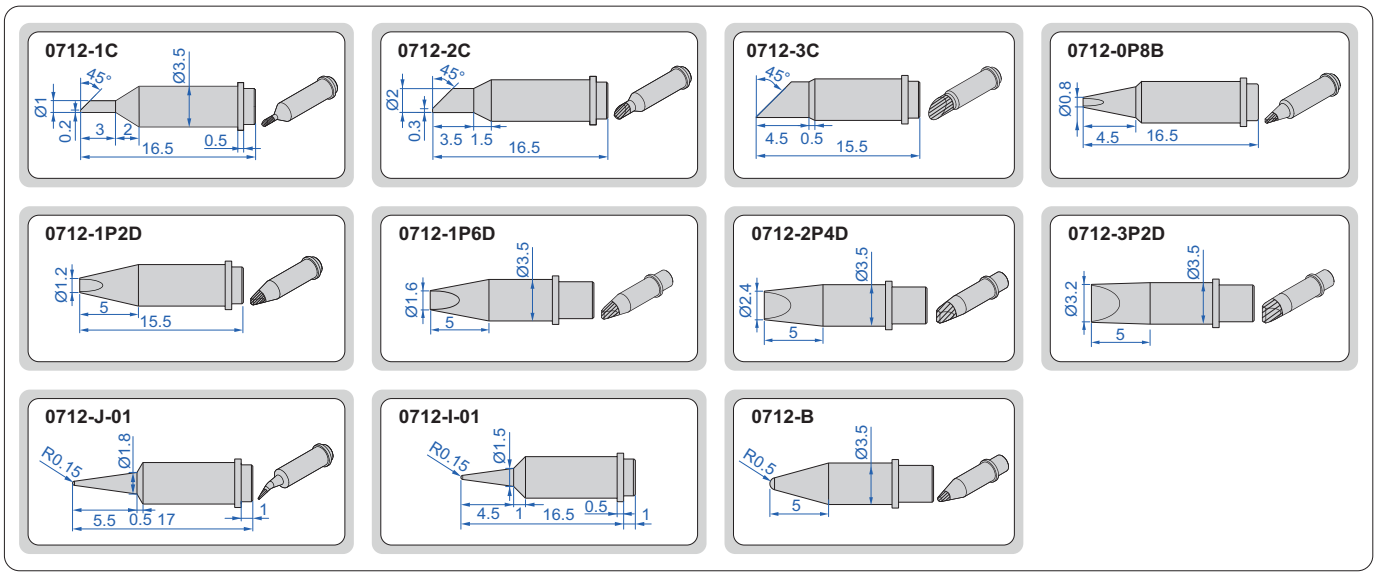

**soldering tips** (included)

Unit: mm




**soldering tips (optional)**

Unit: mm




## SPECIFICATION

| | |
|---|---|
| **Display screen** | IPS |
| **Temperature range** | 100°C~450°C/212°F~842°F |
| **Temperature stability** | ±2°C (when the air is still and no load) |
| **Power** | 90W (MAX) |
| **Tip to groundl potential** | <2mV |
| **Tip to ground resistance** | <2Ω |
| **Power supply** | AC 220V, 50Hz |
| **Dimension** | 116×149×93mm |
| **Weight** | 1.8kg |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **Soldering tip (0712-SK)** | 1 pc |
| **Soldering tip (0712-J)** | 1 pc |
| **Soldering tip (0712-I)** | 1 pc |
| **Soldering iron stand** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Soldering tip** | **0712-1C** |
| **Soldering tip** | **0712-2C** |
| **Soldering tip** | **0712-3C** |
| **Soldering tip** | **0712-0P8D** |
| **Soldering tip** | **0712-1P2D** |
| **Soldering tip** | **0712-1P6D** |
| **Soldering tip** | **0712-2P4D** |
| **Soldering tip** | **0712-3P2D** |
| **Soldering tip** | **0712-J-01** |
| **Soldering tip** | **0712-I-01** |
| **Soldering tip** | **0712-B** |



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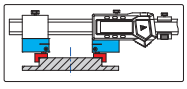
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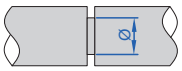




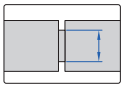
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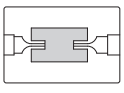


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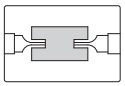


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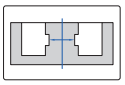


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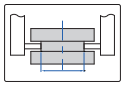


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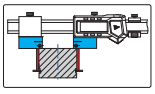


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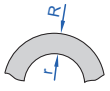
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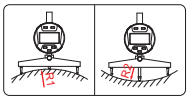
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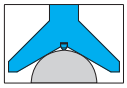




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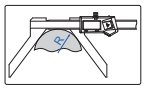
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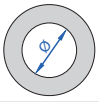




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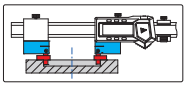


