INSPECTION CERTIFICATE | DATA OUTPUT

ULTRASONIC HARDNESS TESTER (ADVANCED MODEL)
CODE ISHU-460

Application:
1. For steel, non-ferrous metal and alloy
2. Test surface hardening layers (carburized, nitriding, high frequency hardened, etc.) and plating (like chrome plating)
3. Suitable for thin wall or edge of workpieces
4. Suitable for small areas like arc, conical surface and other complex shapes
5. Suitable for small or light workpieces
6. Suitable for narrow spaces, like grooves and blind holes
7. Test large workpieces at any direction
8. Suitable for rough surfaces

VIDEO


test flat surfaces (with the cover)


test cylinder surfaces (use V-groove on the cover)


test narrow areas (remove the cover)

SPECIFICATION OF MAIN UNIT

Hardness scale		HV, HB, HRB, HRC, HS, Mpa
Range		100~940HV, 80~650HB, 20~93HRB, 20~70HRC, 25~100HS, 370~1740Mpa
Resolution		1HV, 1HB, 1HRB, 0.1HRC, 1HS
Accuracy	HB	±3%
	HV	±3%
	HRC	±1.5%
Data output		USB
Operating temperature		-20°C ~ +40°C
Power supply		built-in rechargeable battery
Dimension and weight of main unit		160×80×40mm, 315g

- Small test indentation
- Test force and time are not affected by the operator
- Quick test, only 2 seconds
- Memory of 1000 test results
- Automatic power off
- Anti-dust and waterproof


software CD (included)

SPECIFICATION OF PROBE

Type	A (standard)	B (**optional**)
Measuring force	50N	10N (small force)
Application	general use	plating
Maximum roughness of workpiece (Ra)	2.5μm	1.5μm
Minimum weight of workpiece (direct measurement)	0.1kg*	0.1kg*
Minimum thickness of workpiece (direct measurement)	1mm *	1mm *
Minimum radius of workpiece (direct measurement)	5mm	5mm
Minimum thickness of surface hardening layer or plating	0.1mm	0.03mm
Minimum measuring area	Ø1mm	Ø1mm
Dimension and weight of probe	140×Ø37mm, 271g	145×Ø37mm, 271g

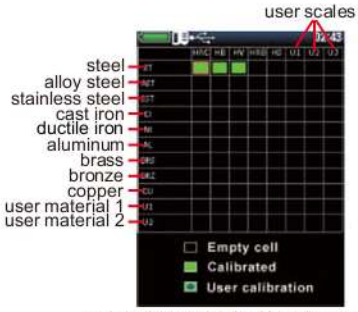
STANDARD DELIVERY

Main unit	1pc
Probe A	1pc
AC/DC adapter	1pc
USB cable and software	1pc

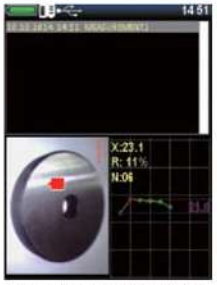
OPTIONAL ACCESSORY

Probe B	ISHU-460-B
Couplant	ISH-COUPLANT

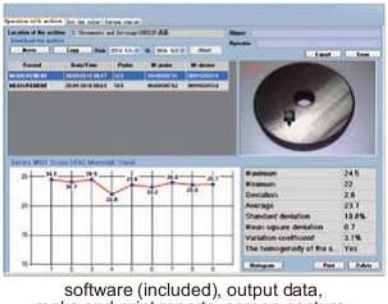
*If the weight or thickness of workpiece is less than required, the workpiece should be fixed or coupled on solid support.



select the material and scale, use the corresponding standard hardness blocks or workpieces for calibration (calibration of HRC, HB and HV for steel are already made, calibration is needed before use other materials and scales)


can take a picture on the workpiece and get a report with testing result and picture,the report can be sent to computer

back


software (included), output data, make and print reports, screen capture, set screen colors of hardness tester

Graph display mode, show average value, relative range and test times

Histogram display mode, show average value, relative range and relative standard deviation

Statistics display mode, show maximum, minimum, deviation, average, relative range and test times

Smart display mode, can set tolerance, automatically reject the result when out of tolerance

ULTRASONIC/LEEB HARDNESS TESTER (ADVANCED MODEL)
CODE ISHU-470

VIDEO | DATA OUTPUT | INSPECTION CERTIFICATE

Ultrasonic hardness tester

Application and features:
1. For steel, non-ferrous metal and alloy
2. Test surface hardening layers (carburized, nitriding, high frequency hardened, etc.) and plating (like chrome plating)
3. Suitable for thin wall or edge of workpieces
4. Suitable for small areas like arc, conical surface and other complex shapes
5. Suitable for small or light workpieces
6. Suitable for narrow spaces, like grooves and blind holes
7. Test large workpieces at any direction
8. Suitable for rough surfaces
9. Small test indentation
10. Test force and time are not affected by the operator
11. Quick test, only 2 seconds

Leeb hardness tester

Application and features:
1. Suitable for large and heavy workpieces, such as casting parts, molds, machine guides, etc.
2. For steel, non-ferrous metal and alloy
3. Based on Leeb (HLD), converted to Rockwell (HRC), Vickers (HV), Brinell (HB) and strength (Mpa)
4. Impact direction is adjustable
5. According to ASTM A956

main unit (included)

ultrasonic probe A (included)

Leeb probe type D (included)

- Automaitc detect the ultrasonic probe or Leeb probe type D
- Memory of 1000 test results for browsing and output
- Automatic power off
- Anti-dust and waterproof

software CD (included)

ultrasonic probe to test flat surfaces (with the cover)

ultrasonic probe to test cylinder surfaces (use V-groove on the cover)

ultrasonic probe to test narrow areas (remove the cover)

