

2021  
2022



# MEASURING INSTRUMENTS

CATALOGUE NO. 104



# QUALITY | INNOVATION | SERVICE | VALUE



The products with this mark are **INSIZE PLUS** brand, otherwise the products are **INSIZE** brand.

**INSIZE** is our standard quality

**INSIZE PLUS** is our premium quality



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              | <i>Jose</i>                    |                  |                   |          |          |
| Resolution           | 0.01mm / 0.0005"   | Judgement              | Passed                         |                  |                   |          |          |
| Serial No.           | 0910120004         |                        |                                |                  |                   |          |          |
| Standard temperature | 20°C / 68°F        |                        |                                |                  |                   |          |          |
|                      |                    | Unit: inch             |                                |                  | Unit: mm          |          |          |
| Measuring Length     | Permissible Error  | Error                  |                                | Measuring Length | Permissible Error | Error    |          |
|                      |                    | External               | Internal                       |                  |                   | External | Internal |
| 0.4 DIA              | +0.0005<br>-0.0010 | /                      | 0.0005                         | Φ10              | +0.01<br>-0.02    | /        | 0.01     |
| 2                    | ±0.0010            | -0.0005                | /                              | 50               | ±0.02             | -0.01    | /        |
| 4                    |                    | -0.0005                | /                              | 100              |                   | -0.01    | /        |
| 6                    |                    | -0.0010                | /                              | 150              |                   | -0.02    | /        |
| 8                    |                    | /                      | /                              | 200              |                   | /        | /        |
| 10                   | ±0.0015            | /                      | /                              | 250              | ±0.03             | /        | /        |
| 12                   |                    | /                      | /                              | 300              |                   | /        | /        |



Please scan QR code to watch the videos of products.



How to search:

1. Search for products according to category in PRODUCT INDEX (next 5 pages)
2. Search for products in CODE NO. INDEX (page 471-474)
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TUBULAR INSIDE MICROMETERS



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GAGE BLOCKS



CALIPER INSPECTION GAGE BLOCK AND RING GAGE SET



MICROMETER INSPECTION GAGE BLOCK SET



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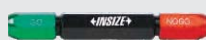
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PIN GAGE HANDLES



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THREAD PLUG GAGES



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EXTERNAL CALIPER GAGES



THICKNESS GAGES



DIAL SNAP GAGES



STEP AND GAP GAGES



CRANKSHAFT TESTERS



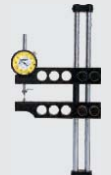
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THREAD TAPER INSTRUMENTS



THREAD HEIGHT INSTRUMENTS

## 10 ANGLE AND STRAIGHTNESS MEASURING INSTRUMENTS

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PERPENDICULARITY TESTERS



GRANITE SQUARES



SQUARES



STRAIGHT EDGES



MAGNALIUM STRAIGHT EDGES



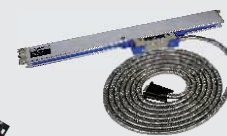
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CHAMFER HEIGHT GAGES



TAPER SLOT GAGES



TAPER GAGES



TAPER BORE GAGES



WELDING GAGES



AMERICAN STANDARD WIRE GAGE



U.S. STANDARD SHEET METAL GAGE



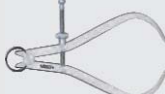
DRILL POINT GAGE



DRILL ANGLE GAGE



INSIDE CALIPERS



OUTSIDE CALIPERS



DIVIDERS



MEASURING TAPES



MEASURING WHEELS



STEEL RULES



T-SHAPE MARKING GAGES



COMBINATION SQUARE SETS



SCRIBING CALIPERS



SCRIBERS



MEASURING TOOL SETS

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CMM



JIG SET FOR CMM



SURFACE PROFILE MEASURING MACHINE

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GRANITE SURFACE PLATES



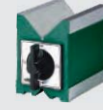
STANDS FOR GRANITE SURFACE PLATES



MAGNETIC RECTANGULAR BLOCKS



V-BLOCK SETS



MAGNETIC V-BLOCKS



PERMANENT MAGNETIC CHUCKS



PARALLEL SETS



ANGLE PLATE SETS



ADJUSTABLE ANGLE BLOCKS



RIGHT ANGLE PLATES



SINE BARS



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PRECISION VISES



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CENTERING INDICATOR



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TOOLMAKER MICROSCOPES



DIGITAL MICROSCOPES



DIGITAL MEASURING MICROSCOPE



INDUSTRIAL MICROSCOPES



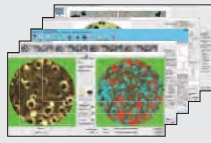
METALLURGICAL MICROSCOPES



ZOOM STEREO MICROSCOPES



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INFRARED THERMAL CAMERAS



THERMAL SCANNERS



THERMOHYGROMETERS



LUX METERS



DIGITAL ANEMOMETERS



DIGITAL MOISTURE METERS



DIGITAL SOUND LEVEL METERS



DIGITAL TACHOMETERS



VIBRATION PENS



DIGITAL MULTIMETERS



DIGITAL CLAMP METERS



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FORCE GAGES



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DIGITAL TORQUE TESTERS



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DIGITAL VICKERS HARDNESS TESTERS



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BRINELL INDENTATION MEASURING SYSTEM



VICKERS HARDNESS MEASURING SYSTEM



ULTRASONIC HARDNESS TESTER



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PORTABLE ROCKWELL HARDNESS TESTERS



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WEIGHING SCALES



CRANE SCALES



PLATFORM SCALES



FLOOR SCALES



WEIGHTS

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CUTTING MACHINE

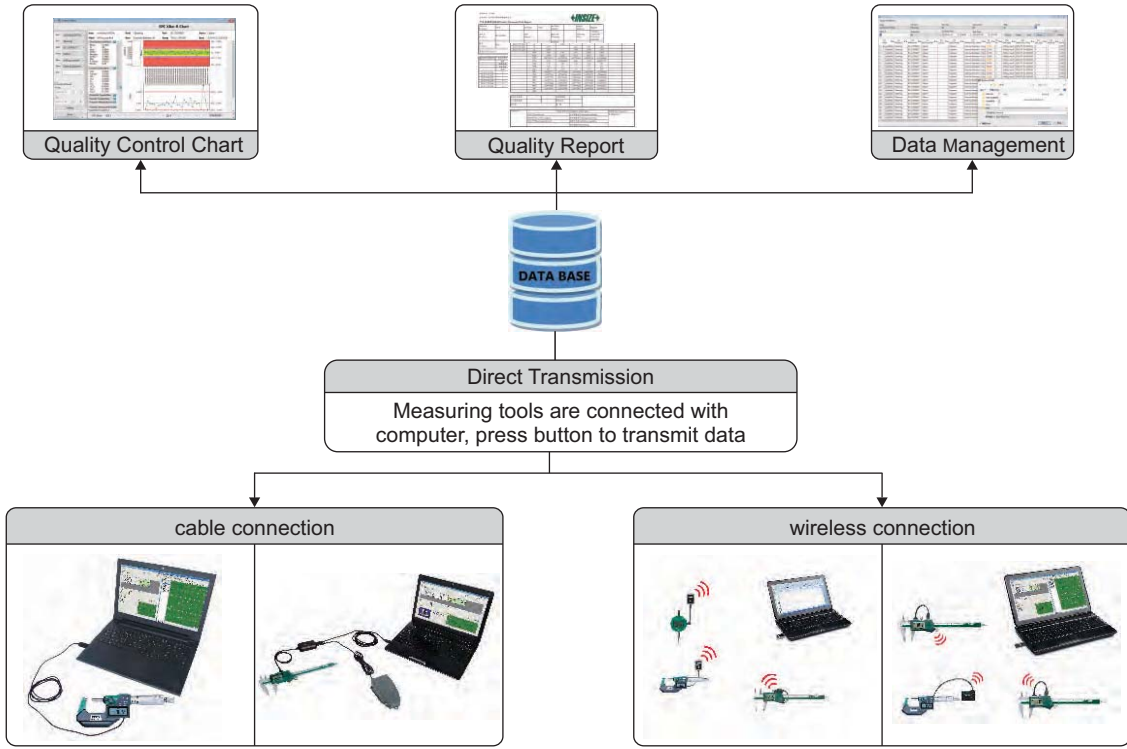


GRINDER AND POLISHER



MOUNTING PRESS

# 1 MEASURING DATA MANAGEMENT SOFTWARE CODE 7316-10

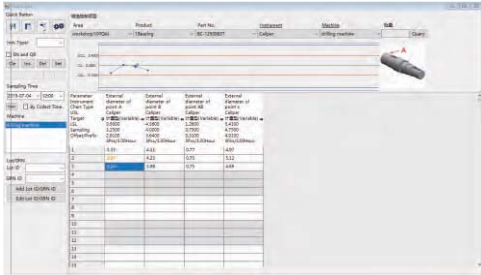


## Direct Transmission

- Transmit data through cables or wireless systems

## Data Management

- Measuring data are stored in database



| Area | Product  | Instrument | Date       | Parameter                | Value  | Unit |
|------|----------|------------|------------|--------------------------|--------|------|
| 1    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 2    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 3    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 4    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 5    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 6    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 7    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 8    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 9    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 10   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 11   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 12   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 13   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 14   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 15   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 16   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 17   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 18   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 19   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 20   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 21   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 22   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |

## Quality Control Chart

- Analyze the tendency of data, make production adjustment in advance

## Quality Report

- Generate different EXCEL report formats according to requirements



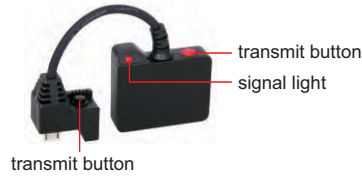
| Area | Product  | Instrument | Date       | Parameter                | Value  | Unit |
|------|----------|------------|------------|--------------------------|--------|------|
| 1    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 2    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 3    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 4    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 5    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 6    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 7    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 8    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 9    | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 10   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 11   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 12   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 13   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 14   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 15   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 16   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 17   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 18   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 19   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 20   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 21   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |
| 22   | workshop | Measuring  | 2019-06-14 | External diameter of pul | 1.0000 | mm   |





## WIRELESS DATA TRANSMISSION SYSTEM

- Transmission distance is 10 meter
- Press the button to transmit data
- 7315-2 is supplied with EXCEL directional input software, each measuring tool is only displayed in the specified area



**transmitter**  
7315-21



**receiver**  
7315-2



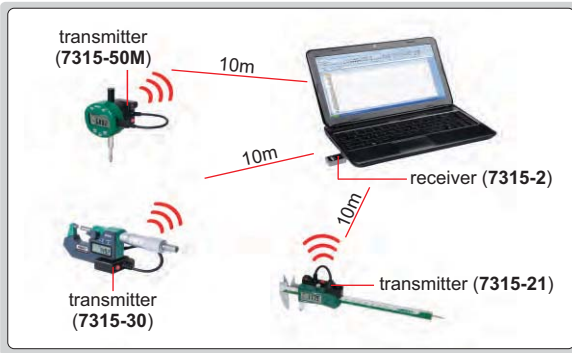
**receiver**  
7315-3

| Code     | Description                                       | Plug to product | Remark   |
|----------|---|-----------------|--|
| 7315-2   | multichannel receiver                             |                 | <ul style="list-style-type: none"> <li>Connected with maximum 8 transmitters, each of them has unique identification code.</li> <li>Text format virtual com port, converted to keyboard format with supplied software (data can be transmitted to EXCEL, WORD etc. and any software which receives keyboard signal)</li> <li>Using EXCEL directional input software, the measurement data of different measuring tools can be transmitted to the specified area in the sheet.</li> </ul>                 |
| 7315-3   | single channel receiver                           |                 | <ul style="list-style-type: none"> <li>Connected with 1 transmitter only, transmitter can be changed as needed.</li> <li>Recognized as HID keyboard device by computer, no need to install drivers and softwares</li> <li>Data can be transmitted to Excel, Word, txt and other files (press transmit button of transmitter, which is recognized by the computer as keyboard input data and press enter, such as 12.34)</li> <li>Suitable for any softwares which can receive keyboard signal</li> </ul> |
| 7315-21  | transmitter for digital calipers                  |                 | <br>digital calipers and digital depth gages<br>   |
| 7315-22  | transmitter for large digital calipers            |                 | <br>large digital calipers (range ≤1000mm) and digital height gages<br>  |
| 7315-30  | transmitter for digital micrometers               |                 | <br>digital micrometers<br>  |
| 7315-50M | transmitter for digital indicators                |                 | <br>digital indicators, digital thickness gages and digital internal/external caliper gages<br>  |
| 7315-60  | transmitter for high precision digital indicators |                 | <br>2140-6 and 2133 series high precision digital indicators<br>3350 series high precision digital snap gages<br>  |

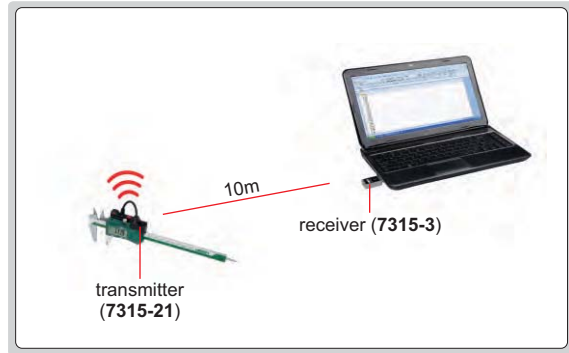
To be continued

Continued from previous page

7315-2 application (multichannel)



7315-3 application (single channel)



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 gage at D4-D9, the readings of height gage 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 gage at E4-E9, the readings of depth gage 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

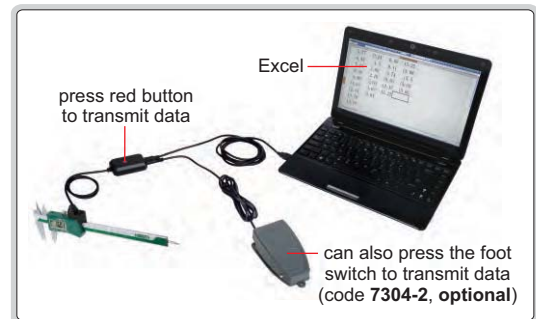
The next data display area is indicated in green

## DATA OUTPUT CABLES (KEYBOARD FORMAT)



7302-40M

application

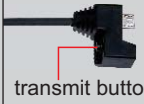

























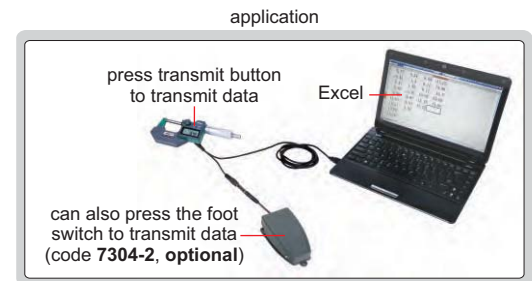
- Recognized as HID keyboard device by computer, no need to install drivers and softwares
- Data can be transmitted to Excel, Word, txt and other files (press transmit button, which is recognized by the computer as keyboard input data and press enter, such as 12.34↵)
- Suitable for any softwares which can receive keyboard signal
- Optional accessory: foot switch (code: 7304-2), hub (code: 7302-HUB, 7302-HUB7) extension cables (code: 7302-ADD5, 7302-ADD10)

To be continued

Continued from previous page

**SEPARATED BUTTON**

| Code     | Description   | Plug to product  | Plug to computer  | Applicable products   |
|----------|---|--|---|---|
| 7302-21  | cable for digital calipers (length 3m)                    | <br>transmit button |   |   <br>digital calipers and digital depth gages  |
| 7302-22  | cable for large digital calipers (length 2.5m)            |                     |   |   <br>large digital calipers (range ≤1000mm) and digital height gages   |
| 7302-30  | cable for digital micrometers (length 2.5m)               |                     |   |  digital micrometers    |
| 7302-40M | cable for digital indicators (length 2.5m)                |                     |  |   <br>digital indicators  |
| 7302-50M | cable for digital gages (length 2.5m)                     |                   |   |   <br>digital thickness gages and digital internal/external caliper gages                                       |
| 7302-60  | cable for high precision digital indicators (length 2.5m) |                   |   |   <br>2140-6 and 2133 series high precision digital indicators<br>3350 series high precision digital snap gages |



**INTEGRATED BUTTON**

| Code       | Description                                 | Plug to product   | Plug to computer  | Applicable products   |
|------------|---|---|---|---|
| 7302-SPC10 | cable for digital micrometers (length 1.8m) |  |  |  digital micrometers (code with suffix Q, such as 3101-25ACQ)  |

## DATA OUTPUT CABLES (TEXT FORMAT, VIRTUAL COM PORT)

application








- Optional accessory: foot switch (code: 7304-2), hub (code: 7302-HUB, 7302-HUB7)

### Single transmission (can be switched to continuous transmission)

| Code      | Description                                    | Plug to product | Plug to computer | Applicable products   |
|-----------|--|-----------------|------------------|---|
| 7305-21   | cable for digital calipers (length 3m)         |                 |                  | <br>digital calipers and digital depth gages                            |
| 7305-R21  |  |                 |                  |   |
| 7305-22   | cable for large digital calipers (length 2.5m) |                 |                  | <br>large digital calipers (range ≤1000mm) and digital height gages     |
| 7305-R22  |  |                 |                  |   |
| 7305-30   | cable for digital micrometers (length 2.5m)    |                 |                  | <br>digital micrometers   |
| 7305-R30  |  |                 |                  |   |
| 7305-50M  | cable for digital gages (length 2.5m)          |                 |                  | <br>digital thickness gages and digital internal/external caliper gages |
| 7305-R50M |  |                 |                  |   |

To be continued

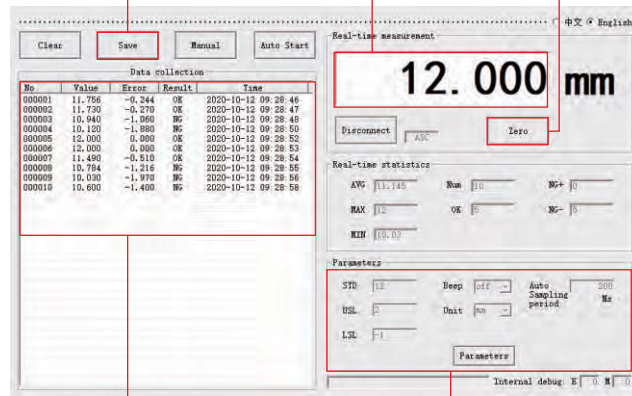
**Continuous transmission (can be switched to single transmission)**

| Code       | Description                                | Plug to product   | Plug to computer  | Applicable products   |
|------------|--|---|---|---|
| 7305-40M*  | cable for digital indicators (length 2.5m) |  |  |    <p>digital indicators</p> |
| 7305-R40M* |  |   |  |   |

\* Supplied with software

**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
- Data transmission: single transmission with button on cable/foot switch, single transmission operated on computer, continuous transmission operated on computer
- Can save results as EXCEL



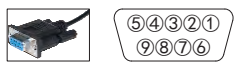
Export Excel      Real-time display      Setting zero of measuring tools

Measurement results and judgment      Setting tolerance and sampling period

Communication protocol

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

Pin definition of RS232 plug:



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

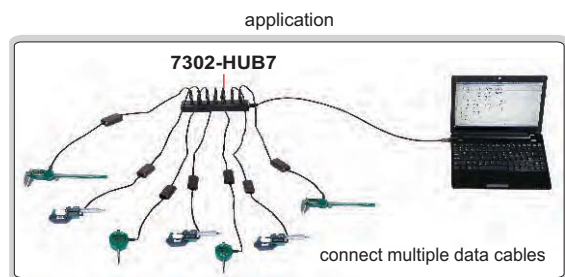
Data output format

| D1                            | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 |
|-------------------------------|----|----|----|----|----|----|----|----|-----|
| Data section (floating point) |    |    |    |    |    |    |    |    | CR  |

Data format example

| Display | Output      |
|---------|-------------|
| 1.234   | +0001.234 ✓ |
| -1.234  | -0001.234 ✓ |

**HUBS**



7302-HUB



7302-HUB7

- Suitable for USB plug data cable

| Code      | Description                                    | Applicable products                |
|-----------|--|------------------------------------|
| 7302-HUB  | 4-channel hub (length 0.3m, USB computer plug) | 7302 series data cables            |
| 7302-HUB7 | 7-channel hub (length 1m, USB computer plug)   | 7305 series data cables (USB plug) |

## FOOT SWITCH

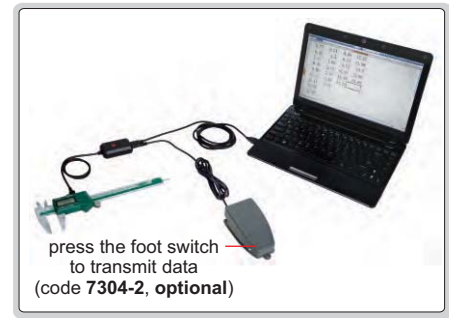
- For data transmission



7304-2

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

application



## EXTENSION CABLES

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



7302-ADD5

application



## ADAPTERS FOR DATA OUTPUT CABLE



7323-OTGM



7323-OTGC



7323-OTGC4

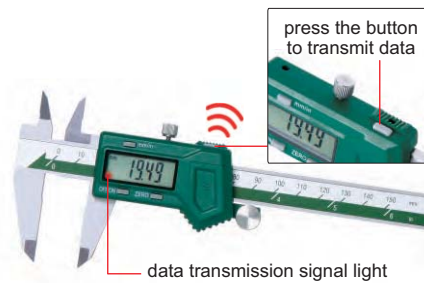
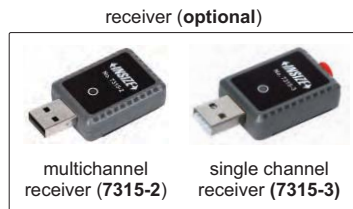
- Connect data output cables or wireless receivers to mobile phones, tablet computers (Type-C or Micro-USB interface)
- Data can be transmitted to any app that can receive keyboard signal (such as Excel, WPS, memorandum and other data management softwares)

application

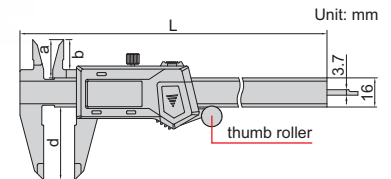


| Code       | Type        | Applicable interface of mobile phones or tablet computers | Plug type | Applicable products         |
|------------|-------------|---|-----------|-----------------------------|
| 7323-OTGM  | One to one  | Micro-USB   |           | <br>7315-3 2134-R1          |
| 7323-OTGC  | One to one  | Type-C  |           | <br>7302 series data cables |
| 7323-OTGC4 | One to four | Type-C  |           |                             |

## WIRELESS DIGITAL CALIPERS

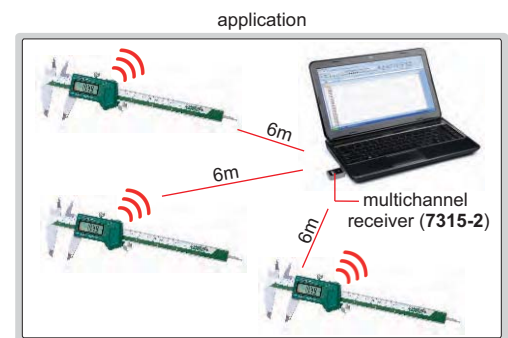


1113-150



- Built-in wireless data transmission module, Zigbee signal
- Transmission distance is 6 meter
- 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, 7315-3)

| 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 traceable to DKD Germany

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

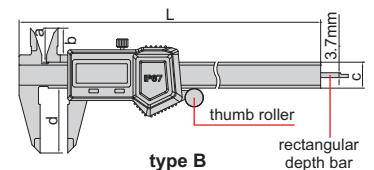
ATTENTION: NO DATA OUTPUT

**IP67**  
WATERPROOF

## IP67 WATERPROOF DIGITAL CALIPERS



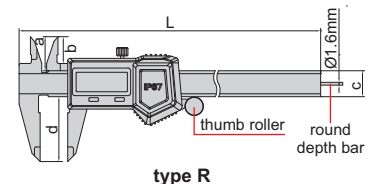
1118-150B



- 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



1118-150R



| 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 |

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## IP67 WATERPROOF DIGITAL CALIPERS

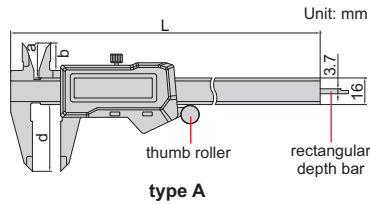
ATTENTION:  
NO DATA OUTPUT

IP67  
WATERPROOF

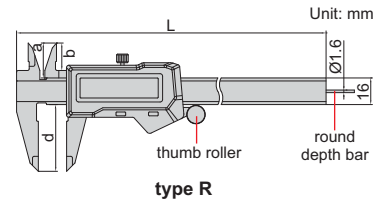
INSPECTION  
CERTIFICATE  
TRACEABLE TO DKD



1126-150



1126-150R



- IP67 dust/waterproof
- Resolution: 0.01mm/0.0005"
- Large display
- Button function: zero, on/off, mm/inch
- Battery CR2032
- Automatic power off
- Meet DIN862
- Made of stainless steel

| Code        | Range         | Accuracy | Thumb roller | Type | L   | a  | b    | d  |
|-------------|---------------|----------|--------------|------|-----|----|------|----|
| 1126-150 *  | 0-150mm/0-6"  | ±0.03mm  | with         | A    | 234 | 20 | 15   | 40 |
| 1126-200 *  | 0-200mm/0-8"  | ±0.03mm  | with         | A    | 286 | 24 | 19   | 50 |
| 1126-300 *  | 0-300mm/0-12" | ±0.03mm  | with         | A    | 390 | 26 | 21.5 | 60 |
| 1126-150W * | 0-150mm/0-6"  | ±0.03mm  | without      | A    | 234 | 20 | 15   | 40 |
| 1126-200W * | 0-200mm/0-8"  | ±0.03mm  | without      | A    | 286 | 24 | 19   | 50 |
| 1126-300W * | 0-300mm/0-12" | ±0.03mm  | without      | A    | 390 | 26 | 21.5 | 60 |
| 1126-150R * | 0-150mm/0-6"  | ±0.03mm  | with         | R    | 234 | 20 | 15   | 40 |

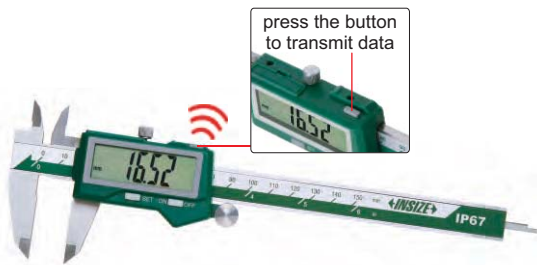
\* Supplied with manufacturer inspection certificate traceable to DKD Germany

## BUILT-IN BLUETOOTH IP67 WATERPROOF DIGITAL CALIPERS

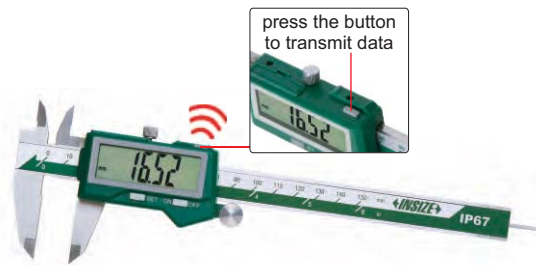
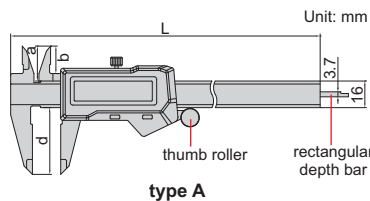
INSPECTION  
CERTIFICATE  
TRACEABLE TO DKD

BLUETOOTH

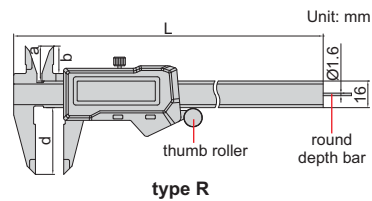
IP67  
WATERPROOF



1127-150



1127-150R



- Built-in bluetooth 4.0 wireless transmission module, connect with computers (with bluetooth receiver), mobile phones, tablets, etc., and output keyboard signals. Transmission distance is 10 meters
- IP67 dust/waterproof
- Resolution: 0.01mm/0.0005"
- Large display
- Button function: zero, on/off, mm/inch, data transmission
- Battery CR2032, automatic power off
- Meet DIN862
- Made of stainless steel

| Code        | Range         | Accuracy | Thumb roller | Type | L   | a  | b    | d  |
|-------------|---------------|----------|--------------|------|-----|----|------|----|
| 1127-150 *  | 0-150mm/0-6"  | ±0.03mm  | with         | A    | 234 | 20 | 15   | 40 |
| 1127-200 *  | 0-200mm/0-8"  | ±0.03mm  | with         | A    | 286 | 24 | 19   | 50 |
| 1127-300 *  | 0-300mm/0-12" | ±0.03mm  | with         | A    | 390 | 26 | 21.5 | 60 |
| 1127-150W * | 0-150mm/0-6"  | ±0.03mm  | without      | A    | 234 | 20 | 15   | 40 |
| 1127-200W * | 0-200mm/0-8"  | ±0.03mm  | without      | A    | 286 | 24 | 19   | 50 |
| 1127-300W * | 0-300mm/0-12" | ±0.03mm  | without      | A    | 390 | 26 | 21.5 | 60 |
| 1127-150R * | 0-150mm/0-6"  | ±0.03mm  | with         | R    | 234 | 20 | 15   | 40 |

\* Supplied with manufacturer inspection certificate traceable to DKD Germany

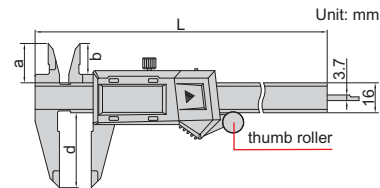


## IP54 WATERPROOF DIGITAL CALIPERS



1104-150

- IP54 dust/waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, ABS/REL
- Automatic power off
- Battery CR2032
- Data output
- Meet DIN862
- Made of stainless steel
- Optional accessory: wireless transmitter, code **7315-1104**, data output cable (keyboard format), code **7302-1104**



| Code        | Range         | Accuracy | Thumb roller | L     | a    | b      | d    |
|-------------|---------------|----------|--------------|-------|------|--------|------|
| 1104-150 *  | 0-150mm/0-6"  | ±0.03mm  | with         | 234mm | 20mm | 15mm   | 40mm |
| 1104-200 *  | 0-200mm/0-8"  | ±0.03mm  | with         | 286mm | 24mm | 19mm   | 50mm |
| 1104-300 *  | 0-300mm/0-12" | ±0.03mm  | with         | 390mm | 26mm | 21.5mm | 60mm |
| 1104-150W * | 0-150mm/0-6"  | ±0.03mm  | without      | 234mm | 20mm | 15mm   | 40mm |
| 1104-200W * | 0-200mm/0-8"  | ±0.03mm  | without      | 286mm | 24mm | 19mm   | 50mm |
| 1104-300W * | 0-300mm/0-12" | ±0.03mm  | without      | 390mm | 26mm | 21.5mm | 60mm |

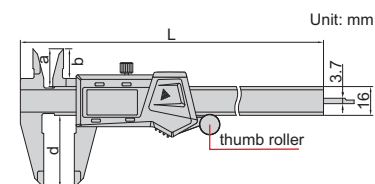
\* Supplied with manufacturer inspection certificate traceable to DKD Germany

## DIGITAL CALIPERS (ABSOLUTE SYSTEM)



1103-150

- 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 **7315-1103**, data output cable (keyboard format), code **7302-1103**



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

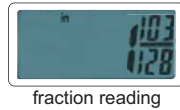
\* Supplied with manufacturer inspection certificate

## DIGITAL CALIPERS (FRACTION READING)

ATTENTION:  
NO DATA OUTPUT

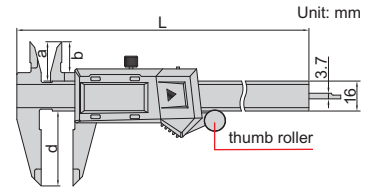
**INSPECTION  
CERTIFICATE**  
TRACEABLE TO DKD

- Resolution: 0.01mm, 0.0005", 1/128"
- Buttons: unit (mm/in/fraction), ABS, on/off, zero
- Absolute and incremental measurement
- Battery CR2032, automatic power off
- Meet DIN862
- Made of stainless steel



1102-150

| Code        | Range         | Accuracy | Thumb roller | L     | a    | b      | d    |
|-------------|---------------|----------|--------------|-------|------|--------|------|
| 1102-150 *  | 0-150mm/0-6"  | ±0.03mm  | with         | 234mm | 20mm | 15mm   | 40mm |
| 1102-200 *  | 0-200mm/0-8"  | ±0.03mm  | with         | 286mm | 24mm | 19mm   | 50mm |
| 1102-300 *  | 0-300mm/0-12" | ±0.03mm  | with         | 390mm | 26mm | 21.5mm | 60mm |
| 1102-150W * | 0-150mm/0-6"  | ±0.03mm  | without      | 234mm | 20mm | 15mm   | 40mm |
| 1102-200W * | 0-200mm/0-8"  | ±0.03mm  | without      | 286mm | 24mm | 19mm   | 50mm |
| 1102-300W * | 0-300mm/0-12" | ±0.03mm  | without      | 390mm | 26mm | 21.5mm | 60mm |



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## DIGITAL CALIPERS

ATTENTION:  
NO DATA OUTPUT

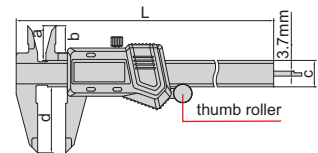
**INSPECTION  
CERTIFICATE**  
TRACEABLE TO DKD

- 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



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 |



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## DIGITAL CALIPERS (STANDARD TYPE)

DATA  
OUTPUT

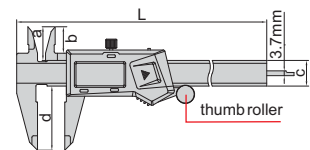
**INSPECTION  
CERTIFICATE**  
TRACEABLE TO DKD

- 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: data output cable (code 7315-21, 7302-21)



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 |
| 1108-250W * | 0-250mm/0-10" | ±0.03mm  | without      | 350mm | 25mm | 20.5mm | 16mm | 60mm |
| 1108-300W * | 0-300mm/0-12" | ±0.03mm  | without      | 400mm | 25mm | 20.5mm | 16mm | 60mm |



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**INSPECTION CERTIFICATE**  
TRACEABLE TO DKD

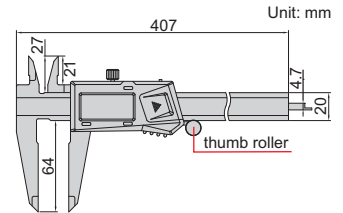
DATA OUTPUT

### HEAVY DUTY 300mm DIGITAL CALIPERS

- 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: data output cable (code 7315-22, 7302-22)



1196-300



| 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 traceable to DKD Germany

**INSPECTION CERTIFICATE**  
TRACEABLE TO DKD

LOCK READING WITH "HOLD" BUTTON

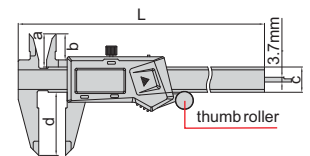
DATA OUTPUT

### METRIC DIGITAL CALIPERS

- 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: data output cable (code 7315-21, 7302-21)



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 traceable to DKD Germany

**INSPECTION CERTIFICATE**  
TRACEABLE TO DKD

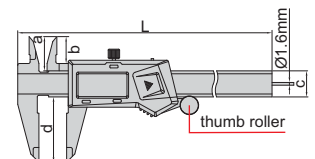
DATA OUTPUT

### DIGITAL CALIPERS WITH ROUND DEPTH BAR

- 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



1119-150



With data interface (data output cable code 7315-21, 7302-21, optional)

| 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

| 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 |

\* Supplied with manufacturer inspection certificate traceable to DKD Germany

## LEFT HAND DIGITAL CALIPERS

DATA  
OUTPUT

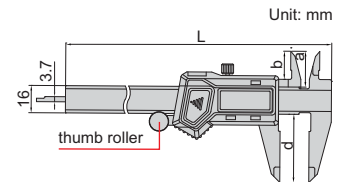
INSPECTION  
CERTIFICATE  
TRACEABLE TO DKD

- 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: data output cable (code 7315-22, 7302-22)



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 |



\*Supplied with manufacturer inspection certificate traceable to DKD Germany

## DIGITAL CALIPERS WITH CERAMIC TIPPED JAWS

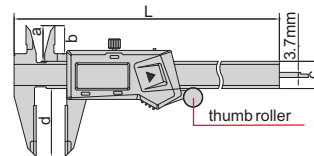
DATA  
OUTPUT

INSPECTION  
CERTIFICATE  
TRACEABLE TO DKD

- 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



1193-150



ceramic  
tipped jaws



With data interface (data output cable code 7315-21, 7302-21, optional)

| 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

| 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 traceable to DKD Germany

## DIGITAL CALIPERS WITH CARBIDE TIPPED JAWS



1110-150A

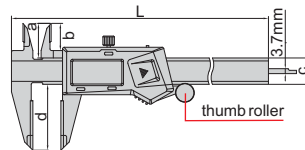


1110-150B



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



### No dust/waterproof, with data interface (data output cable code 7315-21, 7302-21, optional)

| 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           |

### No dust/waterproof, built-in wireless

| 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 traceable to DKD Germany

## DIGITAL CALIPERS

DATA OUTPUT

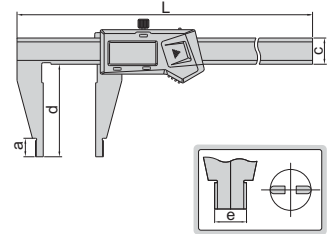
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1170-300

With data interface (data output cable code 7315-21, 7302-21, optional)

| 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

| 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

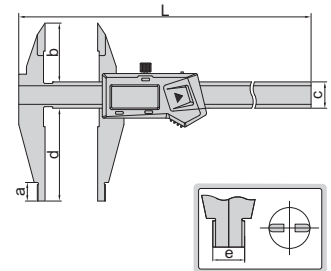
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



1171-300

With data interface (data output cable code 7315-21, 7302-21, optional)

| 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

| 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

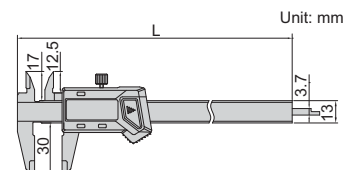
ATTENTION: NO DATA OUTPUT

- 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 |



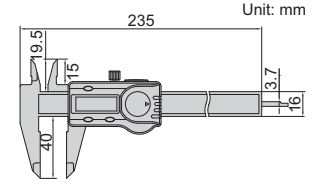
- Made of hard plastic, non-magnetic and non electric conductive
- Prevent workpieces from scratching by calipers
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off

**ATTENTION:  
NO DATA OUTPUT**

**PLASTIC DIGITAL CALIPER**



1139-150



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

**DIAL CALIPERS**

- Shockproof dial indicator
- Made of stainless steel



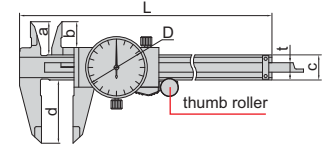
1312-150A

**SHOCK PROOF**

**INSPECTION CERTIFICATE**  
TRACEABLE TO DKD

Dial indicator graduation: 0.02mm

| 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

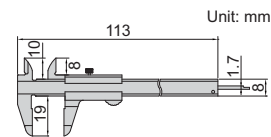
| Code        | Range   | Accuracy | Thumb roller | L   | a  | b    | c  | d  | D     | t   |
|-------------|---------|----------|--------------|-----|----|------|----|----|-------|-----|
| 1311-150A * | 0-150mm | ±0.03mm  | with         | 235 | 21 | 16.5 | 16 | 40 | Ø39   | 6.5 |
| 1311-200A * | 0-200mm | ±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 traceable to DKD Germany

**MINI VERNIER CALIPERS**

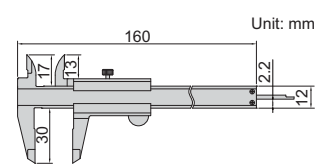
- Meet DIN862
- Made of stainless steel
- Satin chrome plated reading surface

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



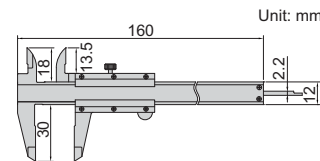
1204-70

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



1203-1003

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



1201-1003

## VERNIER CALIPERS

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

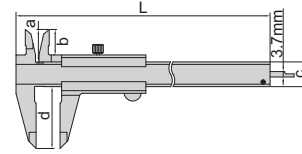
| Code      | Range         | Accuracy | L   | a    | b    | c  | d  |
|-----------|---------------|----------|-----|------|------|----|----|
| 1205-150S | 0-150mm/0-6"  | ±0.05mm  | 235 | 20.5 | 15.5 | 16 | 40 |
| 1205-200S | 0-200mm/0-8"  | ±0.05mm  | 290 | 23.5 | 19   | 17 | 50 |
| 1205-250S | 0-250mm/0-10"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



1205-150S

### 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 |



### 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 |

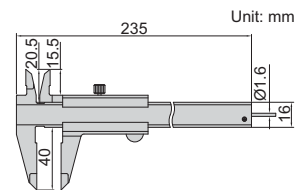
- Meet DIN862
- Made of stainless steel
- Satin chrome plated reading surface

## VERNIER CALIPER WITH ROUND DEPTH BAR

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



1202-150



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

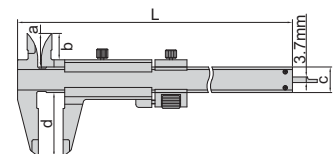
## VERNIER CALIPERS WITH FINE ADJUSTMENT

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



1233-130

| 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

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

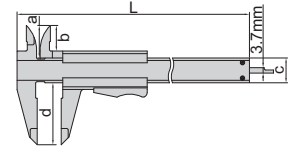
| Code     | Range        | Accuracy | L   | a    | b    | c  | d  |
|----------|--------------|----------|-----|------|------|----|----|
| 1223-150 | 0-150mm/0-6" | ±0.05mm  | 230 | 20.5 | 16.5 | 16 | 40 |
| 1223-200 | 0-200mm/0-8" | ±0.05mm  | 295 | 23.5 | 19   | 16 | 50 |

**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 |



1223-150



### 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

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

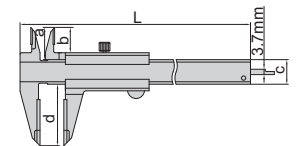
| Code     | Range         | Accuracy | L   | a  | b    | c  | d  |
|----------|---------------|----------|-----|----|------|----|----|
| 1238-150 | 0-150mm/0-6"  | ±0.05mm  | 230 | 21 | 16.5 | 16 | 40 |
| 1238-200 | 0-200mm/0-8"  | ±0.05mm  | 295 | 24 | 19   | 16 | 50 |
| 1238-300 | 0-300mm/0-12" | ±0.05mm  | 410 | 25 | 20   | 17 | 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   | 17 | 60 |



1238-150



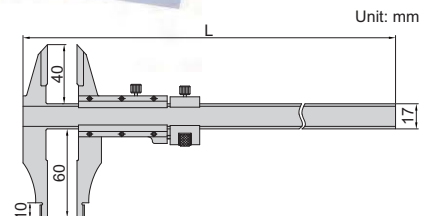
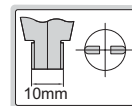
### VERNIER CALIPERS

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



1217-3001

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



ATTENTION:  
NOT HARDENED

PURE COPPER

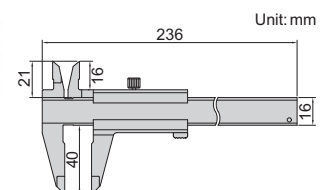
- Suitable for magnetic parts
- Made of pure copper

