| Code | Thickness (T) | Accuracy |
| :--- | :---: | :---: |
| $\mathbf{4 6 2 1 - 0 2}$ | 0.02 mm | $\pm 4 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 0 3}$ | 0.03 mm | $\pm 4 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 0 4}$ | 0.04 mm | $\pm 4 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 0 5}$ | 0.05 mm | $\pm 4 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 0 6}$ | 0.06 mm | $\pm 4 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 0 7}$ | 0.07 mm | $\pm 5 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 0 8}$ | 0.08 mm | $\pm 5 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 0 9}$ | 0.09 mm | $\pm 5 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 1 0}$ | 0.10 mm | $\pm 5 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 1 2}$ | 0.12 mm | $\pm 5 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 1 5}$ | 0.15 mm | $\pm 6 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 1 8}$ | 0.18 mm | $\pm 7 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 2 0}$ | 0.20 mm | $\pm 8 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 2 5}$ | 0.25 mm | $\pm 9 \mu \mathrm{~m}$ |


| Code | Thickness (T) | Accuracy |
| :--- | :---: | :---: |
| $4621-30$ | 0.30 mm | $\pm 9 \mu \mathrm{~m}$ |
| $4621-35$ | 0.35 mm | $\pm 11 \mu \mathrm{~m}$ |
| $4621-40$ | 0.40 mm | $\pm 12 \mu \mathrm{~m}$ |
| $4621-45$ | 0.45 mm | $\pm 12 \mu \mathrm{~m}$ |
| $4621-50$ | 0.50 mm | $\pm 14 \mu \mathrm{~m}$ |
| $4621-55$ | 0.55 mm | $\pm 14 \mu \mathrm{~m}$ |
| $4621-60$ | 0.60 mm | $\pm 14 \mu \mathrm{~m}$ |
| $4621-65$ | 0.65 mm | $\pm 14 \mu \mathrm{~m}$ |
| $4621-70$ | 0.70 mm | $\pm 17 \mu \mathrm{~m}$ |
| $4621-75$ | 0.75 mm | $\pm 17 \mu \mathrm{~m}$ |
| $4621-80$ | 0.80 mm | $\pm 19 \mu \mathrm{~m}$ |
| $4621-85$ | 0.85 mm | $\pm 19 \mu \mathrm{~m}$ |
| $4621-90$ | 0.90 mm | $\pm 22 \mu \mathrm{~m}$ |
| $4621-95$ | 0.95 mm | $\pm 22 \mu \mathrm{~m}$ |
| $\mathbf{4 6 2 1 - 1 0 0}$ | 1.00 mm | $\pm 24 \mu \mathrm{~m}$ |



- Used as shims to accurately set spacing
- Made of hardened alloy steel
- Length 5 m
- Width 13 mm

PITCH GAGES


- Identify the pitch of screw thread
- Made of medium carbon steel


4820-122

Metric $60^{\circ}$ screw

| Code | Range | Pitch of leaves included $(\mathrm{mm})$ | Quantity of leaves |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{4 8 2 0 - 1 2 2}$ | $0.4-7.0 \mathrm{~mm}$ | $0.4,0.5,0.6,0.7,0.75,0.8,0.9,1,1.25,1.5,1.75,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7$ | 2 |
| $\mathbf{4 8 2 0 - 1 2 4}$ | $0.25-7.0 \mathrm{~mm}$ | $0.25,0.3,0.35,0.4,0.5,0.7,0.75,0.8,0.9,1,1.25,1.5,1.75,2,2.5,3,3.5,4,4.5,5$, <br> $5.5,6,6.5,7$ | 24 |
| $\mathbf{4 8 2 0 - 1 2 4 1}$ | $0.25-6.0 \mathrm{~mm}$ | $0.25,0.3,0.35,0.4,0.45,0.5,0.6,0.7,0.75,0.8,0.9,1,1.25,1.5,1.75,2,2.5,3,3.5$, <br> $4,4.5,5,5.5,6$ | 24 |

Unified $60^{\circ}$ screw

| Code | Range | Pitch of leaves included | Quantity of leaves |
| :--- | :--- | :--- | :---: | :---: |
| $\mathbf{4 8 2 0 - 2 3 0}$ | $4-42 \mathrm{TPI}$ | $4,4-1 / 2,5,5-1 / 2,6,7,8,9,10,11,11-1 / 2,12,13,14,15,16,18,20,22,24,26,27$, <br> $28,30,32,34,36,38,40,42 \mathrm{TPI}$ | 30 |

Whitworth $55^{\circ}$ screw

| Code | Range | Pitch of leaves included | Quantity of leaves |
| :--- | :--- | :--- | :---: | :---: |
| $\mathbf{4 8 2 0 - 3 3 0}$ | $4-42 \mathrm{TPI}$ | $4,4-1 / 2,5,5-1 / 2,6,7,8,9,10,11,12,13,14,15,16,18,19,20,22,24,26,27,28$, <br> $30,32,34,36,38,40,42 \mathrm{TPI}$ | 30 |
| $\mathbf{4 8 2 0 - 3 2 8}$ | $4-62 \mathrm{TPI}$ | $4,4-1 / 2,5,6,7,8,9,10,11,12,13,14,16,18,19,20,22,24,25,26,28,30,32,36$, <br> $40,48,60,62 \mathrm{TPI}$ | 2 |