APPLICATION OF ULTRASONIC HARDNESS TESTER AND LEEB HARDNESS TESTER

Application	Ultrasonic	Leeb
Solid parts, molds, etc.	well suited	especially suited
Coarse grain materials, cast iron parts, etc.	not recommended	especially suited
Steel and aluminum cast alloys	suited sometimes	especially suited
HAZ with welds	especially suited	not recommended
Tubes: wall thickness>10 mm	especially suited	especially suited
Tubes: wall thickness<10 mm	especially suited	not recommended
Rough surfaces	not recommended	well suited
Thin workpieces	especially suited	not recommended
Difficult to access positions, like turbine blades, gears, etc.	especially suited	well suited

Graph display mode, show average value, relative range and test times

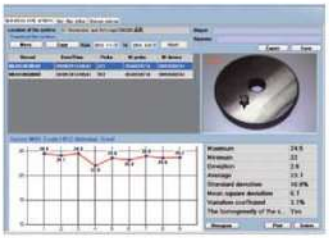
Histogram display mode, show average value, relative range and relative standard deviation

Statistics display mode, show maximum, minimum, deviation, average, relative range and test times

SPECIFICATION OF MAIN UNIT

Hardness scale		HV, HB, HRB, HRC, HS, HL, Mpa
Range		100~940HV, 80~650HB, 20~93HRB, 20~70HRC, 25~100HS, 170~960HL, 370~1740Mpa
Resolution		1HV, 1HB, 1HRB, 0.1HRC, 1HS, 1HL, 1Mpa
Accuracy of ultrasonic test	HB	±3%
	HV	±3%
	HRC	±1.5%
Accuracy of Leeb test	HL	±6HL
Data output		USB
Operating temperature		-20°C ~ +40°C
Power supply		built-in rechargeable battery
Dimension of main unit		160×80×40mm
Weight of main unit		315g

Smart display mode, can set tolerance, automatically reject the result when out of tolerance



software (included), output data, make and print reports, screen capture, set screen colors of hardness tester

SPECIFICATION OF PROBE

Type	ultasonic A (standard)	ultasonic B (**optional**)	Leeb type D (standard)
Test force	50N	10N (small force)	-
Application	general use	plating	large and heavy workpieces
Maximum roughness of workpiece (Ra)	2.5μm	1.5μm	1.6μm
Minimum weight of workpiece (direct measurement)	0.1kg*	0.1kg*	5kg*
Minimum thickness of workpiece (direct measurement)	1mm*	1mm*	5mm*
Minimum radius of workpiece	5mm	5mm	30mm
Minimum thickness of surface hardening layer or plating	0.1mm	0.03mm	-
Minimum test area	Ø1mm	Ø1mm	Ø20mm
Dimension and weight of probe	140×Ø37mm, 271g	145×Ø37mm, 271g	148×Ø20mm, 100g

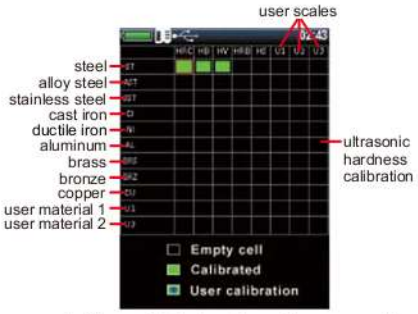
*If the weight or thickness of workpiece is less than required, the workpiece should be fixed or coupled on solid support.

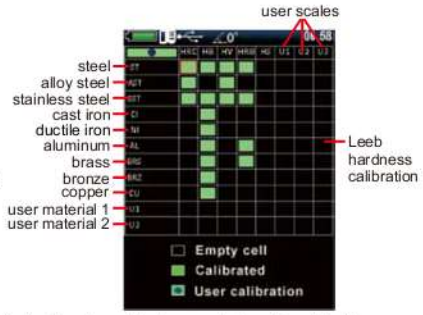
To be continued

Continued from previous page

take a picture on the workpiece and get a report with testing result and picture, the report can be sent to computer

back





select the material and scale, use the corresponding standard hardness blocks or workpieces for calibration ("■" means the calibration is already made, calibration is needed before using other materials and scales)

STANDARD DELIVERY

Main unit	1pc
Ultrasonic probe A	1pc
Leeb probe type D	1pc
Hardness test block D	1pc
AC/DC adapter	1pc
USB cable and software	1pc

OPTIONAL ACCESSORY

Ultrasonic probe B	ISHU-460-B
Leeb support rings	see details
Couplant	ISH-COUPLANT

ULTRASONIC HARDNESS TESTER CODE ISHU-330

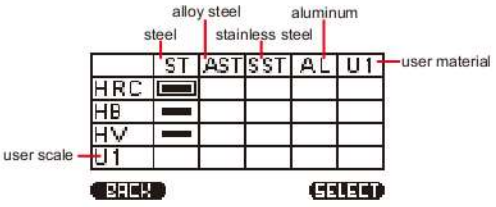
INSPECTION CERTIFICATE

DATA OUTPUT

VIDEO

Application:
1. For steel, non-ferrous metal and alloy
2. Test surface hardening layers (carburized, nitriding, high frequency hardened, etc.) and plating (like chrome plating)
3. Suitable for thin wall or edge of workpieces
4. Suitable for small areas like arc, conical surface and other complex shapes
5. Suitable for small or light workpieces
6. Suitable for narrow spaces, like grooves and blind holes
7. Test large workpieces at any direction
8. Suitable for rough surfaces

- Small test indentation
- Test force and time are not affected by the operator
- Quick test, only 2 seconds
- Average and statistics test modes
- Memory of 1024 test results for browsing and output
- Automatic power off
- Anti-dust and waterproof



select the material and scale, use the corresponding standard hardness blocks or workpieces for calibration (calibration of HRC, HB and HV for steel are already made, calibration is needed before use other materials and scales)

software CD (included)

test flat surfaces (with the cover)

test cylinder surfaces (use V-groove on the cover)

test narrow areas (remove the cover)

SPECIFICATION OF MAIN UNIT

Hardness scale		HV, HB, HRC, Mpa
Range		100~940HV, 80~650HB, 20~70HRC, 370~1740Mpa
Resolution		1HV, 1HB, 0.1HRC, 1Mpa
Accuracy	HB	±3%
	HV	±3%
	HRC	±1.5%
Data output		USB
Operating temperature		-20°C ~ +40°C
Power supply		built-in rechargeable battery
Dimension of main unit		120×60×25mm
Weight of main unit		200g