### VERNIER CALIPERS (ANTI MAGNETIC)



1224-150A

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

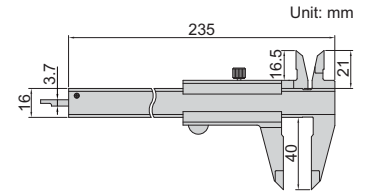


### LEFT HAND VERNIER CALIPERS

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



1239-1502



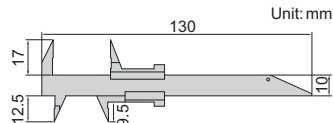
| Code      | Range        | Graduation    | Accuracy |
|-----------|--------------|---------------|----------|
| 1239-150  | 0-150mm/0-6" | 0.05mm/1/128" | ±0.05mm  |
| 1239-1503 | 0-150mm      | 0.05mm        | ±0.05mm  |
| 1239-1502 | 0-150mm/0-6" | 0.02mm/0.001" | ±0.03mm  |
| 1239-1501 | 0-150mm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

### TEETH VERNIER CALIPER

- Used for teeth
- Made of stainless steel



1226-70



scale on the back



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

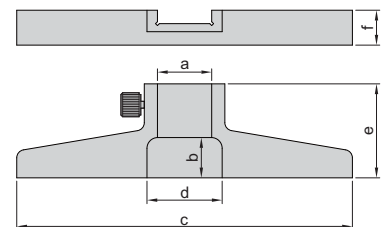
### DEPTH BASE ATTACHMENTS



6140



6140-16B



- To increase the stability of depth measurement
- Suitable for digital calipers and dial calipers
- Made of stainless steel



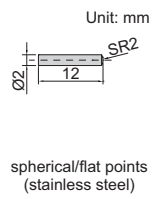
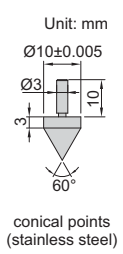
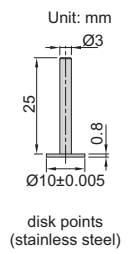
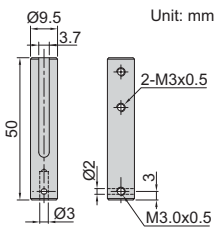
(mm)

| Code      | a    | b    | c   | d    | e  | f  | Type                             | Application                                    |
|-----------|------|------|-----|------|----|----|----------------------------------|--|
| 6140      | 16.5 | 9    | 75  | 18   | 30 | 6  | narrow base (f=6)                | Suitable for calipers with beam width (w) 16mm |
| 6140-300A | 20   | 15   | 125 | 22   | 34 | 9  | narrow base (f=9)                | Suitable for calipers with beam width (w) 20mm |
| 6140-16B  | 16   | 12.5 | 75  | 24.5 | 30 | 11 | wide base (f=11), high stability | Suitable for calipers with beam width (w) 16mm |
| 6140-300B | 20   | 15   | 125 | 28   | 35 | 13 | wide base (f=13), high stability | Suitable for calipers with beam width (w) 20mm |

### ACCESSORY SET FOR DIGITAL CALIPERS CODE 6144



6144



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

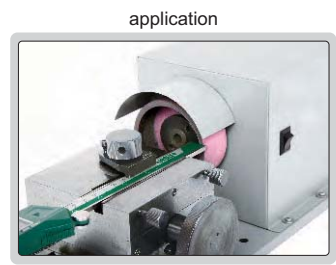
**Code**  
**6144**

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|  |  |  |  |  |

### CALIPER END GRINDING MACHINE CODE 6309



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



**SPECIFICATION**

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

## DIGITAL CALIPERS

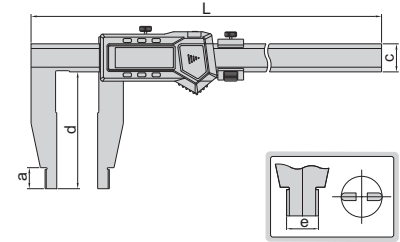
DATA OUTPUT



With data interface  
(data output cable code 7315-22, 7302-22, optional, for calipers with c=24mm or 31mm)

| Code      | Range           | Accuracy | a    | c    | d     | e    | L      |
|-----------|-----------------|----------|------|------|-------|------|--------|
| 1106-301  | 0-300mm/0-12"   | ±0.05mm  | 18mm | 24mm | 100mm | 20mm | 420mm  |
| 1106-302  | 0-300mm/0-12"   | ±0.05mm  | 18mm | 24mm | 150mm | 20mm | 420mm  |
| 1106-451  | 0-450mm/0-18"   | ±0.05mm  | 18mm | 24mm | 100mm | 20mm | 625mm  |
| 1106-501  | 0-500mm/0-20"   | ±0.05mm  | 18mm | 24mm | 100mm | 20mm | 675mm  |
| 1106-502  | 0-500mm/0-20"   | ±0.06mm  | 18mm | 24mm | 150mm | 20mm | 675mm  |
| 1106-503  | 0-500mm/0-20"   | ±0.06mm  | 24mm | 31mm | 200mm | 20mm | 675mm  |
| 1106-505  | 0-500mm/0-20"   | ±0.08mm  | 24mm | 42mm | 300mm | 20mm | 675mm  |
| 1106-601  | 0-600mm/0-24"   | ±0.05mm  | 18mm | 24mm | 100mm | 20mm | 770mm  |
| 1106-602  | 0-600mm/0-24"   | ±0.06mm  | 18mm | 24mm | 150mm | 20mm | 770mm  |
| 1106-603  | 0-600mm/0-24"   | ±0.06mm  | 24mm | 31mm | 200mm | 20mm | 770mm  |
| 1106-802  | 0-800mm/0-32"   | ±0.07mm  | 24mm | 31mm | 150mm | 20mm | 1025mm |
| 1106-1002 | 0-1000mm/0-40"  | ±0.08mm  | 24mm | 31mm | 150mm | 20mm | 1220mm |
| 1106-1003 | 0-1000mm/0-40"  | ±0.08mm  | 24mm | 31mm | 200mm | 20mm | 1220mm |
| 1106-1005 | 0-1000mm/0-40"  | ±0.10mm  | 24mm | 42mm | 300mm | 20mm | 1220mm |
| 1106-1502 | 0-1500mm/0-60"  | ±0.11mm  | 24mm | 42mm | 150mm | 20mm | 1780mm |
| 1106-1503 | 0-1500mm/0-60"  | ±0.12mm  | 24mm | 42mm | 200mm | 20mm | 1780mm |
| 1106-2002 | 0-2000mm/0-80"  | ±0.14mm  | 24mm | 42mm | 150mm | 20mm | 2290mm |
| 1106-2003 | 0-2000mm/0-80"  | ±0.14mm  | 24mm | 42mm | 200mm | 20mm | 2290mm |
| 1106-2502 | 0-2500mm/0-100" | ±0.22mm  | 24mm | 42mm | 150mm | 20mm | 2800mm |
| 1106-3002 | 0-3000mm/0-120" | ±0.26mm  | 24mm | 42mm | 150mm | 20mm | 3300mm |

1106-501



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

### Built-in wireless

| 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

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



1117-501

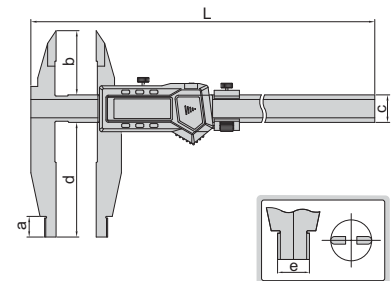
DATA OUTPUT

With data interface (data output cable code 7315-22, 7302-22, optional)

| 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  | 18mm | 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

| 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  | 18mm | 56mm | 24mm | 150mm | 20mm | 675mm |
| 1117-601WL | 0-600mm/0-24" | ±0.05mm  | 18mm | 56mm | 24mm | 100mm | 20mm | 770mm |



## DIGITAL CALIPERS

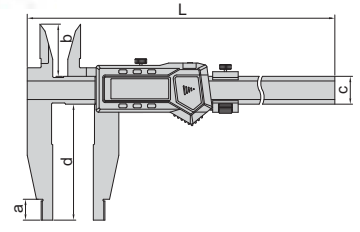
DATA OUTPUT

2

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



1136-501



With data interface (data output cable code 7315-22, 7302-22, optional, for calipers with c=24mm or 31mm) (mm)

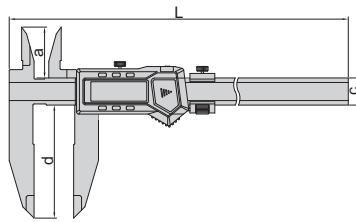
| Code      | Range          | Accuracy | a  | b  | c  | d   | L    |
|-----------|----------------|----------|----|----|----|-----|------|
| 1136-301  | 0-300mm/0-12"  | ±0.05mm  | 18 | 45 | 24 | 100 | 420  |
| 1136-451  | 0-450mm/0-18"  | ±0.05mm  | 18 | 45 | 24 | 100 | 625  |
| 1136-501  | 0-500mm/0-20"  | ±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 (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

With data interface (data output cable code 7315-22, 7302-22, optional) (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 |

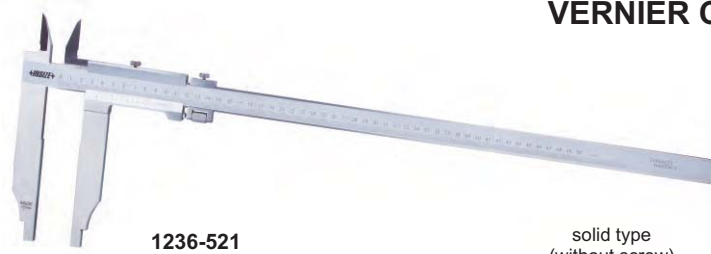
- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Battery CR2032
- Made of stainless steel

Built-in wireless (mm)

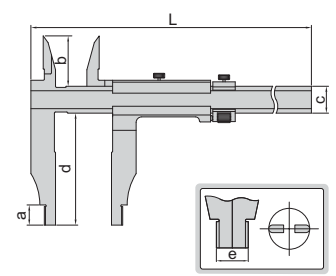
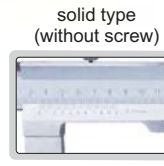
| Code       | Range         | Accuracy | a  | c  | d   | L   |
|------------|---------------|----------|----|----|-----|-----|
| 1135-451WL | 0-450mm/0-18" | ±0.05mm  | 45 | 24 | 100 | 625 |
| 1135-601WL | 0-600mm/0-24" | ±0.05mm  | 45 | 24 | 100 | 770 |

## VERNIER CALIPERS (SOLID TYPE)

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



1236-521



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 |

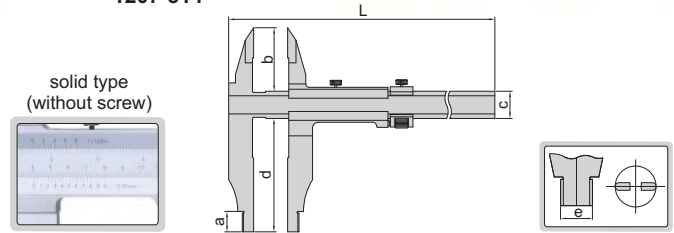
## VERNIER CALIPERS (SOLID TYPE)

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



1207-514

| 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)

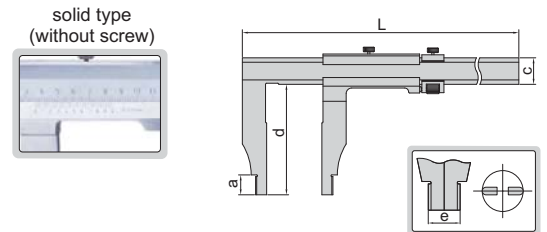


1208-511

Graduation 0.05mm/1/128"

| 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 |

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



solid type  
(without screw)

Graduation 0.02mm

| 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

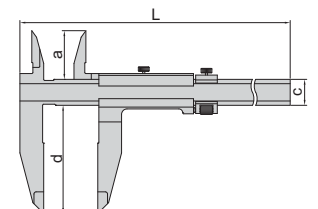
Graduation 0.05mm/1/128"

| 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

| 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)

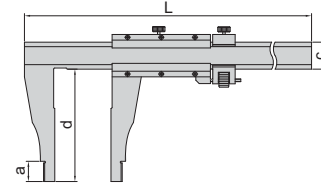
- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



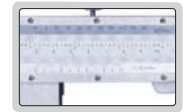
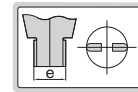
1214-500

### 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 |



separate type  
(with screws)



### 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 |

## LONG JAW VERNIER CALIPERS (SEPARATE TYPE)

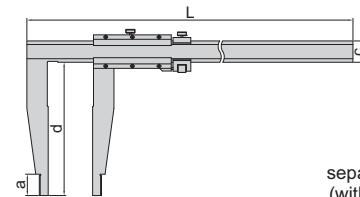
- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface



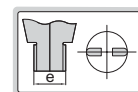
1215-1032

### 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 |



separate type  
(with screws)



### 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 |

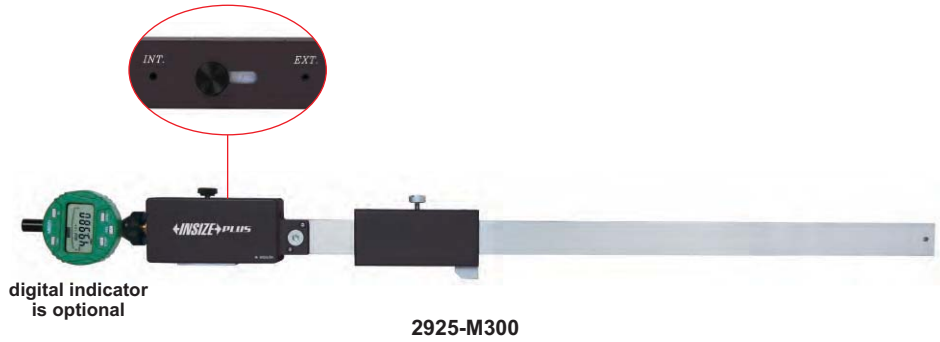
## UNIVERSAL COMPARISON GAGES

**INSIZE PLUS**  
MADE IN EUROPE



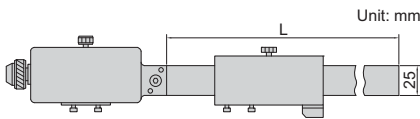
2

internal and external measurement switch



digital indicator is optional

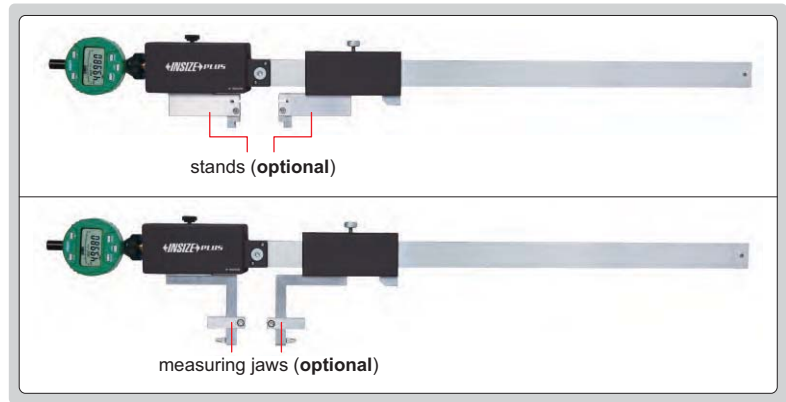
2925-M300



Unit: mm

- For measuring external diameter, internal diameter, center distance, etc.
- Moving range of probe: 10mm, effective measuring range:  $\pm 2$ mm
- Optional accessory: cylinder gage blocks (4001 series), gage block accessories (6881 series), gage block holder (6886 series)

working with stands or measuring jaws



| Code       | External range | Internal range   | L      | Repeatability* | Accuracy* |
|------------|----------------|------------------|--------|----------------|-----------|
| 2925-M300  | 0-300mm/0-12"  | 25-300mm/1"-12"  | 400mm  | 2 $\mu$ m      | 5 $\mu$ m |
| 2925-M500  | 0-500mm/0-20"  | 25-500mm/1"-20"  | 620mm  | 2 $\mu$ m      | 5 $\mu$ m |
| 2925-M1000 | 0-1000mm/0-40" | 25-1000mm/1"-40" | 1150mm | 2 $\mu$ m      | 5 $\mu$ m |

\* Repeatability and accuracy are assured within the effective range of  $\pm 2$ mm after zero setting

### Digital indicator (optional)



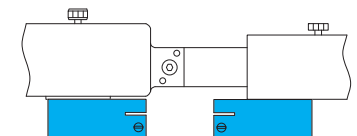
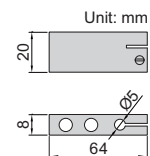
Resolution: 0.001mm/0.00005"

| Code     | Range       |
|----------|-------------|
| 2103-10F | 12.7mm/0.5" |

### Stands (optional, supplied in pair)



| Code   |
|--------|
| 2925-C |

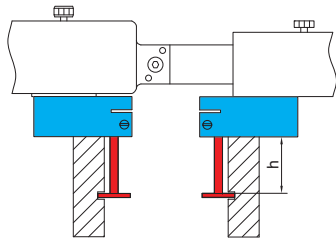
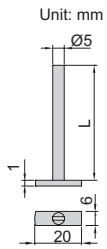


To be continued



Continued from previous page

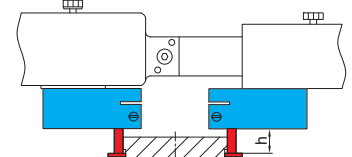
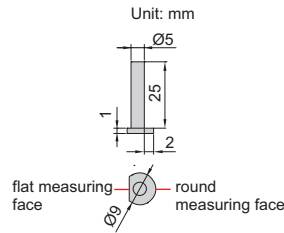
**Rectangular points (optional, supplied in pair)**



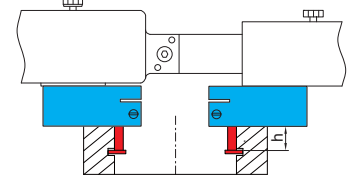
Measuring the distance between two parallel planes (2925-P101 depth h<12mm) (2925-P102 depth h<45mm)

| (mm)      |    |
|-----------|----|
| Code      | L  |
| 2925-P101 | 25 |
| 2925-P102 | 60 |

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



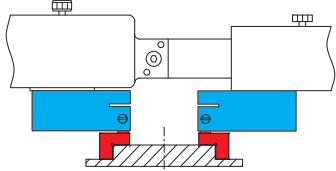
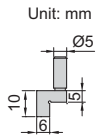
Measuring external groove diameter with flat measuring face (depth h≤10mm)



Measuring internal groove diameter with round measuring face (depth h≤10mm)

| Code      |
|-----------|
| 2925-S101 |

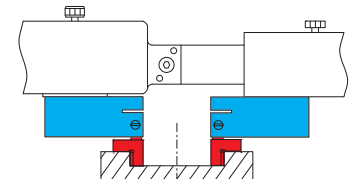
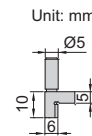
**Flat shoulder points (optional, supplied in pair)**



Measuring outside diameter of shallow steps

| Code      |
|-----------|
| 2925-J101 |

**Round shoulder points (optional, supplied in pair)**



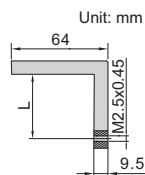
Measuring inside diameter of shallow holes

| Code      |
|-----------|
| 2925-J201 |

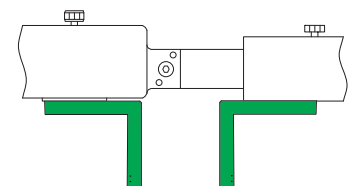
**Measuring jaws (optional, supplied in pair)**



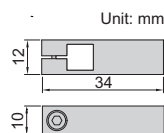
2925-Z50



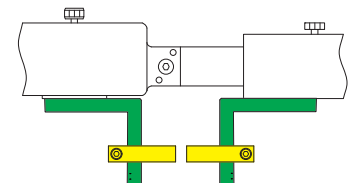
| Code      | Length (L) |
|-----------|------------|
| 2925-Z25  | 25mm       |
| 2925-Z50  | 50mm       |
| 2925-Z100 | 100mm      |



**Depth stops (optional, supplied in pair)**

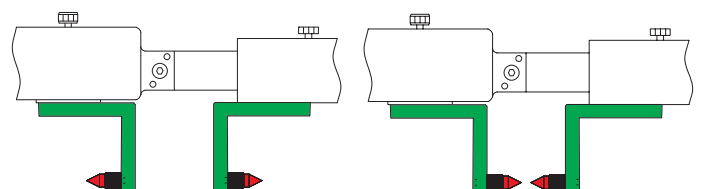
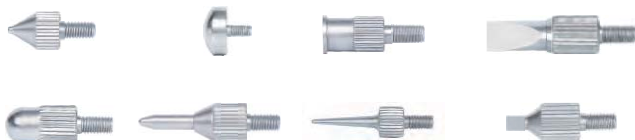


| Code   |
|--------|
| 2925-H |



**Points (optional, supplied in single)**

Refer to page (161~163)



To be continued

Continued from previous page

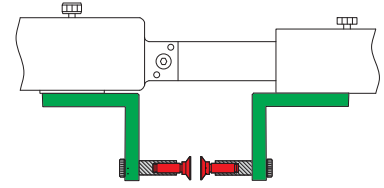
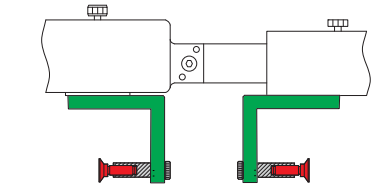
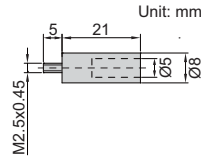
2

**Multifunctional points 7392\*** (optional, supplied in pair)  
refer to 1526-200 for more details



**Point sleeves**  
(optional, supplied in pair)

**Code**  
2923-T101



Points can rotate

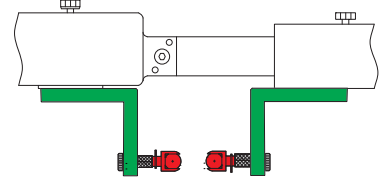
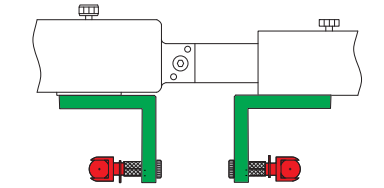
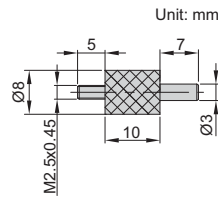
\* It is necessary to use point sleeves (code 2923-T101) for these points

**Ball points 7383\*** (optional, supplied in pair)  
Refer to page 117



**Point sleeves**  
(optional, supplied in pair)

**Code**  
2923-T201



Points can rotate

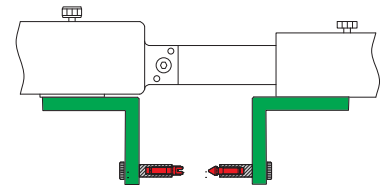
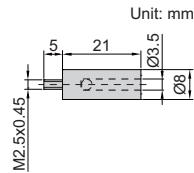
\* It is necessary to use point sleeves (code 2923-T201) for these points

**Measuring points for external screw thread micrometers 7384\*** (optional, supplied in pair)  
Refer to page 71



**Point sleeves**  
(optional, supplied in pair)

**Code**  
2923-T301



Points can rotate

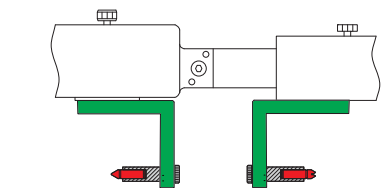
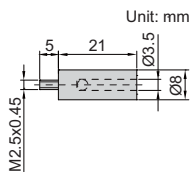
\* It is necessary to use point sleeves (code 2923-T301) for these points

**Measuring points for internal screw thread micrometers 7385\*** (optional, supplied in pair)  
Refer to page 118



**Point sleeves**  
(optional, supplied in pair)

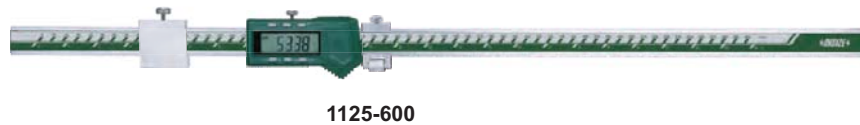
**Code**  
2923-T301



Points can rotate

\* It is necessary to use point sleeves (code 2923-T301) for these points

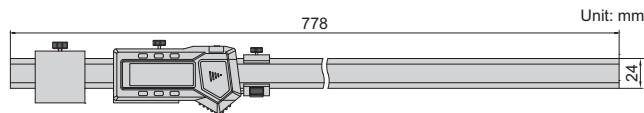
# UNIVERSAL CALIPERS



1125-600

- 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

DATA OUTPUT



With data interface (data output cable code 7315-22, 7302-22, optional)

| Code     | Range *       | Resolution     | Accuracy |
|----------|---------------|----------------|----------|
| 1125-600 | 0-600mm/0-24" | 0.01mm/0.0005" | ±0.05mm  |



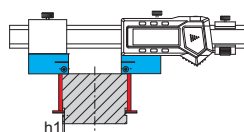
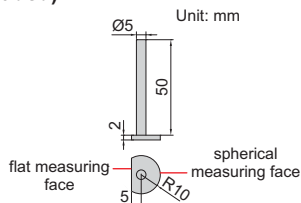
VIDEO

Built-in wireless

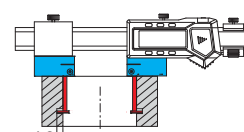
| Code       | Range *       | Resolution     | Accuracy |
|------------|---------------|----------------|----------|
| 1125-600WL | 0-600mm/0-24" | 0.01mm/0.0005" | ±0.05mm  |

\*The range changes according to different points

## Half disk points (included)

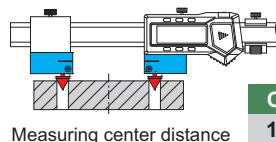
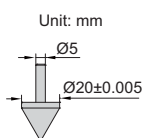


Measuring external groove diameter with flat measuring face (depth  $h1 \leq 2.5mm$ )



Measuring internal groove diameter with spherical measuring face (depth  $h2 \leq 7.5mm$ )

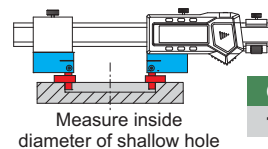
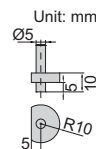
## Conical points (optional)



Measuring center distance

Code  
1125-T101

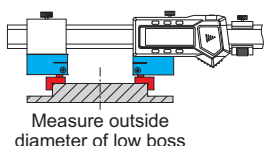
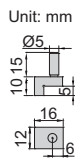
## Round shoulder points (optional)



Measure inside diameter of shallow hole

Code  
1125-T102

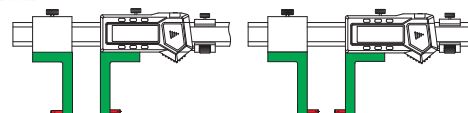
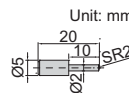
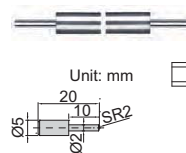
## Flat shoulder points (optional)



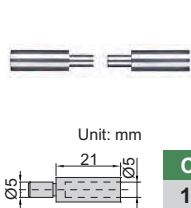
Measure outside diameter of low boss

Code  
1125-T103

## Spherical points (included)



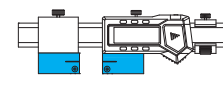
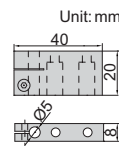
## Point sleeve (optional)



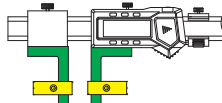
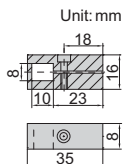
Code  
1125-T104

Working with multifunctional points, ball points and screw thread points

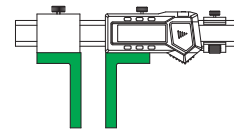
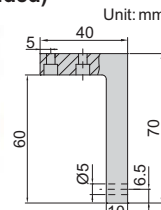
## Stands (included)



## Depth stop (included)



## Measuring jaws (included)



## Multifunctional points 7392\* (optional, next page)



## Ball points 7391\* (optional, next page)



## Screw thread points 7381\*, 7321\* (optional, next page)



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

## DIGITAL CALIPER WITH INTERCHANGEABLE POINTS CODE 1526-200

### short spherical points (included)

Unit: mm



### long spherical/flat points (included)

Unit: mm



### spherical blade points (included)

Unit: mm



1526-200

preset buttons

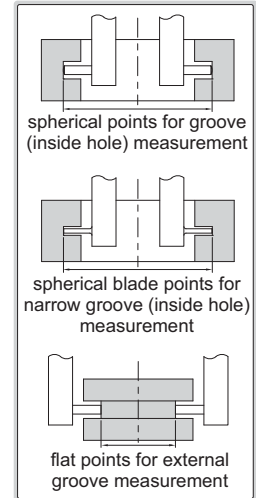


DATA OUTPUT

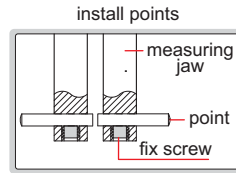
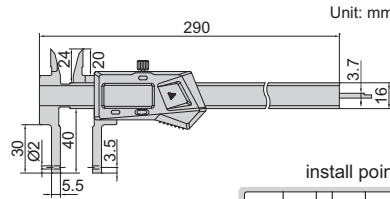
zero setting block for external measurement (included)



measure internal and external grooves



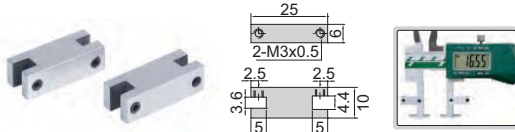
- Supplied with 3 pairs of points and zero setting block for external measurement
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: points, data output cable (code 7315-21, 7302-21)



| 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   |

### Depth stop (optional)

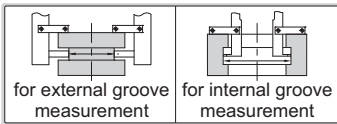
Unit: mm



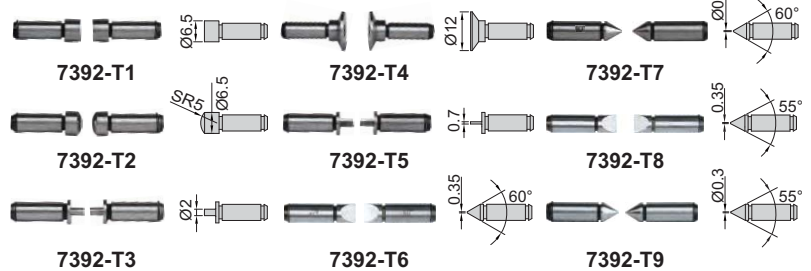
6143

Code

6143



### Multifunctional points (optional)



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

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

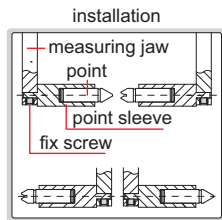
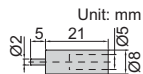
### Point sleeve (optional)



1526-T101

Code

1526-T101



### Ball points (optional)



7391-T5



| Code      | Ball dia.(D) |
|-----------|--------------|
| 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

### Screw thread points (optional)



### 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 |

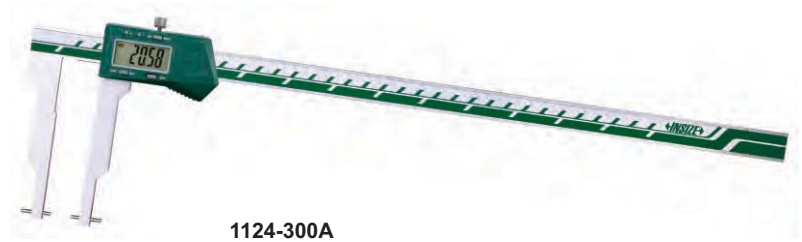
### External thread (60° thread angle)

| 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 |



DATA  
OUTPUT

# DIGITAL CALIPER WITH INTERCHANGEABLE POINTS CODE 1124-300A



1124-300A

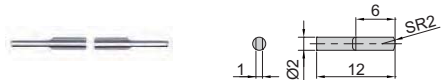
**short spherical/flat points (included)** Unit: mm



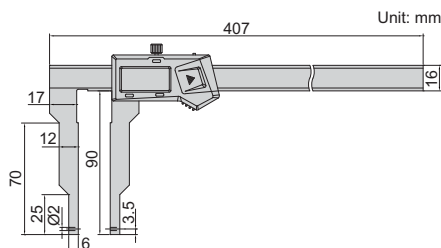
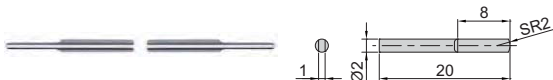
**long spherical/flat points (included)** Unit: mm



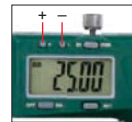
**short spherical blade points (included)** Unit: mm



**long spherical blade points (included)** Unit: mm



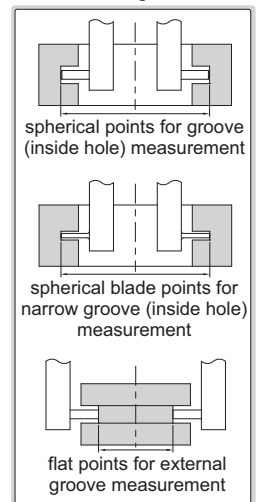
preset buttons



depth stop **6143**  
(optional)

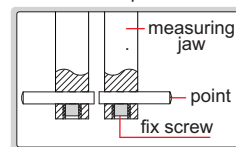


measure internal and external grooves



- 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
- Data output
- Made of stainless steel
- Optional accessory: points (code **1526-T101**, **7392**, **7391**, **7381**, **7321**), depth stop (code **6143**), data output cable (code **7315-21**, **7302-21**)

install points



zero setting block for external measurement (included)



| Point                               | Range   | Accuracy | Application   |
|-------------------------------------|---|----------|---|
| <b>short spherical/flat points</b>  | 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 |
| <b>long spherical/flat points</b>   | 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 |
| <b>short spherical blade points</b> | 24-324mm/1-12.7" (internal)<br>0-288mm/0-11.3" (external)   | ±0.04mm  | for narrow grooves inside hole (small hole)   |
| <b>long spherical blade points</b>  | 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, refer to 1526-200 for more details)



**Ball points 7391\*** (optional, refer to 1526-200 for more details)



**Screw thread points 7381\*, 7321\*** (optional, refer to 1526-200 for more details)



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

## DIGITAL CALIPER WITH INTERCHANGEABLE POINTS

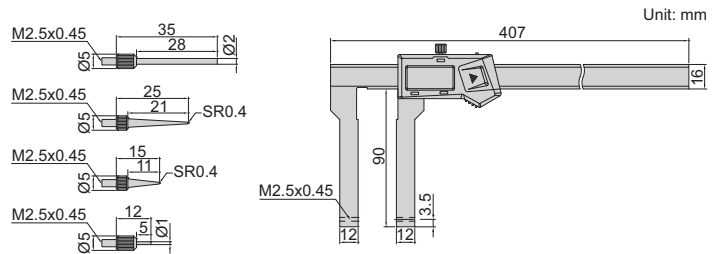
DATA OUTPUT

VARIOUS POINTS ARE AVAILABLE (PAGE 161~163)



1530-300

- 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
- Data output
- Made of stainless steel
- Optional accessory: points (page 161~163), depth stop (code 6143), data output cable (code 7315-21, 7302-21)

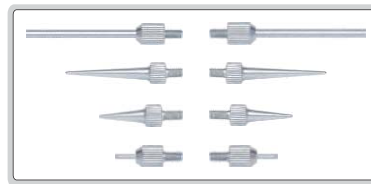


zero setting block for external measurement (included)

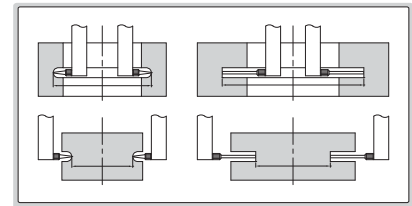
depth stop 6143 (optional)



4 pairs of points (included)



measure internal and external grooves



| Code     | Range*        | Accuracy |
|----------|---------------|----------|
| 1530-300 | 0-300mm/0-12" | ±0.04mm  |

\*For different points, the measuring range changes accordingly

## DIGITAL INSIDE GROOVE CALIPERS

preset buttons

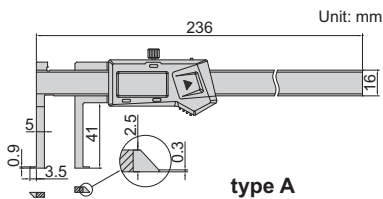


1520-150

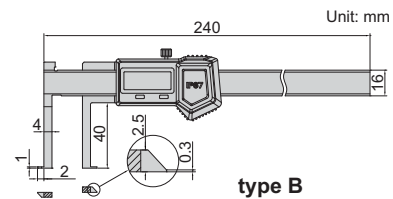
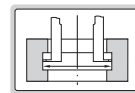


1520-150P

depth stop 6143 (optional)



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)

No dust/waterproof, with data interface (data output cable code 7315-21, 7302-21, optional)

| Code     | Range            | Type | Accuracy |
|----------|------------------|------|----------|
| 1520-150 | 11-150mm/0.43-6" | A    | ±0.04mm  |

No dust/waterproof, built-in wireless

| Code       | Range            | Type | Accuracy |
|------------|------------------|------|----------|
| 1520-150WL | 11-150mm/0.43-6" | A    | ±0.04mm  |

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

| Code      | Range           | Type | Accuracy |
|-----------|-----------------|------|----------|
| 1520-150P | 8-150mm/0.31-6" | B    | ±0.04mm  |

## DIGITAL INSIDE GROOVE CALIPERS

depth stop **6143**  
(optional)



preset buttons



1120-150A  
type A

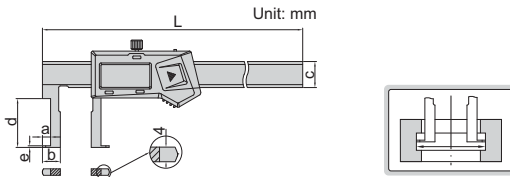


1120-150B  
type B



1120-150P  
type C

- 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)



No dust/waterproof, with data interface, preset (no need to add the width of the jaws on the reading)

(mm)

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

No dust/waterproof, built-in wireless, preset (no need to add the width of the jaws on the reading)

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

No dust/waterproof, no preset ( need to add the width of the jaws on the reading)

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

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

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

## DIGITAL INSIDE POINT CALIPERS

2

DATA  
OUTPUT



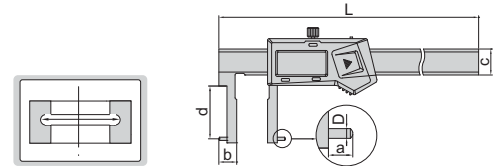
1121-150A  
type A

depth stop 6143  
(optional)



1121-150B  
type B

- 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)



With data interface, preset (no need to add the width of the jaws on the reading)

(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 | 7315-21, 7302-21             |
| 1121-1501  | 35-150mm/1.38-6"  | A    | ±0.05mm  | 250 | 6  | 17.5 | 16 | 60  | Ø2 | 7315-21, 7302-21             |
| 1121-200A  | 25-200mm/0.98-8"  | A    | ±0.04mm  | 310 | 5  | 12.5 | 16 | 37  | Ø2 | 7315-21, 7302-21             |
| 1121-2001  | 40-200mm/1.57-8"  | A    | ±0.05mm  | 310 | 7  | 20   | 16 | 70  | Ø3 | 7315-21, 7302-21             |
| 1121-300A  | 30-300mm/1.18-12" | A    | ±0.07mm  | 410 | 5  | 15   | 16 | 50  | Ø2 | 7315-21, 7302-21             |
| 1121-3001A | 50-300mm/1.97-12" | A    | ±0.07mm  | 410 | 8  | 25   | 16 | 77  | Ø3 | 7315-21, 7302-21             |
| 1121-500A  | 40-500mm/1.57-20" | A    | ±0.07mm  | 680 | 5  | 20   | 24 | 90  | Ø3 | 7315-22, 7302-22             |
| 1121-5001  | 60-500mm/2.36-20" | A    | ±0.08mm  | 680 | 10 | 30   | 24 | 120 | Ø3 | 7315-22, 7302-22             |
| 1121-5002  | 80-500mm/3.15-20" | A    | ±0.08mm  | 680 | 16 | 40   | 24 | 150 | Ø3 | 7315-22, 7302-22             |

Built-in wireless, preset (no need to add the width of the jaws on the reading)

| 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 |



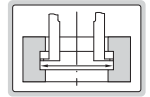
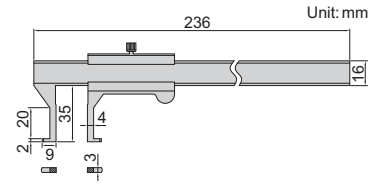
## INSIDE GROOVE VERNIER CALIPER

2

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

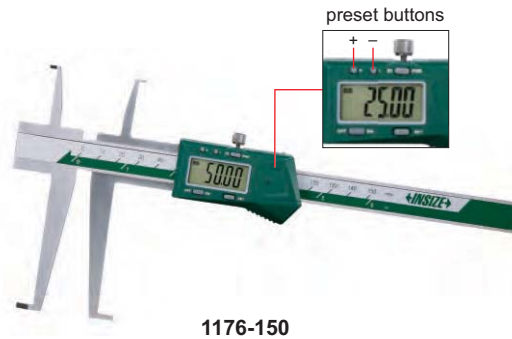


1262-150A



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

## DIGITAL INSIDE GROOVE CALIPERS



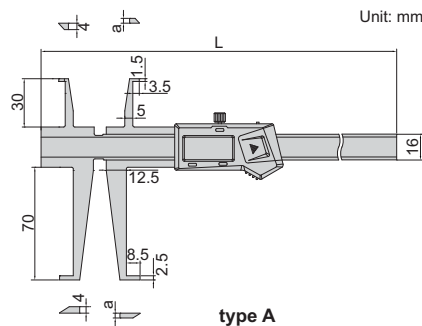
1176-150



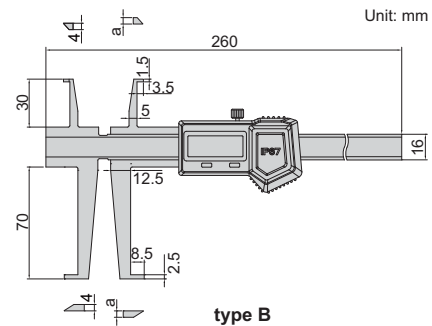
1176-150P



depth stop 6143 (optional)



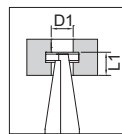
type A



type B

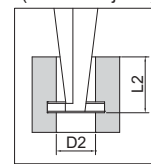
- Measure diameter of grooves inside bores
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, set, mm/inch, preset (+, -)  
type B: on/off, zero, mm/inch, ABS/REL, hold
- Battery CR2032
- Made of stainless steel
- Optional accessory: depth stop (code 6143)

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 |
| Ø22~150 | <70 |

No dust/waterproof, with data interface (data output cable code 7315-21, 7302-21, optional)

| 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 | 4mm |

No dust/waterproof, built-in wireless

| 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 | 4mm |

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 |

## DIGITAL DEEP HOLE INSIDE GROOVE CALIPERS

DATA OUTPUT



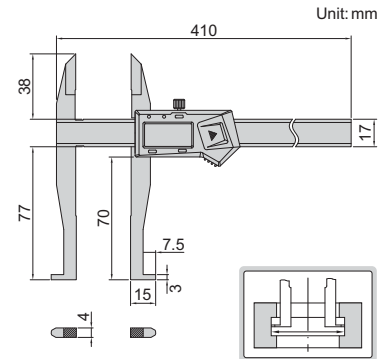
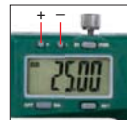
1129-300

- 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)



preset buttons



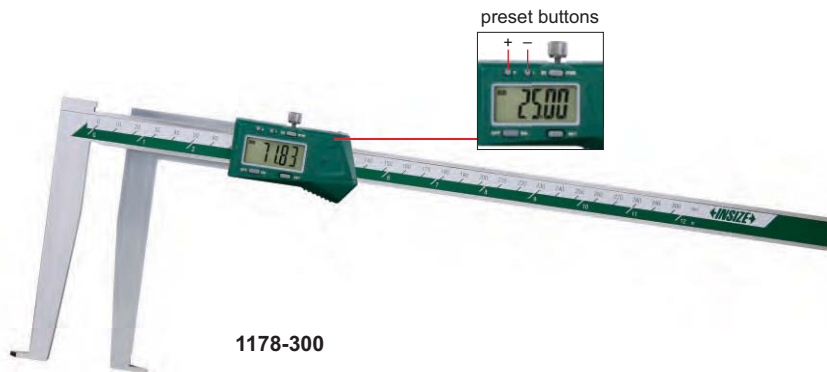
With data interface  
(data output cable code 7315-21, 7302-21, optional)

| Code     | Range of upper jaw | Range of lower jaw | Accuracy |
|----------|--------------------|--------------------|----------|
| 1129-300 | 0-300mm/0-12"      | 30-300mm/1.2-12"   | ±0.04mm  |