Metric $60^{\circ}$ and Whitworth $55^{\circ}$ screw

| Code | Range | Pitch of leaves included | Quantity of leaves |
| :---: | :---: | :---: | :---: |
| 4820-452 | 0.25-6.0mm | $\begin{aligned} & 0.25,0.3,0.35,0.4,0.45,0.5,0.6,0.7,0.75,0.8,0.9,1,1.25,1.5,1.75,2,2.5,3,3.5 \\ & 4,4.5,5,5.5,6 \mathrm{~mm} \end{aligned}$ | 52 |
|  | 4-62TPI | $\begin{aligned} & 4,4-1 / 2,5,6,7,8,9,10,11,12,13,14,16,18,19,20,22,24,25,26,28,30,32 \text {, } \\ & 36,40,48,60,62 \mathrm{TPI} \end{aligned}$ |  |
| 4820-450 | 0.4-7.0mm | $0.4,0.5,0.6,0.7,0.75,0.8,0.9,1,1.25,1.5,1.75,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7 \mathrm{~mm}$ | 50 |
|  | 4-62TPI | $\begin{aligned} & 4,4-1 / 2,5,6,7,8,9,10,11,12,13,14,16,18,19,20,22,24,25,26,28,30,32 \text {, } \\ & 36,40,48,60,62 \mathrm{TPI} \end{aligned}$ |  |
| Metric $60^{\circ}$ and Unified $60^{\circ}$ screw |  |  |  |
| Code | Range | Pitch of leaves included | Quantity of leaves |
| 4820-552 | 0.4-7.0mm | $0.4,0.5,0.6,0.7,0.75,0.8,0.9,1,1.25,1.5,1.75,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7 \mathrm{~mm}$ | 52 |
|  | 4-42TPI | $\begin{aligned} & 4,4-1 / 2,5,5-1 / 2,6,7,8,9,10,11,11-1 / 2,12,13,14,15,16,18,20,22,24,26,27 \text {, } \\ & 28,30,32,34,36,38,40,42 \mathrm{TPI} \end{aligned}$ |  |

## PITCH GAGES

- Check the pitch of screw thread
- Accuracy: $\pm 0.07 \mathrm{~mm}$
- Made of medium carbon steel


4824-12


| Code | Range | Thread type | Pitch of leaves included | Quantity of leaves |
| :--- | :--- | :--- | :--- | :---: |
| $\mathbf{4 8 2 4 - 1 2}$ | $2-20 \mathrm{~mm}$ | Tr $30^{\circ}$ | $2,3,4,5,6,7,8,9,10,12,16,20 \mathrm{~mm}$ | 12 |
| $\mathbf{4 8 2 4 - 1 6}$ | $1-12 \mathrm{TPI}$ | ACME $29^{\circ}$ | $1,1-1 / 3,1-1 / 2,1-3 / 4,2,2-1 / 2,3,3-1 / 2,4,5,6,7,8,9,10,12 \mathrm{TPI}$ | 16 |

## GEAR TOOTH PITCH GAGES

- Check the module pitch of gear tooth
- Accuracy: $\pm 0.05 \mathrm{~mm}$
- Made of hardened stainless steel


4860-245

| Code | Range | Pressure angle | Quantity of leaves | Unit: mm |
| :---: | :---: | :---: | :---: | :---: |
| 4860-145 | $0.35-4.5 \mathrm{~mm}$ | $14.5{ }^{\circ}$ | 15 |  |
| 4860-245 | $0.35-4.5 \mathrm{~mm}$ | $20^{\circ}$ | 15 |  |
| 4860-112 | $5-12 \mathrm{~mm}$ | $14.5{ }^{\circ}$ | 8 |  |
| 4860-212 | $5-12 \mathrm{~mm}$ | $20^{\circ}$ | 8 |  |

## CENTER GAGES



- Angle accuracy: $\pm 30 \mathrm{~min}$.
- Made of stainless steel

| Code | Thread type | Angle (a) | Graduation |
| :--- | :--- | :---: | :--- |
| $\mathbf{4 8 1 0 - 6 0 1}$ | METRIC 60 | $60^{\circ}$ | 0.5 mm and 1mm |
| $\mathbf{4 8 1 0 - 6 0 2}$ | UNIFIED 60 | $60^{\circ}$ | 14 ths and 20ths on front side, 24ths and 32ths on back side |
| $\mathbf{4 8 1 0 - 5 5}$ | WHITWORTH 55 | $5^{\circ}$ | $55^{\circ}$ |

- To check and set screw cutting tools
- Made of medium carbon steel


4812-E


4812-12
4812-E


| Code | Range | Thread type | Pitch |
| :--- | :--- | :---: | :--- |
| 4812-12 | $2-12 \mathrm{~mm}$ | $\operatorname{Tr} 30^{\circ}$ | $2,3,4,5,6,7,8,9,10,12 \mathrm{~mm}$ |
| 4812-E | 1-10TPI | ACME 29 | $1,1-1 / 3,1-1 / 2,1-3 / 4,2,2-1 / 2$, <br> $3,4,5,6,7,8,9,10 \mathrm{TPI}$ |