SPECIFICATION OF PROBE

Type	A (standard)	B (**optional**)
Test force	50N	10N (small force)
Application	general use	plating
Maximum roughness of workpiece (Ra)	2.5μm	1.5μm
Minimum weight of workpiece (direct measurement)	0.1kg*	0.1kg*
Minimum thickness of workpiece (direct measurement)	1mm*	1mm*
Minimum radius of workpiece	5mm	5mm
Minimum thickness of surface hardening layer or plating	0.1mm	0.03mm
Minimum test area	Ø1mm	Ø1mm
Dimension and weight of probe	140×Ø37mm, 271g	145×Ø37mm, 271g

STANDARD DELIVERY

Main unit	1pc
Probe A	1pc
Rechargeable battery	2pcs
Charger	1pc
USB cable and software	1pc

OPTIONAL ACCESSORY

Probe B	ISHU-460-B
Couplant	ISH-COUPLANT

*If the weight or thickness of workpiece is less than required, the workpiece should be fixed or coupled on solid support.

ULTRASONIC/LEEB HARDNESS TESTER
CODE ISHU-340

- Automaitc detect the ultrasonic probe or Leeb probe type D
- Average and statistics test modes
- Memory of 1024 test results for browsing and output
- Automatic power off
- Anti-dust and waterproof

INSPECTION CERTIFICATE

VIDEO

DATA OUTPUT


main unit (included)


ultrasonic probe A (included)


Leeb probe type D (included)


Ultrasonic hardness tester

Application and features:
1. For steel, non-ferrous metal and alloy
2. Test surface hardening layers (carburized, nitriding, high frequency hardened, etc.) and plating (like chrome plating)
3. Suitable for thin wall or edge of workpieces
4. Suitable for small areas like arc, conical surface and other complex shapes
5. Suitable for small or light workpieces
6. Suitable for narrow spaces, like grooves and blind holes
7. Test large workpieces at any direction
8. Suitable for rough surfaces
9. Small test indentation
10. Test force and time are not affected by the operator
11. Quick test, only 2 seconds


Leeb hardness tester

Application and features:
1. Suitable for large and heavy workpieces, such as casting parts, molds, machine guides, etc.
2. For steel, non-ferrous metal and alloy
3. Based on Leeb (HLD), converted to Rockwell (HRC), Vickers (HV), Brinell (HB) and strength (Mpa)
4. Impact direction is adjustable
5. According to ASTM A956


software CD (included)

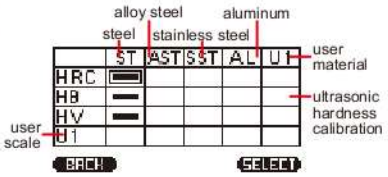

ultrasonic probe to test flat surfaces (with the cover)

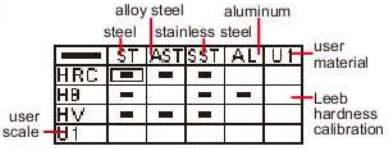

ultrasonic probe to test cylinder surfaces (use V-groove on the cover)


ultrasonic probe to test narrow areas (remove the cover)

APPLICATION OF ULTRASONIC HARDNESS TESTER AND LEEB HARDNESS TESTER

Application	Ultrasonic	Leeb
Solid parts, molds, etc.	well suited	especially suited
Coarse grain materials, cast iron parts, etc.	not recommended	especially suited
Steel and aluminum cast alloys	suited sometimes	especially suited
HAZ with welds	especially suited	not recommended
Tubes: wall thickness>10 mm	especially suited	especially suited
Tubes: wall thickness<10 mm	especially suited	not recommended
Rough surfaces	not recommended	well suited
Thin workpieces	especially suited	not recommended
Difficult to access positions, like turbine blades, gears, etc.	especially suited	well suited





select the material and scale, use the corresponding standard hardness blocks or workpieces for calibration (" ■ " means the calibration is already made, calibration is needed before using other materials and scales)

SPECIFICATION OF MAIN UNIT

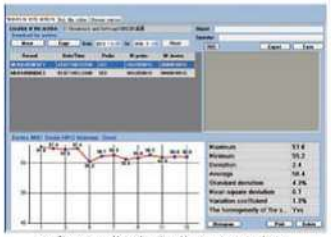
Hardness scale		HV, HB, HRC, HL, Mpa
Range		100~940HV, 80~650HB, 20~70HRC, 170~960HL, 370~1740Mpa
Resolution		1HV, 1HB, 0.1HRC, 1HL, 1Mpa
Accuracy of ultrasonic test	HB	±3%
	HV	±3%
	HRC	±1.5%
Accuracy of Leeb test	HL	±6HL
Data output		USB
Operating temperature		-20°C ~ +40°C
Power supply		built-in rechargeable battery
Dimension of main unit		120×60×25mm
Weight of main unit		200g

STANDARD DELIVERY

Main unit	1pc
Ultrasonic probe A	1pc
Leeb probe type D	1pc
Hardness test block D	1pc
Rechargeable battery	2pcs
Charger	1pc
USB cable and software	1pc

OPTIONAL ACCESSORY

Ultrasonic probe B	ISHU-460-B
Leeb support rings	see details
Couplant	ISH-COUPLANT


software (included), output data, make and print reports

SPECIFICATION OF PROBE

Type	ultasonic A (standard)	ultasonic B (**optional**)	Leeb type D (standard)
Test force	50N	10N (small force)	-
Application	general use	plating	large and heavy workpieces
Maximum roughness of workpiece (Ra)	2.5μm	1.5μm	1.6μm
Minimum weight of workpiece (direct measurement)	0.1kg*	0.1kg*	5kg*
Minimum thickness of workpiece (direct measurement)	1mm*	1mm*	5mm*
Minimum radius of workpiece	5mm	5mm	30mm
Minimum thickness of surface hardening layer or plating	0.1mm	0.03mm	-
Minimum test area	Ø1mm	Ø1mm	Ø20mm
Dimension and weight of probe	140×Ø37mm, 271g	145×Ø37mm, 271g	148×Ø20mm, 100g

*If the weight or thickness of workpiece is less than required, the workpiece should be fixed or coupled on solid support.