Built-in wireless

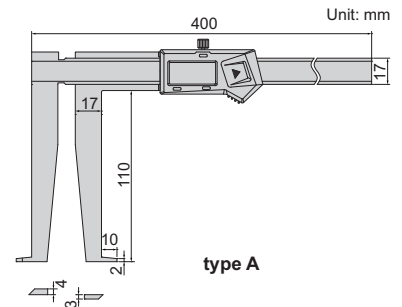
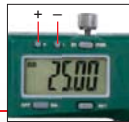
| Code       | Range of upper jaw | Range of lower jaw | Accuracy |
|------------|--------------------|--------------------|----------|
| 1129-300WL | 0-300mm/0-12"      | 30-300mm/1.2-12"   | ±0.04mm  |

## DIGITAL INSIDE GROOVE CALIPERS



1178-300

preset buttons

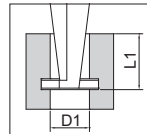


type A

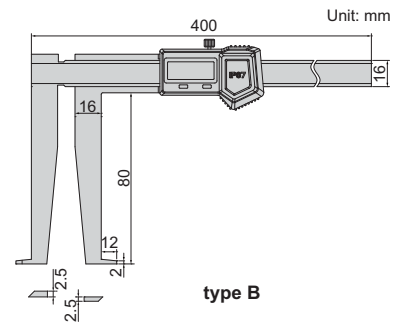


1178-300P

sizes to be measured



depth stop 6143 (optional)



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)

No dust/waterproof, with data interface  
(data output cable code 7315-21, 7302-21, optional)

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

No dust/waterproof, built-in wireless

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

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

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

## DATA OUTPUT

- Measure 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
- Data output
- Made of stainless steel



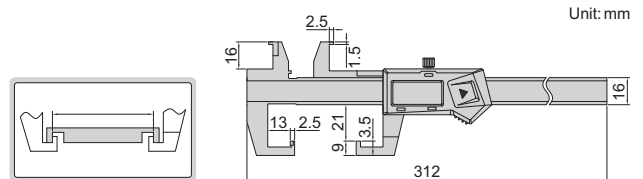
1128-200

With data interface (data output cable code 7315-21, 7302-21, optional)

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

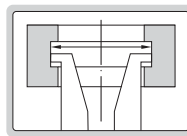
Built-in wireless

| 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

- Upper jaws for measuring diameter of 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



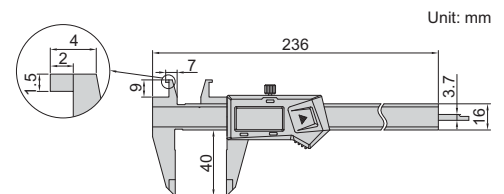
1191-150

With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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

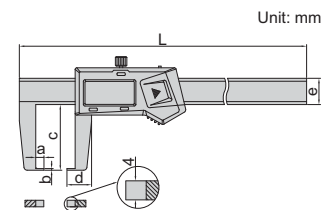


## DATA OUTPUT

- 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)



1187-150A

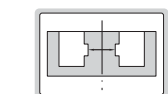


With data interface

| Code      | Range         | Accuracy | L   | a  | b   | c   | d  | e  | Data output cable (optional) |
|-----------|---------------|----------|-----|----|-----|-----|----|----|------------------------------|
| 1187-150A | 0-150mm/0-6"  | ±0.04mm  | 250 | 5  | 1   | 40  | 15 | 16 | 7315-21, 7302-21             |
| 1187-200A | 0-200mm/0-8"  | ±0.05mm  | 310 | 9  | 1.5 | 80  | 23 | 16 | 7315-21, 7302-21             |
| 1187-300A | 0-300mm/0-12" | ±0.06mm  | 490 | 12 | 2   | 150 | 36 | 24 | 7315-22, 7302-22             |

Built-in wireless

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



depth stop 6143 (optional)



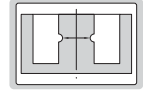
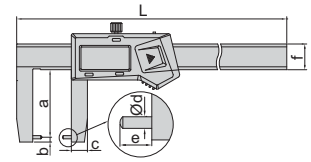
## DIGITAL OUTSIDE POINT CALIPERS

DATA OUTPUT

- 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)



1185-150A



With data interface

| 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 | 7315-21, 7302-21             |
| 1185-200A | 0-200mm/0-8"  | ±0.05mm  | 310 | 80  | 3 | 14 | 3  | 9  | 16 | 7315-21, 7302-21             |
| 1185-300A | 0-300mm/0-12" | ±0.06mm  | 490 | 150 | 3 | 20 | 3  | 12 | 24 | 7315-22, 7302-22             |

(mm)

Built-in wireless

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

(mm)

depth stop 6143 (optional)



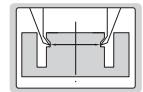
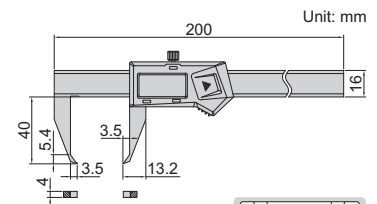
## DIGITAL OUTSIDE GROOVE CALIPERS

DATA OUTPUT

- 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 (data output cable code 7315-21, 7302-21, optional)

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

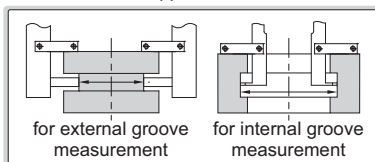


Built-in wireless

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

## DEPTH STOP FOR CALIPERS

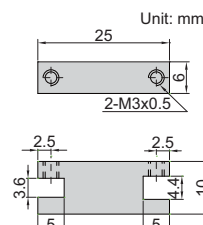
application



6143

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

Code 6143



**DATA OUTPUT**

**DIGITAL CALIPERS WITH POSITIONING SURFACES**

- 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

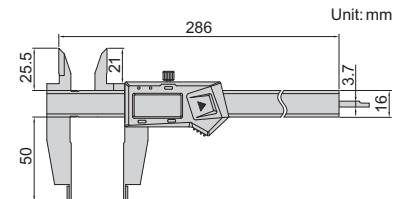
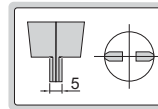
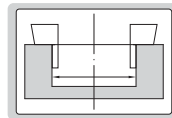


With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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



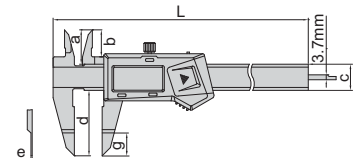
**DATA OUTPUT**

**DIGITAL BLADE CALIPERS**

- 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

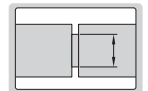


1188-150A



With data interface (data output cable code 7315-21, 7302-21, optional)

| 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

| 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 |

**DIGITAL SMALL POINT CALIPERS**

- 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

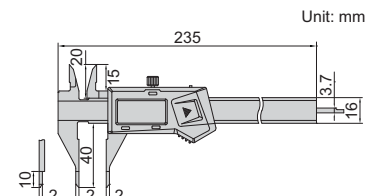
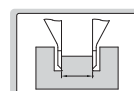
**DATA OUTPUT**

With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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



## DIGITAL POINT CALIPERS

DATA OUTPUT

- 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



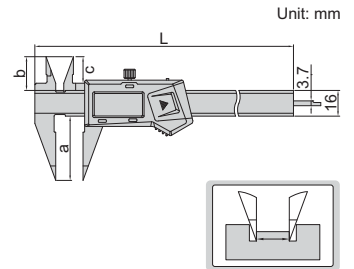
1183-150A

With data interface (data output cable code 7315-21, 7302-21, optional)

| 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

| 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 <td 21.5mm |        |



## DIGITAL CALIPERS WITH KNIFE EDGE LOWER JAWS

DATA OUTPUT

- 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



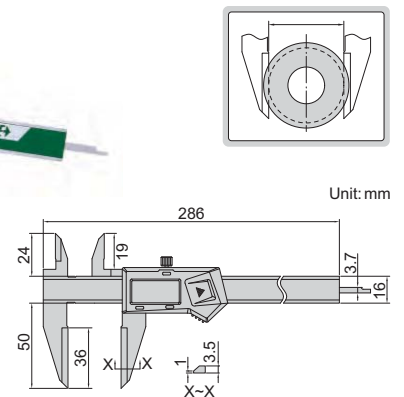
1532-200

With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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



## DIGITAL INSIDE KNIFE-EDGE CALIPERS

DATA OUTPUT

- 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



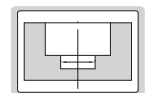
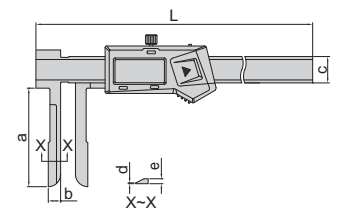
1123-150A

With data interface

| 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 | 7315-21, 7302-21             |
| 1123-200A | 20-200mm/0.8-8"  | ±0.06mm  | 305 | 100 | 17 | 16 | 0.3 | 3.5 | 7315-21, 7302-21             |
| 1123-300A | 24-300mm/0.9-12" | ±0.06mm  | 500 | 150 | 22 | 24 | 0.5 | 3.5 | 7315-22, 7302-22             |

Built-in wireless

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



DATA OUTPUT

## DIGITAL CALIPERS WITH LONG UPPER JAWS

- 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



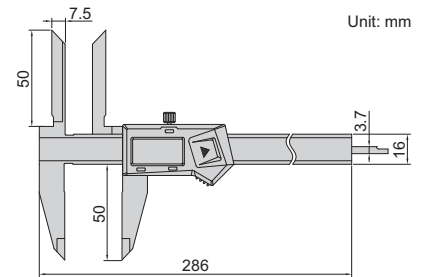
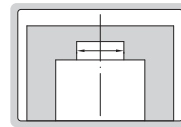
1138-200

With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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

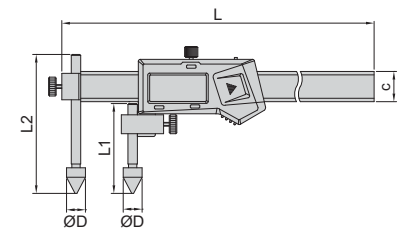


DATA OUTPUT

## DIGITAL OFFSET CENTERLINE CALIPERS



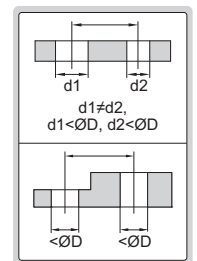
1192-150A



- 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  | 16 | 10 | 46 | 79  | 236  | 7315-21, 7302-21             |
| 1192-200A  | 10-200mm/0.4-8"   | ±0.07mm  | 16 | 10 | 46 | 79  | 286  | 7315-21, 7302-21             |
| 1192-300A  | 10-300mm/0.4-12"  | ±0.09mm  | 16 | 10 | 46 | 79  | 396  | 7315-21, 7302-21             |
| 1192-500A  | 20-500mm/0.8-20"  | ±0.09mm  | 24 | 20 | 52 | 112 | 725  | 7315-22, 7302-22             |
| 1192-1000A | 30-1000mm/1.2-40" | ±0.12mm  | 31 | 30 | 52 | 112 | 1255 | 7315-22, 7302-22             |
| 1192-1500A | 30-1500mm/1.2-60" | ±0.15mm  | 42 | 30 | 52 | 112 | 1805 | —                            |



Built-in wireless

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

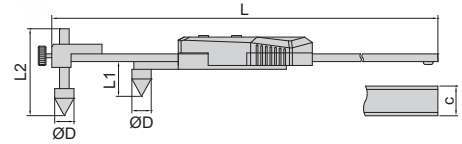
## DIGITAL BACK-JAW CENTERLINE CALIPERS

DATA OUTPUT

- 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



1177-200



**With data interface**

(mm)

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

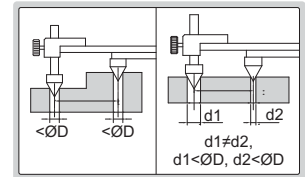
back-jaw



**Built-in wireless**

(mm)

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



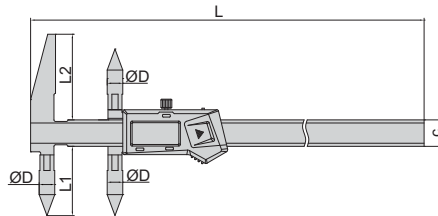
## DIGITAL CENTERLINE AND EDGE TO CENTER CALIPERS

DATA OUTPUT

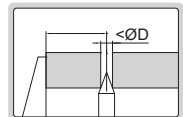


1525-300

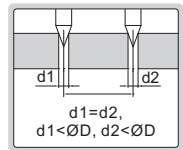
- Measure hole center distance or edge to hole center distance
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel



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  | 7315-21, 7302-21             |
| 1525-3001 | 10-300mm/0.4-12"                    | 20-300mm/0.8-12"                      | ±0.08mm  | 20 | 50   | 55 | 17 | 410  | 7315-21, 7302-21             |
| 1525-500  | 10-500mm/0.4-20"                    | 20-500mm/0.8-20"                      | ±0.09mm  | 20 | 40   | 50 | 24 | 690  | 7315-22, 7302-22             |
| 1525-1000 | 15-1000mm/0.6-40"                   | 30-1000mm/1.2-40"                     | ±0.12mm  | 30 | 60   | 70 | 31 | 1255 | 7315-22, 7302-22             |
| 1525-1500 | 15-1500mm/0.6-60"                   | 30-1500mm/1.2-60"                     | ±0.15mm  | 30 | 60   | 70 | 31 | 1760 | 7315-22, 7302-22             |

**Built-in wireless**

(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 | 50   | 55 | 17 | 410 |
| 1525-500WL  | 10-500mm/0.4-20"                    | 20-500mm/0.8-20"                      | ±0.09mm  | 20 | 40   | 50 | 24 | 690 |



DATA OUTPUT

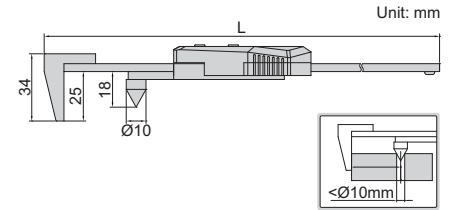
### DIGITAL BACK-JAW EDGE TO CENTER CALIPERS

- 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
- Data output
- Made of stainless steel
- Optional accessory: data output cable (code 7315-21, 7302-21)



1524-200

preset buttons



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

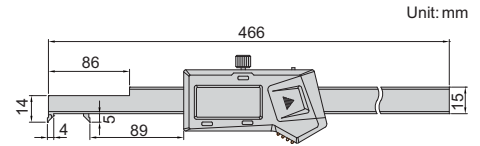
DATA OUTPUT

### DIGITAL HOOK CALIPERS



1122-300

- 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

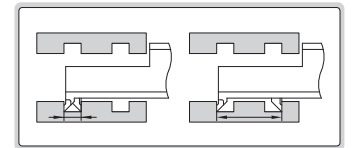


With data interface (data output cable code 7315-21, 7302-21, optional)

| Code     | Range            | Accuracy |
|----------|------------------|----------|
| 1122-300 | 4-300mm/0.16-12" | ±0.04mm  |

Built-in wireless

| Code       | Range            | Accuracy |
|------------|------------------|----------|
| 1122-300WL | 4-300mm/0.16-12" | ±0.04mm  |



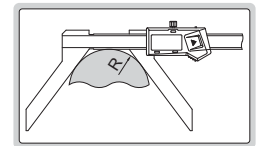
DATA OUTPUT

### DIGITAL ARC RADIUS CALIPERS

- 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
- Made of stainless steel



1189-150B

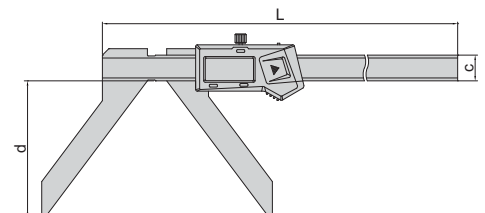


With data interface (data output cable code 7315-21, 7302-21, optional)

| 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

| 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 CALIPERS WITH ONE DIRECTION UPPER JAWS

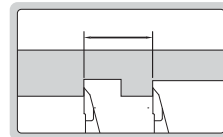
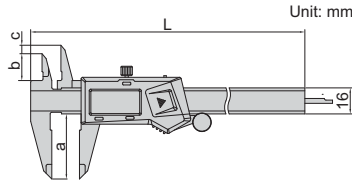


1184-200

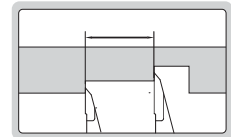


1184-150A

- 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: data output cable (code 7315-21, 7302-21)



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 |

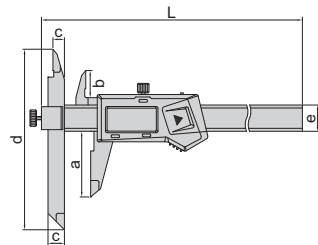
## DIGITAL OFFSET CALIPERS

DATA OUTPUT



1186-150A

- 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

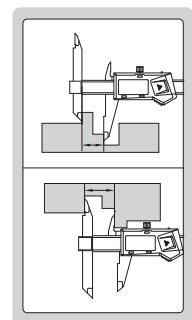


### With data interface (data output cable code 7315-21, 7302-21, optional) (mm)

| 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 (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 |



DATA OUTPUT

## DIGITAL TUBE THICKNESS CALIPERS

- 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



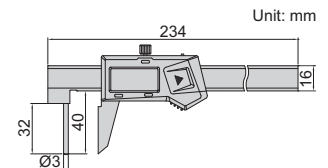
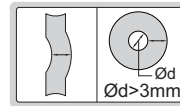
1161-150A

With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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

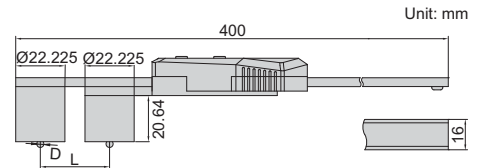


DATA OUTPUT

## DIGITAL CALIPER WITH INTERCHANGEABLE BALL TIPS



1527-3001



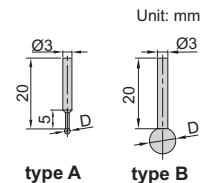
Ball tips (optional, supplied in pair)



1527-T101



1527-T104



- Resolution 0.01mm/.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: ball tips, data output cable (code 7315-21, 7302-21)

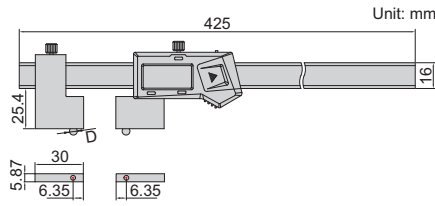
| Code      | Range            | Accuracy |
|-----------|------------------|----------|
| 1527-3001 | (22.22+D)~300mm* | ±0.03mm  |

\*"D" is the diameter of ball tips.

| 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 |

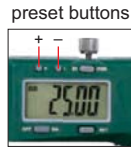
## DIGITAL CALIPER WITH INTERCHANGEABLE BALL TIPS

DATA OUTPUT



ball tips are optional **1528-3001**

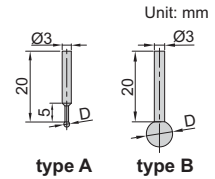
- Resolution 0.01mm/.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: ball tips, data output cable (code **7315-21**, **7302-21**)



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



**1527-T101** **1527-T104**



type A type B

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

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

\*"D" is the diameter of ball tips.

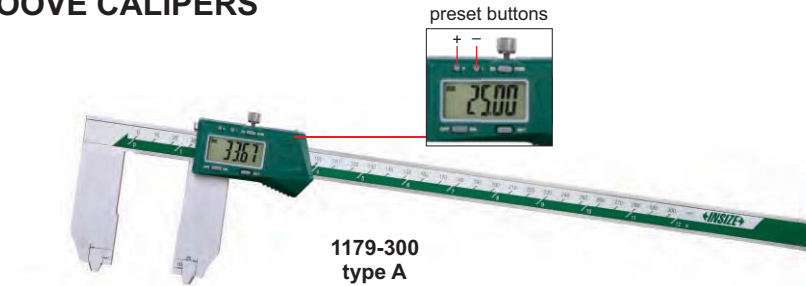
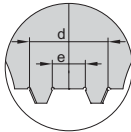
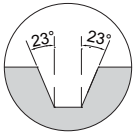
## DIGITAL RTJ RING GROOVE CALIPERS

DATA OUTPUT

- 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

applicable for RTJ ring grooves with angle 23°

d and e need to be added on the reading



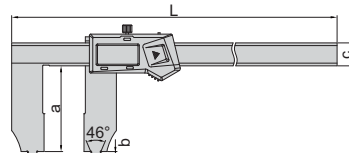
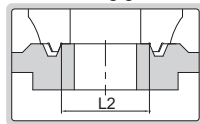
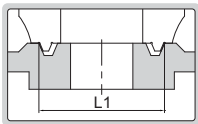
**1179-300**  
type A



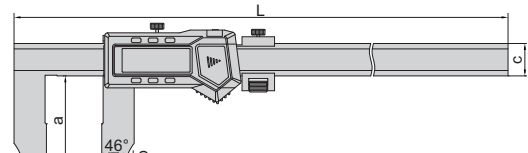
**1179-600**  
type B

measure outside diameter of RTJ ring groove

measure inside diameter of RTJ ring groove



type A



type B

With data interface

| Code             | Range (inside diameter of RTJ ring groove) | Range (outside diameter of RTJ ring groove) | Angle of RTJ ring groove | Accuracy | Type | L    | a    | b   | c  | d  | e  | Data output cable (optional) |
|------------------|--|---|--------------------------|----------|------|------|------|-----|----|----|----|------------------------------|
| <b>1179-300</b>  | 10-300mm/0.4-12"                           | 25-300mm/1-12"                              | 23°                      | ±0.06mm  | A    | 410  | 63.5 | 4.5 | 17 | 25 | 10 | <b>7315-21, 7302-21</b>      |
| <b>1179-600</b>  | 10-600mm/0.4-24"                           | 25-600mm/1-24"                              | 23°                      | ±0.07mm  | B    | 770  | 65.5 | 4.5 | 24 | 25 | 10 | <b>7315-22, 7302-22</b>      |
| <b>1179-1000</b> | 15-1000mm/0.6-40"                          | 30-1000mm/1.2-40"                           | 23°                      | ±0.09mm  | B    | 1220 | 90   | 5   | 31 | 30 | 15 | <b>7315-22, 7302-22</b>      |

Built-in wireless

| Code              | Range (inside diameter of RTJ ring groove) | Range (outside diameter of RTJ ring groove) | Angle of RTJ ring groove | Accuracy | Type | L   | a    | b   | c  | d  | e  |
|-------------------|--|---|--------------------------|----------|------|-----|------|-----|----|----|----|
| <b>1179-300WL</b> | 10-300mm/0.4-12"                           | 25-300mm/1-12"                              | 23°                      | ±0.06mm  | A    | 410 | 63.5 | 4.5 | 17 | 25 | 10 |
| <b>1179-600WL</b> | 10-600mm/0.4-24"                           | 25-600mm/1-24"                              | 23°                      | ±0.07mm  | B    | 770 | 65.5 | 4.5 | 24 | 25 | 10 |

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

DATA OUTPUT

- 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

With data interface (data output cable code 7315-21, 7302-21, optional)

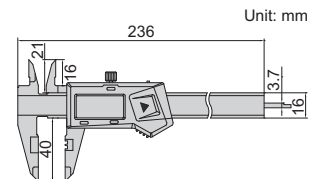
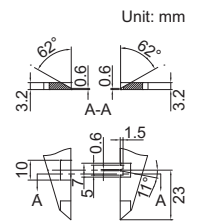
| Code      | Range        | Accuracy |
|-----------|--------------|----------|
| 1165-150A | 0-150mm/0-6" | ±0.03mm  |

Built-in wireless

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



1165-150A



DATA OUTPUT

### DIGITAL CALIPERS WITH LARGE MEASURING FACES

- 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 (data output cable code 7315-21, 7302-21, optional)

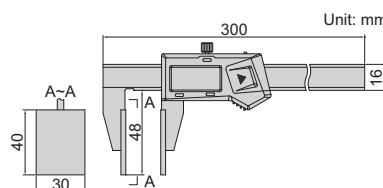
| Code     | Range        | Accuracy |
|----------|--------------|----------|
| 1172-200 | 0-200mm/0-8" | ±0.07mm  |

Built-in wireless

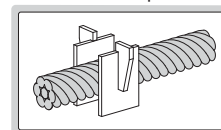
| Code       | Range        | Accuracy |
|------------|--------------|----------|
| 1172-200WL | 0-200mm/0-8" | ±0.07mm  |



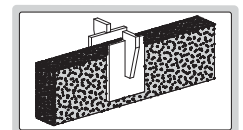
1172-200



measure diameter of wire ropes



measure thickness of rubber, sponge, etc.



DATA OUTPUT

### DIGITAL CALIPERS WITH DISK FACES

- 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

With data interface

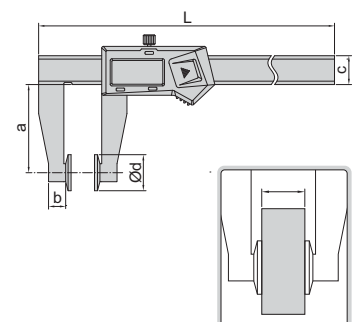
| Code     | Range         | Accuracy | L   | a   | b  | c  | Ød | Data output cable (optional) |
|----------|---------------|----------|-----|-----|----|----|----|------------------------------|
| 1533-150 | 0-150mm/0-6"  | ±0.04mm  | 245 | 50  | 11 | 16 | 20 | 7315-21, 7302-21             |
| 1533-200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

Built-in wireless

| 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 | 20 | 24 | 50 |

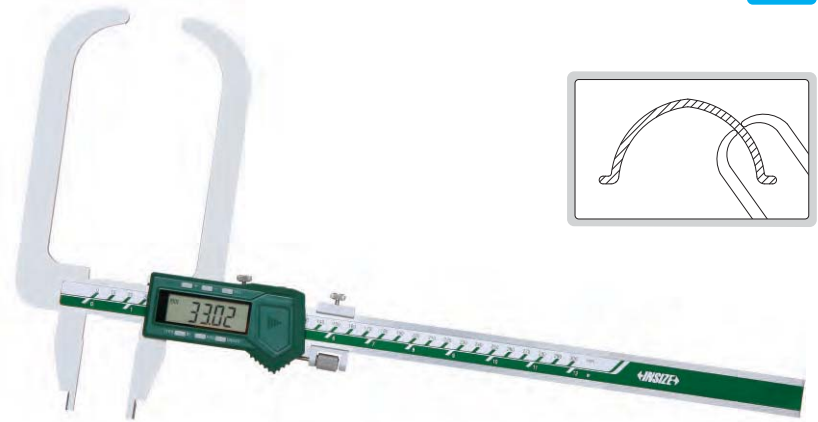
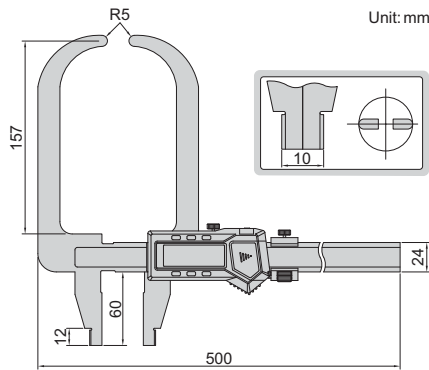


1533-150



## DIGITAL WALL THICKNESS CALIPERS

DATA OUTPUT



1536-300

With data interface (data output cable code 7315-22, 7302-22, optional)

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

Built-in wireless

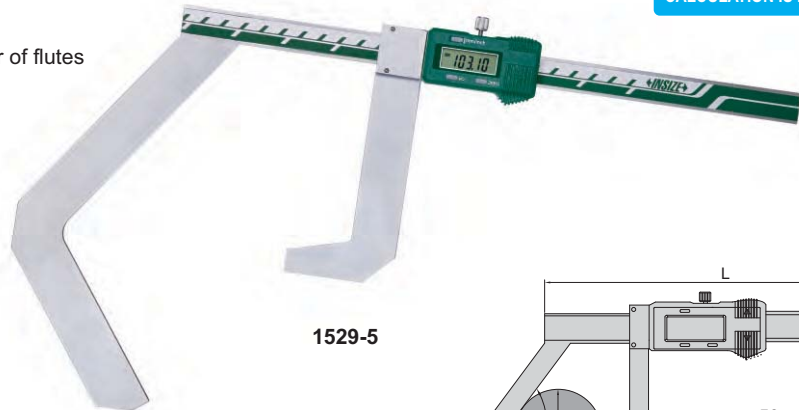
| Code       | Range         | Accuracy |
|------------|---------------|----------|
| 1536-300WL | 0-300mm/0-12" | ±0.05mm  |

- 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

## DIGITAL V SHAPE CALIPERS

DIRECT READING, CALCULATION IS NOT REQUIRED

- Measure the outside diameter of odd number of flutes (such as taps, reamers, end mills and gears)
- Direct reading, calculation is not required
- Resolution: 0.01mm/0.0005"
- Buttons: mm/inch, on/off, origin set
- Battery LR44, automatic power off
- After automatic power off, move the digital unit to turn on power
- Data output
- Made of stainless steel
- Optional accessory: 50mm calibration cylinder (code 6316-50), data output cable (code 7302-SPC9)



1529-5

DATA OUTPUT

| Code    | Range (D)     | Flutes | Accuracy | Angle α   | L     |
|---------|---------------|--------|----------|-----------|-------|
| 1529-3  | 50-200mm/2-8" | 3      | ±0.06mm  | 60°       | 390mm |
| 1529-5  | 50-200mm/2-8" | 5      | ±0.06mm  | 108°      | 318mm |
| 1529-19 | 50-200mm/2-8" | 19     | ±0.06mm  | 85°15'47" | 336mm |
| 1529-23 | 50-200mm/2-8" | 23     | ±0.06mm  | 70°26'5"  | 362mm |
| 1529-31 | 50-200mm/2-8" | 31     | ±0.06mm  | 75°29'2"  | 355mm |

data output cable (optional) code 7302-SPC9



50mm calibration cylinder (optional) code 6316-50



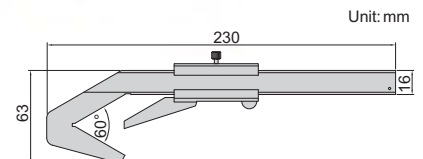
## V SHAPE VERNIER CALIPER

- 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



1273-403

| Code     | Range   | Graduation | Accuracy |
|----------|---------|------------|----------|
| 1273-403 | ∅4-40mm | 0.05mm     | ±0.05mm  |



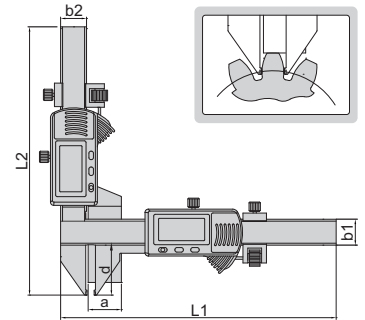
**ATTENTION:  
NO DATA OUTPUT**

### DIGITAL GEAR TOOTH CALIPERS

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

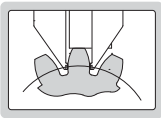


1181-M25A



| 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   |

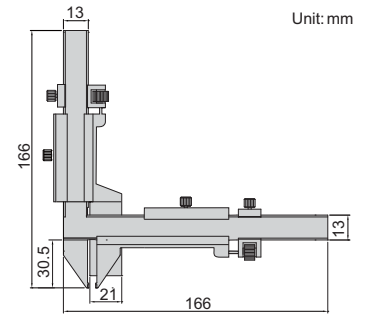
### GEAR TOOTH VERNIER CALIPER



- Carbide tips
- Measure the tooth thickness by positioning the tooth height
- Made of stainless steel
- Satin chrome plated reading surface



1281-M26A



| 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        |

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

DATA OUTPUT

### DIGITAL DISK BRAKE CALIPERS

- 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

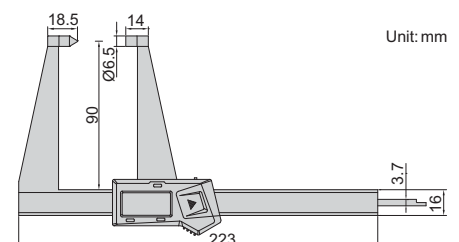


With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

| 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-)

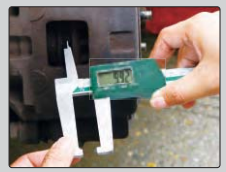
DATA OUTPUT

2

- 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

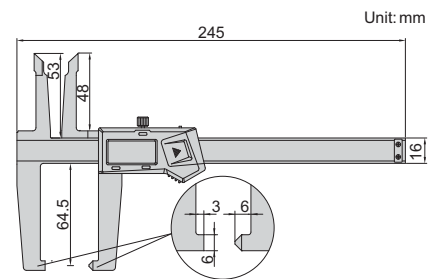


With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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



## DIGITAL DRUM BRAKE CALIPERS

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

DATA OUTPUT



1168-300A

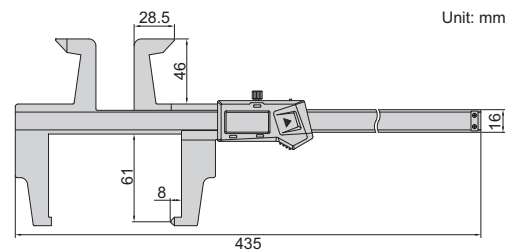
- Measure internal and external diameter of drum brakes
- Resolution 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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

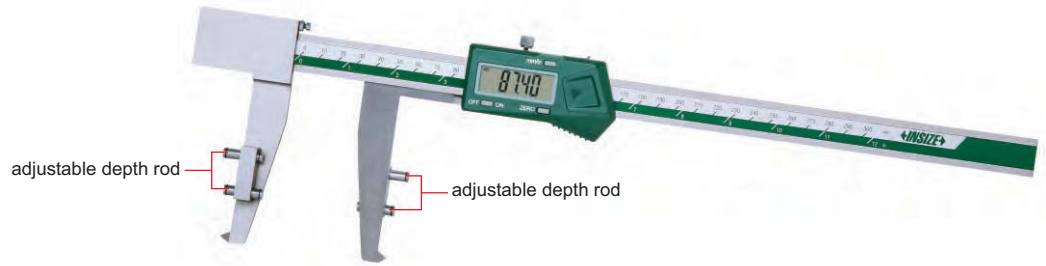




**DATA OUTPUT**

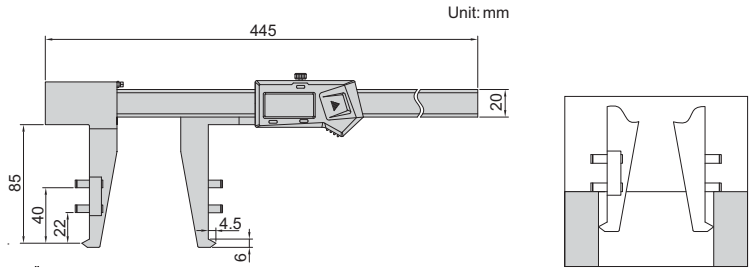
**DIGITAL DRUM BRAKE CALIPER**

calibration block (included)



**1538-300**

- 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: data output cable (code **7315-22**, **7302-22**)



| Code            | Range            | Accuracy |
|-----------------|------------------|----------|
| <b>1538-300</b> | 30-300mm/1.2-12" | ±0.05mm  |

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

**IP67 WATERPROOF DIGITAL DEPTH GAGES**

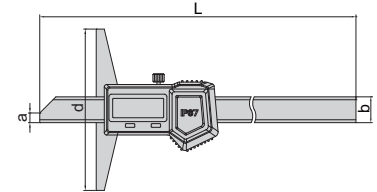
**IP67 WATERPROOF**

**ATTENTION: NO DATA OUTPUT**

- 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     |
|-----------------|---------------|----------|-------|-----|------|-------|
| <b>1149-150</b> | 0-150mm/0-6"  | ±0.03mm  | 240mm | 6mm | 16mm | 100mm |
| <b>1149-200</b> | 0-200mm/0-8"  | ±0.03mm  | 290mm | 6mm | 16mm | 100mm |
| <b>1149-300</b> | 0-300mm/0-12" | ±0.03mm  | 390mm | 6mm | 16mm | 150mm |

**ATTENTION: NO DATA OUTPUT**

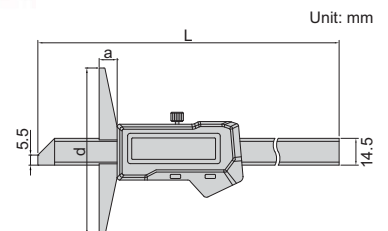
**IP67 WATERPROOF**

**IP67 WATERPROOF DIGITAL DEPTH GAGES**

- IP67 dust/waterproof
- Resolution: 0.01mm/0.0005"
- Large display
- Button function: zero, on/off, mm/inch
- Battery CR2032, automatic power off
- Meet DIN862
- Made of stainless steel



**1541-150**



| Code            | Range         | Accuracy | L       | a      | d     |
|-----------------|---------------|----------|---------|--------|-------|
| <b>1541-150</b> | 0-150mm/0-6"  | ±0.03mm  | 232.5mm | 11mm   | 100mm |
| <b>1541-200</b> | 0-200mm/0-8"  | ±0.03mm  | 285mm   | 11mm   | 100mm |
| <b>1541-300</b> | 0-300mm/0-12" | ±0.03mm  | 390mm   | 13.5mm | 150mm |

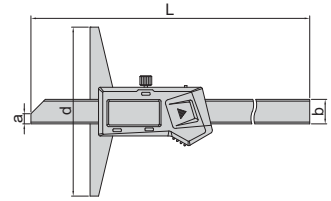
## DIGITAL DEPTH GAGES (STANDARD TYPE)

DATA OUTPUT

- 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

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

### Built-in wireless

| 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 |

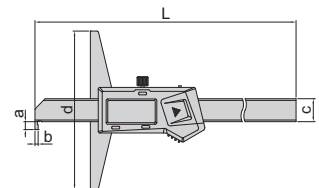
## DIGITAL HOOK DEPTH GAGES

DATA OUTPUT

- 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

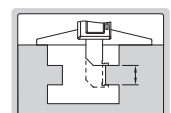
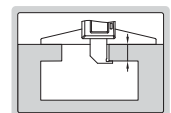
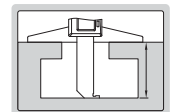


### With data interface

| 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 | 7315-21, 7302-21             |
| 1142-200A   | 0-200mm/0-8"   | ±0.03mm  | 280mm  | 100mm | 5mm  | 2mm | 14.5mm | 7315-21, 7302-21             |
| 1142-300A   | 0-300mm/0-12"  | ±0.04mm  | 380mm  | 150mm | 5mm  | 2mm | 14.5mm | 7315-21, 7302-21             |
| 1142-500A   | 0-500mm/0-20"  | ±0.05mm  | 585mm  | 150mm | 8mm  | 3mm | 15mm   | 7315-21, 7302-21             |
| 1142-5001A  | 0-500mm/0-20"  | ±0.05mm  | 585mm  | 200mm | 8mm  | 3mm | 15mm   | 7315-21, 7302-21             |
| 1142-1000A  | 0-1000mm/0-40" | ±0.07mm  | 1188mm | 150mm | 10mm | 4mm | 18mm   | 7315-22, 7302-22             |
| 1142-10001A | 0-1000mm/0-40" | ±0.07mm  | 1188mm | 200mm | 10mm | 4mm | 18mm   | 7315-22, 7302-22             |
| 1142-10002A | 0-1000mm/0-40" | ±0.07mm  | 1188mm | 250mm | 10mm | 4mm | 18mm   | 7315-22, 7302-22             |

### Built-in wireless

| 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   |

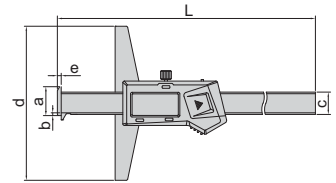


**DATA OUTPUT**

- 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

**DIGITAL DOUBLE HOOK DEPTH GAGES**

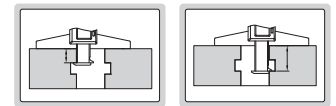
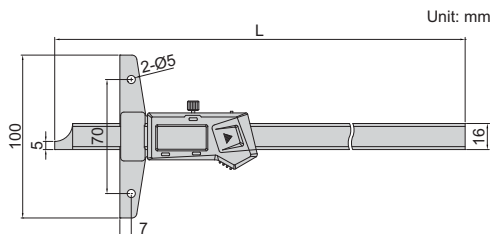

1144-150A


**With data interface**

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

**Built-in wireless**

| 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   |


**DATA OUTPUT**
**DIGITAL DEPTH GAGES WITH MOUNTING HOLES FOR EXTENSION BASE**


1147-300

extension base (optional)

6141 series

- 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)

**With data interface (data output cable code 7315-21, 7302-21, optional)**

| Code     | Range         | Accuracy | L (mm) |
|----------|---------------|----------|--------|
| 1147-150 | 0-150mm/0-6"  | ±0.03mm  | 237    |
| 1147-200 | 0-200mm/0-8"  | ±0.03mm  | 287    |
| 1147-300 | 0-300mm/0-12" | ±0.03mm  | 403    |
| 1147-500 | 0-500mm/0-20" | ±0.05mm  | 605    |

**Built-in wireless**

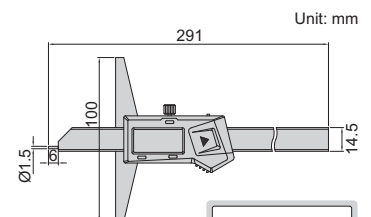
| Code       | Range         | Accuracy | L (mm) |
|------------|---------------|----------|--------|
| 1147-150WL | 0-150mm/0-6"  | ±0.03mm  | 237    |
| 1147-200WL | 0-200mm/0-8"  | ±0.03mm  | 287    |
| 1147-300WL | 0-300mm/0-12" | ±0.03mm  | 403    |
| 1147-500WL | 0-500mm/0-20" | ±0.05mm  | 605    |

**DATA OUTPUT**
**DIGITAL POINT DEPTH GAGES**

- 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



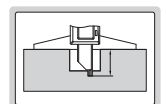
1143-200A


**With data interface (data output cable code 7315-21, 7302-21, optional)**

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

**Built-in wireless**

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



## DIGITAL DEPTH GAGES WITH ROUND DEPTH BAR

MEASURE WIDTH AND DEPTH OF GROOVES INSIDE BORE

MEASURE DEPTH OF SMALL HOLES (>Ø4mm)

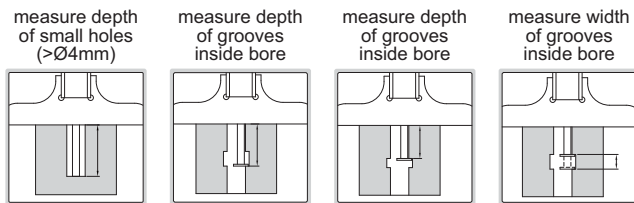
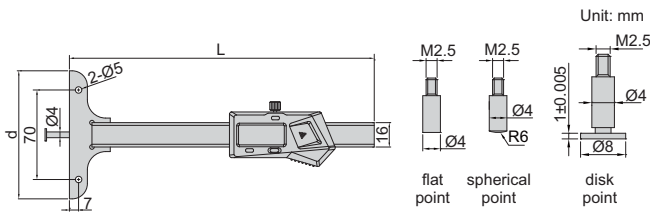
DATA OUTPUT

preset buttons



3

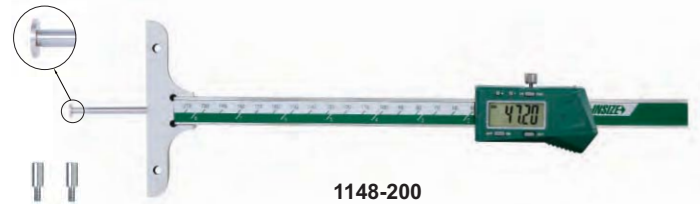
- Resolution: 0.01mm/0.0005"
- Supplied with three interchangeable points (flat, spherical, disk)
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel
- Optional accessory: extension base (code 6141, for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