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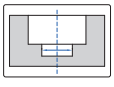
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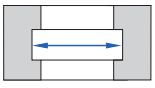
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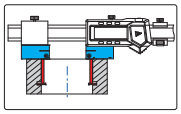
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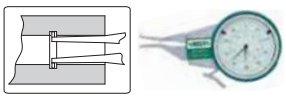
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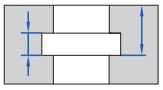
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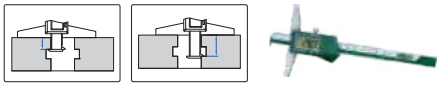
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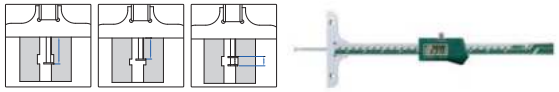
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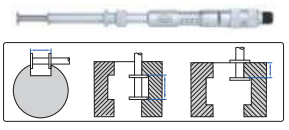
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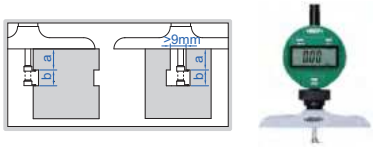
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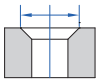




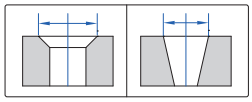

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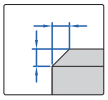


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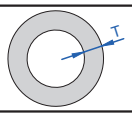




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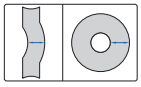
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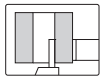


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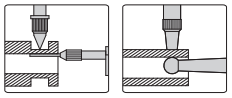




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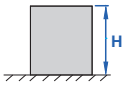


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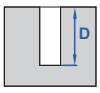
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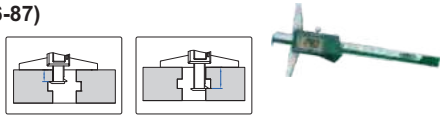

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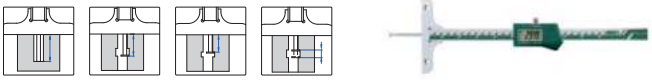
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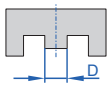
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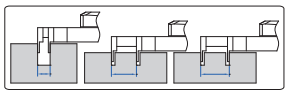




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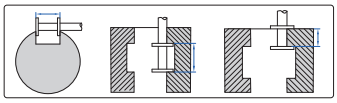
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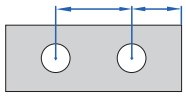


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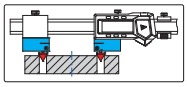
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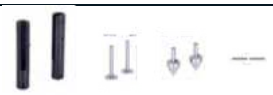


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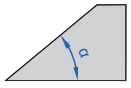
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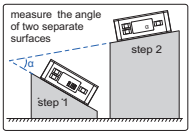
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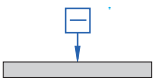


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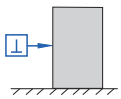
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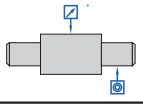





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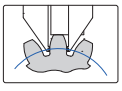
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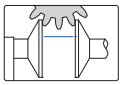


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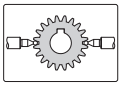


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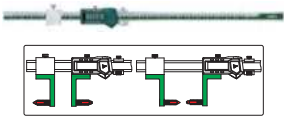


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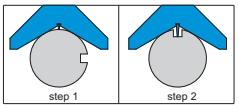
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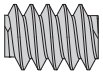

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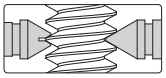
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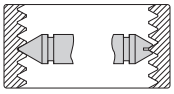


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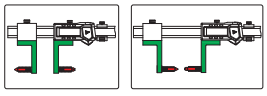
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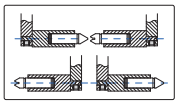


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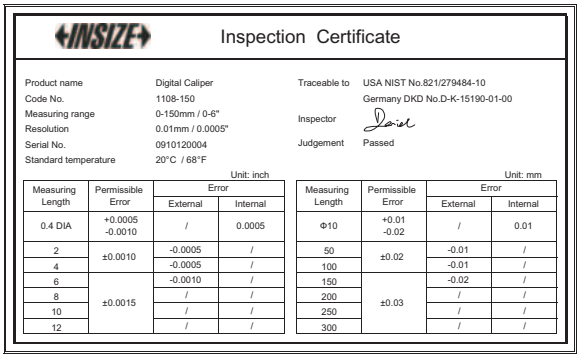


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INSPECTION CERTIFICATE

The products with this mark are supplied with manufacturer inspection certificate.



INSIZE Inspection Certificate

| | | | |
|---|---|---|---|
| Product name | Digital Caliper | Traceable to | USA NIST No.821/279484-10 |
| Code No. | 1108-150 | | Germany DKD No.D-K-15190-01-00 |
| Measuring range | 0-150mm / 0-6" | Inspector | |
| Resolution | 0.01mm / 0.0005" | Judgement | Passed |
| Serial No. | 0910120004 | | |
| Standard temperature | 20°C / 68°F | | |

Unit: inch

| Measuring Length | Permissible Error | Error | |
|---|---|---|---|
| | | External | Internal |
| 0.4 DIA | +0.0005 -0.0010 | / | 0.0005 |
| 2 | ±0.0010 | -0.0005 | / |
| 4 | | -0.0005 | / |
| 6 | ±0.0015 | -0.0010 | / |
| 8 | | / | / |
| 10 | | / | / |
| 12 | | / | / |

Unit: mm

| Measuring Length | Permissible Error | Error | |
|---|---|---|---|
| | | External | Internal |
| Φ10 | +0.01 -0.02 | / | 0.01 |
| 50 | ±0.02 | -0.01 | / |
| 100 | | -0.01 | / |
| 150 | ±0.03 | -0.02 | / |
| 200 | | / | / |
| 250 | | / | / |
| 300 | | / | / |

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