INSPECTION CERTIFICATE DATA OUTPUT VIDEO

PORTABLE LEEB HARDNESS TESTER
CODE ISH-SPHA

- Based on Leeb (HL), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Connected with printer via bluetooth
- Connected with computer via USB port
- Up to 800 test results can be saved
- Low and high limits with judgement
- Touch screen operation, large display with backlight
- Language: English, Chinese, Italian, German, French and Portuguese
- Automatic power off
- According to ASTM A 956


software CD (included)


hardness test block D (included)


small support ring (included)


printer (included)

SPECIFICATION

Min. reading	1HL, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa
Accuracy	±6HL (when HL=800)
Display	Leeb (HL), converted hardness, material, impact direction, test times, average value, deviation, time
Output	bluetooth and USB
Power supply	built-in rechargeable battery
Dimension	135×83×24mm
Weight	350g

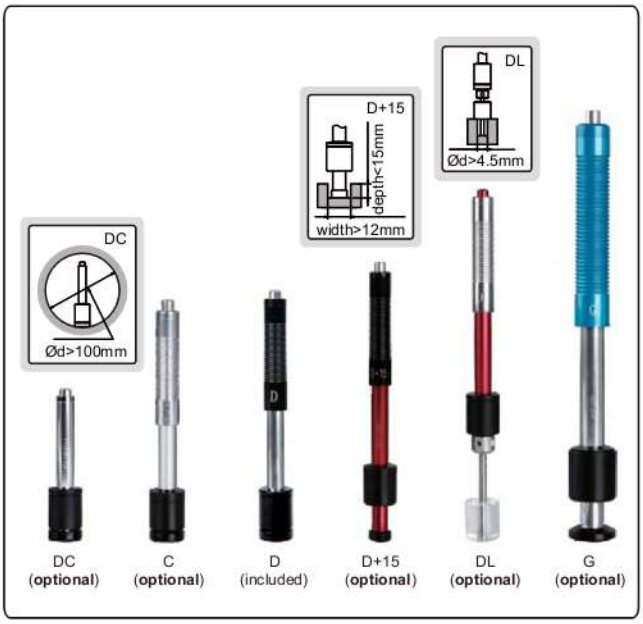
STANDARD DELIVERY

Main unit	1pc
Impact device D	1pc
Printer	1pc
Hardness test block D	1pc
Small support ring	1pc
Cleaning brush	1pc
AC/DC adapter	1pc
USB cable and software disc	1pc
Pen for touch screen	1pc

OPTIONAL ACCESSORY

Impact device DC	ISH-SPHA-DC
Impact device C	ISH-SPHA-C
Impact device D+15	ISH-SPHA-D15
Impact device DL	ISH-SPHA-DL
Impact device G	ISH-SPHA-G
Hardness test block D *	ISH-BHLD
Hardness test block G *	ISH-BHLG
Couplant	ISH-COUPLANT
Support rings	see details

* Hardness test block G (ISH-BHLG) is for impact device G (ISH-SPHA-G). Hardness test block D (ISH-BHLD) is for all others impact devices.



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)		1.6μm	0.4μm	1.6μm	1.6μm	1.6μm	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	0.1kg	0.02kg	0.1kg	0.1kg	0.1kg	0.5kg
Minimum thickness of workpiece		5mm	1mm	5mm	5mm	5mm	10mm

PORTABLE LEEB HARDNESS TESTER (BASIC MODEL) CODE ISHL-P100

VIDEO

hardness test block D (included)

small support ring (included)

- Supplied with impact device D
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Set test times (1~32) to have average value
- Memory of 100 test values for browsing
- Automatic power off

SPECIFICATION

Min. reading	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa	
Accuracy	±8HLD (when HLD=760±30)	
Display	Leeb, conversion hardness, material, impact direction, test times, average value, time	
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	155×72×27mm	
Weight	280g	

STANDARD DELIVERY

Main unit	1pc
Impact device D	1pc
Hardness test block D	1pc
Small support ring	1pc
Cleaning brush	1pc

OPTIONAL ACCESSORY

Couplant	ISH-COUPLANT
Hardness test block D	ISHL-P100-BLOCK
Support rings	see details

APPLICABLE MATERIAL AND HARDNESS RANGE FOR 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 TESTER (BASIC MODEL) CODE ISHL-P200

DATA OUTPUT

WITH BUILT-IN PRINTER

printer

VIDEO

hardness test block D (included)

software CD (included)

small support ring (included)

- Supplied with impact device D and built-in printer
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength(MPa)
- Set test times (1~32) to have average value
- Memory of 100 test values for browsing, print and output
- Low and high limits with judgement
- Automatic power off

SPECIFICATION

Min. reading	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa	
Accuracy	±8HLD (when HLD=760±30)	
Display	Leeb, conversion hardness, material, impact direction, test times, average value, time	
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	built-in rechargeable battery	
Dimension	198×82×30mm	
Weight	320g	

STANDARD DELIVERY

Main unit with printer	1pc
Impact device D	1pc
Hardness test block D	1pc
Printer paper	1pc
Small support ring	1pc
Cleaning brush	1pc
USB cable and software	1pc
AC/DC adapter	1pc

OPTIONAL ACCESSORY

Couplant	ISH-COUPLANT
Hardness test block D	ISHL-P100-BLOCK
Printer paper	ISHL-P200-PAPER
Support rings	see details

APPLICABLE MATERIAL AND HARDNESS RANGE FOR 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 TESTER
CODE ISH-PHB


hardness test block D (included)


small support ring (included)


wireless printer (**optional**)

- 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 bluetooth
- Automatic power off
- According to ASTM A 956

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	
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	1pc
Impact device D	1pc
Hardness test block D	1pc
Small support ring	1pc
Cleaning brush	1pc

OPTIONAL ACCESSORY

Wireless printer	ISH-DS-PRINTER
Couplant	ISH-COUPLANT
Support rings	see details
Hardness test block D	ISH-BHLD