1148-100S



1148-120



1148-200

With data interface (data output cable code 7315-21, 7302-21, optional)

| 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               |

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)



Built-in wireless

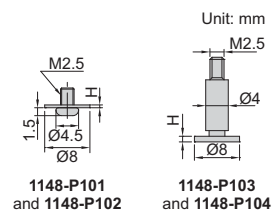
| Code        | Range *        | Accuracy | L     | d     | Remark   |
|-------------|----------------|----------|-------|-------|--|
| 1148-100SWL | 0-100mm/0-4"   | ±0.02mm  | 200mm | 45mm  |  |
| 1148-100WL  | 0-100mm/0-4"   | ±0.02mm  | 200mm | 85mm  |  |
| 1148-120WL  | 0-120mm/0-4.7" | ±0.03mm  | 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

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)



1148-P101 and 1148-P102

1148-P103 and 1148-P104

**DATA OUTPUT**

- 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 gage block for zero setting
- Optional accessory: extension base, data output cable (code **7302-SPC7**, keyboard format)

gage block for zero setting (included)



data output cable (optional)

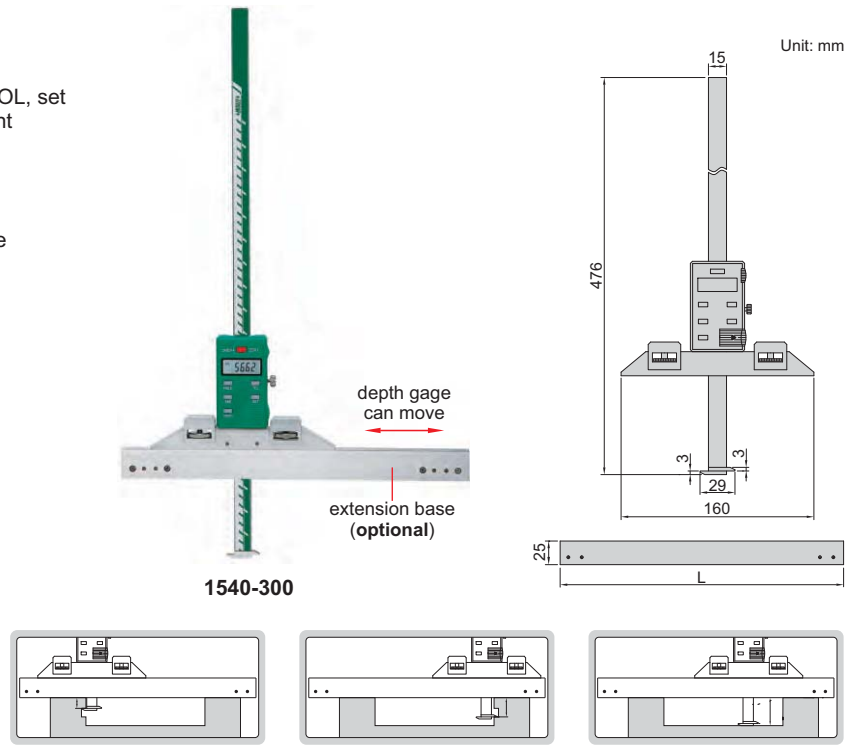


**Extension base**

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

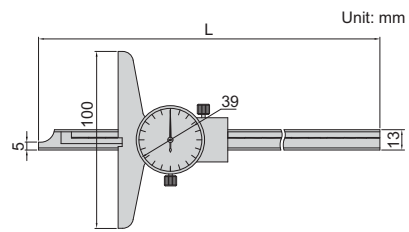
| Code     | Range         | Accuracy |
|----------|---------------|----------|
| 1540-300 | 0-300mm/0-12" | ±0.04mm  |

**DIGITAL DOUBLE HOOK DEPTH GAGE**



**SHOCK PROOF**

- Shockproof dial indicator
- Made of stainless steel



| 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 GAGES**



1340-150

**VERNIER DEPTH GAGES (STANDARD TYPE)**

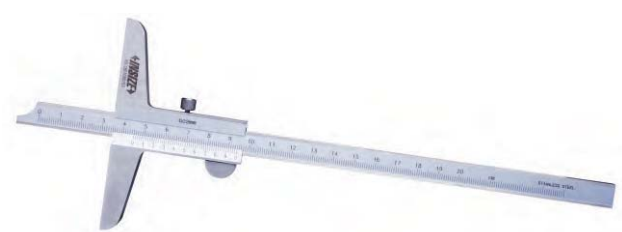
- Made of stainless steel
- Satin chrome plated reading surface

**Graduation 0.05mm**

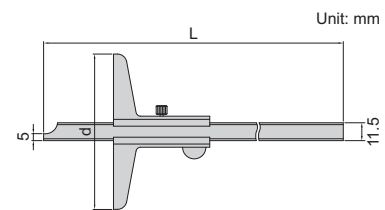
| Code     | Range   | Accuracy | L     | d     |
|----------|---------|----------|-------|-------|
| 1240-150 | 0-150mm | ±0.05mm  | 245mm | 100mm |
| 1240-200 | 0-200mm | ±0.05mm  | 282mm | 100mm |
| 1240-300 | 0-300mm | ±0.08mm  | 382mm | 100mm |
| 1240-500 | 0-500mm | ±0.09mm  | 585mm | 150mm |

**Graduation 0.02mm**

| Code      | Range   | Accuracy | L     | d     |
|-----------|---------|----------|-------|-------|
| 1240-1501 | 0-150mm | ±0.03mm  | 245mm | 100mm |
| 1240-2001 | 0-200mm | ±0.03mm  | 282mm | 100mm |
| 1240-3001 | 0-300mm | ±0.04mm  | 382mm | 100mm |
| 1240-5001 | 0-500mm | ±0.05mm  | 585mm | 150mm |



1240-2001

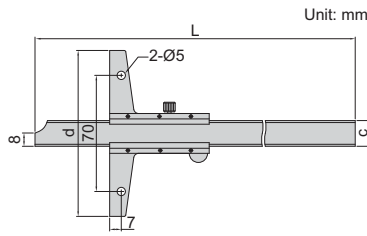


## VERNIER DEPTH GAGES

WITH MOUNTING HOLES FOR EXTENSION BASE



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



1247-1501

### Graduation 0.05mm

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

### Graduation 0.02mm

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

| Range    | L      | c    | d     |
|----------|--------|------|-------|
| 0-150mm  | 240mm  | 11mm | 100mm |
| 0-200mm  | 290mm  | 11mm | 100mm |
| 0-300mm  | 390mm  | 11mm | 100mm |
| 0-600mm  | 704mm  | 16mm | 150mm |
| 0-1000mm | 1124mm | 16mm | 200mm |

## VERNIER DEPTH GAGES WITH FINE ADJUSTMENT

WITH MOUNTING HOLES FOR EXTENSION BASE

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

### Graduation 0.05mm

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

### Graduation 0.02mm

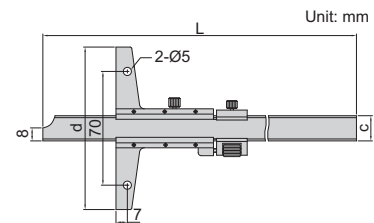
| Code      | Range   | Accuracy |
|-----------|---------|----------|
| 1249-1501 | 0-150mm | ±0.03mm  |
| 1249-2001 | 0-200mm | ±0.03mm  |
| 1249-3001 | 0-300mm | ±0.04mm  |

extension base (optional)

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



1249-1501



## VERNIER HOOK DEPTH GAGES

WITH MOUNTING HOLES FOR EXTENSION BASE

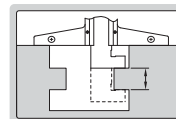
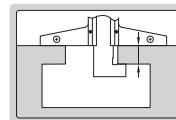
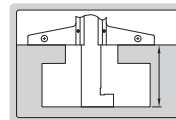
- Made of stainless steel
- Satin chrome plating finish on reading surface
- Optional accessory: extension base (code **6141**)

### Graduation 0.05mm

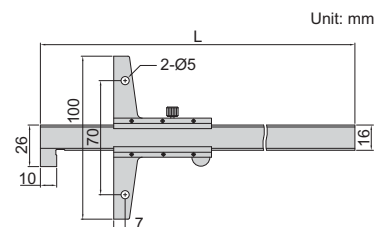
| Code     | Range   | Accuracy | L     |
|----------|---------|----------|-------|
| 1248-150 | 0-150mm | ±0.05mm  | 266mm |
| 1248-200 | 0-200mm | ±0.05mm  | 316mm |
| 1248-300 | 0-300mm | ±0.08mm  | 416mm |

### 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 |

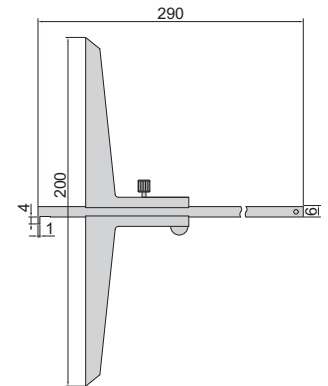
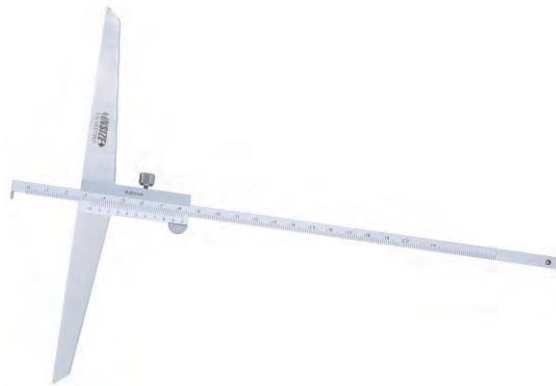


1248-1501



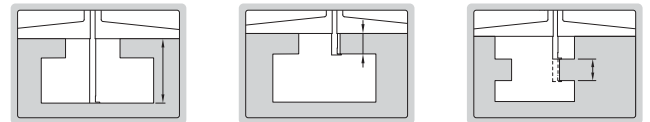
### VERNIER HOOK DEPTH GAGE

Unit: mm



1243-2001

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

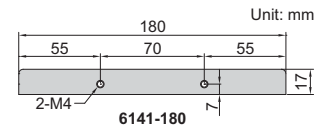


| Code      | Range   | Accuracy |
|-----------|---------|----------|
| 1243-2001 | 0-200mm | ±0.03mm  |

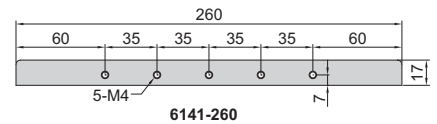
### EXTENSION BASES



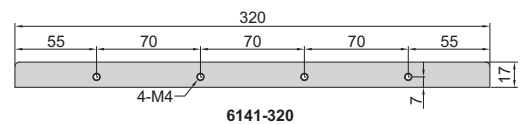
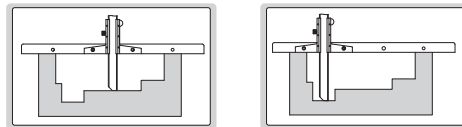
6141-260



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



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



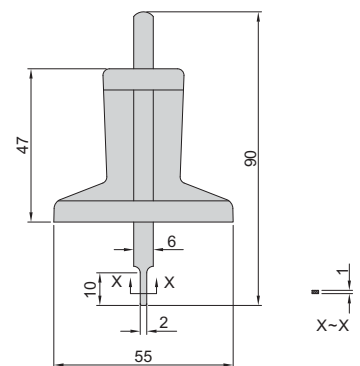
### VERNIER DEPTH GAGE (ECONOMIC TYPE)

Unit: mm

- Graduation: 0.1mm
- Made of stainless steel



1244-30



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

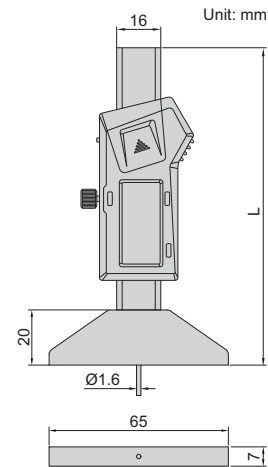
## MINI DIGITAL DEPTH GAGES WITH ROUND BAR

DATA OUTPUT

3



1140-25



- 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

With data interface (data output cable code 7315-21, 7302-21, optional)

| Code    | Range       | Accuracy | L     |
|---------|-------------|----------|-------|
| 1140-25 | 0-25mm/0-1" | ±0.02mm  | 114mm |
| 1140-50 | 0-50mm/0-2" | ±0.02mm  | 140mm |

Built-in wireless

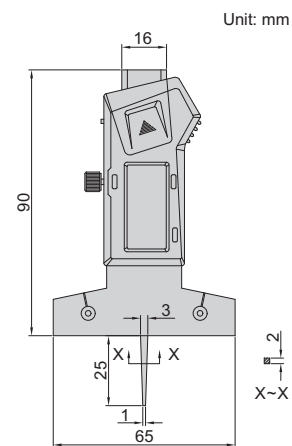
| Code      | Range       | Accuracy | L     |
|-----------|-------------|----------|-------|
| 1140-25WL | 0-25mm/0-1" | ±0.02mm  | 114mm |
| 1140-50WL | 0-50mm/0-2" | ±0.02mm  | 140mm |

## MINI DIGITAL DEPTH GAGES

DATA OUTPUT



1145-25A



- 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

With data interface (data output cable code 7315-21, 7302-21, optional)

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

Built-in wireless

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



## DIAL DEPTH GAGES

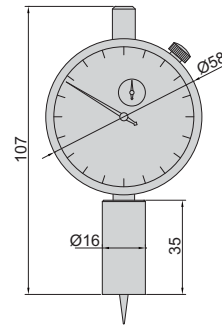
Unit: mm

3

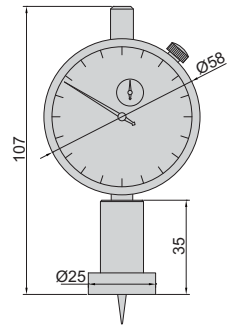
- Accuracy:  $\pm 0.017\text{mm}$
- Stainless steel base
- Pointed tip



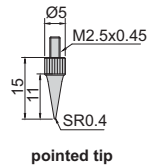
2343-102



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 |

DATA OUTPUT

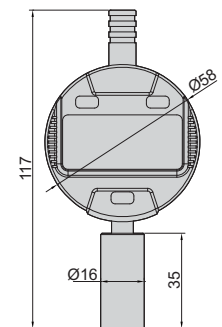
## DIGITAL DEPTH GAGES

Unit: mm

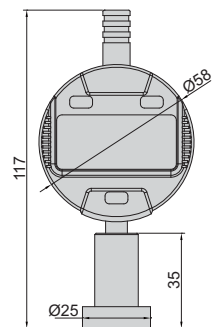
- Button function: on/off, zero, mm/inch, ABS, data preset, change measuring direction
- CR2032 battery, automatic power off
- Data output
- Stainless steel base
- Pointed tip
- Optional accessory: data output cable (code 7315-50M, 7302-40M)



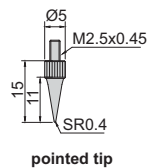
2142-102



2142-101/2142-301



2142-102/2142-302



pointed tip

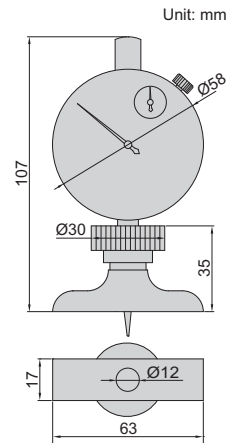
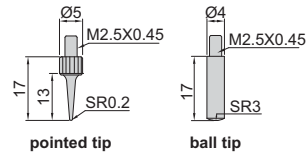
| Code     | Range           | Digital indicator stroke | Digital indicator resolution | Accuracy            | Base  |
|----------|-----------------|--------------------------|------------------------------|---------------------|-------|
| 2142-101 | 0-12.7mm/0-0.5" | 12.7mm/0.5"              | 0.01mm/0.0005"               | $\pm 20\mu\text{m}$ | Ø16mm |
| 2142-102 | 0-12.7mm/0-0.5" | 12.7mm/0.5"              | 0.01mm/0.0005"               | $\pm 20\mu\text{m}$ | Ø25mm |
| 2142-301 | 0-12.7mm/0-0.5" | 12.7mm/0.5"              | 0.001mm/0.00005"             | $\pm 5\mu\text{m}$  | Ø16mm |
| 2142-302 | 0-12.7mm/0-0.5" | 12.7mm/0.5"              | 0.001mm/0.00005"             | $\pm 5\mu\text{m}$  | Ø25mm |

## DIAL DEPTH GAGE

- Accuracy:  $\pm 0.017\text{mm}$
- Stainless steel base
- Supplied with pointed tip and ball tip



2341-101A

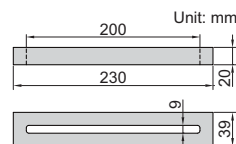


| Code      | Range  | Dial indicator stroke | Dial indicator graduation |
|-----------|--------|-----------------------|---------------------------|
| 2341-101A | 0-10mm | 10mm                  | 0.01mm                    |

## DIAL DEPTH GAGES

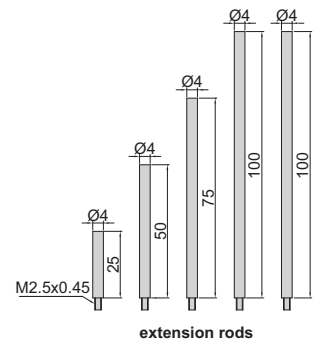
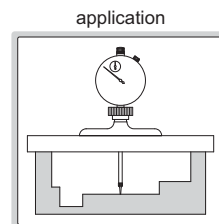
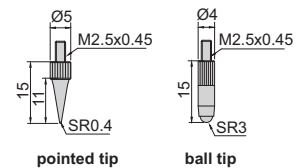
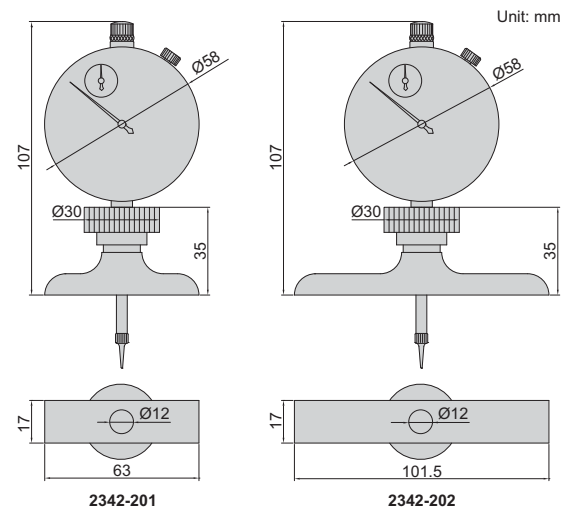


2141-10 (optional),  
can be customized  
according to workpieces



- Dial indicator graduation: 0.01mm
- Accuracy:  $\pm 0.03\text{mm}$
- Stainless steel base
- Extension rods: 25mm (1 pc), 50mm (1 pc), 75mm (1 pc), 100mm (2 pcs)
- 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                  | 63x17mm    |
| 2342-202 | 0-300mm | 30mm                  | 101.5x17mm |



DATA  
OUTPUT

## DIGITAL DEPTH GAGES

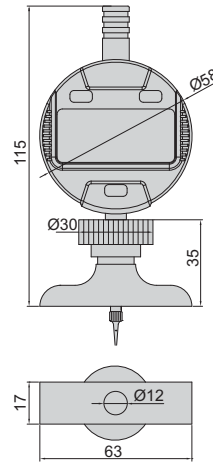
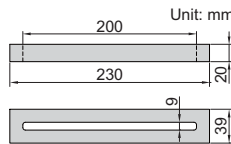
3



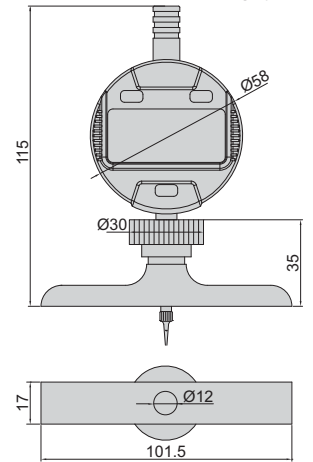
2141-202A



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



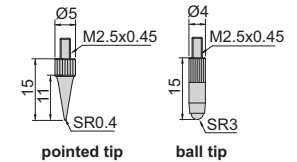
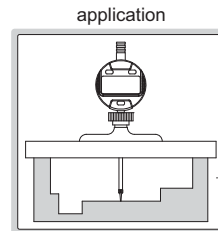
2141-201A/2141-301



2141-202A/2141-302

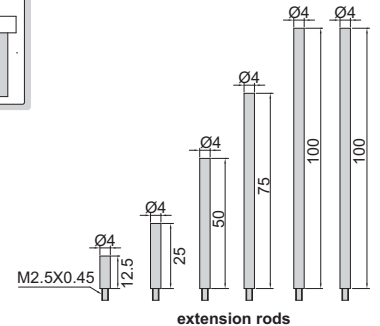
Unit: mm

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



pointed tip

ball tip



extension rods

| 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    | 63x17mm    |
| 2141-202A | 0-300mm/0-12" | 12.7mm/0.5"              | 0.01mm/0.0005"               | ±20µm    | 101.5x17mm |
| 2141-301  | 0-300mm/0-12" | 12.7mm/0.5"              | 0.001mm/0.00005"             | ±5µm     | 63x17mm    |
| 2141-302  | 0-300mm/0-12" | 12.7mm/0.5"              | 0.001mm/0.00005"             | ±5µm     | 101.5x17mm |

DATA  
OUTPUT

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

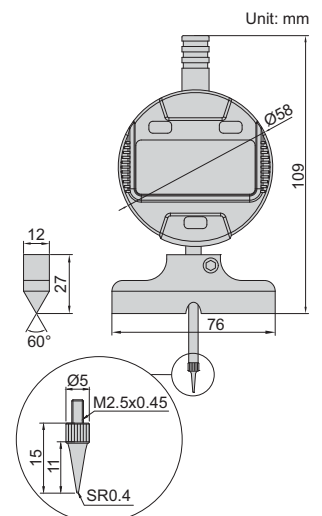
- Button function: on/off, zero, inch/mm, ABS, data preset, change measuring direction
- CR2032 battery, automatic power off
- Data output
- Stainless steel base with 60° knife edge
- Optional accessory: data output cable (code 7315-50M, 7302-40M)



front view

2143-101

side view



Unit: mm

| 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    |

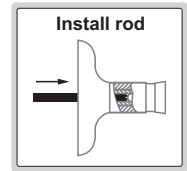
## DIGITAL DEPTH MICROMETERS

**IP65**  
WATERPROOF

**DATA**  
OUTPUT

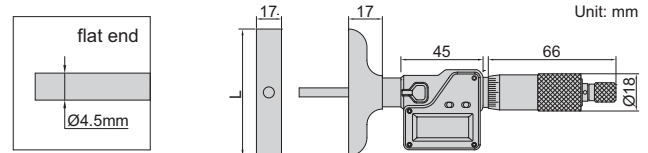
3

- Resolution: 0.001mm/0.00005"
- Micrometer head accuracy:  $\pm 3\mu\text{m}$
- Rod accuracy:  $\pm(2+L/75)\mu\text{m}$ , L is the measuring range in mm
- Button function: on/off, set, mm/inch, ABS/INC
- IP65 dust/waterproof
- Data output
- LR44 battery, automatic power off
- Rods with flat end
- Ratchet stop
- Optional accessory: data output cable (code 7315-30, 7302-30)

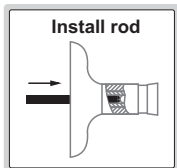


3540-50

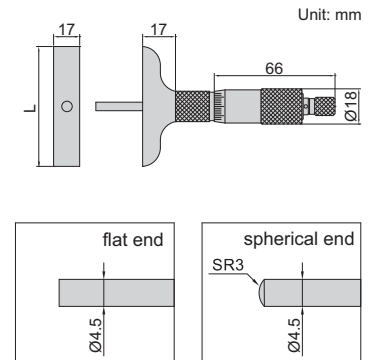
| Code      | Range         | Rods   | L       |
|-----------|---------------|--------|---------|
| 3540-25   | 0-25mm/0-1"   | 1 pc   | 101.5mm |
| 3540-50   | 0-50mm/0-2"   | 2 pcs  | 101.5mm |
| 3540-100  | 0-100mm/0-4"  | 4 pcs  | 101.5mm |
| 3540-150  | 0-150mm/0-6"  | 6 pcs  | 101.5mm |
| 3540-300  | 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:  $\pm 3\mu\text{m}$
- Rod accuracy:  $\pm(2+L/75)\mu\text{m}$ , 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

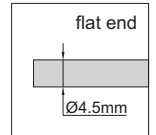
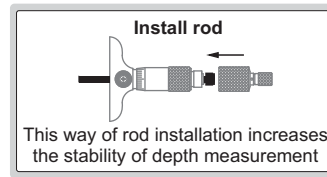
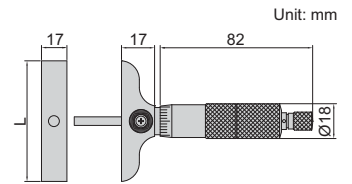
3  
4

- Meet DIN863-2
- Graduation: 0.01mm
- Micrometer head accuracy:  $\pm 3\mu\text{m}$
- Rod accuracy:  $\pm (2+L/75)\mu\text{m}$ , 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    |



3241-100



## HIGH PRECISION DIGITAL HEIGHT GAGES



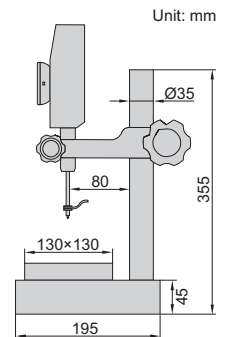
power supplied by charge pal



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



1155-505



- High stability, high precision, high response speed (5000mm/s)
- High brightness LED display
- Ceramic base flatness:  $1\mu\text{m}$

| Code     | Range  | Resolution   | Accuracy (20°C)   | Measuring force | Output | Power supply                     |
|----------|--------|--|-------------------|-----------------|--------|----------------------------------|
| 1155-505 | 0~50mm | 0.5 $\mu\text{m}$ /0.00002"<br>(can switch to: 1 $\mu\text{m}$ /0.00005")  | 1.5 $\mu\text{m}$ | 1.0~1.5N        | USB    | 5V/1A<br>(adapter or charge pal) |
| 1155-510 | 0~50mm | 0.1 $\mu\text{m}$ /0.000005"<br>(can switch to: 1 $\mu\text{m}$ /0.00005") | 1 $\mu\text{m}$   | 1.0~1.5N        | USB    | 5V/1A<br>(adapter or charge pal) |

### OPTIONAL ACCESSORY

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

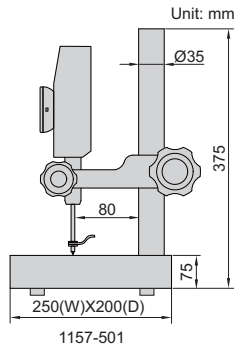
### STANDARD DELIVERY

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

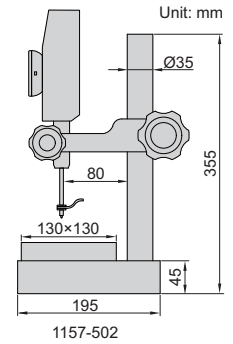
## DIGITAL HEIGHT GAGES



1157-501



1157-502



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



power supplied by charge pal



foot switch

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

| Code     | Range  | Resolution   | Accuracy (20°C) | Measuring force | Output | Power supply                  | Base                    |
|----------|--------|--------------|-----------------|-----------------|--------|-------------------------------|-------------------------|
| 1157-501 | 0~50mm | 1µm/0.00005" | 3µm             | 1.0~1.5N        | USB    | 5V/1A (adapter or charge pal) | granite (flatness: 2µm) |
| 1157-502 | 0~50mm | 1µm/0.00005" | 3µm             | 1.0~1.5N        | USB    | 5V/1A (adapter or charge pal) | ceramic (flatness: 1µm) |

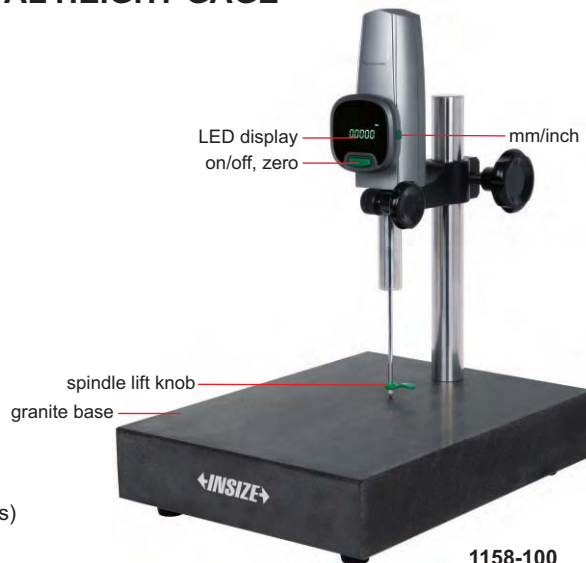
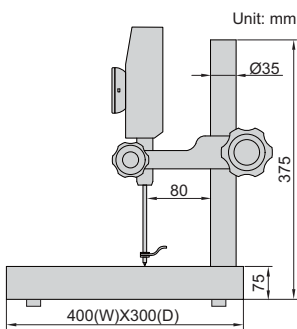
### OPTIONAL ACCESSORY

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

### STANDARD DELIVERY

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

## LARGE RANGE DIGITAL HEIGHT GAGE

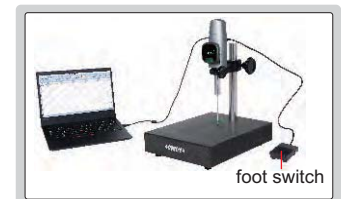


1158-100

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



power supplied by charge pal



foot switch

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

### STANDARD DELIVERY

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

### OPTIONAL ACCESSORY

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

| Code     | Range   | Resolution                                    | Accuracy (20°C) | Measuring force | Output | Power supply                  |
|----------|---------|---|-----------------|-----------------|--------|-------------------------------|
| 1158-100 | 0~100mm | 0.1µm/0.000005" (can switch to: 1µm/0.00005") | 3µm             | 1.0~1.5N        | USB    | 5V/1A (adapter or charge pal) |

**INSPECTION  
CERTIFICATE**

**DATA  
OUTPUT**

# 1D MANUAL HEIGHT GAGE (WITHOUT AIR CUSHION) CODE DHG-C420

**INSIZE PLUS  
MADE IN EUROPE**



software CD  
(included)

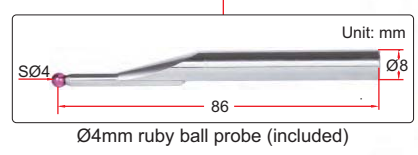
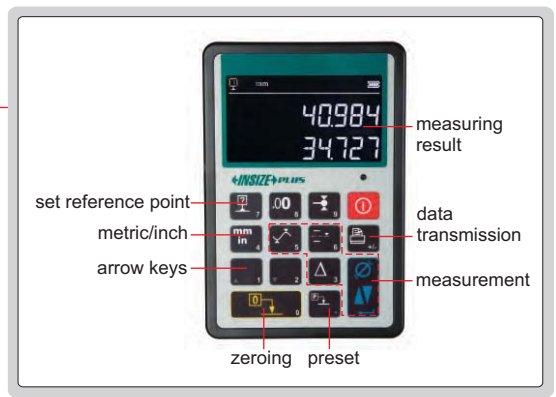


VIDEO

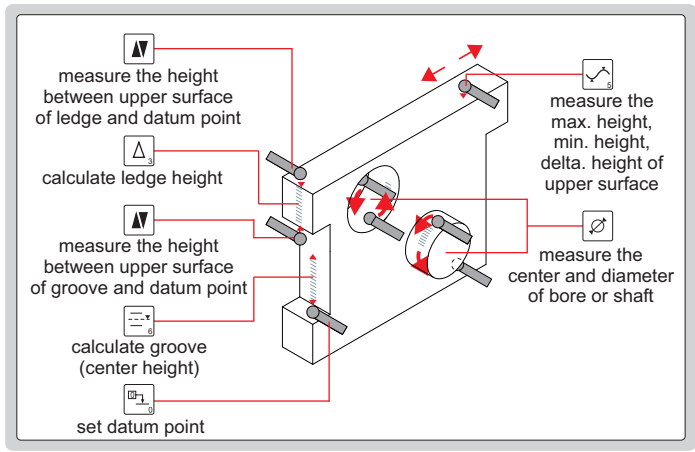


**DHG-C420**

- Set 9 reference points
- Probe can be moved quickly by hand
- Touch buttons
- LED display with backlight
- Built-in rechargeable battery, 40 hours working
- Measurement results can be sent to Excel/Word, equivalent to keyboard input



hand wheel



- measure height between measuring point and datum point
- maximum, minimum, TIR measurement
- calculate difference between two measured values
- measure diameter and center of shafts
- calculate average value of two measured values

**SPECIFICATION**

|                     |                                     |
|---------------------|-------------------------------------|
| Measuring range     | 0~406mm                             |
| Accuracy (at 20°C)  | 8µm                                 |
| Repeatability       | 3µm                                 |
| Resolution          | 0.1mm, 0.01mm, 0.001mm (selectable) |
| Data output         | USB                                 |
| Measuring force     | 0.75N, 1N, 1.25N, 1.5N (selectable) |
| Power supply        | rechargeable battery                |
| Working temperature | 10°C~40°C                           |
| Weight              | 21kg                                |

**STANDARD DELIVERY**

|                        |      |
|------------------------|------|
| Main unit              | 1 pc |
| Ø4mm ruby ball probe   | 1 pc |
| Calibration block      | 1 pc |
| AC/DC adapter          | 1 pc |
| Software and USB cable | 1 pc |

**OPTIONAL ACCESSORY**

|             |  |
|-------------|--|
| Transmitter | 7306-100   |
| Receiver    | 7306-2   |
| Probe       | DHG-C-C2A<br>DHG-C-C4A<br>DHG-C-R4<br>DHG-C-R5B<br>DHG-C-R10<br>DHG-C-P1 |

To be continued

Continued from previous page

■ Probe (optional) for DHG-C420

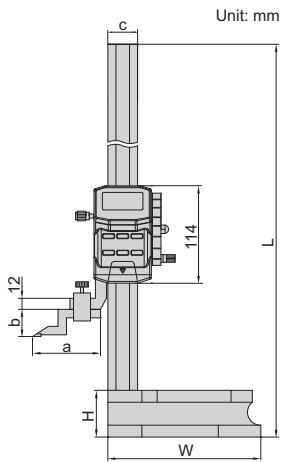
Unit: mm

|  |  |   |
|--|--|---|
| <p>SØ2mm carbide ball probe, code <b>DHG-C-C2A</b></p> | <p>SØ4mm carbide ball probe, code <b>DHG-C-C4A</b></p> | <p>Ø1.5mm pin probe, code <b>DHG-C-P1</b></p>       |
| <p>SØ10mm ruby ball probe, code <b>DHG-C-R10</b></p>   | <p>SØ4mm ruby ball probe, code <b>DHG-C-R4</b></p>     | <p>SØ5mm ruby ball probe, code <b>DHG-C-R5B</b></p> |

## DIGITAL HEIGHT GAGES WITH DRIVING WHEEL

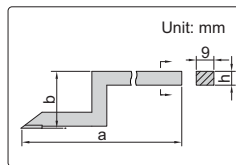
DATA OUTPUT

INSPECTION CERTIFICATE TRACEABLE TO DKD



Unit: mm

scriber (included)



Unit: mm

- 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: data output cable (code 7315-22, 7302-22), clamp for protractors (code 2372-CLAMP)



1156-300

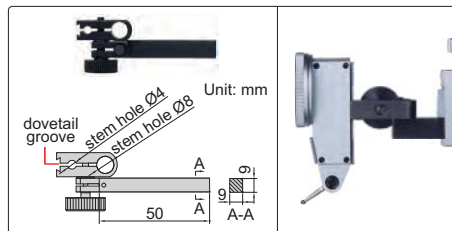
front

1156-1000

side

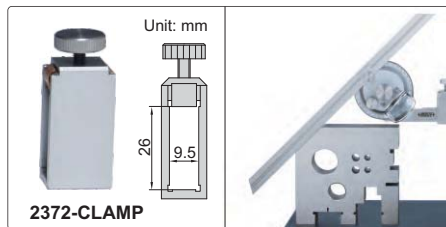
supporting rod

dial test indicator holder (included)



Unit: mm

clamp for protractors (optional)



Unit: mm

2372-CLAMP

| 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 traceable to DKD Germany



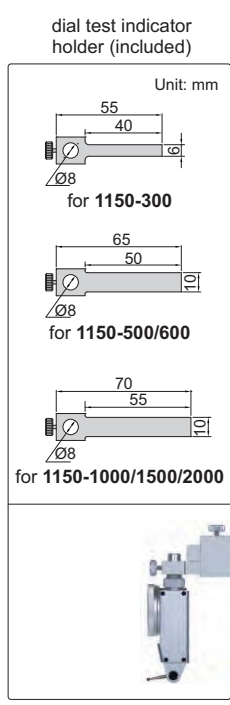
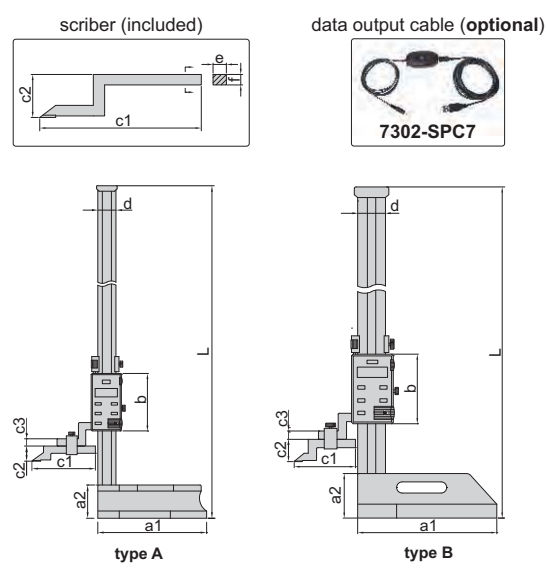
ATTENTION: CAN NOT USE CLAMP FOR PROTRACTORS (CODE 2372-CLAMP)

ATTENTION: LOW ACCURACY

DATA OUTPUT

### DIGITAL HEIGHT GAGES (ECONOMIC TYPE)

- 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: data output cable (code 7302-SPC7, keyboard format)



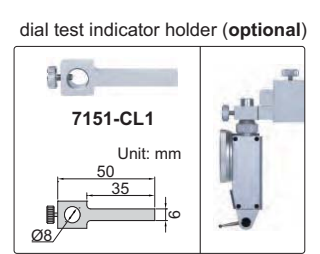
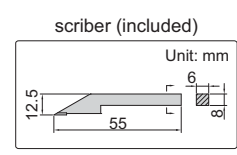
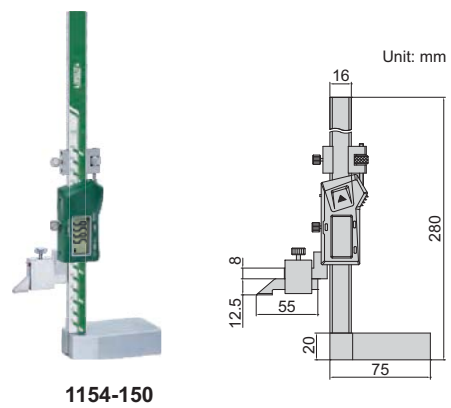
| Code      | Range          | Type | Accuracy | L      | a1    | a2   | b     | c1    | c2   | c3   | d    | e    | f    |
|-----------|----------------|------|----------|--------|-------|------|-------|-------|------|------|------|------|------|
| 1150-300  | 0-300mm/0-12"  | A    | ±0.05mm  | 470mm  | 135mm | 45mm | 80mm  | 76mm  | 25mm | 10mm | 23mm | 6mm  | 8mm  |
| 1150-500  | 0-500mm/0-20"  | A    | ±0.06mm  | 720mm  | 180mm | 55mm | 95mm  | 103mm | 25mm | 12mm | 30mm | 10mm | 12mm |
| 1150-600  | 0-600mm/0-24"  | A    | ±0.06mm  | 820mm  | 180mm | 55mm | 95mm  | 103mm | 25mm | 12mm | 30mm | 10mm | 12mm |
| 1150-1000 | 0-1000mm/0-40" | B    | ±0.08mm  | 1275mm | 250mm | 80mm | 125mm | 110mm | 39mm | 15mm | 50mm | 10mm | 15mm |
| 1150-1500 | 0-1500mm/0-60" | B    | ±0.12mm  | 1790mm | 280mm | 80mm | 125mm | 110mm | 39mm | 15mm | 50mm | 10mm | 15mm |
| 1150-2000 | 0-2000mm/0-80" | B    | ±0.16mm  | 2290mm | 280mm | 80mm | 125mm | 110mm | 39mm | 15mm | 50mm | 10mm | 15mm |

ATTENTION: CAN NOT USE CLAMP FOR PROTRACTORS (CODE 2372-CLAMP)

DATA OUTPUT

### DIGITAL HEIGHT GAGES

- 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)



With data interface (data output cable code 7315-21, 7302-21, optional)

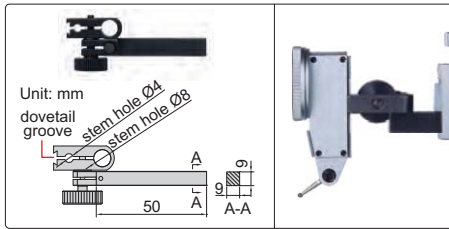
| Code     | Range        | Accuracy |
|----------|--------------|----------|
| 1154-150 | 0-150mm/0-6" | ±0.03mm  |

Built-in wireless

| Code       | Range        | Accuracy |
|------------|--------------|----------|
| 1154-150WL | 0-150mm/0-6" | ±0.03mm  |

## DIAL HEIGHT GAGES

dial test indicator holder (included)

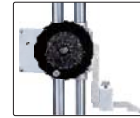
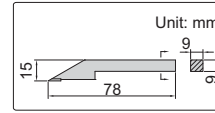


- Dial indicator graduation: 0.01mm
- One counter reads in the plus direction and another in the minus direction, so incremental measurement can be made in either direction
- Carbide tipped scriber
- Made of stainless steel (except the base)
- With driving wheel
- With dial test indicator holder
- Supplied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



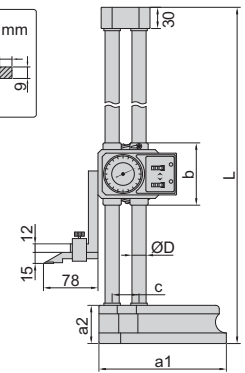
1351-300

scriber (included)



driving wheel on the back

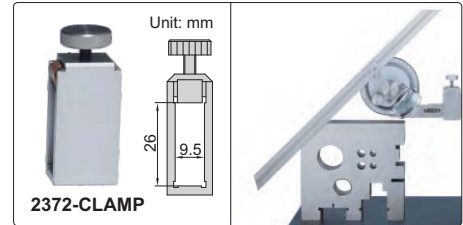
Unit: mm



| 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 |

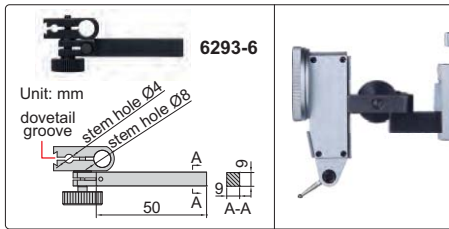
(mm)

clamp for protractors (optional)



## VERNIER HEIGHT GAGES

dial test indicator holder (optional)

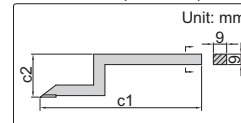


- Graduation: 0.02mm/0.001"
- Adjustable main scale to set zero
- Carbide tipped scriber
- Made of stainless steel (except the base)
- Satin chrome plated scale
- Supplied with magnifier
- With fine adjustment
- Supplied with dust cover
- Optional accessory: dial test indicator holder (code **6293-6**),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