ANGLE GAGE SET

type A

type B

- Each blade checks primary,

1/2 primary and complementary angles

- Made of medium carbon steel


4807


| Primary <br> angle | $1 / 2$ primary <br> angle | Complementary <br> angle | Type |
| :---: | :--- | :---: | :---: |
| $5^{\circ}$ | $2^{\circ} 30^{\prime}$ | $175^{\circ}$ | A |
| $10^{\circ}$ | $5^{\circ}$ | $170^{\circ}$ | A |
| $15^{\circ}$ | $7^{\circ} 30^{\prime}$ | $165^{\circ}$ | A |
| $20^{\circ}$ | $10^{\circ}$ | $160^{\circ}$ | B |
| $25^{\circ}$ | $12^{\circ} 30^{\prime}$ | $155^{\circ}$ | B |
| $30^{\circ}$ | $15^{\circ}$ | $150^{\circ}$ | B |
| $35^{\circ}$ | $17^{\circ} 30^{\prime}$ | $145^{\circ}$ | B |
| $40^{\circ}$ | $20^{\circ}$ | $140^{\circ}$ | B |
| $45^{\circ}$ | $22^{\circ} 30^{\prime}$ | $135^{\circ}$ | B |
| $50^{\circ}$ | $25^{\circ}$ | $130^{\circ}$ | B |
| $55^{\circ}$ | $27^{\circ} 30^{\prime}$ | $125^{\circ}$ | B |
| $60^{\circ}$ | $30^{\circ}$ | $120^{\circ}$ | B |
| $65^{\circ}$ | $32^{\circ} 30^{\prime}$ | $115^{\circ}$ | B |
| $70^{\circ}$ | $35^{\circ}$ | $110^{\circ}$ | B |
| $75^{\circ}$ | $37^{\circ} 30^{\prime}$ | $105^{\circ}$ | B |
| $80^{\circ}$ | $40^{\circ}$ | $100^{\circ}$ | B |
| $85^{\circ}$ | $42^{\circ} 30^{\prime}$ | $95^{\circ}$ | B |
| $90^{\circ}$ | $45^{\circ}$ | $90^{\circ}$ | B |



4806-20


Range ( $\alpha$ )
Angle of leaves included
Quantity of leaves
Accuracy
4806-20 $1^{\circ}-45^{\circ}$ , $1^{\circ}, 2^{\circ}, 3^{\circ}, 4^{\circ}, 5^{\circ}, 6^{\circ}, 7^{\circ}, 8^{\circ}, 9^{\circ}, 10^{\circ}, 12^{\circ}, 14^{\circ}, 16^{\circ}, 18^{\circ}, 20^{\circ}, 25^{\circ}, 30^{\circ}, 35^{\circ}, 40^{\circ}, 45^{\circ}$

## RADIUS GAGES

- Made of medium carbon steel


4801-17


| Code | Range | Radius of leaves included $(\mathrm{mm})$ | Quantity of leaves (internal + external) |
| :--- | :--- | :--- | :--- |
| $\mathbf{4 8 0 1 - 1 7}$ | $1-7 \mathrm{~mm}$ | $1,1.25,1.5,1.75,2,2.25,2.5,2.75,3,3.5,4,4.5,5,5.5,6,6.5,7$ | $17+17$ |
| $\mathbf{4 8 0 1 - 1 6}$ | $7.5-15 \mathrm{~mm}$ | $7.5,8,8.5,9,9.5,10,10.5,11,11.5,12,12.5,13,13.5,14,14.5,15$ | $16+16$ |
| $\mathbf{4 8 0 1 - 1 5}$ | $15.5-25 \mathrm{~mm}$ | $15.5,16,16.5,17,17.5,18,18.5,19,19.5,20,21,22,23,24,25$ | $15+15$ |

## RADIUS GAGE

- Made of stainless steel


| Code | Range | Radius of leaves included (mm) | Quantity of leaves |
| :--- | :--- | :--- | :---: |
| $\mathbf{4 8 0 2 - 3 1}$ | $25-40 \mathrm{~mm}$ | $25,25.5,26,26.5,27,27.5,28,28.5$, <br> $29,29.5,30,30.5,31,31.5,32,32.5$, <br> $33,33.5,34,34.5,35,35.5,36,36.5$, |  |
|  |  | $37,37.5,38,38.5,39,39.5,40$ |  |
|  |  |  |  |



## RADIUS GAGE SET

- Each piece has 3 concave and 2 convex gauging surfaces
- Supplied with handle
- Made of medium carbon steel


| Code | Range | Radius of leaves included (mm) | Quantity of leaves |
| :--- | :--- | :--- | :---: |
| $\mathbf{4 8 0 4 - 2 6}$ | $0.5-13 \mathrm{~mm}$ | $0.5,1,1.5,2,2.5,3,3.5,4,4.5,5$ | $5.5,6,6.5,7,7.5,8,8.5,9,9.5$ <br>  |



4804-26