APPLICABLE MATERIAL AND HARDNESS RANGE FOR 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 TESTER
CODE ISH-SPHD

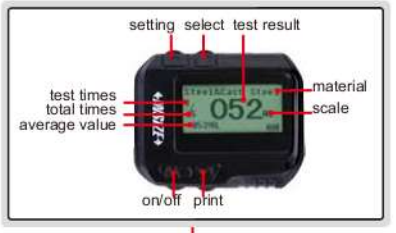
- Impact device D
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Automatic direction correction
- Connected with printer via bluetooth
- Connected with computer via USB port
- Up to 500 test results can be saved
- According to ASTM A 956


software CD (included)


printer (included)


hardness test block D (included)


small support ring (included)



SPECIFICATION

Min. reading	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS	
Accuracy	±6HLD (when HLD=800)	
Output	USB and bluetooth	
Applicable workpiece	minimum weight	5kg (direct measurement)
		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	built-in rechargeable battery	
Dimension	147×35×22mm	
Weight	65g	

APPLICABLE MATERIAL AND HARDNESS RANGE FOR IMPACT DEVICE D

Material	HLD	HV	HB	HRC	HRB	HS
Steel & cast steel	300-900	81-955	81-654	20-68	38-100	32-100
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			

STANDARD DELIVERY

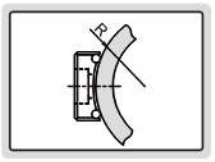
Main unit	1pc
Printer	1pc
Hardness test block D	1pc
Small support ring	1pc
Cleaning brush	1pc
AC/DC adapter	1pc
USB cable and software disc	1pc

OPTIONAL ACCESSORY

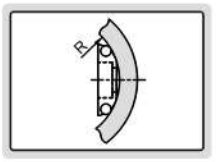
Couplant	ISH-COUPLANT
Support rings	see details
Hardness test block D	ISH-BHLD

SUPPORT RING SET FOR PORTABLE LEEB HARDNESS TESTER
CODE ISH-PH-SP9

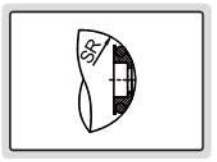
type A



type B



type C

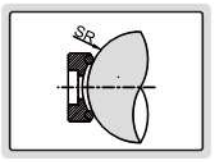


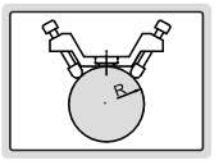
SPECIFICATION

Type	Applicable workpiece	Range (mm)	Quantity
A	cylindrical outside surface	R10-15	3pcs
		R14.5-30	
		R25-50	
B	cylindrical inside surface	R11-13	3pcs
		R12.5-17	
		R16.5-30	
C	spherical inside surface	SR11-13	3pcs
		SR12.5-17	
		SR16.5-30	
D	spherical outside surface	SR10-15	2pcs
		SR14.5-30	
E	cylindrical outside surface	R > 10	1pcs

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×AAA batteries
Dimension	245×105×230mm
Weight	5.3kg

STANDARD DELIVERY

Main unit	1pc
Flat anvil	1pc
Diamond indenter	1pc
Ø1.5875mm carbide ball indenter	1pc
Hardness test block HRB85~95	1pc
Hardness test block HRC60~70	1pc
Hardness test block HRC20~30	1pc

MAGNETIC ROCKWELL HARDNESS TESTER
CODE ISHR-M111

- Apply to large and heavy steel or iron workpieces
- According to ISO 6508, ASTM E18

VIDEO


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	1pc
Diamond indenter	1pc
Ø1.5875mm carbide ball indenter	2pcs
Hardness test block HRB85~95	1pc
Hardness test block HRC60~70	1pc
Hardness test block HRC20~30	1pc
Flat anvil	1pc
Support	4pcs
Magnifier with LED	1pc

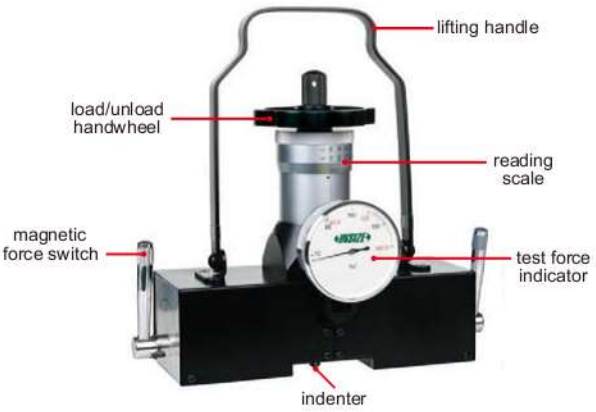
MAGNETIC BRINELL/ROCKWELL HARDNESS TESTER
CODE ISHR-B141


flat anvil for test block (included)


supports for cylinder or tube workpieces (included)


magnifier with LED (included)


measuring microscope (included)



VIDEO

- Apply to large steel or iron workpieces
- According to ISO 6508, ASTM E18

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	1pc
Flat anvil	1pc
Support	4pcs
Diamond Rockwell indenter	1pc
Ø1.5875mm carbide ball indenter	1pc
Ø2.5mm Brinell indenter	1pc
Hardness test block HRB85~95	1pc
Hardness test block HRC60~70	1pc
Hardness test block HRC20~30	1pc
Brinell test block	1pc
Measuring microscope	1pc
Magnifier with LED	1pc

PORTABLE ROCKWELL HARDNESS TESTER
CODE ISHR-P151

VIDEO

- 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. workpiece depth	25mm
Dimension	240×70×160mm
Weight (with base)	2.5kg

STANDARD DELIVERY

Main unit	1pc
Diamond indenter	1pc
Ø1.5875mm carbide ball indenter	2pcs
Hardness test block HRB88~95	1pc
Hardness test block HRC60~65	1pc
Hardness test block HRC20~30	1pc
Flat anvil	1pc
V-type anvil	1pc
Base	1pc
Anvil extension	1pc
Magnifier	2pcs


flat anvil (included)