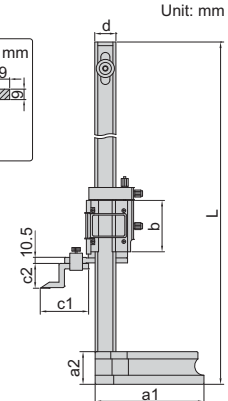


1250-300

scriber (included)



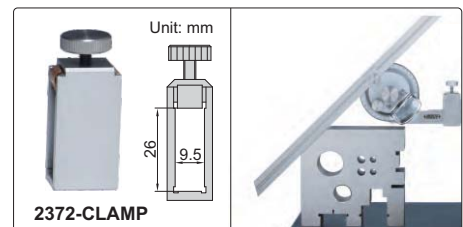
Unit: mm



| 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 |

(mm)

clamp for protractors (optional)

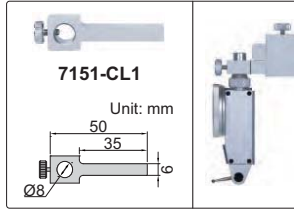


**ATTENTION: CAN NOT USE CLAMP FOR PROTRACTORS (CODE 2372-CLAMP)**

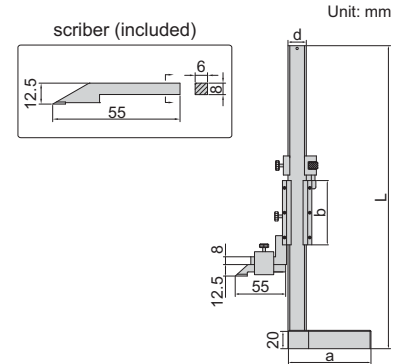
## VERNIER HEIGHT GAGES

- 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**)

dial test indicator holder (optional)



1253-200



Unit: 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 |

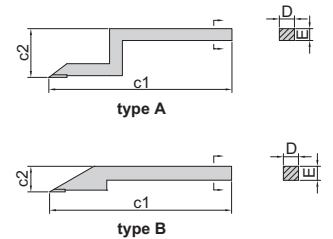
## SCRIBERS FOR HEIGHT GAGES

- Carbide tipped



7150-SC1

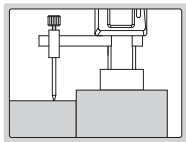
| Code      | For height gages                | Type | c1    | c2     | D    | E    |
|-----------|---------------------------------|------|-------|--------|------|------|
| 7150-SC1  | 1150-300                        | A    | 76mm  | 25mm   | 6mm  | 8mm  |
| 7150-SC2  | 1150-500, 1150-600              | 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    | B    | 78mm  | 15mm   | 9mm  | 9mm  |
| 7150-SC6  | 1250-300, 1156-300, 1156-600    | 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 |



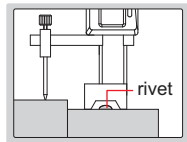
DATA OUTPUT

## MINI DIGITAL HEIGHT GAGES

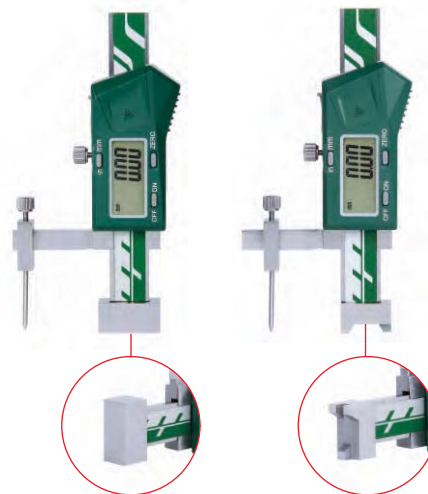
application of 1146-20A/1146-20AWL



application of 1146-20B/1146-20BWL

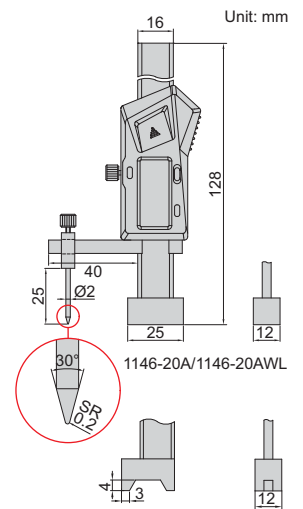


- Measure height difference of two surfaces (**1146-20B**, **1146-20BWL** suitable for surfaces with barrier, such as rivet)
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

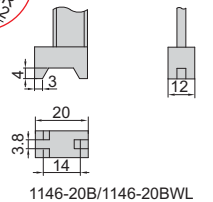


1146-20A

1146-20B



1146-20A/1146-20AWL



1146-20B/1146-20BWL

With data interface (data output cable code 7315-21, 7302-21, optional)

| Code     | Range           | Accuracy |
|----------|-----------------|----------|
| 1146-20A | 0~±20mm/0~±0.8" | ±0.02mm  |
| 1146-20B | 0~±20mm/0~±0.8" | ±0.02mm  |

Built-in wireless

| Code       | Range           | Accuracy |
|------------|-----------------|----------|
| 1146-20AWL | 0~±20mm/0~±0.8" | ±0.02mm  |
| 1146-20BWL | 0~±20mm/0~±0.8" | ±0.02mm  |

## HIGH PRECISION DIGITAL MICROMETERS/SNAP GAGES



NON-ROTATING SPINDLE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

IP65 WATERPROOF

DATA OUTPUT

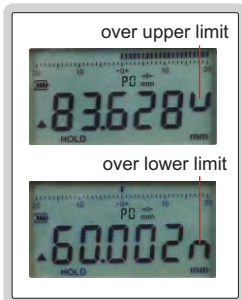
ONE TURN OF SLEEVE MAKES 5MM SPINDLE FEED, PRESS THE FORK, THE SPINDLE RETRACTS 3MM

MEASUREMENT ACCURACY IS NOT AFFECTED BY THE USE OF SLEEVE

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

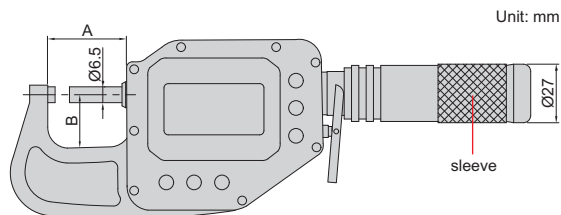
5

warning when over tolerance



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 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 gage blocks for zero setting
- Power: rechargeable battery, for 24 hours continuous working



### With data interface

Optional accessory:

wireless transmitter, code **7315-60**, wireless receiver, code **7315-2**, **7315-3**

data output cable (keyboard format), code **7302-60**

data output cable (serial port format), code **7305-G60**

(cable length 3m, optional cable length maximum 15m; RS232 protocol, optional RS485 protocol)

| 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/3-4" | 2µm      | 1µm           | 0.5µm           | 1µm         | 113mm | 57mm |

### Built-in wireless

Optional accessory:

wireless receiver (keyboard format), code **2134-R1**

wireless receiver (serial port format), 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/3-4" | 2µm      | 1µm           | 0.5µm           | 1µm         | 113mm | 57mm |

wireless receiver  
2134-R1, 2134-R2 (optional)



\* Supplied with manufacturer inspection certificate

**QUICK MEASUREMENT**  
ONE TURN OF SLEEVE OR RATCHET STOP MAKES 2MM SPINDLE FEED

**ATTENTION: SETTING STANDARDS ARE NOT INCLUDED**

**DATA OUTPUT**

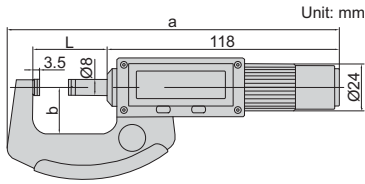
**STROKE 30mm**

**IP65 WATERPROOF**

**NON-ROTATING SPINDLE**

## HIGH PRECISION NON-ROTATING SPINDLE DIGITAL MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE



3661-30

| Code     | Range                  | Accuracy | L   | a   | b     |
|----------|------------------------|----------|-----|-----|-------|
| 3661-30  | 0-30mm/0-1.18"         | ±2µm     | 38  | 169 | 24    |
| 3661-55  | 25-55mm/0.98-2.17"     | ±2µm     | 63  | 195 | 30.5  |
| 3661-80  | 50-80mm/1.97-3.15"     | ±3µm     | 88  | 228 | 44    |
| 3661-105 | 75-105mm/2.95-4.13"    | ±3µm     | 113 | 257 | 57    |
| 3661-130 | 100-130mm/3.94-5.12"   | ±3µm     | 138 | 289 | 70    |
| 3661-155 | 125-155mm/4.92-6.1"    | ±3µm     | 163 | 315 | 83    |
| 3661-180 | 150-180mm/5.91-7.09"   | ±4µm     | 188 | 340 | 96    |
| 3661-205 | 175-205mm/6.89-8.07"   | ±4µm     | 213 | 363 | 109   |
| 3661-230 | 200-230mm/7.87-9.06"   | ±4µm     | 238 | 388 | 122   |
| 3661-255 | 225-255mm/8.86-10.04"  | ±4µm     | 268 | 429 | 135   |
| 3661-280 | 250-280mm/9.84-11.02"  | ±5µm     | 293 | 454 | 147.5 |
| 3661-305 | 275-305mm/10.83-12.01" | ±5µm     | 318 | 479 | 160   |

- Resolution: 0.01mm/0.0005", 0.001mm/0.00005", 0.0005mm/0.00002"
- Repeatability: 0.5µm
- Measuring force: 5-10N
- Flatness of measuring faces: 0.3µm
- Parallelism of measuring faces: 0.5µm
- Ratchet stop
- Non-rotating spindle, suitable for cylinders
- Quick measurement: one turn of sleeve or ratchet stop makes 2mm spindle feed
- Carbide measuring faces
- 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: setting standards (code 7386), data output cable (code 7305-A03, 7305-SPC4)

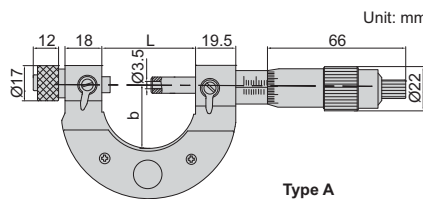
**INSPECTION CERTIFICATE**  
TRACEABLE TO DKD

## EXTERNAL SCREW THREAD MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE

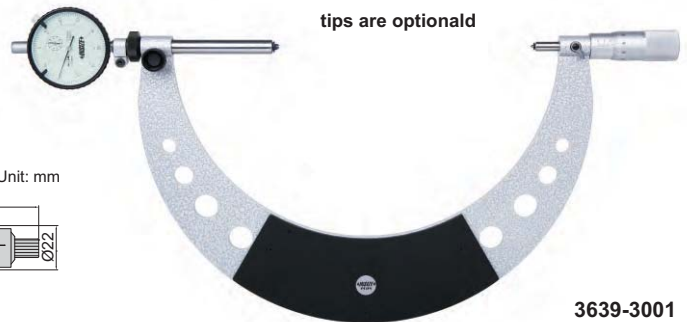


3639-25



Type A

dial indicator is optional

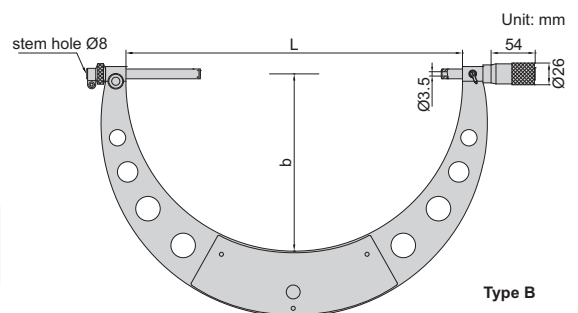


3639-3001

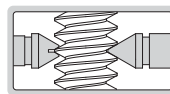
- Meet DIN863-3
- Measure pitch diameter of screw thread
- Graduation 0.01mm
- Optional accessory: measuring tips and setting standards for external screw thread micrometer (code 7384), dial indicators or digital indicators (reading 0.01mm or 0.001mm) (only for type B)

### Type A (ratchet thimble)

| Code      | Range     | Accuracy | L     | b      |
|-----------|-----------|----------|-------|--------|
| 3639-25*  | 0-25mm    | 4µm      | 45mm  | 31mm   |
| 3639-50*  | 25-50mm   | 4µm      | 70mm  | 35mm   |
| 3639-75*  | 50-75mm   | 5µm      | 95mm  | 48.5mm |
| 3639-100* | 75-100mm  | 5µm      | 120mm | 60mm   |
| 3639-125* | 100-125mm | 6µm      | 145mm | 72.5mm |
| 3639-150* | 125-150mm | 6µm      | 170mm | 80mm   |
| 3639-175* | 150-175mm | 7µm      | 195mm | 97.5mm |
| 3639-200* | 175-200mm | 7µm      | 220mm | 110mm  |
| 3639-225* | 200-225mm | 8µm      | 245mm | 122mm  |



Type B



### Type B (without ratchet thimble)

| Code       | Range     | Anvil retracting range | L     | b     |
|------------|-----------|------------------------|-------|-------|
| 3639-2001* | 100-200mm | 3mm                    | 217mm | 109mm |
| 3639-3001* | 200-300mm | 3mm                    | 317mm | 159mm |
| 3639-4001* | 300-400mm | 3mm                    | 417mm | 209mm |

\* Supplied with manufacturer inspection certificate traceable to DKD Germany

## MEASURING TIPS FOR EXTERNAL SCREW THREAD MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE

TIPS FOR TRAPEZOIDAL, ACME  
THREAD ARE ALSO AVAILABLE

ATTENTION: WHEN PITCH <0.4MM OR >63.5 TPI,  
SETTING STANDARDS CANNOT BE USED TO SET ZERO,  
A CALIBRATED WORK PIECE CAN BE USED INSTEAD

5

- Supplied in pair
- Made of hardened steel
- Suitable for 3639 series micrometers



7384-T108



### 60° thread angle

| Code      | Applicable pitch (mm) |
|-----------|-----------------------|
| 7384-T101 | 0.2                   |
| 7384-T102 | 0.225                 |
| 7384-T103 | 0.25                  |
| 7384-T104 | 0.3                   |
| 7384-T105 | 0.35                  |
| 7384-T106 | 0.4/0.45              |
| 7384-T107 | 0.5/0.6               |
| 7384-T108 | 0.7/0.75/0.8          |
| 7384-T109 | 1/1.25                |
| 7384-T110 | 1.5/1.75              |
| 7384-T111 | 2.0/2.5               |
| 7384-T112 | 3.0/3.5               |
| 7384-T113 | 4.0/4.5/5.0           |
| 7384-T114 | 5.5/6.0               |

### 55° thread angle

| Code      | Applicable pitch (TPI) |
|-----------|------------------------|
| 7384-T201 | 80                     |
| 7384-T202 | 72/64                  |
| 7384-T203 | 60/48                  |
| 7384-T204 | 40/32                  |
| 7384-T205 | 28/26/24/22            |
| 7384-T206 | 20/19/18/16            |
| 7384-T207 | 14/12/11               |
| 7384-T208 | 10/9/8                 |
| 7384-T209 | 7/6                    |
| 7384-T210 | 5/4.5/4                |
| 7384-T211 | 3.5/3.25/3/2.875/2.75  |
| 7384-T212 | 2.625/2.5/2            |

## SETTING STANDARDS FOR EXTERNAL SCREW THREAD MICROMETERS



7384-A100



### 60° thread angle

| Code      | L   | Ød  | Accuracy (mm) |
|-----------|-----|-----|---------------|
| 7384-A25  | 25  | 7.8 | ±1.5µm        |
| 7384-A50  | 50  | 7.8 | ±2µm          |
| 7384-A75  | 75  | 7.8 | ±2.5µm        |
| 7384-A100 | 100 | 7.8 | ±3µm          |
| 7384-A125 | 125 | 7.8 | ±3.5µm        |
| 7384-A150 | 150 | 7.8 | ±4µm          |
| 7384-A175 | 175 | 7.8 | ±4.5µm        |
| 7384-A200 | 200 | 7.8 | ±5µm          |
| 7384-A225 | 225 | 10  | ±5.5µm        |
| 7384-A250 | 250 | 10  | ±6µm          |
| 7384-A275 | 275 | 10  | ±6.5µm        |
| 7384-A300 | 300 | 10  | ±7µm          |

### 55° thread angle

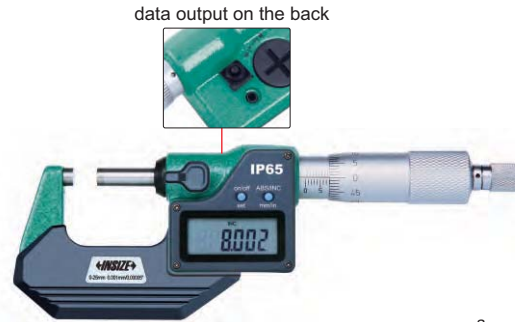
| Code      | L   | Ød  | Accuracy (mm) |
|-----------|-----|-----|---------------|
| 7384-B25  | 25  | 7.8 | ±1.5µm        |
| 7384-B50  | 50  | 7.8 | ±2µm          |
| 7384-B75  | 75  | 7.8 | ±2.5µm        |
| 7384-B100 | 100 | 7.8 | ±3µm          |
| 7384-B125 | 125 | 7.8 | ±3.5µm        |
| 7384-B150 | 150 | 7.8 | ±4µm          |
| 7384-B175 | 175 | 7.8 | ±4.5µm        |
| 7384-B200 | 200 | 7.8 | ±5µm          |
| 7384-B225 | 225 | 10  | ±5.5µm        |
| 7384-B250 | 250 | 10  | ±6µm          |
| 7384-B275 | 275 | 10  | ±6.5µm        |
| 7384-B300 | 300 | 10  | ±7µm          |

## WATERPROOF DIGITAL OUTSIDE MICROMETERS (WITH DATA OUTPUT)

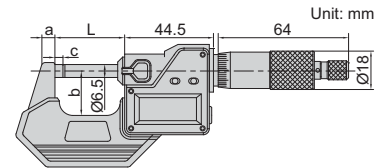
DATA  
OUTPUT

IP65  
WATERPROOF

- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Supplied with spherical anvil
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)



3101-25A



### Metric/Inch type (ratchet stop)

(mm)

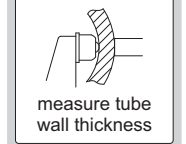
| Code       | Range            | Resolution       | Accuracy | L     | a  | b     | c   |
|------------|------------------|------------------|----------|-------|----|-------|-----|
| 3101-25A*  | 0-25mm/0-1"      | 0.001mm/0.00005" | ±2µm     | 34.5  | 6  | 25    | 3   |
| 3101-50A*  | 25-50mm/1-2"     | 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    |



3101-753A



3101-1506A

\*Supplied with manufacturer inspection certificate traceable to DKD Germany

## WATERPROOF DIGITAL OUTSIDE MICROMETERS (WITHOUT DATA OUTPUT)

- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- No data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Supplied with spherical anvil
- Setting standards are included (except 0-25mm/0-1")

**IP65**  
WATERPROOF

**ATTENTION: NO**  
DATA OUTPUT

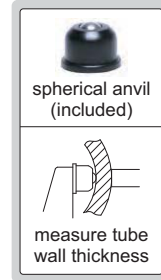
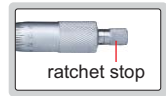
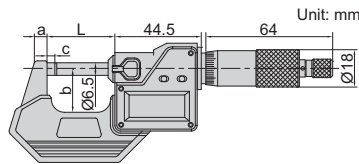
**INSPECTION**  
**CERTIFICATE**  
TRACEABLE TO DKD

### Ratchet stop type

| 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 |



3108-25A



### Friction thimble type

| Code       | Range       | Accuracy | L    | a | b  | c |
|------------|-------------|----------|------|---|----|---|
| 3108-25FA* | 0-25mm/0-1" | ±2µm     | 34.5 | 6 | 25 | 3 |

### 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 traceable to DKD Germany



3108-753A



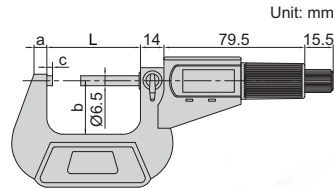
3108-1506A

## DIGITAL OUTSIDE MICROMETERS (BASIC TYPE, WITH DATA OUTPUT)

- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Friction thimble
- Supplied with spherical anvil
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory: data output cable

**INSPECTION**  
**CERTIFICATE**  
TRACEABLE TO DKD

**DATA**  
OUTPUT



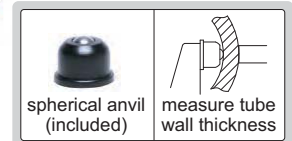
data output on the back



| 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 |



3102-50



### 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 traceable to DKD Germany



3102-753A



3102-1506A



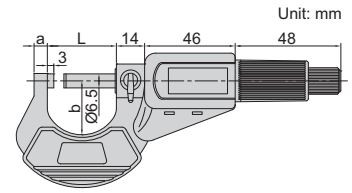
## DIGITAL OUTSIDE MICROMETERS (BASIC TYPE, WITHOUT DATA OUTPUT)

**ATTENTION: NO DATA OUTPUT**

- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, ABS/INC
- No data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Friction thimble
- Supplied with spherical anvil
- Setting standards are included (except 0-25mm/0-1")



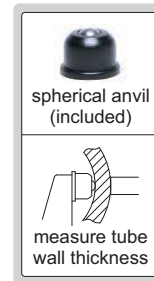
3109-25A



| Code       | Range          | Accuracy | L     | a    | b      |
|------------|----------------|----------|-------|------|--------|
| 3109-25A*  | 0-25mm/0-1"    | ±2µm     | 32mm  | 6mm  | 27.5mm |
| 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 | 21mm | 104mm  |
| 3109-200A  | 175-200mm/7-8" | ±4µm     | 207mm | 21mm | 117mm  |

**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    |



3109-753A



3109-1506A

\*Supplied with manufacturer inspection certificate traceable to DKD Germany

**DATA OUTPUT**

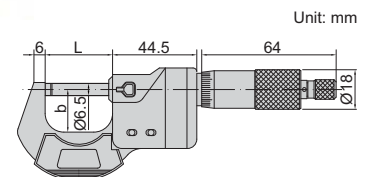
**IP65 WATERPROOF**

## DIGITAL VERTICAL MICROMETERS

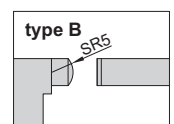
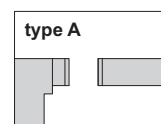
- Measure the thickness of plates for easy reading
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Carbide spindle tip
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)



3565-25A



| 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 traceable to DKD Germany

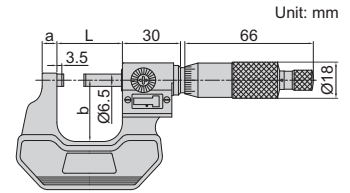
## OUTSIDE MICROMETERS WITH COUNTER

- Counter resolution: 0.01mm
- Thimble graduation: 0.01mm
- Carbide measuring faces
- Meet DIN 863-1
- Ratchet stop
- Supplied with setting standards (except 0-25mm)

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO DKD



3400-25



5

| 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   |

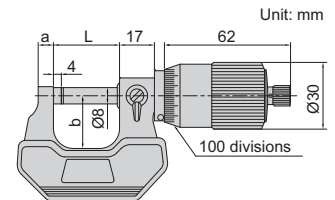
\*Supplied with manufacturer inspection certificate traceable to DKD Germany

## QUICK FEEDING OUTSIDE MICROMETERS

- Graduation 0.01mm
- 1mm feeding of each turn
- Friction thimble
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm)



3208-25B



| 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 |

## OUTSIDE MICROMETERS

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO DKD

| 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 |

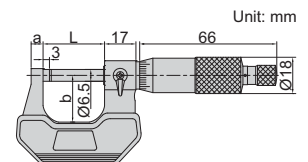
### Micrometer set

| 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 traceable to DKD Germany



3202-25A



- Graduation 0.01mm
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm)

## OUTSIDE MICROMETERS



3203-25A



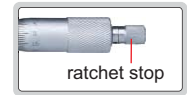
3203-50A



3203-1004A

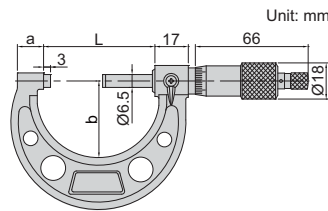


3203-3006A



5

- 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"   | ±.0001"  | 1.260"  | .354" | 1.102" |
| 3203-2A* | 1-2"   | ±.0001"  | 2.244"  | .551" | 1.496" |
| 3203-3A* | 2-3"   | ±.0001"  | 3.228"  | .591" | 1.929" |
| 3203-4A* | 3-4"   | ±.00015" | 4.213"  | .591" | 2.362" |
| 3203-5A* | 4-5"   | ±.00015" | 5.236"  | .650" | 2.874" |
| 3203-6A* | 5-6"   | ±.00015" | 6.220"  | .650" | 3.346" |
| 3203-7A  | 6-7"   | ±.0002"  | 7.205"  | .764" | 4.094" |
| 3203-8A  | 7-8"   | ±.0002"  | 8.228"  | .764" | 4.606" |
| 3203-9A  | 8-9"   | ±.0002"  | 9.213"  | .764" | 5.118" |
| 3203-10A | 9-10"  | ±.00025" | 10.236" | .764" | 5.591" |
| 3203-11A | 10-11" | ±.00025" | 11.220" | .764" | 6.102" |
| 3203-12A | 11-12" | ±.00025" | 12.205" | .764" | 6.614" |

### 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    |

### Inch micrometer set (ratchet stop type)

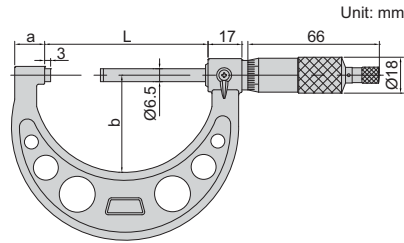
| Code       | Range | Micrometers included  | Packaging       |
|------------|-------|---|-----------------|
| 3203-33A*  | 0-3"  | 3203-1A, 3203-2A, 3203-3A   | blow mould case |
| 3203-44A*  | 0-4"  | 3203-1A, 3203-2A, 3203-3A, 3203-4A  | blow mould case |
| 3203-66A*  | 0-6"  | 3203-1A, 3203-2A, 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"  | ±.0001"  | 1.260" | .354" | 1.102" |
| 3203-2FA* | 1-2"  | ±.0001"  | 2.244" | .551" | 1.496" |
| 3203-3FA* | 2-3"  | ±.0001"  | 2.244" | .591" | 1.929" |

\* Supplied with manufacturer inspection certificate traceable to DKD Germany or NIST USA

## LONG SPINDLE OUTSIDE MICROMETERS

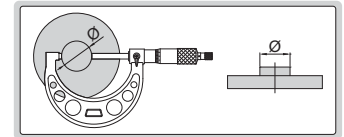
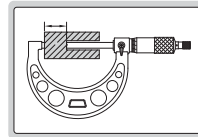


- Graduation 0.01mm
- Carbide measuring faces
- Meet DIN863-1
- Ratchet stop
- Supplied with setting standards (except 0-25mm)



3209-25

| 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 |



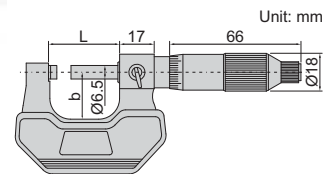
## NON MAGNETIC MICROMETERS

- 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

- Graduation 0.01mm
- Graduations on two sides
- Ratchet stop
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm)



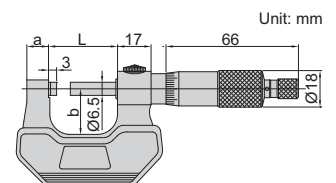
front



back

3236-25B

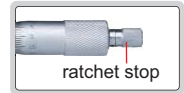
| Code      | Range     | Accuracy | L   | a | b   |
|-----------|-----------|----------|-----|---|-----|
| 3236-25B  | 0-25mm    | 4µm      | 32  | 6 | 24  |
| 3236-50B  | 25-50mm   | 4µm      | 57  | 8 | 32  |
| 3236-75B  | 50-75mm   | 5µm      | 82  | 8 | 45  |
| 3236-100B | 75-100mm  | 5µm      | 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 |



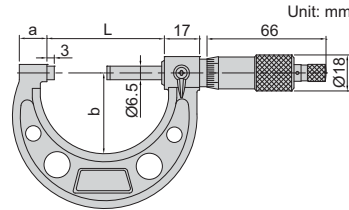


- Graduation 0.001mm
- Carbide measuring faces
- Meet DIN863-1
- Supplied with setting standards (except 0-25mm)

## 1µm GRADUATION OUTSIDE MICROMETERS



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 |

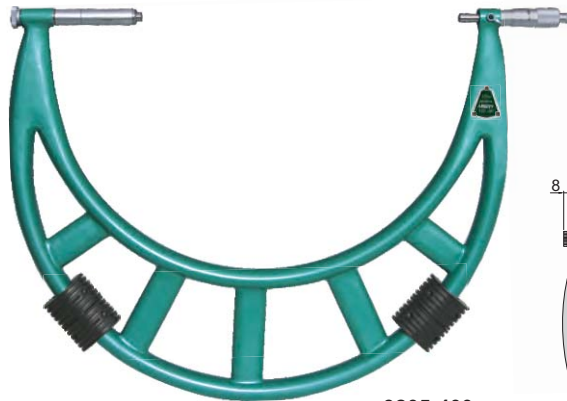
\* Supplied with manufacturer inspection certificate traceable to DKD Germany

## OUTSIDE MICROMETERS WITH EXTENSION ANVIL COLLAR

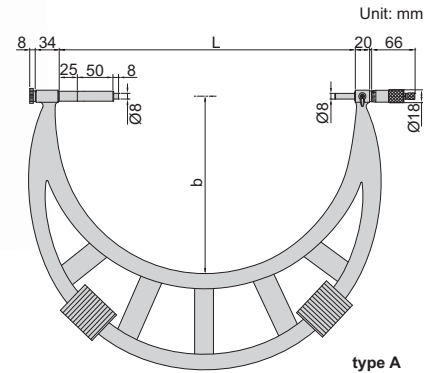
- Graduation 0.01mm
- Adjust collars for different measuring ranges
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards



adjust collars for different measuring ranges



3205-400

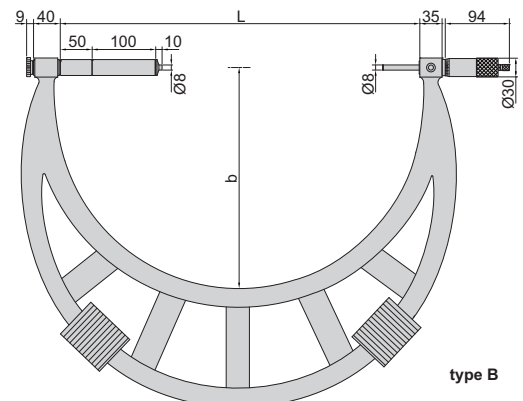


type A



| 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                  |

(mm)

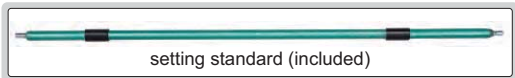
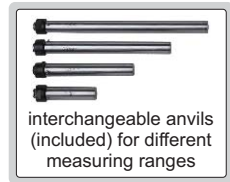


type B

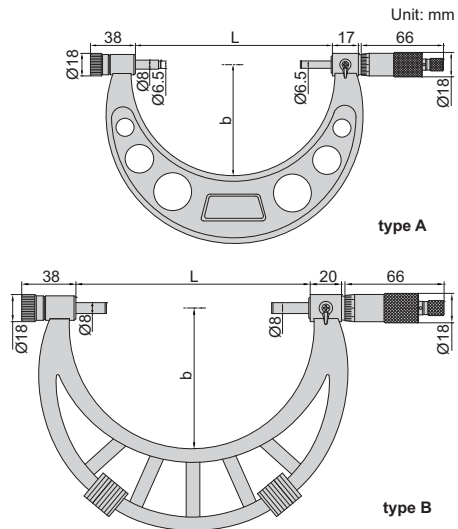
## OUTSIDE MICROMETERS WITH INTERCHANGEABLE ANVILS



- Graduation 0.01mm
- Ratchet stop
- Meet DIN863-3
- Carbide measuring faces
- Supplied with setting standards



| 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**

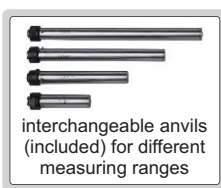
- Resolution 0.001mm/0.0001" (resolution of 3506-100A and 3506-150A is 0.001mm/0.00005")
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: data output cable (code 7315-30, 7302-30)



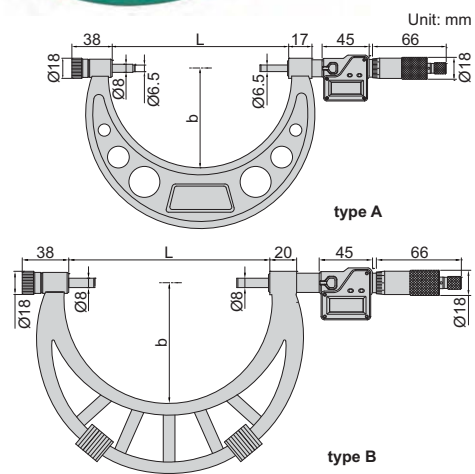
3506-100A



3506-400A

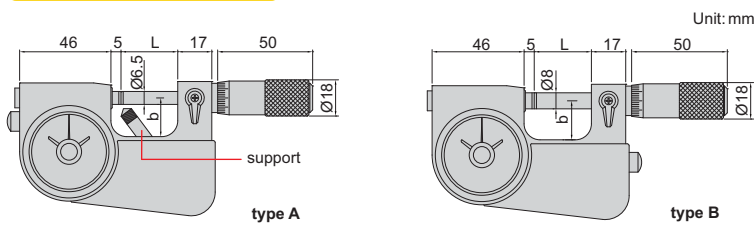


| Code       | Range             | Type | Accuracy | L    | b   | Setting standard (included)  |
|------------|-------------------|------|----------|------|-----|------------------------------|
| 3506-100A  | 0-100mm/0-4"      | A    | ±5µm     | 105  | 57  | 25, 50, 75                   |
| 3506-150A  | 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                     |



**ATTENTION: SETTING STANDARDS ARE NOT INCLUDED**

## INDICATING MICROMETERS



- Meet DIN863-3
- Micrometer head graduation: 0.002mm
- Dial indicator: range  $\pm 0.04$ mm, graduation 0.001mm, accuracy 0.001mm
- Carbide measuring faces
- Optional accessory: gage blocks grade 0 (4101-A series), for zero setting



3332-25



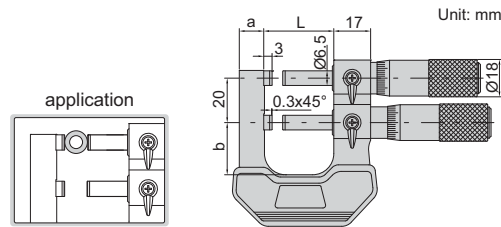
3332-25B

| Code     | Micrometer head range | Micrometer head accuracy | Type | L     | b  | Remark          |
|----------|-----------------------|--------------------------|------|-------|----|-----------------|
| 3332-25  | 0-25mm                | 4 $\mu$ m                | A    | 28.5  | 19 | with support    |
| 3332-50  | 25-50mm               | 4 $\mu$ m                | A    | 53.5  | 30 | with support    |
| 3332-75  | 50-75mm               | 5 $\mu$ m                | A    | 78.5  | 45 | without support |
| 3332-100 | 75-100mm              | 5 $\mu$ m                | A    | 103.5 | 57 | without support |
| 3332-25B | 0-25mm                | 4 $\mu$ m                | B    | 28.5  | 19 | without support |

5

## LIMIT MICROMETERS

- Used as Go/No-Go gage by setting upper and lower limits
- Graduation 0.002mm
- Carbide measuring faces
- Supplied with setting standard (except 0-25mm)



3235-25A

| Code     | Range   | Accuracy  | L    | a    | b    |
|----------|---------|-----------|------|------|------|
| 3235-25A | 0-25mm  | 4 $\mu$ m | 32mm | 12mm | 24mm |
| 3235-50A | 25-50mm | 4 $\mu$ m | 57mm | 15mm | 32mm |

**ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS**

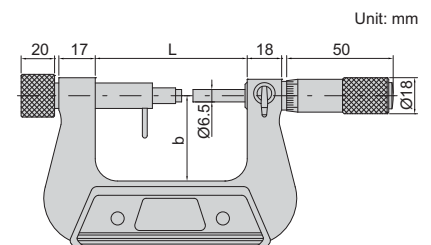
## MICROMETERS WITH DIAL INDICATOR

- 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")



3331-25A

| Code      | Micrometer head range | Micrometer head accuracy | L       | b      |
|-----------|-----------------------|--------------------------|---------|--------|
| 3331-25A  | 0-25mm                | 4 $\mu$ m                | 67mm    | 38mm   |
| 3331-50A  | 25-50mm               | 4 $\mu$ m                | 92.4mm  | 50mm   |
| 3331-75A  | 50-75mm               | 5 $\mu$ m                | 117.6mm | 62mm   |
| 3331-100A | 75-100mm              | 5 $\mu$ m                | 143mm   | 70mm   |
| 3331-125A | 100-125mm             | 6 $\mu$ m                | 168.2mm | 82mm   |
| 3331-150A | 125-150mm             | 6 $\mu$ m                | 192mm   | 94.5mm |
| 3331-175A | 150-175mm             | 7 $\mu$ m                | 217mm   | 107mm  |

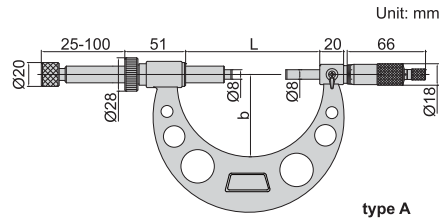


## MICROMETERS WITH DIAL INDICATOR

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS



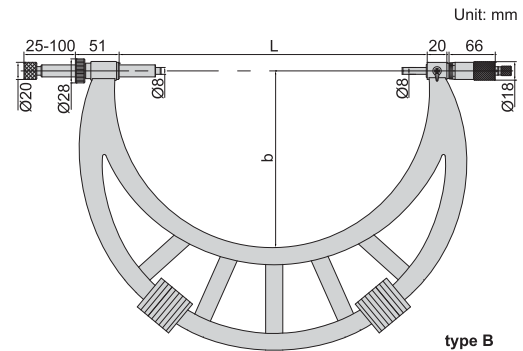
3296-100A



type A



3296-400A



type B

| 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

- Measure width of grooves inside bores
- Graduation 0.01mm
- Two graduations for inside and outside measurements
- Non-rotating spindle



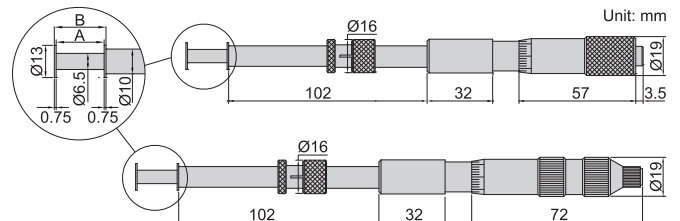
3287-25A



3287-50B

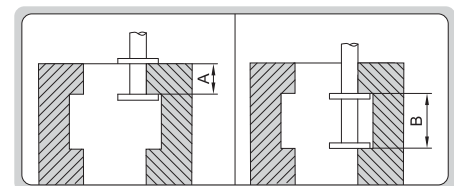
### No ratchet stop

| Code      | Range (outside A) | Range (inside B) | Accuracy |
|-----------|-------------------|------------------|----------|
| 3287-25A  | 0-25mm            | 1.6-26.5mm       | 10µm     |
| 3287-50A  | 25-50mm           | 26.5-51.5mm      | 10µm     |
| 3287-75A  | 50-75mm           | 51.5-76.5mm      | 10µm     |
| 3287-100A | 75-100mm          | 76.5-101.5mm     | 10µm     |



### Two-directional ratchet stop

| Code      | Range (outside A) | Range (inside B) | Accuracy |
|-----------|-------------------|------------------|----------|
| 3287-25B  | 0-25mm            | 1.6-26.5mm       | 10µm     |
| 3287-50B  | 25-50mm           | 26.5-51.5mm      | 10µm     |
| 3287-75B  | 50-75mm           | 51.5-76.5mm      | 10µm     |
| 3287-100B | 75-100mm          | 76.5-101.5mm     | 10µm     |







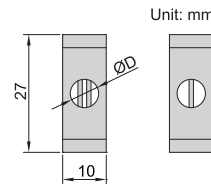
- Used with standard outside micrometers to measure pitch diameter of screw threads
- Diameter accuracy:  $\pm 0.5\mu\text{m}$
- Cylindricity:  $1\mu\text{m}$
- Hardness: HRC60
- Supplied with manufacturer inspection certificate



**Formula of pitch diameter E**  
 $E = M - 3d + 0.866025P$   
**M**=measured value of the micrometer  
**d**=diameter of the pin gage (choose diameter of pin gage according to pitch:  $d = 0.577P$ )  
**P**=screw thread pitch  
**The formula is suitable for 60° screw**


**7382-19**

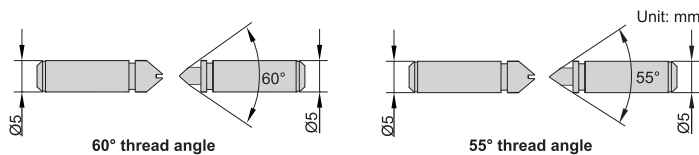
application


**For outside micrometers with spindle Ø6.35mm (ØD)**

| Code     | Pin gage diameter (Ød)                    | Applicable pitch     |
|----------|---|----------------------|
| 7382-11  | 0.170mm                                   | 0.2mm, 0.25mm, 0.3mm |
| 7382-12  | 0.195mm                                   | 0.35mm               |
| 7382-13  | 0.220mm                                   | 0.4mm                |
| 7382-14  | 0.250mm                                   | 0.45mm               |
| 7382-15  | 0.290mm                                   | 0.5mm                |
| 7382-16  | 0.335mm                                   | 0.6mm                |
| 7382-17  | 0.390mm                                   | 0.7mm                |
| 7382-18  | 0.455mm                                   | 0.75mm, 0.8mm        |
| 7382-19  | 0.530mm                                   | 0.9mm                |
| 7382-110 | 0.620mm                                   | 1.0mm                |
| 7382-111 | 0.725mm                                   | 1.25mm               |
| 7382-112 | 0.895mm                                   | 1.5mm                |
| 7382-113 | 1.100mm                                   | 1.75mm, 2.0mm        |
| 7382-114 | 1.350mm                                   | 2.5mm                |
| 7382-115 | 1.650mm                                   | 3.0mm                |
| 7382-116 | 2.050mm                                   | 3.5mm                |
| 7382-117 | 2.550mm                                   | 4mm, 4.5mm           |
| 7382-118 | 3.200mm                                   | 5mm, 5.5mm, 6mm      |
| 7382-1S  | 18 pairs/set, including all above 3-wires |                      |

**For outside micrometers with spindle Ø6.50mm (ØD)**

| Code     | Pin gage diameter (Ød)                    | Applicable pitch     |
|----------|---|----------------------|
| 7382-21  | 0.170mm                                   | 0.2mm, 0.25mm, 0.3mm |
| 7382-22  | 0.195mm                                   | 0.35mm               |
| 7382-23  | 0.220mm                                   | 0.4mm                |
| 7382-24  | 0.250mm                                   | 0.45mm               |
| 7382-25  | 0.290mm                                   | 0.5mm                |
| 7382-26  | 0.335mm                                   | 0.6mm                |
| 7382-27  | 0.390mm                                   | 0.7mm                |
| 7382-28  | 0.455mm                                   | 0.75mm, 0.8mm        |
| 7382-29  | 0.530mm                                   | 0.9mm                |
| 7382-210 | 0.620mm                                   | 1.0mm                |
| 7382-211 | 0.725mm                                   | 1.25mm               |
| 7382-212 | 0.895mm                                   | 1.5mm                |
| 7382-213 | 1.100mm                                   | 1.75mm, 2.0mm        |
| 7382-214 | 1.350mm                                   | 2.5mm                |
| 7382-215 | 1.650mm                                   | 3.0mm                |
| 7382-216 | 2.050mm                                   | 3.5mm                |
| 7382-217 | 2.550mm                                   | 4mm, 4.5mm           |
| 7382-218 | 3.200mm                                   | 5mm, 5.5mm, 6mm      |
| 7382-2S  | 18 pairs/set, including all above 3-wires |                      |