V-type anvil (included)

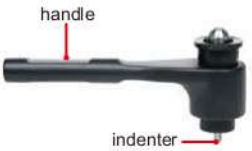

anvil extension for thin workpieces (included)

PIN BRINELL HARDNESS TESTER
CODE ISHB-P101

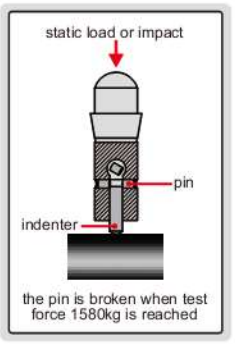
VIDEO

- 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 clamp




static test


impact test


V-type anvil (included)


pins (included)


measuring microscope (included)

SPECIFICATION

Measuring range	100~350HBW (with Ø7.26mm indenter, included) 350~650HBW (with Ø4mm indenter, optional)
Test force	1580kg
Accuracy	static test: ±3% impact test: ±5%
Measuring microscope	20X, graduation 0.01mm
Max. workpiece height in static test	150mm
Max. workpiece depth in static test	80mm (from the center of indenter)
Dimension	195×60×350mm
Weight	4.2kg

STANDARD DELIVERY

Static test clamp	1pc
Impact test clamp	1pc
Flat anvil	1pc
V-type anvil	1pc
Ø7.26mm indenter	1pc
Hardness test block	1pc
Pin	250pcs
Measuring microscope	1pc

OPTIONAL ACCESSORY

Ø4mm indenter	ISHB-P101-INDENTER
Pin (250pcs)	ISHB-P101-PIN

HYDRAULIC BRINELL HARDNESS TESTER
CODE ISHB-H131

- According to ISO 6506, ASTM E10

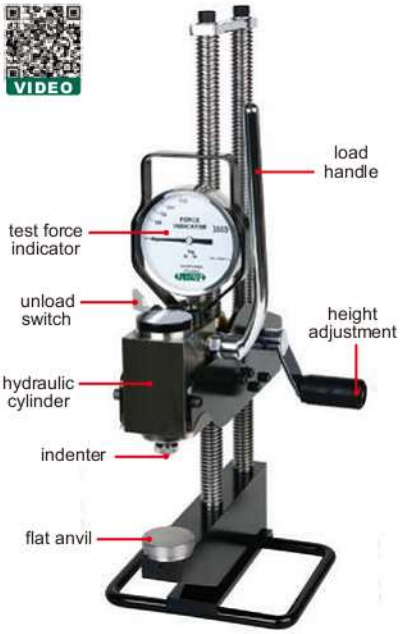
SPECIFICATION

Measuring range	16~650HBW
Test force	3000kg
Indenter	Ø10mm carbide ball
Measuring microscope	20X, graduation 0.01mm
Max. workpiece height	350mm
Max. workpiece depth	90mm (from the center of indenter)
Dimension	270×225×570mm
Weight	13.8kg

STANDARD DELIVERY

Main unit	1pc
Flat anvil	1pc
V-type anvil	1pc
Spherical anvil	1pc
Ø10mm carbide ball	2pcs
Brinell test block	2pcs
Measuring microscope	1pc

VIDEO




V-type anvil (included)


spherical anvil (included)


measuring microscope (included)

CHAIN TYPE HYDRAULIC BRINELL HARDNESS TESTER
CODE ISHB-C161

VIDEO


measuring microscope (included)

- 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	1pc
1.5m chain	1pc
Ø10mm carbide ball	2pcs
Brinell test block	2pcs
Measuring microscope	1pc

BARCOL HARDNESS TESTER
CODE ISHB-B300

VIDEO

- To measure the hardness of thick 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 (equal to 25~150HBW)
Min. reading	1HBa
Accuracy	±2HBa (at 42~52HBa) ±1HBa (at 84~88HBa)
Min. workpiece thickness	0.8mm
Dimension	142×65×90mm
Weight	500g

STANDARD DELIVERY

Main unit	1pc
Spare indenter	2pcs
Hardness test block	2pcs
Wrench	1pc

WEBSTER HARDNESS TESTERS

VIDEO

- To measure the hardness of soft metal such as aluminum alloy, copper, brass, soft steel, etc.
- According to ASTM B647-84 (2000)

ISHW-L20

STANDARD DELIVERY

Main unit	1pc
Spare indenter	1pc
Hardness test block	1pc
Wrench	1pc

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					

DIGITAL SHORE DUROMETERS

DATA OUTPUT

VIDEO

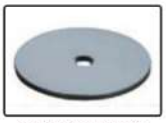
- According to ISO868, ISO7619, ASTM D 2240
- Average and peak (max.) mode
- Dwell time is adjustable
- Low and high limits with judgement
- 500 memories
- Wireless connection to printer
- Handhold use or work with test stand (code **ISH-DS-STAND**)
- Automatic power off

blunt taper indenter — ISH-DSA — sharp point indenter — ISH-DSD

SPECIFICATION

Code	ISH-DSA	ISH-DSD
Unit	Shore A	Shore D
Test material	soft plastic, soft rubber, etc.	hard plastic, hard rubber, etc.
Measuring range*	0~100HA	0~100HD
Resolution	0.1HA	0.1HD
Accuracy	±1HA	±1HD
Indenter protrusion	2.5mm	
Output	wireless and USB	
Power supply	built-in rechargeable battery	
Dimension	153×50×29mm	
Weight	170g	


software CD (included)


calibration block (included)


printer (**optional**)

STANDARD DELIVERY

Main unit	1pc
Calibration block	1pc
USB cable and software	1pc
AC/DC adapter	1pc

OPTIONAL ACCESSORY

Printer	ISH-DS-PRINTER
Test stand	ISH-DS-STAND
1kg weight block (for ISH-DSA)	ISH-DSA-W1
5kg weight block (for ISH-DSD)	ISH-DSD-W5

* Use **ISH-DSD** when measuring result is higher than 90HA
Use **ISH-DSA** when measuring result is lower than 20HD