**MEASURING TIPS FOR SCREW THREAD MICROMETERS**

**7381-T13**
**Whitworth thread (55° thread angle)**
**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 |

- Supplied in pair
- Suitable for 3281, 3581 series micrometers

| 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 |

# SCREW THREAD MICROMETERS

NON-ROTATING SPINDLE

5

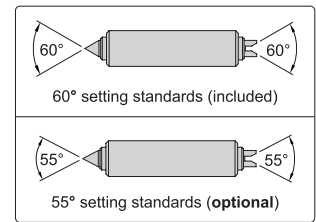
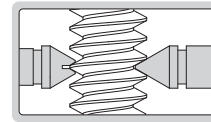


**3281-25A**  
(measuring tips are optional)



**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)**

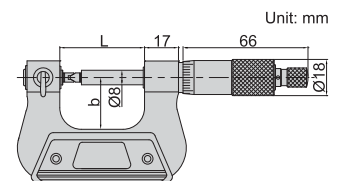
| Code      | Range     | L     | b    | 55° setting standard (optional) |
|-----------|-----------|-------|------|---------------------------------|
| 3281-25A  | 0-25mm    | 42    | 26   | —                               |
| 3281-50A  | 25-50mm   | 67    | 38   | 3281-SP1                        |
| 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                        |

**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) | —                               |
| 3281-S50  | 25-50mm   | 67    | 38   | 0.4-0.5mm/64-48TPI,   | 3281-SP1                        |
| 3281-S75  | 50-75mm   | 92    | 50   | 0.6-0.9mm/44-28TPI,   | 3281-SP2                        |
| 3281-S100 | 75-100mm  | 117.6 | 62   | 1-1.75mm/24-14TPI,  | 3281-SP3                        |
| 3281-S125 | 100-125mm | 143   | 70   | 2-3mm/13-9TPI,  | 3281-SP4                        |
| 3281-S150 | 125-150mm | 168.2 | 82   | 3.5-5mm/8-5TPI,   | 3281-SP5                        |
| 3281-S175 | 150-175mm | 192   | 94.5 | 5.5-7mm/4.5-3.5TPI  | 3281-SP6                        |
| 3281-S200 | 175-200mm | 217   | 107  |   | 3281-SP7                        |

**accuracy of micrometers with tips (mm)**

| Pitch   | Range  |        |        |        |         |         |
|---------|--------|--------|--------|--------|---------|---------|
|         | 0-25   | 25-50  | 50-75  | 75-100 | 100-125 | 125-200 |
| 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  |
| 2.5~3.5 | ±0.016 | ±0.019 | ±0.021 | ±0.021 | ±0.023  | ±0.025  |
| 4.0~7.0 | -      | ±0.021 | ±0.023 | ±0.023 | ±0.025  | ±0.028  |



DATA  
OUTPUT

NON-ROTATING  
SPINDLE

## DIGITAL SCREW THREAD MICROMETERS

5

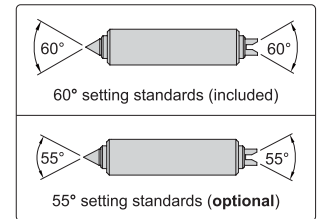
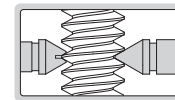


**3581-25A**  
(measuring tips are optional)



**3581-S50**  
(measuring tips are included)

- Measure pitch diameter of screw threads
- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Non-rotating spindle
- Ratchet stop
- Supplied with 60° setting standards (except 0-25mm/0-1")
- Optional accessory: 55° setting standards, data output cable (code **7315-30**, **7302-30**)



Measuring tips are optional (mm)

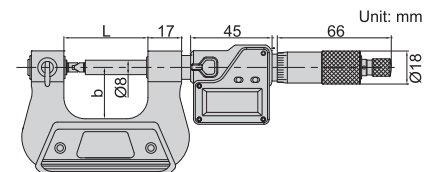
| Code             | Range          | L     | b    | 55° setting standard (optional) |
|------------------|----------------|-------|------|---------------------------------|
| <b>3581-25A</b>  | 0-25mm/0-1"    | 42    | 26   | —                               |
| <b>3581-50A</b>  | 25-50mm/1-2"   | 67    | 38   | <b>3281-SP1</b>                 |
| <b>3581-75A</b>  | 50-75mm/2-3"   | 92    | 50   | <b>3281-SP2</b>                 |
| <b>3581-100A</b> | 75-100mm/3-4"  | 117.6 | 62   | <b>3281-SP3</b>                 |
| <b>3581-125A</b> | 100-125mm/4-5" | 143   | 70   | <b>3281-SP4</b>                 |
| <b>3581-150A</b> | 125-150mm/5-6" | 168.2 | 82   | <b>3281-SP5</b>                 |
| <b>3581-175A</b> | 150-175mm/6-7" | 192   | 94.5 | <b>3281-SP6</b>                 |
| <b>3581-200A</b> | 175-200mm/7-8" | 217   | 107  | <b>3281-SP7</b>                 |

Measuring tips are included (mm)

| Code             | Range          | L     | b    | Measuring tips (included)  | 55° setting standard (optional) |
|------------------|----------------|-------|------|--|---------------------------------|
| <b>3581-S25</b>  | 0-25mm/0-1"    | 42    | 26   | 6 pairs of measuring tips: metric and unified thread (60° thread angle)<br>0.4-0.5mm/64-48TPI,<br>0.6-0.9mm/44-28TPI,<br>1-1.75mm/24-14TPI,<br>2-3mm/13-9TPI,<br>3.5-5mm/8-5TPI,<br>5.5-7mm/4.5-3.5TPI | —                               |
| <b>3581-S50</b>  | 25-50mm/1-2"   | 67    | 38   |  | <b>3281-SP1</b>                 |
| <b>3581-S75</b>  | 50-75mm/2-3"   | 92    | 50   |  | <b>3281-SP2</b>                 |
| <b>3581-S100</b> | 75-100mm/3-4"  | 117.6 | 62   |  | <b>3281-SP3</b>                 |
| <b>3581-S125</b> | 100-125mm/4-5" | 143   | 70   |  | <b>3281-SP4</b>                 |
| <b>3581-S150</b> | 125-150mm/5-6" | 168.2 | 82   |  | <b>3281-SP5</b>                 |
| <b>3581-S175</b> | 150-175mm/6-7" | 192   | 94.5 |  | <b>3281-SP6</b>                 |
| <b>3581-S200</b> | 175-200mm/7-8" | 217   | 107  |  | <b>3281-SP7</b>                 |

accuracy of micrometers with tips (mm)

| Pitch   | Range  |        |        |        |         |         |
|---------|--------|--------|--------|--------|---------|---------|
|         | 0-25   | 25-50  | 50-75  | 75-100 | 100-125 | 125-200 |
| 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  |
| 2.5~3.5 | ±0.016 | ±0.019 | ±0.021 | ±0.021 | ±0.023  | ±0.025  |
| 4.0~7.0 | -      | ±0.021 | ±0.023 | ±0.023 | ±0.025  | ±0.028  |



## GEAR TOOTH MICROMETERS

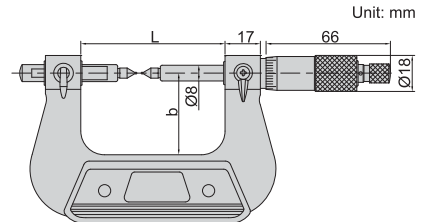
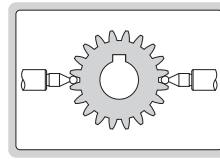
- Meet DIN863-3
- Measure over-pin diameter of gears
- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards (except 0-25mm)
- Optional accessory: ball tips (code 7391)

5

| Code     | Range     | Accuracy  | L     | b    |
|----------|-----------|-----------|-------|------|
| 3291-25  | 0-25mm    | 4 $\mu$ m | 67    | 38   |
| 3291-50  | 25-50mm   | 4 $\mu$ m | 92.4  | 50   |
| 3291-75  | 50-75mm   | 5 $\mu$ m | 117.6 | 62   |
| 3291-100 | 75-100mm  | 5 $\mu$ m | 143   | 70   |
| 3291-125 | 100-125mm | 6 $\mu$ m | 168.2 | 82   |
| 3291-150 | 125-150mm | 6 $\mu$ m | 192   | 94.5 |
| 3291-175 | 150-175mm | 7 $\mu$ m | 217   | 107  |



3291-25

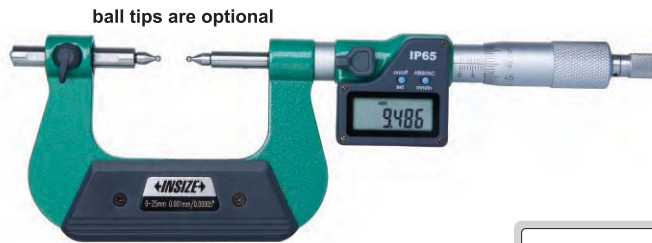


## DIGITAL GEAR TOOTH MICROMETERS

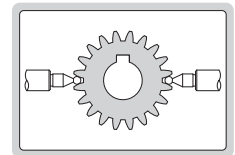
IP65  
WATERPROOF

DATA  
OUTPUT

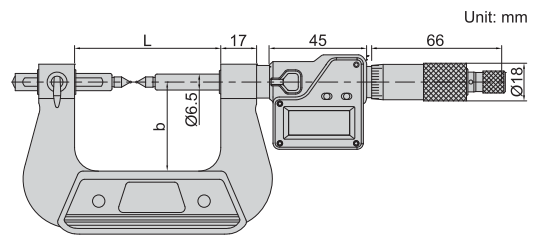
- Measure over-pin diameter of gears
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: ball tips (code 7391), data output cable (code 7315-30, 7302-30)



3591-25A



| Code      | Range          | Accuracy        | L     | b    |
|-----------|----------------|-----------------|-------|------|
| 3591-25A  | 0-25mm/0-1"    | $\pm$ 4 $\mu$ m | 67    | 38   |
| 3591-50A  | 25-50mm/1-2"   | $\pm$ 4 $\mu$ m | 92.4  | 50   |
| 3591-75A  | 50-75mm/2-3"   | $\pm$ 5 $\mu$ m | 117.6 | 62   |
| 3591-100A | 75-100mm/3-4"  | $\pm$ 5 $\mu$ m | 143   | 70   |
| 3591-125A | 100-125mm/4-5" | $\pm$ 6 $\mu$ m | 168.2 | 82   |
| 3591-150A | 125-150mm/5-6" | $\pm$ 6 $\mu$ m | 192   | 94.5 |
| 3591-175A | 150-175mm/6-7" | $\pm$ 7 $\mu$ m | 217   | 107  |



## BALL TIPS FOR GEAR TOOTH MICROMETERS

- Supplied in pair
- Suitable for 3291, 3591 series micrometers

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



7391-T5



## POINT MICROMETERS

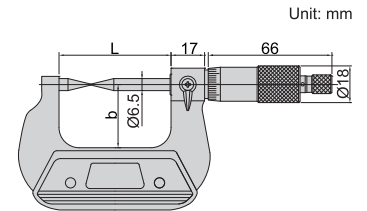
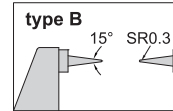
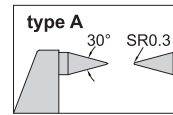
- Measure the web thickness of drills, small grooves and keyways
- Graduation 0.01mm
- Ratchet stop
- Carbide tips
- Supplied with setting standards (except 0-25mm)



3230-25A

(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 |



DATA  
OUTPUT

IP65  
WATERPROOF

## DIGITAL POINT MICROMETERS

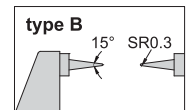
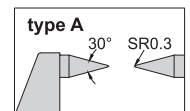
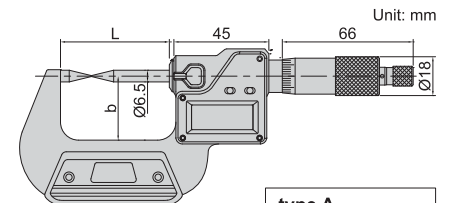
- Measure the web thickness of drills, small grooves and keyways
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide tips
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)



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 |



## BLADE MICROMETERS

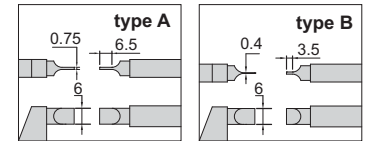
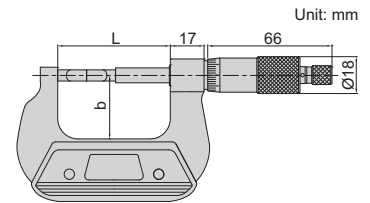
NON-ROTATING SPINDLE

- 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)

5



3232-25A



| Code       | Range     | Type | Accuracy | L     | b    |
|------------|-----------|------|----------|-------|------|
| 3232-25A   | 0-25mm    | A    | 4μm      | 57    | 32   |
| 3232-50A   | 25-50mm   | A    | 4μm      | 82    | 44.5 |
| 3232-75A   | 50-75mm   | A    | 5μm      | 107   | 57   |
| 3232-100A  | 75-100mm  | A    | 5μm      | 132.6 | 69.5 |
| 3232-125A  | 100-125mm | A    | 6μm      | 158   | 82   |
| 3232-150A  | 125-150mm | A    | 6μm      | 183.4 | 94.5 |
| 3232-175A  | 150-175mm | A    | 7μm      | 208.8 | 107  |
| 3232-25BA  | 0-25mm    | B    | 4μm      | 57    | 32   |
| 3232-50BA  | 25-50mm   | B    | 4μm      | 82    | 44.5 |
| 3232-75BA  | 50-75mm   | B    | 5μm      | 107   | 57   |
| 3232-100BA | 75-100mm  | B    | 5μm      | 132.6 | 69.5 |
| 3232-125BA | 100-125mm | B    | 6μm      | 158   | 82   |
| 3232-150BA | 125-150mm | B    | 6μm      | 183.4 | 94.5 |
| 3232-175BA | 150-175mm | B    | 7μm      | 208.8 | 107  |

## DIGITAL BLADE MICROMETERS

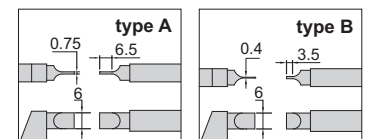
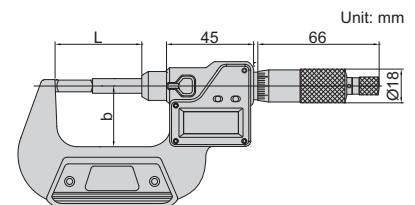
DATA OUTPUT

NON-ROTATING SPINDLE

- Measure the groove diameter of shafts and keyways
- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)



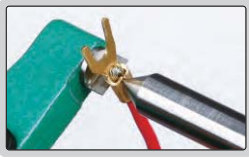
3532-25A



| 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  |

RELATIVE PRODUCT: DIGITAL CRIMP HEIGHT CALIPER (CODE 1165-150A)

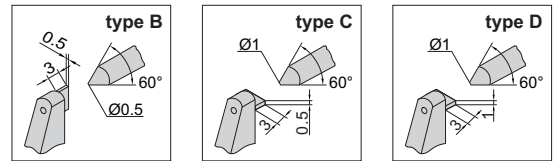
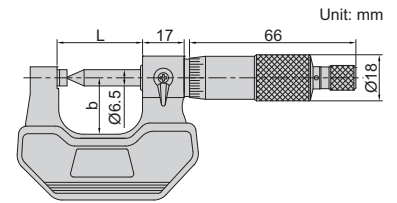
## CRIMP HEIGHT MICROMETERS



3266-25BA

- Measure the height of crimp contact
- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards (except 0-25mm)

| Code       | Range    | Type | Accuracy | L   | b  |
|------------|----------|------|----------|-----|----|
| 3266-25BA  | 0-25mm   | B    | 4μm      | 34  | 24 |
| 3266-50BA  | 25-50mm  | B    | 4μm      | 59  | 32 |
| 3266-75BA  | 50-75mm  | B    | 5μm      | 85  | 45 |
| 3266-100BA | 75-100mm | B    | 5μm      | 110 | 57 |
| 3266-25CA  | 0-25mm   | C    | 4μm      | 34  | 24 |
| 3266-25DA  | 0-25mm   | D    | 4μm      | 34  | 24 |



IP65  
WATERPROOF

DATA  
OUTPUT

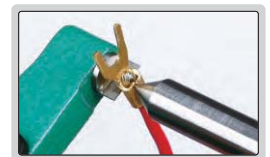
RELATIVE PRODUCT: DIGITAL CRIMP HEIGHT CALIPER (CODE 1165-150A)

## DIGITAL CRIMP HEIGHT MICROMETERS

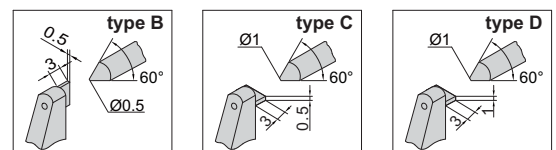
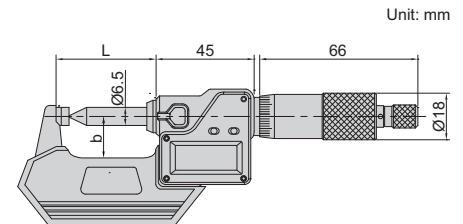


3566-25BA

- Measure the height of crimp contact
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)



| Code       | Range         | Type | Accuracy | L     | b    |
|------------|---------------|------|----------|-------|------|
| 3566-25BA  | 0-25mm/0-1"   | B    | ±4μm     | 34.5  | 25   |
| 3566-50BA  | 25-50mm/0-1"  | B    | ±4μm     | 59.5  | 32   |
| 3566-75BA  | 50-75mm/0-1"  | B    | ±5μm     | 84.5  | 44.5 |
| 3566-100BA | 75-100mm/0-1" | B    | ±5μm     | 109.5 | 57   |
| 3566-25CA  | 0-25mm/0-1"   | C    | ±4μm     | 34.5  | 25   |
| 3566-25DA  | 0-25mm/0-1"   | D    | ±4μm     | 34.5  | 25   |



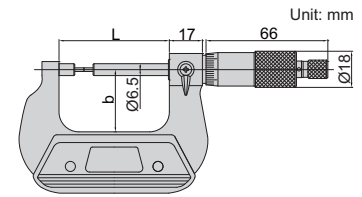
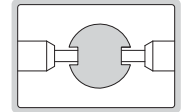
## SPLINE MICROMETERS

- Meet DIN863-3
- Measure splined shafts, slots and keyways
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)

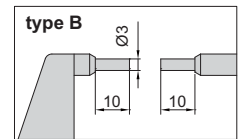
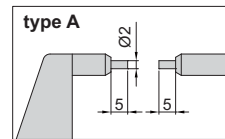
5



3233-25BA



| 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

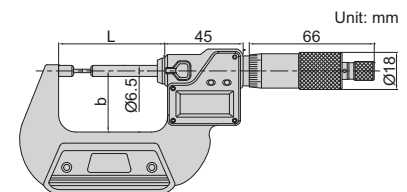
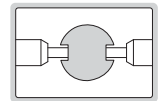
IP65  
WATERPROOF

DATA  
OUTPUT

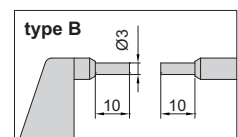
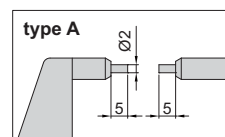
- Measure splined shafts, slots and keyways
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)



3533-25BA



| 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  |



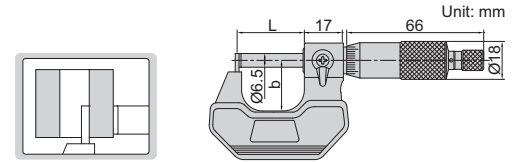


## CYLINDRICAL ANVIL TUBE MICROMETERS

- Measure wall thickness of tubes
- Graduation 0.01mm
- Ratchet stop
- Carbide spindle tip
- Supplied with setting standards (except 0-25mm)

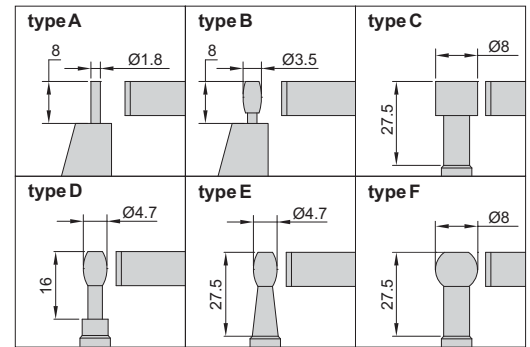


3261-25A



(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 |



**IP65**  
WATERPROOF

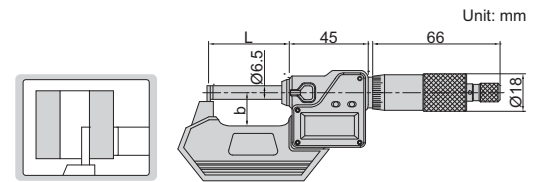
**DATA**  
OUTPUT

## DIGITAL CYLINDRICAL ANVIL TUBE MICROMETERS

- Measure wall thickness of tubes
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide spindle tip
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)

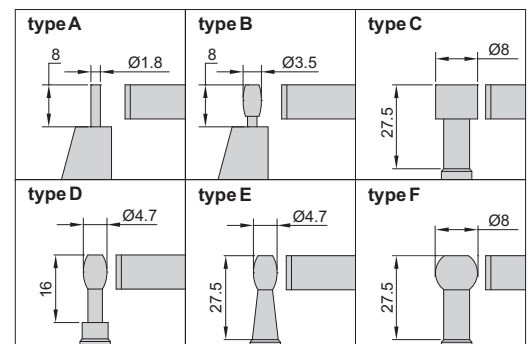


3561-25A



(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 |

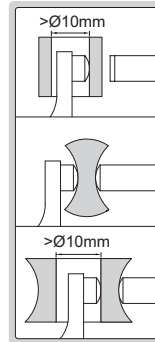


## SPHERICAL ANVIL TUBE MICROMETERS

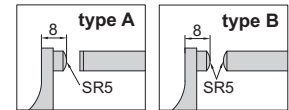
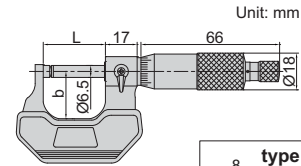
- Meet DIN863-3
- Measure wall thickness of tubes
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)

| Code              | Range    | Type | Accuracy | L   | b    |
|-------------------|----------|------|----------|-----|------|
| <b>3260-25A</b>   | 0-25mm   | A    | 4µm      | 32  | 24   |
| <b>3260-50A</b>   | 25-50mm  | A    | 4µm      | 57  | 32   |
| <b>3260-75A</b>   | 50-75mm  | A    | 5µm      | 82  | 44.5 |
| <b>3260-100A</b>  | 75-100mm | A    | 5µm      | 107 | 57   |
| <b>3260-25SA</b>  | 0-25mm   | B    | 4µm      | 32  | 24   |
| <b>3260-50SA</b>  | 25-50mm  | B    | 4µm      | 57  | 32   |
| <b>3260-75SA</b>  | 50-75mm  | B    | 5µm      | 82  | 44.5 |
| <b>3260-100SA</b> | 75-100mm | B    | 5µm      | 107 | 57   |

(mm)



**3260-25A**

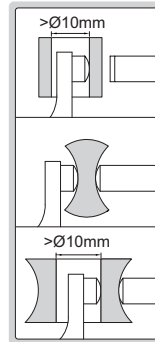


## DIGITAL SPHERICAL ANVIL TUBE MICROMETERS

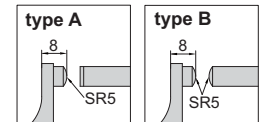
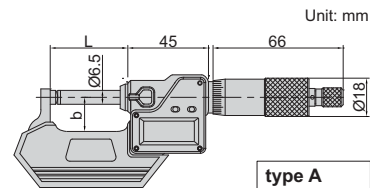
- Measure wall thickness of tubes
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC, data output
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)

| Code              | Range         | Type | Accuracy | L   | b    |
|-------------------|---------------|------|----------|-----|------|
| <b>3560-25A</b>   | 0-25mm/0-1"   | A    | ±4µm     | 32  | 24   |
| <b>3560-50A</b>   | 25-50mm/1-2"  | A    | ±4µm     | 57  | 32   |
| <b>3560-75A</b>   | 50-75mm/2-3"  | A    | ±5µm     | 82  | 44.5 |
| <b>3560-100A</b>  | 75-100mm/3-4" | A    | ±5µm     | 107 | 57   |
| <b>3560-25SA</b>  | 0-25mm/0-1"   | B    | ±4µm     | 32  | 24   |
| <b>3560-50SA</b>  | 25-50mm/1-2"  | B    | ±4µm     | 57  | 32   |
| <b>3560-75SA</b>  | 50-75mm/2-3"  | B    | ±5µm     | 82  | 44.5 |
| <b>3560-100SA</b> | 75-100mm/3-4" | B    | ±5µm     | 107 | 57   |

(mm)



**3560-25A**



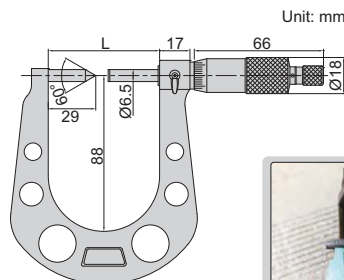
**IP65**  
WATERPROOF

DATA  
OUTPUT

## DISK BRAKE MICROMETERS

- Measure thickness of disk brakes
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards

| Code            | Range    | Accuracy | L      |
|-----------------|----------|----------|--------|
| <b>3288-33A</b> | 7.6-33mm | 5µm      | 64.5mm |
| <b>3288-50A</b> | 25-50mm  | 5µm      | 82mm   |



**3288-33A**

RELATIVE PRODUCT: DIGITAL DISK BRAKE AND PAD CALIPER  
DIGITAL DRUM BRAKE CALIPER (CODE 1162-125A, 1167-150A, 1168-300A)

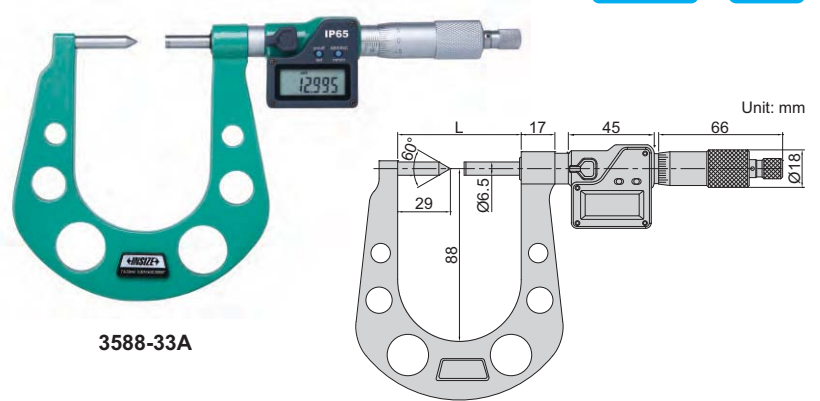
RELATIVE PRODUCT: DIGITAL DISK BRAKE AND PAD CALIPER  
DIGITAL DRUM BRAKE CALIPER (CODE 1162-125A, 1167-150A, 1168-300A)

## DIGITAL DISK BRAKE MICROMETERS

**IP65**  
WATERPROOF

**DATA**  
OUTPUT

- Measure thickness of disk brakes
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: data output cable (code 7315-30, 7302-30)

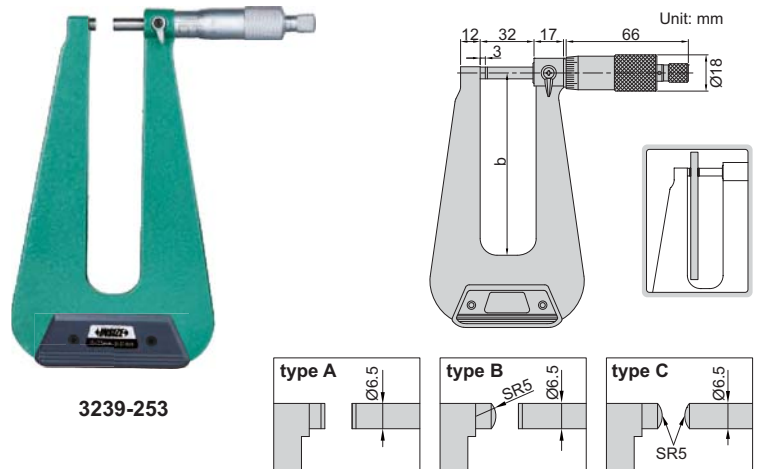


3588-33A

| Code     | Range             | Accuracy | L (mm) |
|----------|-------------------|----------|--------|
| 3588-33A | 7.6-33mm/0.3-1.3" | ±5µm     | 64.5   |
| 3588-50A | 25-50mm/1-2"      | ±5µm     | 82     |

## SHEET METAL MICROMETERS

- Deep frame suitable for sheet metal, paper and plastic
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces



3239-253

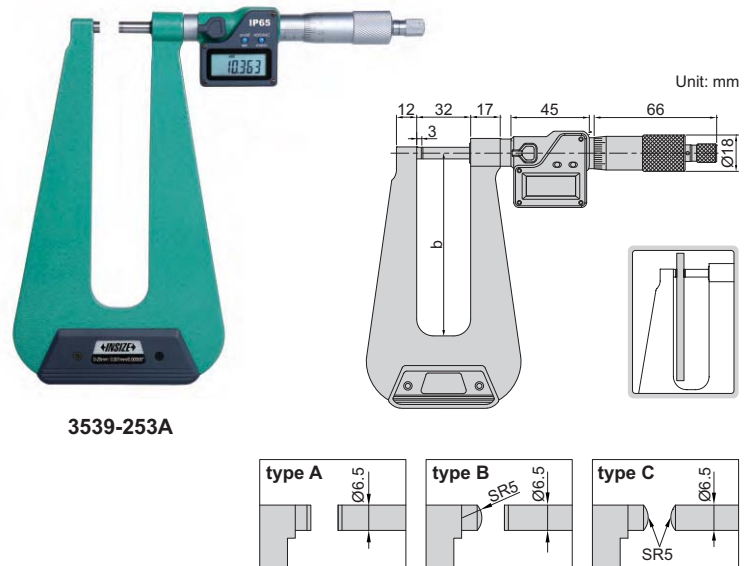
| Code      | Range  | Type | Accuracy | b (mm) |
|-----------|--------|------|----------|--------|
| 3239-253  | 0-25mm | A    | 7µm      | 155    |
| 3239-253F | 0-25mm | B    | 7µm      | 155    |
| 3239-254F | 0-25mm | B    | 10µm     | 310    |
| 3239-253S | 0-25mm | C    | 7µm      | 155    |

**DATA**  
OUTPUT

**IP65**  
WATERPROOF

## DIGITAL SHEET METAL MICROMETERS

- Deep frame suitable for sheet metal, paper and plastic
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Optional accessory: data output cable (code 7315-30, 7302-30)



3539-253A

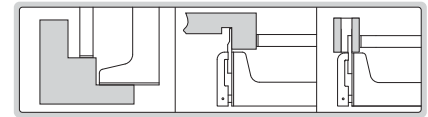
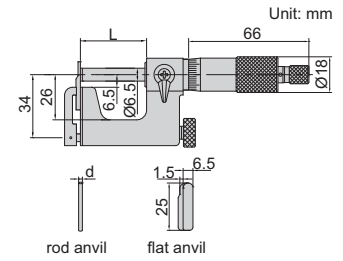
| Code       | Range       | Type | Accuracy | b (mm) |
|------------|-------------|------|----------|--------|
| 3539-253A  | 0-25mm/0-1" | A    | ±7µm     | 155    |
| 3539-253FA | 0-25mm/0-1" | B    | ±7µm     | 155    |
| 3539-254FA | 0-25mm/0-1" | B    | ±10µm    | 310    |
| 3539-253SA | 0-25mm/0-1" | C    | ±7µm     | 155    |

## 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)



3262-25A



5

| Code     | Range   | Accuracy | L    | (mm) |  |
|----------|---------|----------|------|------|--|
|          |         |          |      | d    |  |
| 3262-25A | 0-25mm  | 4µm      | 28.5 | Ø3   |  |
| 3262-50A | 25-50mm | 4µm      | 53.5 | Ø5   |  |

## DIGITAL INTERCHANGEABLE ANVIL MICROMETERS

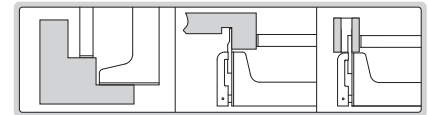
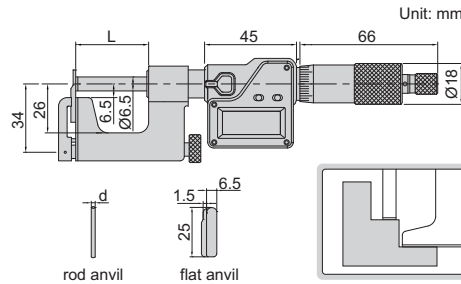
IP65  
WATERPROOF

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, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide spindle tip
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)



3562-25A



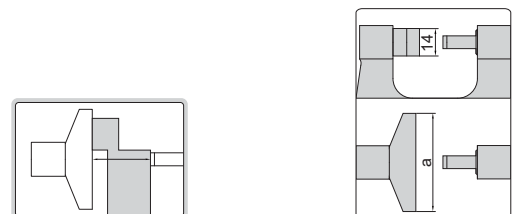
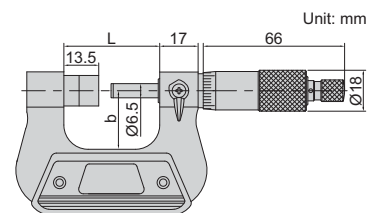
| Code     | Range        | Accuracy | L    | (mm) |  |
|----------|--------------|----------|------|------|--|
|          |              |          |      | d    |  |
| 3562-25A | 0-25mm/0-1"  | ±4µm     | 28.5 | Ø3   |  |
| 3562-50A | 25-50mm/1-2" | ±4µm     | 53.5 | Ø5   |  |

## LARGE ANVIL MICROMETERS

- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards (except 0-25mm)



3234-25A



| Code     | Range   | Accuracy | L  | (mm) |    |  |
|----------|---------|----------|----|------|----|--|
|          |         |          |    | a    | b  |  |
| 3234-25A | 0-25mm  | 4µm      | 42 | 50   | 26 |  |
| 3234-50A | 25-50mm | 4µm      | 67 | 60   | 38 |  |

DATA  
OUTPUT

IP65  
WATERPROOF

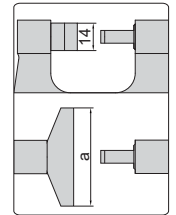
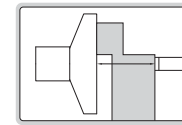
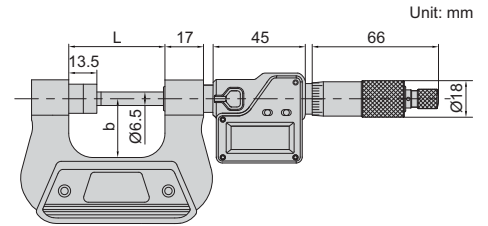
## DIGITAL LARGE ANVIL MICROMETERS

5



3534-25A

- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)



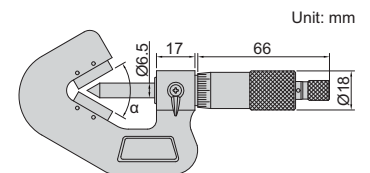
| Code     | Range        | Accuracy | L    | a    | b    |
|----------|--------------|----------|------|------|------|
| 3534-25A | 0-25mm/0-1"  | ±4µm     | 42mm | 50mm | 26mm |
| 3534-50A | 25-50mm/1-2" | ±4µm     | 67mm | 60mm | 38mm |

## V-ANVIL MICROMETERS



3290-153A

- 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



| Code      | Range   | Flutes | Accuracy | α    |
|-----------|---------|--------|----------|------|
| 3290-153A | 1-15mm  | 3      | 4µm      | 60°  |
| 3290-203A | 5-20mm  | 3      | 4µm      | 60°  |
| 3290-353A | 20-35mm | 3      | 5µm      | 60°  |
| 3290-503A | 35-50mm | 3      | 5µm      | 60°  |
| 3290-653A | 50-65mm | 3      | 6µm      | 60°  |
| 3290-803A | 65-80mm | 3      | 6µm      | 60°  |
| 3290-953A | 80-95mm | 3      | 7µm      | 60°  |
| 3290-255A | 5-25mm  | 5      | 4µm      | 108° |

| Code       | Range    | Flutes | Accuracy | α          |
|------------|----------|--------|----------|------------|
| 3290-455A  | 25-45mm  | 5      | 5µm      | 108°       |
| 3290-655A  | 45-65mm  | 5      | 6µm      | 108°       |
| 3290-855A  | 65-85mm  | 5      | 7µm      | 108°       |
| 3290-1055A | 85-105mm | 5      | 8µm      | 108°       |
| 3290-257A  | 5-25mm   | 7      | 4µm      | 128°34'17" |
| 3290-457A  | 25-45mm  | 7      | 5µm      | 128°34'17" |
| 3290-657A  | 45-65mm  | 7      | 6µm      | 128°34'17" |
| 3290-857A  | 65-85mm  | 7      | 7µm      | 128°34'17" |

## DIGITAL V-ANVIL MICROMETERS

IP65  
WATERPROOF

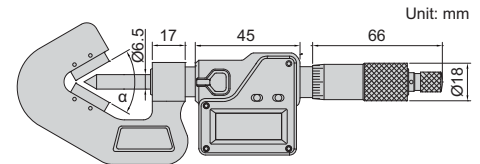
DATA  
OUTPUT

5

- 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, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards
- Optional accessory: data output cable (code 7315-30, 7302-30)



3590-153A

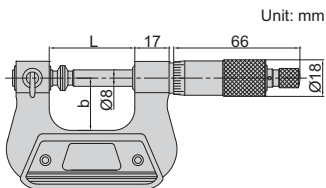


| Code      | Range            | Flutes | Accuracy           | $\alpha$ |
|-----------|------------------|--------|--------------------|----------|
| 3590-153A | 1-15mm/0.04-0.6" | 3      | $\pm 4\mu\text{m}$ | 60°      |
| 3590-203A | 5-20mm/0.2-0.8"  | 3      | $\pm 4\mu\text{m}$ | 60°      |
| 3590-353A | 20-35mm/0.8-1.4" | 3      | $\pm 5\mu\text{m}$ | 60°      |
| 3590-503A | 35-50mm/1.4-2.0" | 3      | $\pm 5\mu\text{m}$ | 60°      |
| 3590-653A | 50-65mm/2.0-2.6" | 3      | $\pm 6\mu\text{m}$ | 60°      |
| 3590-803A | 65-80mm/2.6-3.2" | 3      | $\pm 6\mu\text{m}$ | 60°      |
| 3590-953A | 80-95mm/3.2-3.6" | 3      | $\pm 6\mu\text{m}$ | 60°      |
| 3590-255A | 5-25mm/0.2-1.0"  | 5      | $\pm 4\mu\text{m}$ | 108°     |

| Code       | Range             | Flutes | Accuracy           | $\alpha$   |
|------------|-------------------|--------|--------------------|------------|
| 3590-455A  | 25-45mm/1.0-1.8"  | 5      | $\pm 5\mu\text{m}$ | 108°       |
| 3590-655A  | 45-65mm/1.8-2.6"  | 5      | $\pm 6\mu\text{m}$ | 108°       |
| 3590-855A  | 65-85mm/2.6-3.4"  | 5      | $\pm 6\mu\text{m}$ | 108°       |
| 3590-1055A | 85-105mm/3.4-4.2" | 5      | $\pm 6\mu\text{m}$ | 108°       |
| 3590-257A  | 5-25mm/0.2-1.0"   | 7      | $\pm 4\mu\text{m}$ | 128°34'17" |
| 3590-457A  | 25-45mm/1.0-1.8"  | 7      | $\pm 4\mu\text{m}$ | 128°34'17" |
| 3590-657A  | 45-65mm/1.8-2.6"  | 7      | $\pm 5\mu\text{m}$ | 128°34'17" |
| 3590-857A  | 65-85mm/2.6-3.4"  | 7      | $\pm 5\mu\text{m}$ | 128°34'17" |

## NON-ROTATING SPINDLE UNIVERSAL MICROMETERS

NON-ROTATING  
SPINDLE



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)

| Code      | Range     | Accuracy        | L     | b     |
|-----------|-----------|-----------------|-------|-------|
| 3280-25A  | 0-25mm    | 4 $\mu\text{m}$ | 42mm  | 26mm  |
| 3280-50A  | 25-50mm   | 4 $\mu\text{m}$ | 67mm  | 38mm  |
| 3280-75A  | 50-75mm   | 5 $\mu\text{m}$ | 92mm  | 50mm  |
| 3280-100A | 75-100mm  | 5 $\mu\text{m}$ | 118mm | 62mm  |
| 3280-125A | 100-125mm | 6 $\mu\text{m}$ | 143mm | 70mm  |
| 3280-150A | 125-150mm | 6 $\mu\text{m}$ | 168mm | 82mm  |
| 3280-175A | 150-175mm | 7 $\mu\text{m}$ | 192mm | 95mm  |
| 3280-200A | 175-200mm | 7 $\mu\text{m}$ | 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<br>Knife-edge |  |  |
| Code 3280-SP2<br>Point      |  |  |

## DIGITAL UNIVERSAL MICROMETERS

Anvil/spindle tip (included) Unit: mm

|            |  |  |
|------------|--|--|
| Flat       |  |  |
| Spherical  |  |  |
| Spline     |  |  |
| Disk       |  |  |
| Blade      |  |  |
| Knife-edge |  |  |
| Point      |  |  |

55° anvil/spindle tip (optional) Unit: mm

|                             |  |  |
|-----------------------------|--|--|
| Code 3280-SP1<br>Knife-edge |  |  |
| Code 3280-SP2<br>Point      |  |  |

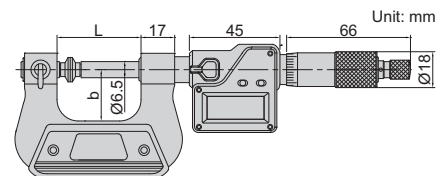
- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery
- Automatic power off
- Ratchet stop
- Supplied with 7 pairs of anvil/spindle tip
- Setting standards are included (except 0-25mm/0-1")
- Optional accessory: 55° anvil/spindle tip code 3280-SP1 and 3280-SP2, data output cable (code 7315-30, 7302-30)



3580-25A

DATA OUTPUT

NON-ROTATING SPINDLE

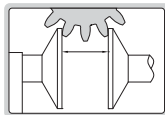


Unit: mm

| Code      | Range          | Accuracy | (mm) |     |
|-----------|----------------|----------|------|-----|
|           |                |          | 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 |

ATTENTION: LOW PARALLELISM OF TWO MEASURING FACES

- Measure root tangent length of gear
- Graduation 0.01mm
- Ratchet stop
- Supplied with setting standards

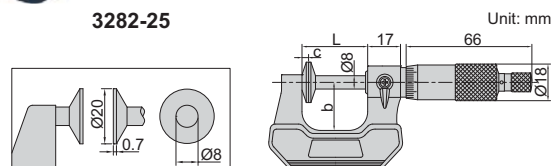


## DISK MICROMETERS (ECONOMIC TYPE)



3282-25

| Code     | Range    | Accuracy | Parallelism | (mm) |    |     |
|----------|----------|----------|-------------|------|----|-----|
|          |          |          |             | 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 |

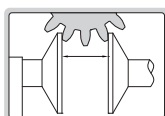


Unit: mm

ATTENTION: LOW PARALLELISM OF TWO MEASURING FACES

NON-ROTATING SPINDLE

- Measure root tangent length of gear
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with setting standards