TEST STAND FOR DIGITAL SHORE DUROMETERS CODE ISH-DS-STAND

VIDEO

- For digital shore durometers (code **ISH-DSA** and **ISH-DSD**)
- Can perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- 1kg weight block is for **ISH-DSA**, 5kg weight block is for **ISH-DSD**

5kg weight block
(optional)
for **ISH-DSD**

SPECIFICATION

Stage diameter	Ø88mm
Maximum workpiece height	75mm
Dimension	125×163×350mm
Weight	4kg

STANDARD DELIVERY

Test stand	1pc
Durometer supporter	1pc

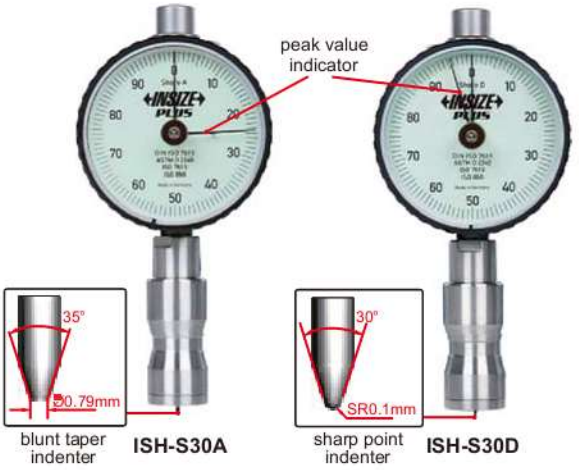
OPTIONAL ACCESSORY

1kg weight block (for ISH-DSA)	ISH-DSA-W1
5kg weight block (for ISH-DSD)	ISH-DSD-W5

SHORE DUROMETERS

VIDEO

- 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
Resolution	1HA	1HD
Accuracy	±0.5HA	±0.5HD
Indenter protrusion	2.5mm	
Bezel diameter	57mm	
Overall height	121mm	
Weight	184g	

* Use **ISH-S30D** when measuring result is higher than 90HA
Use **ISH-S30A** when measuring result is lower than 20HD

HARDNESS TEST BLOCKS FOR SHORE DUROMETERS

ISH-S30A-BLOCK

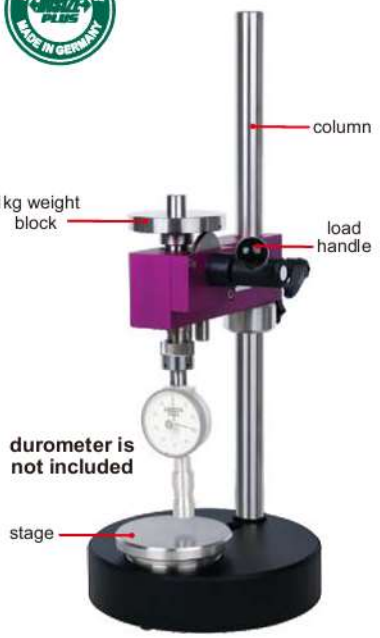
ISH-S30D-BLOCK

SPECIFICATION

Code	ISH-S30A-BLOCK	ISH-S30D-BLOCK
Type	Shore A	Shore D
Hardness value	7pcs/set: 30, 40, 50, 60, 70, 80, 90HA	3pcs/set: 60, 75, 85HD

TEST STAND FOR SHORE DUROMETERS CODE ISH-OS2

- For shore durometers (code **ISH-S30A** and **ISH-S30D**)
- Can perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- Special structure for stable loading
- 1kg weight block is for **ISH-S30A**, 4kg weight block is for **ISH-S30D**




calibration block (included)


4kg weight block (**optional**) for **ISH-S30D**

SPECIFICATION

Stage diameter	Ø98mm
Maximum workpiece height	180mm
Maximum workpiece depth	115mm (from test point to column)
Weight block	1kg (for **ISH-S30A**)
Dimension	Ø200×500mm
Weight	18kg

STANDARD DELIVERY

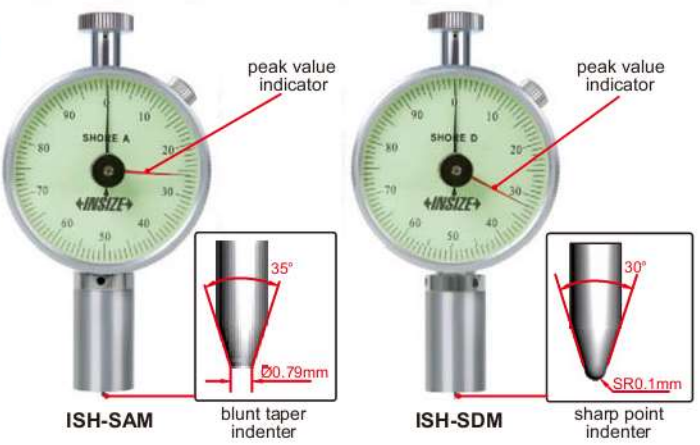
Test stand	1pc
Calibration block	1pc

OPTIONAL ACCESSORY

4kg weight block (for ISH-S30D)	ISH-OS2-W4

SHORE DUROMETERS

- According to ISO868, ISO7619, ASTM D 2240
- With peak value indicator
- Optional accessory: test stand **ISH-STAC** and **ISH-STD**



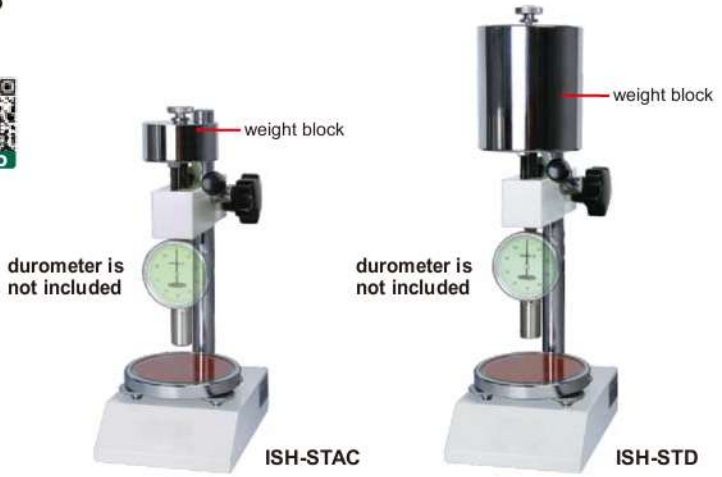
SPECIFICATION

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

TEST STANDS FOR SHORE DUROMETERS

- For shore durometers (code **ISH-SAM** and **ISH-SDM**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations



SPECIFICATION

Code	ISH-STAC	ISH-STD
Applicable durometer	ISH-SAM	ISH-SDM
Stage diameter	Ø100mm	Ø100mm
Maximum workpiece height	75mm	75mm
Weight block	1kg	5kg

INSPECTION CERTIFICATE DATA OUTPUT

DIGITAL FORCE GAGES

- Push and pull test
- Units: N, gf, kgf, ozf, lbf
- 500 memories
- Automatic power off
- Metal case
- LCD display with backlight, can turn 180°
- Overload alarm

accessory (included)

ISF-1DF100

VIDEO

software CD (included)

printer (**optional**)

STANDARD DELIVERY

Main unit	1pc
AC/DC adapter	1pc
USB cable and software	1pc
Push/pull accessory	6pcs (flat push tip, V push tip, knife-edge push tip, point push tip, pull clamp, extension rod)

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.), low and high limits with judgement				
Power supply	built-in rechargeable battery				
Dimension	150×73×33mm				
Weight	450g				

OPTIONAL ACCESSORY

Printer	ISF-DF-PRINTER
Test stand	ISF-MT1K

INSPECTION CERTIFICATE DATA OUTPUT

DIGITAL FORCE GAGES (HIGH ACCURACY)

printer (**optional**)

software CD (included)

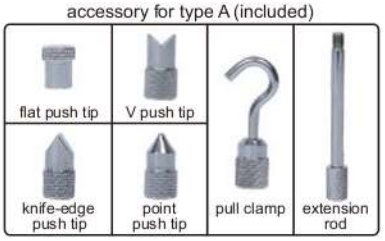
VIDEO

- Push and pull test
- Peak (max.) and tracking mode
- Units: mN, N, gf, kgf, ozf, lbf, MPa (only for type B)
- Low and high limits with judgement
- 1000 memories
- Automatic power off
- Metal case, touch buttons
- LCD display with backlight, can automatically turn 180°
- Overload alarm

ISF-DF100A
type A

ISF-DF5KA
type B

accessory for type A (included)



accessory for type B (included)

SPECIFICATION

Code	ISF-DF 5A	ISF-DF 10A	ISF-DF 20A	ISF-DF 50A	ISF-DF 100A	ISF-DF 200A	ISF-DF 500A	ISF-DF 1KA	ISF-DF 2KA	ISF-DF 5KA	ISF-DF 10KA	ISF-DF 20KA
Type	A (internal sensor)								B (external sensor)			
Load capacity (N)	5	10	20	50	100	200	500	1000	2000	5000	10000	20000
Resolution (N)	0.0005	0.001	0.005	0.005	0.01	0.05	0.05	0.1	0.5	0.5	1	5
Accuracy	±0.2% (of load capacity)											
Power supply	built-in rechargeable battery											

STANDARD DELIVERY

Code	ISF-DF 5A	ISF-DF 10A	ISF-DF 20A	ISF-DF 50A	ISF-DF 100A	ISF-DF 200A	ISF-DF 500A	ISF-DF 1KA	ISF-DF 2KA	ISF-DF 5KA	ISF-DF 10KA	ISF-DF 20KA
Main unit	1pc								1pc			
AC/DC adapter	1pc								1pc			
USB cable and software	1pc								1pc			
Push/pull accessory	6pcs (flat push tip, V push tip, knife-edge push tip, point push tip, pull clamp, extension rod)								4pcs (flat push tip, adapter, pull clamps)			

OPTIONAL ACCESSORY

Printer	ISF-DF-PRINTER
Test stand	ISF-MT1K

TEST STAND FOR DIGITAL FORCE GAGES CODE ISF-MT1K

- For digital force gages (code **ISF-1DFxx** and **ISF-DFxx**)
- To be used in vertical and horizontal orientation

horizontal orientation test

digital scale (**optional**)

VIDEO

force gages are not included

SPECIFICATION

Load capacity	1000N
Travel	200mm (3mm vertical movement per revolution of handwheel)
Dimension	196 x 250 x 446mm
Weight	13kg

OPTIONAL ACCESSORY

Digital scale (range: 200mm, resolution: 0.01mm/0.0005")	ISF-MT1K-SCALE

FORCE GAGES

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)							

ISF-F500

VIDEO

STANDARD DELIVERY

Main unit	1pc
Push tip	4pcs (flat, V type, knife-edge, point)
Pull clamp	1pc
Extension rod	1pc

OPTIONAL ACCESSORY

Test stand	ISF-MT500

- Push and pull test
- Peak (max.) or tracking mode

flat push tip (included) | V type push tip (included) | knife-edge push tip (included) | point push tip (included) | pull clamp (included) | extension rod (included)

TEST STAND FOR FORCE GAGES CODE ISF-MT500

- For force gages (code **ISF-Fxx**)
- To be used in vertical and horizontal orientation

horizontal orientation test

VIDEO

force gages are not included

SPECIFICATION

Load capacity	500N
Travel	150mm (3mm vertical movement per revolution of handwheel)
Dimension	160×240×460mm
Weight	12kg

DIAL TENSION GAGES

SPECIFICATION (Unit: N)

Code	ISF-TGD1	ISF-TGD3	ISF-TGD5	ISF-TG1	ISF-TG1D5	ISF-TG3	ISF-TG5
Capacity (N)	0.1	0.3	0.5	1	1.5	3	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
Cap acity (gf)	10	30	50	100	150	300	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						

VIDEO

ISF-TG3

- Clockwise and counter-clockwise use
- For electronic and precision mechanical industry, such as measure contact pressure of relay, adjust the tension or compression of spring