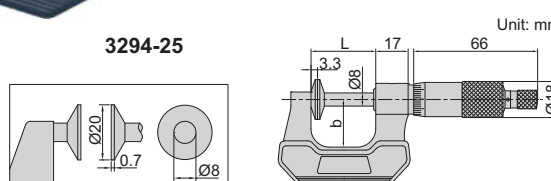


## NON-ROTATING SPINDLE DISK MICROMETERS (ECONOMIC TYPE)



3294-25

| Code     | Range    | Accuracy | Parallelism | (mm) |    |
|----------|----------|----------|-------------|------|----|
|          |          |          |             | 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 |



Unit: mm

## DIGITAL NON-ROTATING SPINDLE DISK MICROMETERS (ECONOMIC TYPE)

ATTENTION: LOW PARALLELISM OF TWO MEASURING FACES

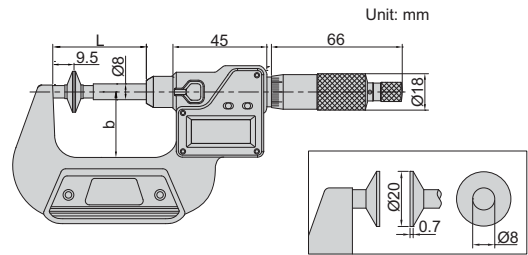
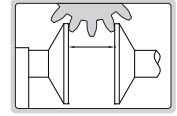
DATA OUTPUT

NON-ROTATING SPINDLE

- Measure root tangent length of gear
- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards
- Optional accessory: data output cable (code 7315-30, 7302-30)



3594-25A



| 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   |

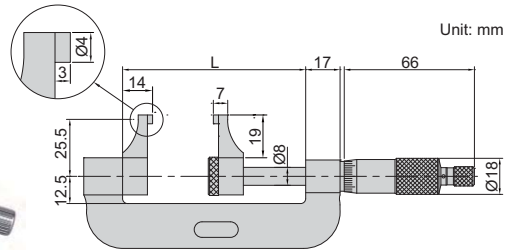
5

## CALIPER TYPE MICROMETERS

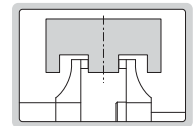
- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)



3238-25



| 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 |

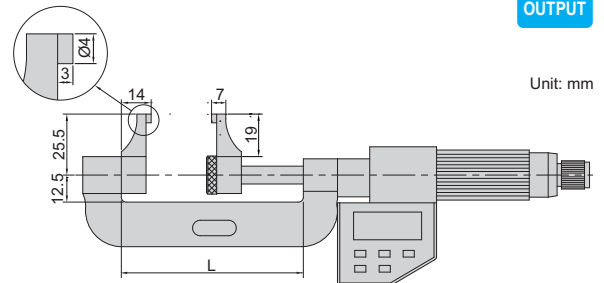


## DIGITAL CALIPER TYPE MICROMETERS

DATA OUTPUT

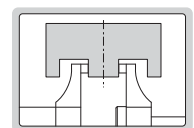


3538-25



| 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 |

- Resolution: 0.001mm/0.00005"
- Non-rotating spindle
- Buttons: on/off, data set, mm/in, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet friction thimble
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)





NON-ROTATING SPINDLE

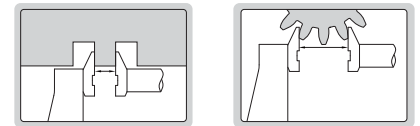
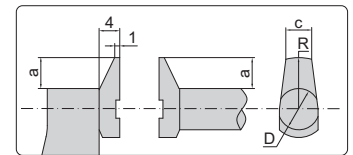
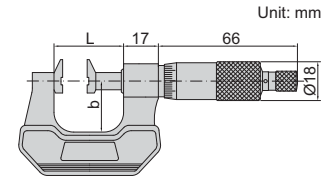
## JAW TYPE MICROMETERS



3283-25A

- Graduation 0.01mm
- Non-rotating spindle
- Ratchet stop
- Supplied with setting standards (except 0-25mm)

| 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 |



5

DATA OUTPUT

NON-ROTATING SPINDLE

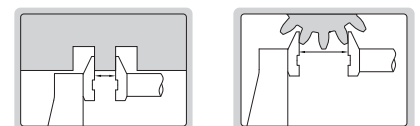
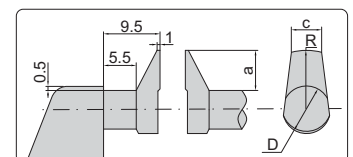
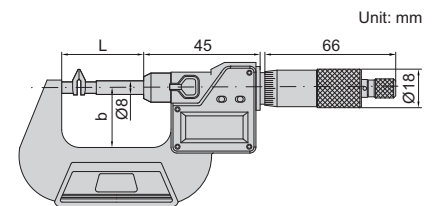
## DIGITAL JAW TYPE MICROMETERS



3583-25A

- Resolution 0.001mm/0.00005"
- Non-rotating spindle
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Supplied with setting standards (except 0-25mm/0-1")
- Optional accessory: data output cable (code 7315-30, 7302-30)

| 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 |

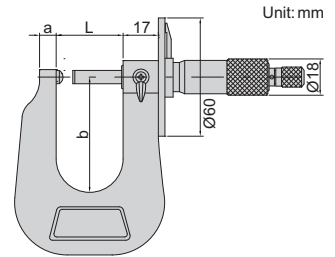
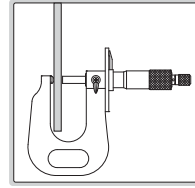


## SHEET METAL MICROMETERS

- Meet DIN863-3
- Measure thickness of sheet metal, paper, plastic and rubber parts
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces

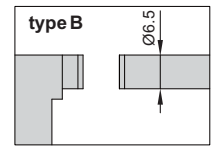
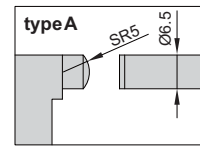


3263-25A



| 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 |

(mm)



## MICROMETERS FOR HOT PLATE

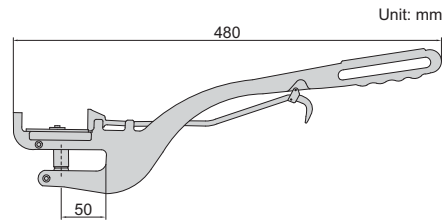
- Measure thickness of hot rolling sheet metal
- Carbide measuring faces
- Supplied with setting standard (except 0-15mm)



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

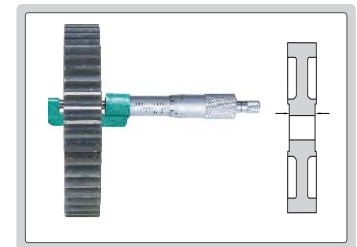
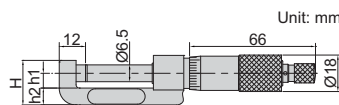
- Meet DIN863-3
- Measure hub thickness and shoulder inside a bore
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)



3292-25

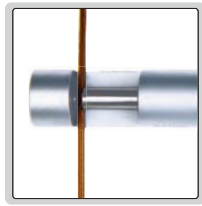
| Code     | Range    | Accuracy | h1  | h2 | H    |
|----------|----------|----------|-----|----|------|
| 3292-25  | 0-25mm   | 4µm      | 6   | 9  | 18.7 |
| 3292-50  | 25-50mm  | 4µm      | 6.5 | 11 | 21.2 |
| 3292-75  | 50-75mm  | 5µm      | 6.5 | 11 | 21.2 |
| 3292-100 | 75-100mm | 5µm      | 6.5 | 11 | 21.2 |

(mm)

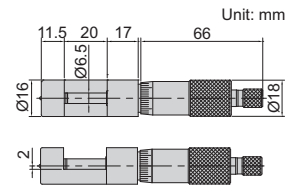


## WIRE MICROMETER

- 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



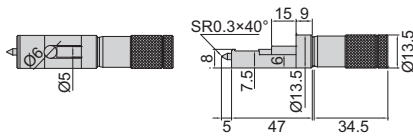
3293-131



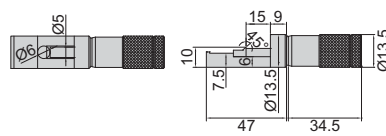
3293-132



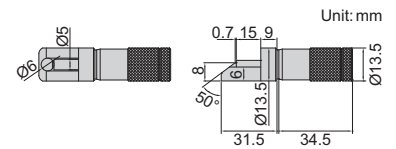
3293-133



3293-131



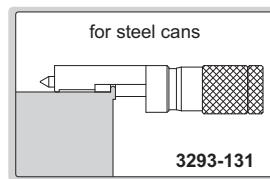
3293-132



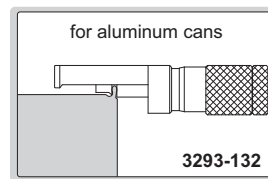
3293-133

- Measure the width, height and depth of can seams
- Graduation 0.01mm

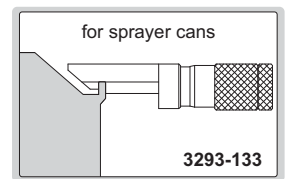
| Code     | Range  | Accuracy |
|----------|--------|----------|
| 3293-131 | 0-13mm | 4µm      |
| 3293-132 | 0-13mm | 4µm      |
| 3293-133 | 0-13mm | 4µm      |



3293-131



3293-132

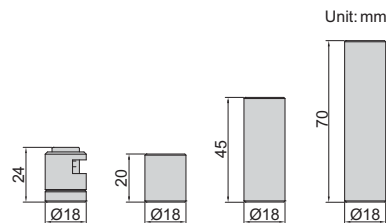


3293-133

## MICROMETER MEASURING FORCE DETECTOR



6315



- For outside micrometers 0-25mm/0-1", 25-50mm/1-2", 50-75mm/2-3" and 75-100mm/3-4"

| Code | Measuring force |
|------|-----------------|
| 6315 | 5-12N           |

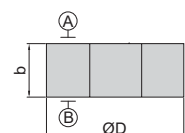
## OPTICAL PARALLELS

- Check the flatness and parallelism of measuring faces of micrometer
- Flatness of A and B: 0.1µm
- Parallelism between A and B: 0.6µm



4184-41A

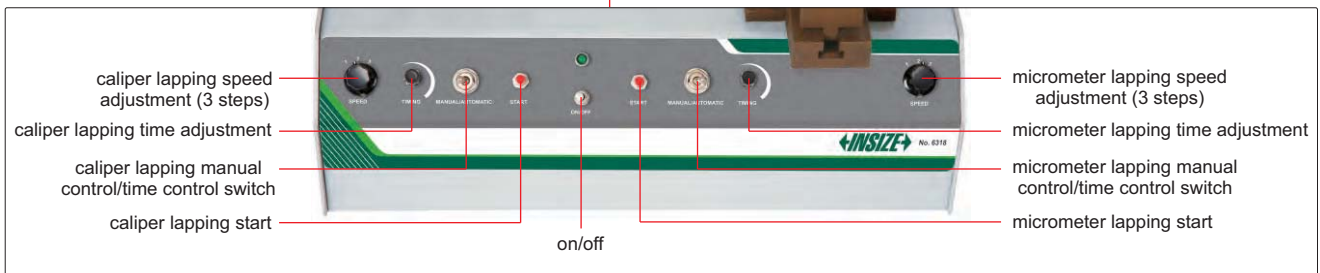
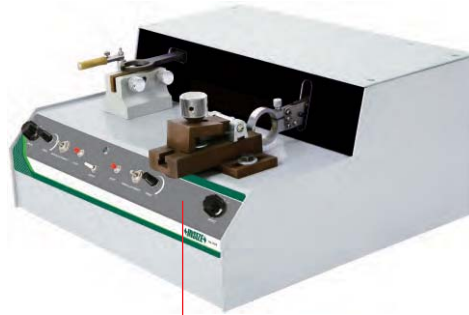
| Code     | Parallels included (b)             | ØD   | Applicable micrometer |
|----------|------------------------------------|------|-----------------------|
| 4184-41A | 15.62mm, 15.75mm, 15.87mm, 16.00mm | 30mm | 0-25mm                |
| 4184-42A | 40.62mm, 40.75mm, 40.87mm, 41.00mm | 30mm | 25-50mm               |
| 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              |



# CALIPER/MICROMETER LAPPING MACHINE CODE 6318



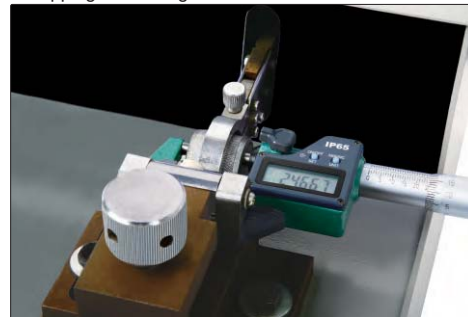
5



lapping measuring surfaces of caliper lower jaws



lapping measuring surfaces of outside micrometer



- For lapping measuring surfaces of caliper lower jaws and outside micrometer
- Suitable for 0-300mm range calipers and 0-100mm range outside micrometers

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 |



## MICROMETER LAPPING MACHINE CODE 6307



lapping blocks (code: 6307-1, optional)



- Used for lapping micrometer measuring surfaces
- Suitable for 0~100mm range micrometers

### SPECIFICATION

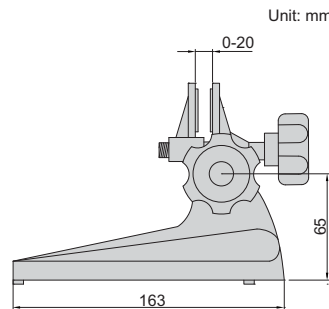
|                   |               |
|-------------------|---------------|
| Power supply      | 220V, 50/60HZ |
| Dimension (L×W×H) | 450×260×220mm |
| Weight            | 30kg          |

### 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 STAND

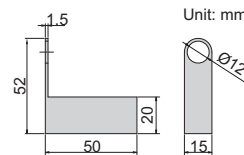
- Suitable for outside micrometers up to 100mm



6301

| Code |
|------|
| 6301 |

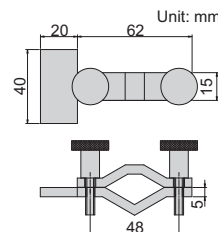
- Suitable for inside micrometers



6301-1

| Code   | Description                  | Applicable products      |
|--------|------------------------------|--------------------------|
| 6301-1 | clamp for inside micrometers | all sizes of 3220 series |

- Suitable for three points internal micrometers



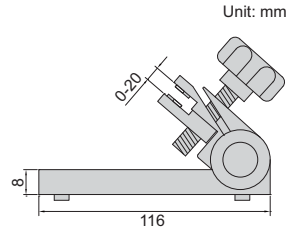
6301-2

| Code   | Description                                 | Applicable products                 |
|--------|---|-------------------------------------|
| 6301-2 | clamp for three points internal micrometers | up to 100mm of 3127 and 3227 series |

## MICROMETER STAND

- Suitable for outside micrometers up to 100mm

**Code**  
6300

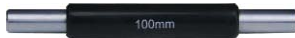


6300



5

## MICROMETER SETTING STANDARDS



6310-100



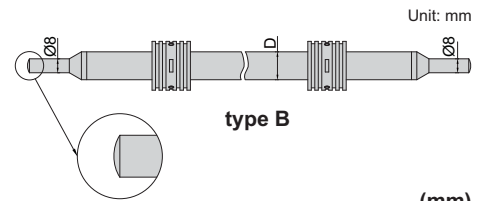
type A



6310-300

| 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 |

| 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 |



type B

| 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 |

## DIGITAL MICROMETER HEADS

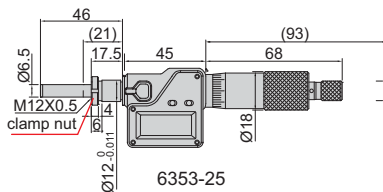
- Resolution 0.001mm/0.00005"
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Optional accessory: data output cable (code 7315-30, 7302-30)



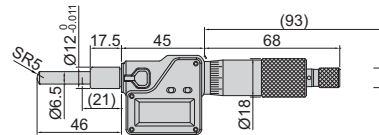
6353-25W

**IP65**  
WATERPROOF

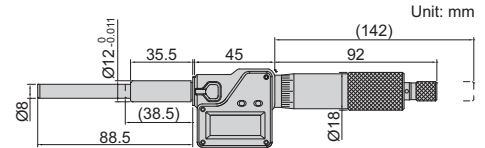
**DATA**  
OUTPUT



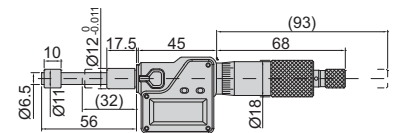
6353-25



6353-25WS



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     |

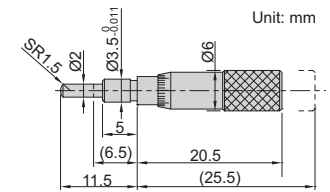
## SMALL MICROMETER HEAD

- Graduation 0.02mm

| Code     | Range | Stem  | Spindle tip       | Accuracy |
|----------|-------|-------|-------------------|----------|
| 6372-5WS | 0-5mm | plain | spherical (SR1.5) | 5µm      |



6372-5WS



5

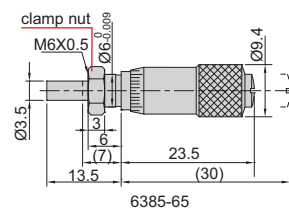
## SMALL MICROMETER HEADS

- Range 0-6.5mm
- Graduation 0.01mm
- Accuracy 5µm

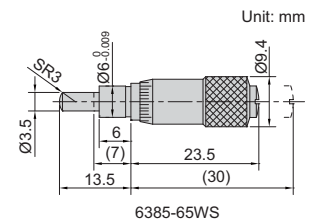


6385-65W

| 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) |



6385-65

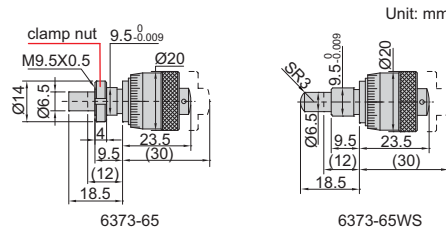


6385-65WS

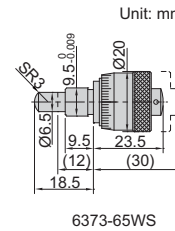
## LARGE THIMBLE MICROMETER HEADS

- Meet DIN863-2
- Large thimble diameter for easy reading
- Graduation 0.01mm
- Accuracy 3µm

| 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            |



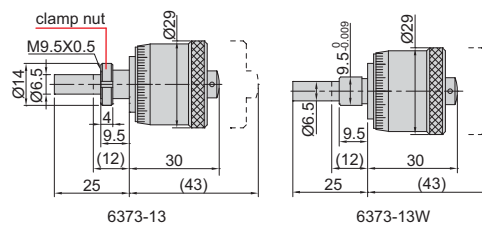
6373-65



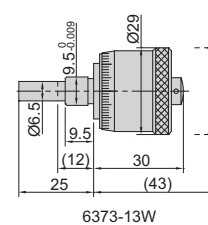
6373-65WS



6373-65



6373-13



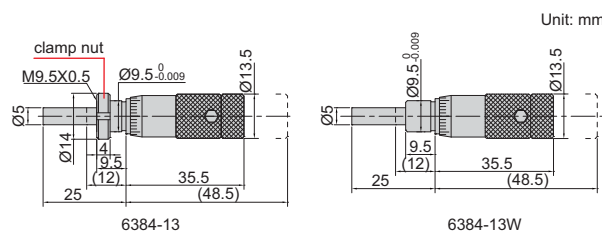
6373-13W



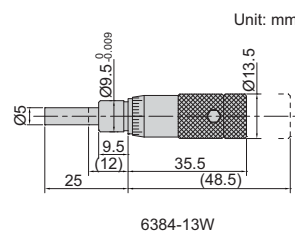
6373-13

## 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



6384-13



6384-13W



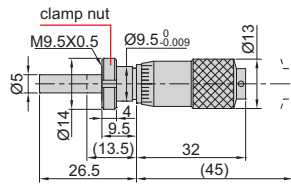
6384-13W

| Code     | Stem           | Spindle tip |
|----------|----------------|-------------|
| 6384-13  | with clamp nut | flat        |
| 6384-13W | plain          | flat        |

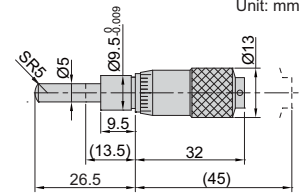
## MICROMETER HEADS



6386-13W



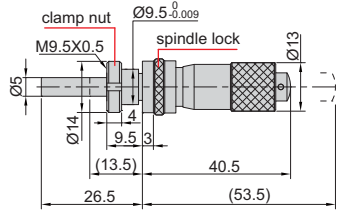
6386-13



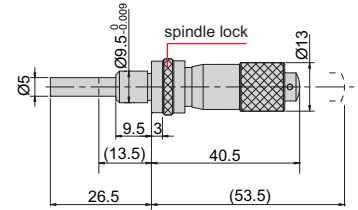
6386-13WS



6386-13P



6386-13P



6386-13WP

| 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      |

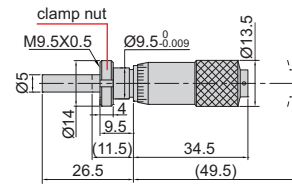
- Meet DIN863-2
- Graduation 0.01mm

## MICROMETER HEADS

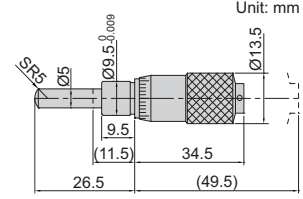
- Meet DIN863-2
- Graduation 0.01mm
- Accuracy 3µm



6387-15WS



6387-15



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) |

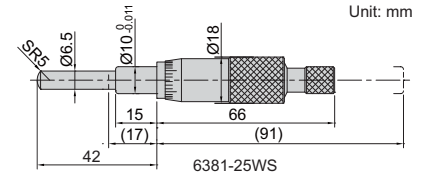
## MICROMETER HEADS



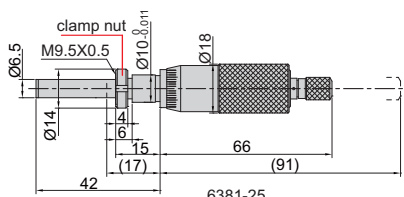
6381-25



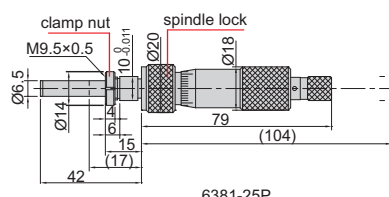
6381-25P



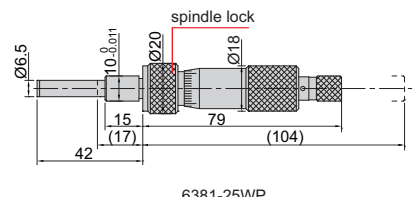
6381-25WS



6381-25



6381-25P



6381-25WP

| 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      |

- Meet DIN863-2
- Graduation 0.01mm
- Ratchet stop

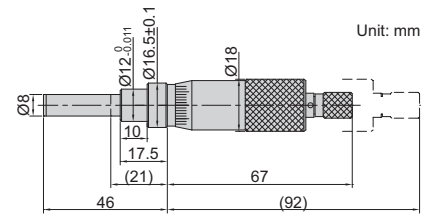


## NON-ROTATING SPINDLE MICROMETER HEAD

- Meet DIN863-2
- Graduation 0.01mm
- Ratchet stop
- Non-rotating spindle



6377-25W



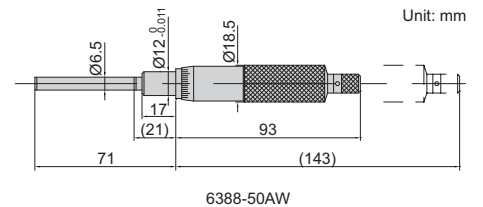
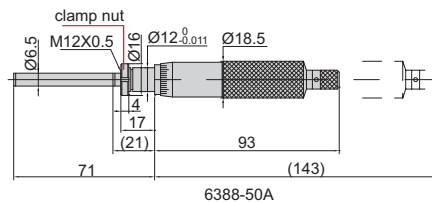
| Code     | Range  | Stem  | Spindle tip    | Accuracy |
|----------|--------|-------|----------------|----------|
| 6377-25W | 0-25mm | plain | flat (carbide) | 3µm      |

## LARGE MICROMETER HEADS

- Graduation 0.01mm
- Ratchet stop

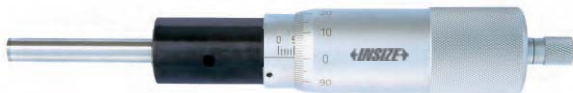


6388-50AW



| 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



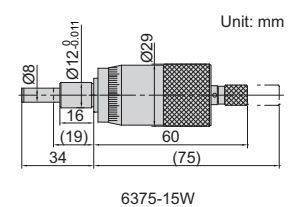
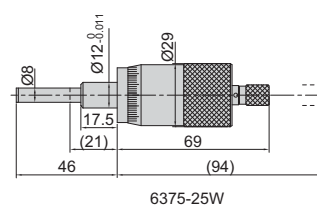
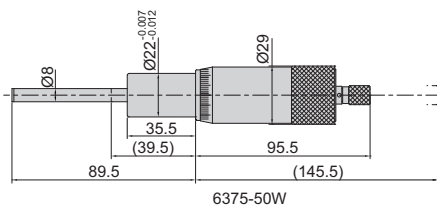
6375-50W



6375-25W



6375-15W

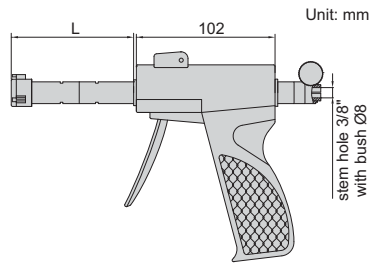


| Code     | Range  | Stem  | Spindle tip    | Accuracy |
|----------|--------|-------|----------------|----------|
| 6375-15W | 0-15mm | plain | flat (carbide) | 3µm      |
| 6375-25W | 0-25mm | plain | flat (carbide) | 3µm      |
| 6375-50W | 0-50mm | plain | flat (carbide) | 5µm      |

- Micrometers up to 25mm meet DIN863-2
- Graduation 0.01mm
- Quick spindle feed of 1mm/rev.
- Ratchet stop

## PISTOL GRIP THREE POINTS BORE GAGES

**INSPECTION  
CERTIFICATE**



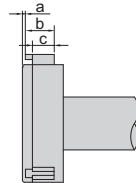
- Optional accessory: digital indicators (code **2108-101F**, resolution 0.001mm/0.00005"), setting rings (code **6312**)



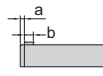
6-100mm: included  
100-300mm: **optional**



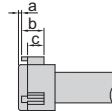
included



**Type C**  
50-300mm, carbide measuring points



**Type A**  
6-12mm, steel measuring points



**Type B**  
12-50mm, carbide measuring points



### Individual

| 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                                  | <b>optional</b>  | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-150 * | 125-150mm | C    | 6µm                                  | <b>optional</b>  | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-175 * | 150-175mm | C    | 7µm                                  | <b>optional</b>  | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-200 * | 175-200mm | C    | 7µm                                  | <b>optional</b>  | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-225   | 200-225mm | C    | 8µm                                  | <b>optional</b>  | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-250   | 225-250mm | C    | 8µm                                  | <b>optional</b>  | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-275   | 250-275mm | C    | 9µm                                  | <b>optional</b>  | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-300   | 275-300mm | C    | 9µm                                  | <b>optional</b>  | 150mm                    | 140 | 0.9 | 29   | 25   |

### Set

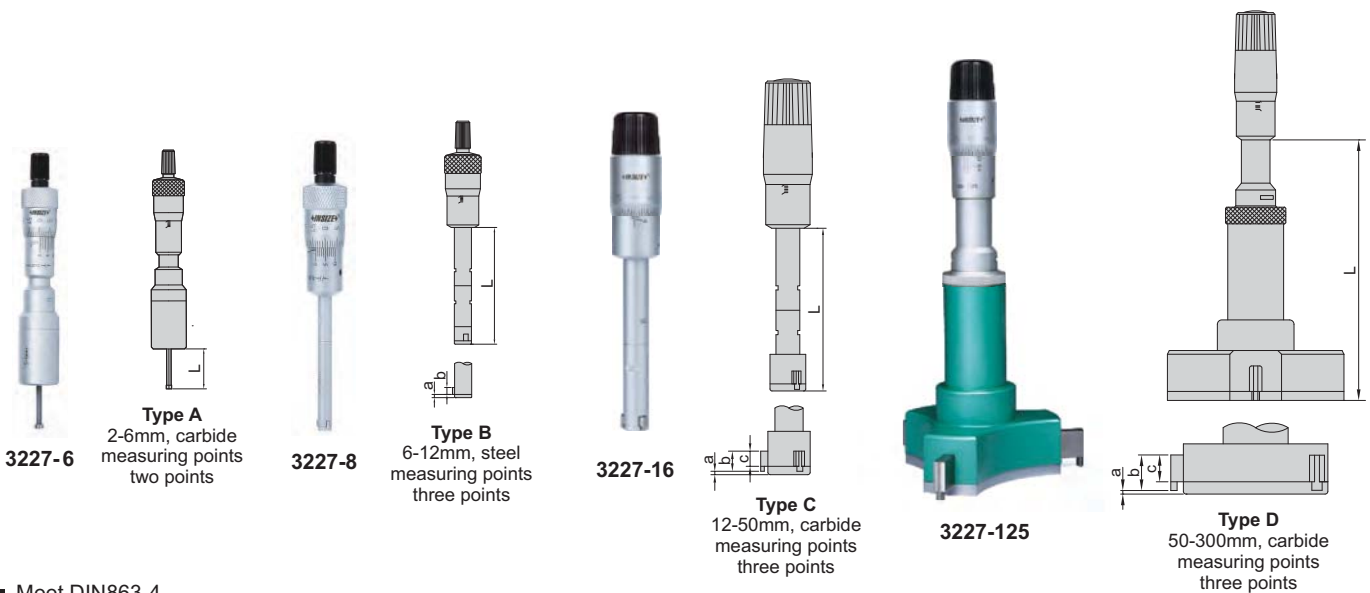
| Code         | Range    | Probes included                     | Setting ring (included) | Extension rod (included) |
|--------------|----------|-------------------------------------|-------------------------|--------------------------|
| 2124-S123 *  | 6-12mm   | 6-8mm, 8-10mm, 10-12mm              | 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

## TWO POINTS/THREE POINTS INTERNAL MICROMETERS



- 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)

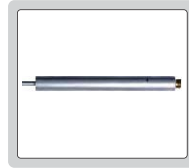


setting ring



2-100mm: included  
100-300mm: optional

extension rod



included



3227-504

6

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, 40-50mm  | Ø25mm, Ø40mm            | 150mm                    |
| 3227-1004 * | 50-100mm | 50-63mm, 62-75mm, 75-88mm, 87-100mm | Ø62mm, Ø87mm            | 150mm                    |

\* Supplied with manufacturer inspection certificate

## DIGITAL TWO POINTS/THREE POINTS INTERNAL MICROMETERS



IP65  
WATERPROOF

DATA  
OUTPUT



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



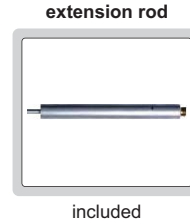
3127-125

**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, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Optional accessory: data output cable (code 7315-30, 7302-30), setting ring (code 6312), micrometer stand and clamp (code 6301 and 6301-2)

To be continued

Continued from previous page



3127-202

6

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                    |

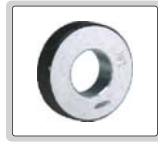
\* Supplied with manufacturer inspection certificate

## WIDE RANGE THREE POINTS INTERNAL MICROMETERS

- Meet DIN863-4
- Graduation 0.001mm
- Carbide measuring faces
- Ratchet stop
- Setting rings are included (except 200-300mm)



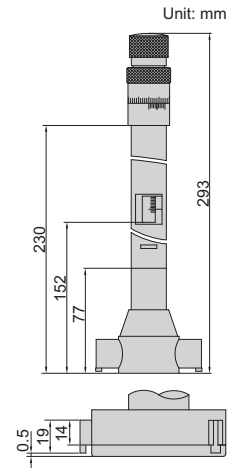
| Code              | Range     | Accuracy | Setting ring      |
|-------------------|-----------|----------|-------------------|
| <b>3228-70 *</b>  | 50-70mm   | 5µm      | Ø50mm (included)  |
| <b>3228-100 *</b> | 70-100mm  | 5µm      | Ø70mm (included)  |
| <b>3228-150 *</b> | 100-150mm | 6µm      | Ø100mm (included) |
| <b>3228-250 *</b> | 150-250mm | 8µm      | Ø150mm (included) |
| <b>3228-300 *</b> | 200-300mm | 9µm      | Ø200mm (optional) |



setting ring



3228-70



\*Supplied with manufacturer 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, ABS/INC
- Data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with extension rods
- Setting rings are included (except 200-300mm)
- Optional accessory: data output cable (code **7315-30**, **7302-30**)



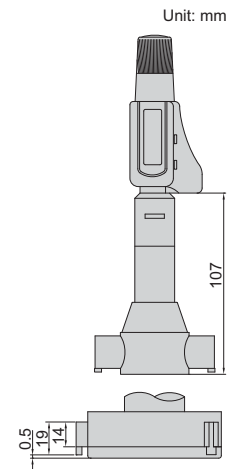
setting ring



extension rod (included)



3128-70



| Code              | Range                 | Accuracy | Setting ring      | Extension rod (included) |
|-------------------|-----------------------|----------|-------------------|--------------------------|
| <b>3128-70 *</b>  | 50-70mm/1.97-2.76"    | 5µm      | Ø50mm (included)  | 150mm                    |
| <b>3128-100 *</b> | 70-100mm/2.76-3.94"   | 5µm      | Ø70mm (included)  | 150mm                    |
| <b>3128-150 *</b> | 100-150mm/3.94-5.91"  | 6µm      | Ø100mm (included) | 150mm                    |
| <b>3128-250 *</b> | 150-250mm/5.91-9.84"  | 8µm      | Ø150mm (included) | 150mm                    |
| <b>3128-300 *</b> | 200-300mm/7.87-11.81" | 9µm      | Ø200mm (optional) | 150mm                    |

\*Supplied with manufacturer inspection certificate

## INSIDE MICROMETERS (ECONOMIC TYPE)

ATTENTION: LOW PARALLELISM OF TWO MEASURING FACES

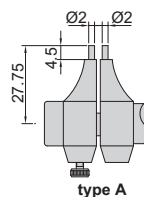
- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Optional accessory: setting ring (code **6312**), micrometer stand and clamp (code **6301** and **6301-1**)

micrometer stand with clamp (optional)



| Code            | Range    | Type | Setting ring    | Accuracy |
|-----------------|----------|------|-----------------|----------|
| <b>3220-30</b>  | 5-30mm   | A    | 5mm (included)  | 7µm      |
| <b>3220-50</b>  | 25-50mm  | B    | 25mm (included) | 8µm      |
| <b>3220-75</b>  | 50-75mm  | B    | 50mm (optional) | 9µm      |
| <b>3220-100</b> | 75-100mm | C    | 75mm (optional) | 10µm     |

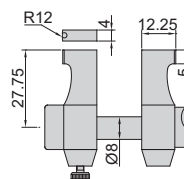
Unit: mm



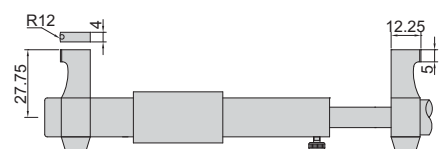
type A



3220-50



type B



type C

DATA  
OUTPUT

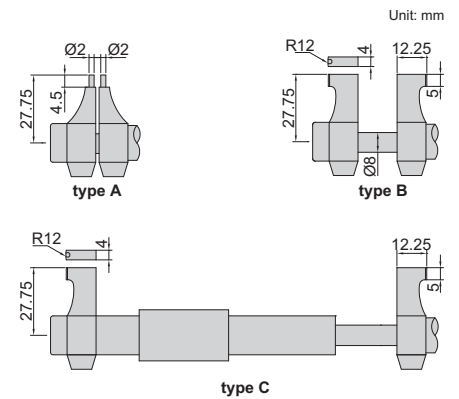
ATTENTION: LOW PARALLELISM  
OF TWO MEASURING FACES

## DIGITAL INSIDE MICROMETERS (ECONOMIC TYPE)

- Resolution 0.001mm/0.00005"
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Optional accessory: data output cable (code **7315-30**, **7302-30**), setting ring (code **6312**)



3520-30



| 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     |

IP65  
WATERPROOF

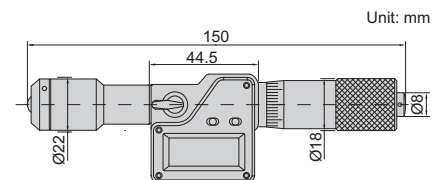
DATA  
OUTPUT

## DIGITAL TUBULAR INSIDE MICROMETERS



3521-1000

- Micrometer head: 150-175mm
- Graduation: 0.001mm/0.00005"
- Accuracy:  $(3+n+L/50)\mu\text{m}$   
n= number of rods  
L=maximum measuring length (mm)
- Carbide measuring faces
- The diameter of extension rods is 22mm
- IP65 dust/waterproof
- Button function: on/off, set, mm/inch, ABS/INC
- Data output
- LR44 battery, automatic power off
- Supplied with setting standards
- Optional accessory: data output cable (code **7315-30**, **7302-30**)



| 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) |

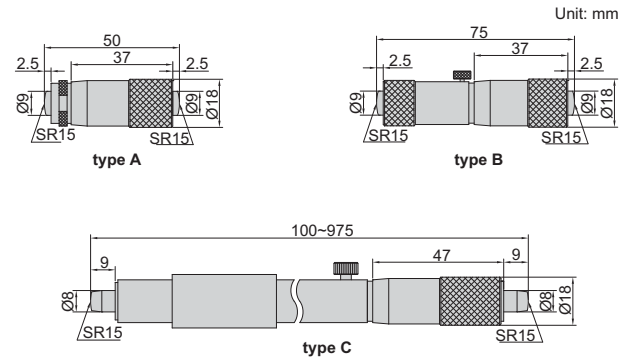
## TUBULAR INSIDE MICROMETERS

- Micrometers up to 500mm meet DIN863-4
- Graduation 0.01mm
- Carbide measuring faces
- Optional accessory: gage block accessory (code **6881**), cylinder gage block (code **4001**), caliper/height gage 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     |

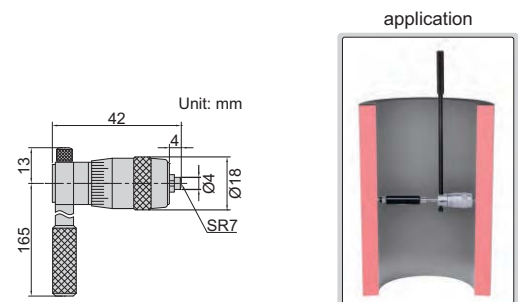
## TUBULAR INSIDE MICROMETERS

- Graduation 0.01mm
- Accuracy:  $(6+L/50)\mu\text{m}$   
L=maximum measuring length (mm)
- Optional accessory: setting ring (code **6312**), gage block accessory (code **6881**), cylinder gage block (code **4001**), caliper/height gage checker (code **6884**)



**3221-200**

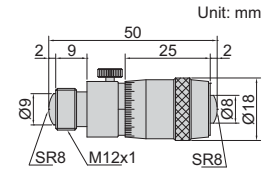
| Code      | Range      | Travel of micrometer head | Extension rods |
|-----------|------------|---------------------------|----------------|
| 3221-32   | 25-32mm    | 7mm                       | —              |
| 3221-50   | 25-50mm    | 7mm                       | 2 pcs          |
| 3221-63   | 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          |





## TUBULAR INSIDE MICROMETERS

- Micrometer head: 50-63mm
- Graduation 0.01mm
- Accuracy:  $(3+n+L/50)\mu\text{m}$   
n=number of rods  
L=maximum measuring length (mm)
- Supplied with setting standards
- Carbide measuring faces



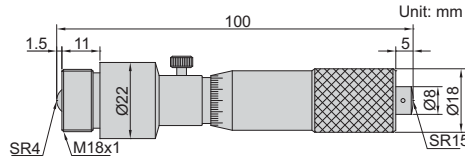
3222-150

| 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) |

6

## TUBULAR INSIDE MICROMETERS

- Micrometer head: 100-125mm
- Graduation 0.01mm
- Accuracy:  $(3+n+L/50)\mu\text{m}$   
n=number of rods  
L=maximum measuring length (mm)
- Travel of micrometer head 25mm
- Supplied with setting standards
- Carbide measuring faces



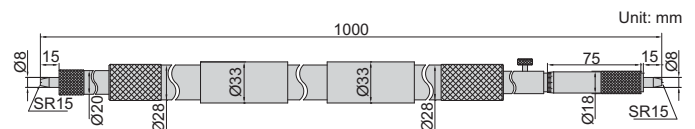
3225-500

| 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) |

## 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:  $(7+n+L/50)\mu\text{m}$   
n=number of rods  
L=maximum measuring length (mm)
- Travel of micrometer head 50mm
- Carbide measuring faces

# DIGITAL NON-ROTATING SPINDLE TUBULAR INSIDE MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE

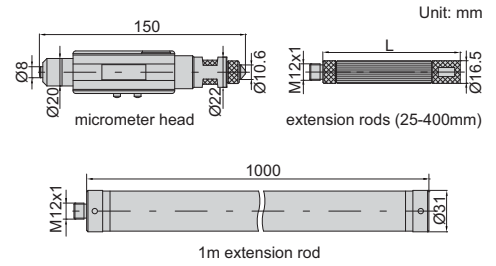
DATA  
OUTPUT

SPRING LOADED  
MEASURING POINT

NON-ROTATING  
SPINDLE

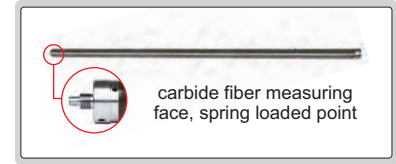


3635-950

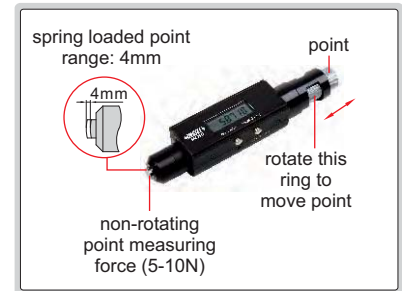


- Carbide measuring faces for micrometer head and extension rods
- Points of extension rods are spring loaded
- Data output
- Button function: mm/inch, max./min. value tracking, tolerance measurement, hold, on/off, zero
- CR2032 battery, automatic power off
- Optional accessory: gage block accessory (code **6881**), cylinder gage block (code **4001**), caliper/height gage 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 |
|-----------|---|----------|---------------|-----------------|--------|
| 150-175mm | 0.001mm/0.00005"<br>0.01mm/0.0005" (switchable) | ±4µm     | 1µm           | 5-10N           | 275g   |

| Code      | Range      | Extension rods  |
|-----------|------------|---|
| 3635-350  | 150-350mm  | 25mm, 50mm, 100mm                                       |
| 3635-550  | 150-550mm  | 25mm, 50mm, 100mm, 200mm                                |
| 3635-950  | 150-950mm  | 25mm, 50mm, 100mm, 200mm, 400mm                         |
| 3635-1550 | 150-1550mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm (2 pcs)         |
| 3635-2150 | 150-2150mm | 25mm, 50mm, 100mm, 200mm, 400mm (4 pcs)                 |
| 3635-3150 | 150-3150mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (2 pcs) |
| 3635-4150 | 150-4150mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (3 pcs) |
| 3635-5150 | 150-5150mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (4 pcs) |
| 3635-6150 | 150-6150mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (5 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:  
gage block accessory (code **6881**),  
cylinder gage block (code **4001**),  
caliper/height gage checker (code **6884**)



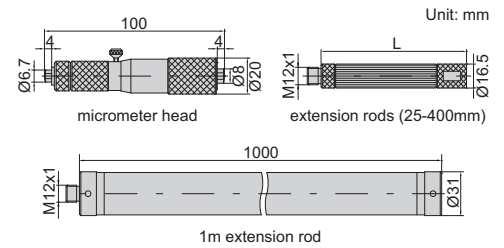
**3634-1300**

### Micrometer head

| Range     | Graduation | Accuracy | Weight |
|-----------|------------|----------|--------|
| 100-125mm | 0.01mm     | ±4μm     | 154g   |

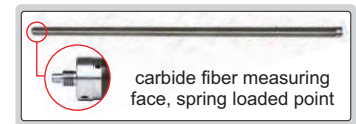
### Extension rods

| 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 |



| Code             | Range      | Extension rods  |
|------------------|------------|---|
| <b>3634-350</b>  | 100-350mm  | 25mm, 200mm   |
| <b>3634-500</b>  | 100-500mm  | 25mm, 50mm, 100mm, 200mm                                |
| <b>3634-1300</b> | 100-1300mm | 25mm, 50mm, 100mm, 200mm, 400mm (2 pcs)                 |
| <b>3634-1500</b> | 100-1500mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm (2 pcs)         |
| <b>3634-2100</b> | 100-2100mm | 25mm, 50mm, 100mm, 200mm, 400mm (4 pcs)                 |
| <b>3634-3100</b> | 100-3100mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (2 pcs) |
| <b>3634-4100</b> | 100-4100mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (3 pcs) |
| <b>3634-5100</b> | 100-5100mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (4 pcs) |
| <b>3634-6100</b> | 100-6100mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (5 pcs) |

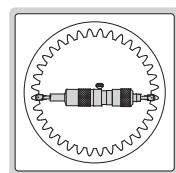
1m carbon fiber extension rod,  
light weight, no deform



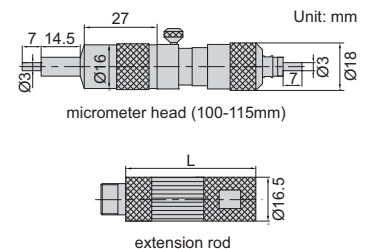
RELATIVE PRODUCT:  
GEAR BORE GAGE (CODE 2428)

## INTERNAL GEAR TOOTH MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE



**3638-200**



- 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

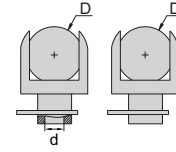
| Length (L) | Accuracy |
|------------|----------|
| 15mm       | ±1μm     |
| 25mm       | ±1.25μm  |
| 30mm       | ±1.25μm  |
| 50mm       | ±1.25μm  |
| 100mm      | ±2μm     |
| 200mm      | ±3.5μm   |
| 400mm      | ±4.5μm   |

| Code             | Range      | Micrometer head | Extension rod (L)                      |
|------------------|------------|-----------------|--|
| <b>3638-200</b>  | 100-205mm  | 100-115mm       | 15mm, 25mm, 50mm                       |
| <b>3638-500</b>  | 100-505mm  | 100-115mm       | 15mm, 25mm, 50mm, 100mm, 200mm         |
| <b>3638-900</b>  | 100-905mm  | 100-115mm       | 15mm, 25mm, 50mm, 100mm, 200mm, 400mm  |
| <b>3638-1100</b> | 150-1150mm | 150-175mm       | 25mm, 50mm, 100mm, 200mm, 200mm, 400mm |

## BALL TIPS FOR GEAR TOOTH MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE

- Supplied in pair
- Made of hardened special steel
- Suitable for **3638** series micrometers



7383-8

6

| Code   | Ball dia. (D) | Accuracy of D | d    |
|--------|---------------|---------------|------|
| 7383-1 | SØ1mm         | ±1µm          | Ø3mm |
| 7383-2 | SØ2mm         | ±1µm          | Ø3mm |
| 7383-3 | SØ3mm         | ±1µm          | Ø3mm |
| 7383-4 | SØ4mm         | ±1µm          | Ø3mm |
| 7383-5 | SØ5mm         | ±1µm          | Ø3mm |
| 7383-6 | SØ6mm         | ±1µm          | Ø3mm |
| 7383-7 | SØ7mm         | ±1µm          | Ø3mm |
| 7383-8 | SØ8mm         | ±1µm          | Ø3mm |

| Code    | Ball dia. (D) | Accuracy of D | d    |
|---------|---------------|---------------|------|
| 7383-9  | SØ9mm         | ±1µm          | Ø3mm |
| 7383-10 | SØ10mm        | ±1µm          | Ø3mm |
| 7383-11 | SØ11mm        | ±1µm          | Ø3mm |
| 7383-12 | SØ12mm        | ±1µm          | Ø3mm |
| 7383-13 | SØ13mm        | ±1µm          | Ø3mm |
| 7383-14 | SØ14mm        | ±1µm          | Ø3mm |
| 7383-15 | SØ15mm        | ±1µm          | Ø3mm |
| 7383-16 | SØ16mm        | ±1µm          | Ø3mm |

## INTERNAL SCREW THREAD MICROMETERS

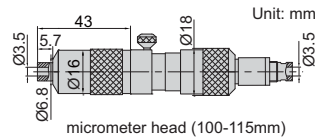
**INSIZE PLUS**  
MADE IN EUROPE



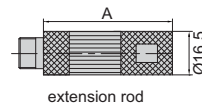
tips are optional

tips are optional

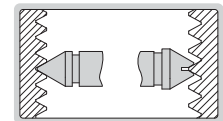
3641-200



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, 400mm       | stem length L=13.5mm |

TIPS FOR TRAPEZOIDAL, ACME  
THREAD ARE ALSO AVAILABLE

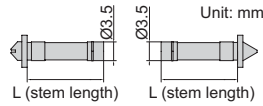
## MEASURING TIPS FOR INTERNAL SCREW THREAD MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE

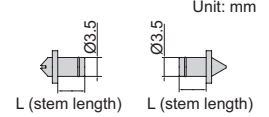
- Supplied in pair
- Made of hardened steel
- Suitable for **3641** series micrometers



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            |

## 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     | Code      | Range     |
|-----------|-----------|-----------|-----------|
| 3226-1001 | 75-100mm  | 3226-2251 | 200-225mm |
| 3226-1251 | 100-125mm | 3226-2501 | 225-250mm |
| 3226-1501 | 125-150mm | 3226-2751 | 250-275mm |
| 3226-1751 | 150-175mm | 3226-3001 | 275-300mm |
| 3226-2001 | 175-200mm |           |           |

## MEASURING TIPS FOR INTERNAL SCREW THREAD MICROMETERS

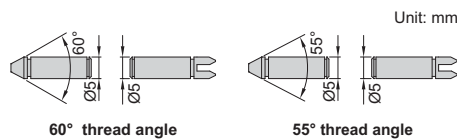
- Supplied in pair
- Suitable for **3226** series micrometers

### 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

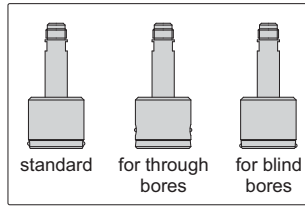
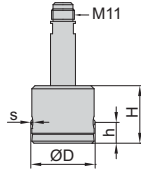
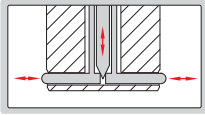
### Whitworth screw (55° thread angle)

| 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 |

## BORE PLUG GAGES

**INSIZE PLUS**  
MADE IN EUROPE

principle of measurement



dial comparator is optional



### SPECIFICATION OF PROBE

|                     | (mm)              |       |       |        |        |         |         |         |          |
|---------------------|-------------------|-------|-------|--------|--------|---------|---------|---------|----------|
| Range               | 2-3               | 3.1-4 | 4.1-6 | 6.1-9  | 9.1-12 | 12.1-20 | 20.1-40 | 40.1-60 | 60.1-130 |
| Travel of point (s) | 0.15              | 0.15  | 0.15  | 0.2    | 0.2    | 0.2     | 0.2     | 0.2     | 0.2      |
| Height of point (h) | standard          | 1     | 1.5   | 1.5    | 2.5    | 2.5     | 2.5     | 3.5     | 4        |
|                     | for through bores | —     | 6     | 6      | 6      | 10      | 10      | 10      | 10       |
|                     | for blind bores   | 0.7   | 1     | 1      | 1      | 1       | 1       | 1.2     | 1.2      |
| Height of probe (H) | 17.5              | 26    | 10    | 15     | 15     | 15      | 20      | 28      | 33       |
| Repeatability       | 0.001             | 0.001 | 0.001 | 0.0005 | 0.0005 | 0.0005  | 0.0005  | 0.0005  | 0.001    |

### PROBE AND SLEEVE

| Code       | Type              |
|------------|-------------------|
| 4653-A□□□□ | standard          |
| 4653-B□□□□ | for through bores |
| 4653-C□□□□ | for blind bores   |

Ordering examples: (mm)

| Code           | Type     | Range  |
|----------------|----------|--------|
| 4653-A30D6H7 * | standard | 30.6H7 |

\* "D" stands for "."



### DEPTH STOP

| Code       | Applicable for probe |
|------------|----------------------|
| 4653-G□□□□ | 3.0~60mm             |
| 4653-J□□□□ | 30~130mm             |

Ordering examples: (mm)

| Code       | Applicable for probe |
|------------|----------------------|
| 4653-G22H7 | 22H7                 |

### SETTING RING

| Code       |
|------------|
| 6312-□□□□□ |



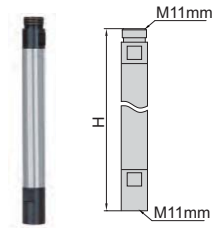
### HANDLE

| Code      | Length (L) | Retraction |
|-----------|------------|------------|
| 4653-150  | 45mm       | without    |
| 4653-1105 | 105mm      | without    |
| 4653-1235 | 235mm      | without    |
| 4653-H70  | 70mm       | with       |



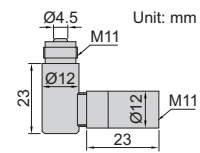
### EXTENSION ROD FOR HANDLE

| Code      | Length (H) |
|-----------|------------|
| 4653-R50  | 50mm       |
| 4653-R100 | 100mm      |
| 4653-R250 | 250mm      |
| 4653-R500 | 500mm      |



### 90° ADAPTER

| Code    |
|---------|
| 4653-K1 |



Unit: mm application



set measuring depth

### HANDLE FOR INDUCTIVE PROBE

| Code      |
|-----------|
| 4653-F110 |



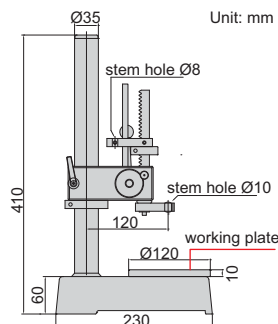
application



## STAND FOR SPLIT DIAL BORE GAGES

- For split type dial bore gages 2421, 2426, 2427 and 2429
- Maximum working stroke: 90mm
- Accept dial indicator to show measuring depth

| Code     |
|----------|
| 2491-250 |



Unit: mm



2491-250

accept dial indicator to show measuring depth



## SPLIT TYPE DIAL BORE GAGES

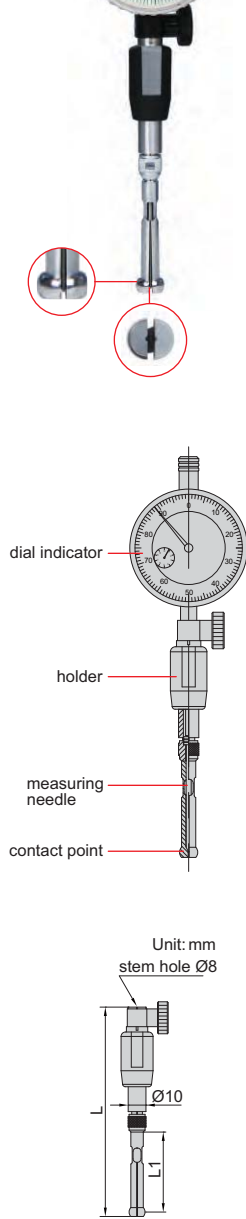
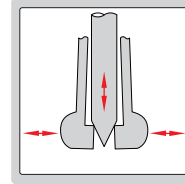
**INSIZE PLUS**  
MADE IN EUROPE

dial indicator  
is optional



- Split type contact points
- Accuracy (without indicator):  
3µm (measuring range 0.95~10mm),  
4µm (measuring range 10~20.6mm)
- Repeatability (without indicator): 1µm
- Optional accessory:  
digital/dial indicators or dial comparator

principle of measurement



| Code      | Contact point   |                      |                  |              | Material of points | Measuring needle |          | Setting ring |  |
|-----------|-----------------|----------------------|------------------|--------------|--------------------|------------------|----------|--------------|--|
|           | Measuring range | Measuring depth (L1) | Total length (L) | Code         |                    | Code             | Diameter |              |  |
| 2426-1    | 0.95-1.15       | 13                   | 89               | carbide      | 2426-N1D4          | 2421-R1          | 1        |              |  |
| 2426-1D1  | 1.07-1.25       | 13                   | 89               | carbide      |                    | 2421-R1D1        | 1.1      |              |  |
| 2426-1D2  | 1.17-1.35       | 13                   | 89               | carbide      |                    | 2421-R1D2        | 1.2      |              |  |
| 2426-1D3  | 1.27-1.45       | 13                   | 89               | carbide      |                    | 2421-R1D3        | 1.3      |              |  |
| 2426-1D4  | 1.37-1.55       | 13                   | 89               | carbide      |                    | 2421-R1D4        | 1.4      |              |  |
| 2426-1D75 | 1.5-1.9         | 17                   | 93               | carbide      | 2426-N2D25         | 2421-R1D75       | 1.75     |              |  |
| 2426-2    | 1.8-2.2         | 17                   | 93               | carbide      |                    | 2421-R2          | 2        |              |  |
| 2426-2D25 | 2.05-2.45       | 17                   | 93               | carbide      |                    | 2421-R2D25       | 2.25     |              |  |
| 2426-2D5  | 2.3-2.7         | 25                   | 101              | carbide      | 2426-N4            | 2421-R2D5        | 2.5      |              |  |
| 2426-2D75 | 2.55-2.95       | 25                   | 101              | carbide      |                    | 2421-R2D75       | 2.75     |              |  |
| 2426-3    | 2.8-3.2         | 25                   | 101              | carbide      |                    | 2421-R3          | 3        |              |  |
| 2426-3D25 | 3.05-3.45       | 25                   | 101              | carbide      |                    | 2421-R3D25       | 3.25     |              |  |
| 2426-3D5  | 3.3-3.7         | 25                   | 101              | carbide      |                    | 2421-R3D5        | 3.5      |              |  |
| 2426-3D75 | 3.55-3.95       | 25                   | 101              | carbide      |                    | 2421-R3D75       | 3.75     |              |  |
| 2426-4    | 3.8-4.2         | 25                   | 101              | carbide      |                    | 2421-R4          | 4        |              |  |
| 2426-4D5  | 4.15-4.8        | 41                   | 118              | hard chromed | 2426-N9            | 2421-R4D5        | 4.5      |              |  |
| 2426-5    | 4.7-5.3         | 41                   | 118              | hard chromed |                    | 2421-R5          | 5        |              |  |
| 2426-5D5  | 5.2-5.8         | 41                   | 118              | hard chromed |                    | 2421-R5D5        | 5.5      |              |  |
| 2426-6    | 5.7-6.3         | 41                   | 118              | hard chromed |                    | 2421-R6          | 6        |              |  |
| 2426-6D5  | 6.2-6.8         | 41                   | 118              | hard chromed |                    | 2421-R6D5        | 6.5      |              |  |
| 2426-7    | 6.7-7.3         | 41                   | 118              | hard chromed |                    | 2421-R7          | 7        |              |  |
| 2426-7D5  | 7.2-7.8         | 45                   | 118              | hard chromed |                    | 2421-R7D5        | 7.5      |              |  |
| 2426-8    | 7.7-8.3         | 45                   | 118              | hard chromed |                    | 2421-R8          | 8        |              |  |
| 2426-8D5  | 8.2-8.8         | 45                   | 118              | hard chromed |                    | 2421-R8D5        | 8.5      |              |  |
| 2426-9    | 8.7-9.3         | 45                   | 118              | hard chromed |                    | 2421-R9          | 9        |              |  |
| 2426-10   | 9.2-10.5        | 45                   | 118              | hard chromed | 2426-N20           | 2421-R10         | 10       |              |  |
| 2426-11   | 10.2-11.5       | 45                   | 118              | hard chromed |                    | 2421-R11         | 11       |              |  |
| 2426-12   | 11.2-12.5       | 45                   | 118              | hard chromed |                    | 2421-R12         | 12       |              |  |
| 2426-13   | 12.2-13.5       | 45                   | 118              | hard chromed |                    | 2421-R13         | 13       |              |  |
| 2426-14   | 13.4-14.6       | 45                   | 118              | hard chromed |                    | 2421-R14         | 14       |              |  |
| 2426-15   | 14.4-15.6       | 45                   | 118              | hard chromed |                    | 2421-R15         | 15       |              |  |
| 2426-16   | 15.4-16.6       | 45                   | 118              | hard chromed |                    | 2421-R16         | 16       |              |  |
| 2426-17   | 16.4-17.6       | 45                   | 118              | hard chromed |                    | 2421-R17         | 17       |              |  |
| 2426-18   | 17.4-18.6       | 45                   | 118              | hard chromed |                    | 2421-R18         | 18       |              |  |
| 2426-19   | 18.4-19.6       | 45                   | 118              | hard chromed |                    | 2421-R19         | 19       |              |  |
| 2426-20   | 19.4-20.6       | 45                   | 118              | hard chromed |                    | 2421-R20         | 20       |              |  |



2426-HOLDER1



2426-HOLDER2

### HOLDER

| Code         | Retraction | Applicable points |
|--------------|------------|-------------------|
| 2426-HOLDER1 | without    | all               |
| 2426-HOLDER2 | with       | all               |

## SPLIT TYPE DIAL BORE GAGE SETS

**INSIZE PLUS**  
MADE IN EUROPE

- Split type contact points
- Accuracy (without indicator):  
3µm (measuring range 0.95~10mm),  
4µm (measuring range 10~20.6mm)
- Repeatability (without indicator): 1µm
- Setting rings and dial indicators are optional

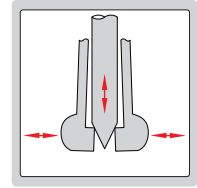


2421-121

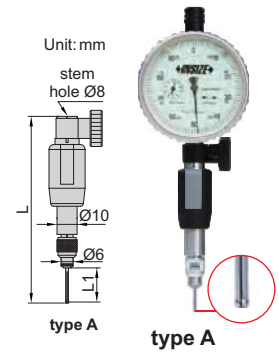
(mm)

| Code     | Range     | Quantity of points | Measuring range of point | Measuring depth (L1) | Total length (L) | Material of points | Type of point | Setting ring (optional) |          |
|----------|-----------|--------------------|--------------------------|----------------------|------------------|--------------------|---------------|-------------------------|----------|
|          |           |                    |                          |                      |                  |                    |               | Code                    | Diameter |
| 2421-1D4 | 0.95-1.55 | 5                  | 0.95-1.15                | 13                   | 89               | carbide            | A             | 2421-R1                 | 1        |
|          |           |                    | 1.07-1.25                | 13                   | 89               | carbide            | A             | 2421-R1D1               | 1.1      |
|          |           |                    | 1.17-1.35                | 13                   | 89               | carbide            | A             | 2421-R1D2               | 1.2      |
|          |           |                    | 1.27-1.45                | 13                   | 89               | carbide            | A             | 2421-R1D3               | 1.3      |
|          |           |                    | 1.37-1.55                | 13                   | 89               | carbide            | A             | 2421-R1D4               | 1.4      |
| 2421-4   | 1.5-4.2   | 10                 | 1.5-1.9                  | 17                   | 93               | carbide            | A             | 2421-R1D75              | 1.75     |
|          |           |                    | 1.8-2.2                  | 17                   | 93               | carbide            | A             | 2421-R2                 | 2        |
|          |           |                    | 2.05-2.45                | 17                   | 93               | carbide            | A             | 2421-R2D25              | 2.25     |
|          |           |                    | 2.3-2.7                  | 25                   | 101              | carbide            | A             | 2421-R2D5               | 2.5      |
|          |           |                    | 2.55-2.95                | 25                   | 101              | carbide            | A             | 2421-R2D75              | 2.75     |
|          |           |                    | 2.8-3.2                  | 25                   | 101              | carbide            | A             | 2421-R3                 | 3        |
|          |           |                    | 3.05-3.45                | 25                   | 101              | carbide            | A             | 2421-R3D25              | 3.25     |
|          |           |                    | 3.3-3.7                  | 25                   | 101              | carbide            | A             | 2421-R3D5               | 3.5      |
|          |           |                    | 3.55-3.95                | 25                   | 101              | carbide            | A             | 2421-R3D75              | 3.75     |
|          |           |                    | 3.8-4.2                  | 25                   | 101              | carbide            | A             | 2421-R4                 | 4        |
| 2421-7D5 | 4.15-7.8  | 7                  | 4.15-4.8                 | 41                   | 118              | hard chromed       | B             | 2421-R4D5               | 4.5      |
|          |           |                    | 4.7-5.3                  | 41                   | 118              | hard chromed       | B             | 2421-R5                 | 5        |
|          |           |                    | 5.2-5.8                  | 41                   | 118              | hard chromed       | B             | 2421-R5D5               | 5.5      |
|          |           |                    | 5.7-6.3                  | 41                   | 118              | hard chromed       | B             | 2421-R6                 | 6        |
|          |           |                    | 6.2-6.8                  | 41                   | 118              | hard chromed       | B             | 2421-R6D5               | 6.5      |
|          |           |                    | 6.7-7.3                  | 41                   | 118              | hard chromed       | B             | 2421-R7                 | 7        |
|          |           |                    | 7.2-7.8                  | 45                   | 118              | hard chromed       | C             | 2421-R7D5               | 7.5      |
| 2421-12  | 7.7-12.5  | 6                  | 7.7-8.3                  | 45                   | 118              | hard chromed       | C             | 2421-R8                 | 8        |
|          |           |                    | 8.2-8.8                  | 45                   | 118              | hard chromed       | C             | 2421-R8D5               | 8.5      |
|          |           |                    | 8.7-9.3                  | 45                   | 118              | hard chromed       | C             | 2421-R9                 | 9        |
|          |           |                    | 9.2-10.5                 | 45                   | 118              | hard chromed       | C             | 2421-R10                | 10       |
|          |           |                    | 10.2-11.5                | 45                   | 118              | hard chromed       | C             | 2421-R11                | 11       |
|          |           |                    | 11.2-12.5                | 45                   | 118              | hard chromed       | C             | 2421-R12                | 12       |
| 2421-20  | 12.2-20.6 | 8                  | 12.2-13.5                | 45                   | 118              | hard chromed       | C             | 2421-R13                | 13       |
|          |           |                    | 13.4-14.6                | 45                   | 118              | hard chromed       | C             | 2421-R14                | 14       |
|          |           |                    | 14.4-15.6                | 45                   | 118              | hard chromed       | C             | 2421-R15                | 15       |
|          |           |                    | 15.4-16.6                | 45                   | 118              | hard chromed       | C             | 2421-R16                | 16       |
|          |           |                    | 16.4-17.6                | 45                   | 118              | hard chromed       | C             | 2421-R17                | 17       |
|          |           |                    | 17.4-18.6                | 45                   | 118              | hard chromed       | C             | 2421-R18                | 18       |
|          |           |                    | 18.4-19.6                | 45                   | 118              | hard chromed       | C             | 2421-R19                | 19       |
|          |           |                    | 19.4-20.6                | 45                   | 118              | hard chromed       | C             | 2421-R20                | 20       |
| 2421-121 | 4.15-12.5 | 13                 | 4.15-4.8                 | 41                   | 118              | hard chromed       | B             | 2421-R4D5               | 4.5      |
|          |           |                    | 4.7-5.3                  | 41                   | 118              | hard chromed       | B             | 2421-R5                 | 5        |
|          |           |                    | 5.2-5.8                  | 41                   | 118              | hard chromed       | B             | 2421-R5D5               | 5.5      |
|          |           |                    | 5.7-6.3                  | 41                   | 118              | hard chromed       | B             | 2421-R6                 | 6        |
|          |           |                    | 6.2-6.8                  | 41                   | 118              | hard chromed       | B             | 2421-R6D5               | 6.5      |
|          |           |                    | 6.7-7.3                  | 41                   | 118              | hard chromed       | B             | 2421-R7                 | 7        |
|          |           |                    | 7.2-7.8                  | 45                   | 118              | hard chromed       | C             | 2421-R7D5               | 7.5      |
|          |           |                    | 7.7-8.3                  | 45                   | 118              | hard chromed       | C             | 2421-R8                 | 8        |
|          |           |                    | 8.2-8.8                  | 45                   | 118              | hard chromed       | C             | 2421-R8D5               | 8.5      |
|          |           |                    | 8.7-9.3                  | 45                   | 118              | hard chromed       | C             | 2421-R9                 | 9        |
|          |           |                    | 9.2-10.5                 | 45                   | 118              | hard chromed       | C             | 2421-R10                | 10       |
|          |           |                    | 10.2-11.5                | 45                   | 118              | hard chromed       | C             | 2421-R11                | 11       |
|          |           |                    | 11.2-12.5                | 45                   | 118              | hard chromed       | C             | 2421-R12                | 12       |

principle of measurement

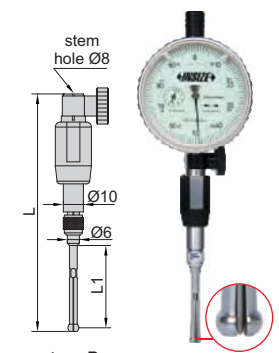


dial indicator is optional



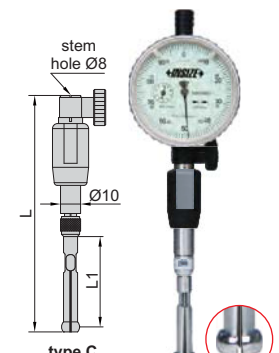
type A

dial indicator is optional



type B

dial indicator is optional



type C

type C



## SPLIT TYPE DIAL BORE GAGES FOR BLIND HOLES

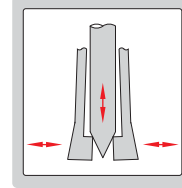
**INSIZE PLUS**  
MADE IN EUROPE

dial indicator  
is optional



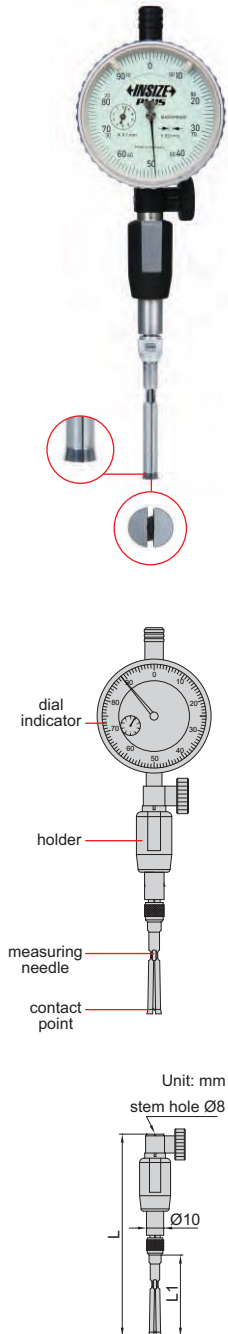
- Split type contact points
- Accuracy (without indicator):  
3µm (measuring range 1.5~10mm),  
4µm (measuring range 10~20.6mm)
- Repeatability (without indicator): 1µm
- Optional accessory:  
digital/dial indicators or dial comparator

principle of measurement



6

(mm)



| Code      | Contact point   |                      |                  | Material of points | Measuring needle | Setting ring |          |
|-----------|-----------------|----------------------|------------------|--------------------|------------------|--------------|----------|
|           | Measuring range | Measuring depth (L1) | Total length (L) |                    | Code             | Code         | Diameter |
| 2427-1D75 | 1.5-1.9         | 17                   | 93               | carbide            | 2426-N2D25       | 2421-R1D75   | 1.75     |
| 2427-2    | 1.8-2.2         | 17                   | 93               | carbide            |                  | 2421-R2      | 2        |
| 2427-2D25 | 2.05-2.45       | 17                   | 93               | carbide            |                  | 2421-R2D25   | 2.25     |
| 2427-2D5  | 2.3-2.7         | 25                   | 101              | carbide            | 2426-N4          | 2421-R2D5    | 2.5      |
| 2427-2D75 | 2.55-2.95       | 25                   | 101              | carbide            |                  | 2421-R2D75   | 2.75     |
| 2427-3    | 2.8-3.2         | 25                   | 101              | carbide            |                  | 2421-R3      | 3        |
| 2427-3D25 | 3.05-3.45       | 25                   | 101              | carbide            |                  | 2421-R3D25   | 3.25     |
| 2427-3D5  | 3.3-3.7         | 25                   | 101              | carbide            |                  | 2421-R3D5    | 3.5      |
| 2427-3D75 | 3.55-3.95       | 25                   | 101              | carbide            |                  | 2421-R3D75   | 3.75     |
| 2427-4    | 3.8-4.2         | 25                   | 101              | carbide            |                  | 2421-R4      | 4        |
| 2427-4D5  | 4.15-4.8        | 41                   | 118              | hard chromed       | 2427-N9          | 2421-R4D5    | 4.5      |
| 2427-5    | 4.7-5.3         | 41                   | 118              | hard chromed       |                  | 2421-R5      | 5        |
| 2427-5D5  | 5.2-5.8         | 41                   | 118              | hard chromed       |                  | 2421-R5D5    | 5.5      |
| 2427-6    | 5.7-6.3         | 41                   | 118              | hard chromed       |                  | 2421-R6      | 6        |
| 2427-6D5  | 6.2-6.8         | 41                   | 118              | hard chromed       |                  | 2421-R6D5    | 6.5      |
| 2427-7    | 6.7-7.3         | 41                   | 118              | hard chromed       |                  | 2421-R7      | 7        |
| 2427-7D5  | 7.2-7.8         | 45                   | 118              | hard chromed       |                  | 2421-R7D5    | 7.5      |
| 2427-8    | 7.7-8.3         | 45                   | 118              | hard chromed       |                  | 2421-R8      | 8        |
| 2427-8D5  | 8.2-8.8         | 45                   | 118              | hard chromed       |                  | 2421-R8D5    | 8.5      |
| 2427-9    | 8.7-9.3         | 45                   | 118              | hard chromed       |                  | 2421-R9      | 9        |
| 2427-10   | 9.2-10.5        | 45                   | 118              | hard chromed       | 2427-N20         | 2421-R10     | 10       |
| 2427-11   | 10.2-11.5       | 45                   | 118              | hard chromed       |                  | 2421-R11     | 11       |
| 2427-12   | 11.2-12.5       | 45                   | 118              | hard chromed       |                  | 2421-R12     | 12       |
| 2427-13   | 12.2-13.5       | 45                   | 118              | hard chromed       |                  | 2421-R13     | 13       |
| 2427-14   | 13.4-14.6       | 45                   | 118              | hard chromed       |                  | 2421-R14     | 14       |
| 2427-15   | 14.4-15.6       | 45                   | 118              | hard chromed       |                  | 2421-R15     | 15       |
| 2427-16   | 15.4-16.6       | 45                   | 118              | hard chromed       |                  | 2421-R16     | 16       |
| 2427-17   | 16.4-17.6       | 45                   | 118              | hard chromed       |                  | 2421-R17     | 17       |
| 2427-18   | 17.4-18.6       | 45                   | 118              | hard chromed       |                  | 2421-R18     | 18       |
| 2427-19   | 18.4-19.6       | 45                   | 118              | hard chromed       |                  | 2421-R19     | 19       |
| 2427-20   | 19.4-20.6       | 45                   | 118              | hard chromed       |                  | 2421-R20     | 20       |



2426-HOLDER1



2426-HOLDER2

### HOLDER

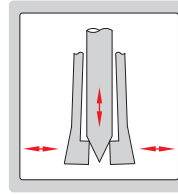
| Code         | Retraction | Applicable points |
|--------------|------------|-------------------|
| 2426-HOLDER1 | without    | all               |
| 2426-HOLDER2 | with       | all               |

## SPLIT TYPE DIAL BORE GAGE SETS FOR BLIND HOLES

**INSIZE PLUS**  
MADE IN EUROPE

- Split type contact points
- Accuracy (without indicator): 3µm (measuring range 1.5~10mm), 4µm (measuring range 10~20.6mm)
- Repeatability (without indicator): 1µm
- Setting rings and dial indicators are optional

principle of measurement



2429-12

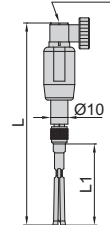
(mm)

| Code     | Range     | Quantity of points | Measuring range of point | Measuring depth (L1) | Total length (L) | Material of points | Setting ring (optional) |          |
|----------|-----------|--------------------|--------------------------|----------------------|------------------|--------------------|-------------------------|----------|
|          |           |                    |                          |                      |                  |                    | Code                    | Diameter |
| 2429-4   | 1.5-4.2   | 10                 | 1.5-1.9                  | 17                   | 93               | carbide            | 2421-R1D75              | 1.75     |
|          |           |                    | 1.8-2.2                  | 17                   | 93               | carbide            | 2421-R2                 | 2        |
|          |           |                    | 2.05-2.45                | 17                   | 93               | carbide            | 2421-R2D25              | 2.25     |
|          |           |                    | 2.3-2.7                  | 25                   | 101              | carbide            | 2421-R2D5               | 2.5      |
|          |           |                    | 2.55-2.95                | 25                   | 101              | carbide            | 2421-R2D75              | 2.75     |
|          |           |                    | 2.8-3.2                  | 25                   | 101              | carbide            | 2421-R3                 | 3        |
|          |           |                    | 3.05-3.45                | 25                   | 101              | carbide            | 2421-R3D25              | 3.25     |
|          |           |                    | 3.3-3.7                  | 25                   | 101              | carbide            | 2421-R3D5               | 3.5      |
|          |           |                    | 3.55-3.95                | 25                   | 101              | carbide            | 2421-R3D75              | 3.75     |
|          |           |                    | 3.8-4.2                  | 25                   | 101              | carbide            | 2421-R4                 | 4        |
| 2429-7D5 | 4.15-7.8  | 7                  | 4.15-4.8                 | 41                   | 118              | hard chromed       | 2421-R4D5               | 4.5      |
|          |           |                    | 4.7-5.3                  | 41                   | 118              | hard chromed       | 2421-R5                 | 5        |
|          |           |                    | 5.2-5.8                  | 41                   | 118              | hard chromed       | 2421-R5D5               | 5.5      |
|          |           |                    | 5.7-6.3                  | 41                   | 118              | hard chromed       | 2421-R6                 | 6        |
|          |           |                    | 6.2-6.8                  | 41                   | 118              | hard chromed       | 2421-R6D5               | 6.5      |
|          |           |                    | 6.7-7.3                  | 41                   | 118              | hard chromed       | 2421-R7                 | 7        |
|          |           |                    | 7.2-7.8                  | 45                   | 118              | hard chromed       | 2421-R7D5               | 7.5      |
| 2429-12  | 7.7-12.5  | 6                  | 7.7-8.3                  | 45                   | 118              | hard chromed       | 2421-R8                 | 8        |
|          |           |                    | 8.2-8.8                  | 45                   | 118              | hard chromed       | 2421-R8D5               | 8.5      |
|          |           |                    | 8.7-9.3                  | 45                   | 118              | hard chromed       | 2421-R9                 | 9        |
|          |           |                    | 9.2-10.5                 | 45                   | 118              | hard chromed       | 2421-R10                | 10       |
|          |           |                    | 10.2-11.5                | 45                   | 118              | hard chromed       | 2421-R11                | 11       |
|          |           |                    | 11.2-12.5                | 45                   | 118              | hard chromed       | 2421-R12                | 12       |
| 2429-20  | 12.2-20.6 | 8                  | 12.2-13.5                | 45                   | 118              | hard chromed       | 2421-R13                | 13       |
|          |           |                    | 13.4-14.6                | 45                   | 118              | hard chromed       | 2421-R14                | 14       |
|          |           |                    | 14.4-15.6                | 45                   | 118              | hard chromed       | 2421-R15                | 15       |
|          |           |                    | 15.4-16.6                | 45                   | 118              | hard chromed       | 2421-R16                | 16       |
|          |           |                    | 16.4-17.6                | 45                   | 118              | hard chromed       | 2421-R17                | 17       |
|          |           |                    | 17.4-18.6                | 45                   | 118              | hard chromed       | 2421-R18                | 18       |
|          |           |                    | 18.4-19.6                | 45                   | 118              | hard chromed       | 2421-R19                | 19       |
|          |           |                    | 19.4-20.6                | 45                   | 118              | hard chromed       | 2421-R20                | 20       |

dial indicator is optional



Unit: mm  
stem hole Ø8



## BORE GAGES FOR SMALL HOLES

**INSIZE PLUS**  
MADE IN EUROPE

- Applicable for 0.01mm or 0.001mm, graduation dial indicators
- Carbide contact point and anvil
- Optional accessory: dial indicator or dial comparator, setting ring (code 6312)

dial comparator is optional

(mm)

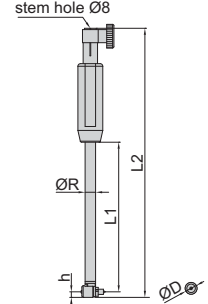
| Code    | Range   | Accuracy (without dial comparator) | Repeatability (without dial comparator) | L1  | L2  | ØR | ØD  | h    |
|---------|---------|------------------------------------|---|-----|-----|----|-----|------|
| 2425-6  | 4.5-6mm | 2µm                                | 0.5µm                                   | 80  | 147 | 4  | 4   | 2    |
| 2425-8  | 6-8mm   | 2µm                                | 0.5µm                                   | 100 | 165 | 5  | 5.2 | 2.6  |
| 2425-12 | 8-12mm  | 2µm                                | 0.5µm                                   | 100 | 166 | 5  | 6.5 | 3.25 |
| 2425-20 | 12-20mm | 2µm                                | 0.5µm                                   | 110 | 204 | 8  | 9   | 4.5  |



2425-6



Unit: mm  
stem hole Ø8



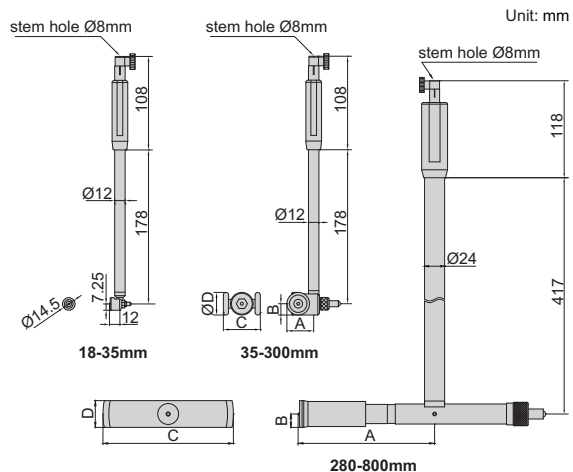
## BORE GAGES

**INSIZE PLUS**  
MADE IN EUROPE

dial comparator is optional



2422-150



- Applicable for 0.01mm or 0.001mm graduation dial indicators
- Optional accessory:
  - Dial indicator or dial comparator
  - Setting ring (code 6312)
  - Long handle (code 7352)
  - Bore gage setter

| Code     | Range     | Accuracy (without dial comparator) | Repeatability (without dial comparator) |
|----------|-----------|------------------------------------|---|
| 2422-35  | 18-35mm   | 4µm                                | 2µm                                     |
| 2422-60  | 35-60mm   | 4µm                                | 2µm                                     |
| 2422-150 | 50-150mm  | 4µm                                | 2µm                                     |
| 2422-300 | 150-300mm | 4µm                                | 2µm                                     |
| 2422-510 | 280-510mm | 3µm                                | 1.5µm                                   |
| 2422-800 | 400-800mm | 3µm                                | 1.5µm                                   |

| Code     | A      | B      | C      | D    |
|----------|--------|--------|--------|------|
| 2422-60  | 19.5mm | 10.5mm | 28mm   | 21mm |
| 2422-150 | 30.8mm | 13mm   | 42.5mm | 26mm |
| 2422-300 | 30.8mm | 13mm   | 76.5mm | 26mm |
| 2422-510 | 164mm  | 16mm   | 156mm  | 32mm |
| 2422-800 | 305mm  | 18mm   | 300mm  | 36mm |

## BORE GAGE SET

**INSIZE PLUS**  
MADE IN EUROPE

dial comparator is optional



2423-S2

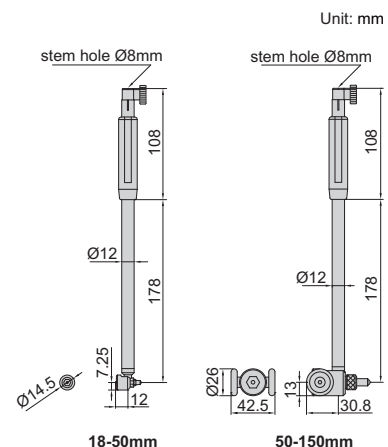
- Includes bore gages 18-50mm and 50-150mm
- Optional accessory:
  - 0.01mm or 0.001mm graduation dial indicator or dial comparator
  - Setting ring (code 6312)
  - Long handle (code 7352)
  - Bore gage setter



18-50mm



50-150mm



| Code    | Range    | Accuracy (without dial comparator) | Repeatability (without dial comparator) |
|---------|----------|------------------------------------|---|
| 2423-S2 | 18-150mm | 4µm                                | 2µm                                     |

## GEAR BORE GAGES

**INSIZE PLUS**  
MADE IN EUROPE

RELATIVE PRODUCT: INTERNAL GEAR TOOTH MICROMETER (CODE 3638)

- Tungsten carbide ball points, diameter accuracy 2µm
- Optional accessory:
  - Dial indicator or dial comparator
  - Ball points
  - Thread adaptor
  - Long handle (code 7352)

| Code     | Range (E) | Accuracy (without dial comparator) | Repeatability (without dial comparator) | ØR | L1  | L2  | Thread for ball points |
|----------|-----------|------------------------------------|---|----|-----|-----|------------------------|
| 2428-12  | 8-12mm    | 2µm                                | 0.5µm                                   | 5  | 100 | 165 | M1.6                   |
| 2428-22  | 12-22mm   | 2µm                                | 0.5µm                                   | 5  | 102 | 168 | M1.6                   |
| 2428-55  | 22-55mm   | 2µm                                | 0.5µm                                   | 8  | 110 | 204 | M2.5                   |
| 2428-250 | 55-250mm  | 2µm                                | 0.5µm                                   | 12 | 177 | 290 | M4                     |
| 2428-510 | 100-510mm | 2µm                                | 0.5µm                                   | 18 | 235 | 363 | M4                     |

### Ball points (optional)

| Ball point diameter Ødk | 2428-12           | 2428-22           | 2428-55           | 2428-250        | 2428-510        |
|-------------------------|-------------------|-------------------|-------------------|-----------------|-----------------|
|                         | point thread M1.6 | point thread M1.6 | point thread M2.5 | point thread M4 | point thread M4 |
|                         | point code        | point code        | point code        | point code      | point code      |
| 1mm                     | 2428-A1           | 2428-E1           | 2428-B1           | 2428-C1         | 2428-C1         |
| 1.5mm                   | 2428-A1D5         | 2428-E1D5         | 2428-B1D5         | 2428-C1D5       | 2428-C1D5       |
| 2mm                     | 2428-A2           | 2428-E2           | 2428-B2           | 2428-C2         | 2428-C2         |
| 2.5mm                   | —                 | 2428-E2D5         | 2428-B2D5         | 2428-C2D5       | 2428-C2D5       |
| 3mm                     | —                 | 2428-E3           | 2428-B3           | 2428-C3         | 2428-C3         |
| 3.5mm                   | —                 | 2428-E3D5         | 2428-B3D5         | 2428-C3D5       | 2428-C3D5       |
| 4mm                     | —                 | 2428-E4           | 2428-B4           | 2428-C4         | 2428-C4         |
| 4.5mm                   | —                 | —                 | 2428-B4D5         | 2428-C4D5       | 2428-C4D5       |
| 5mm                     | —                 | —                 | 2428-B5           | 2428-C5         | 2428-C5         |
| 5.5mm                   | —                 | —                 | 2428-B5D5         | 2428-C5D5       | 2428-C5D5       |
| 6mm                     | —                 | —                 | 2428-B6           | 2428-C6         | 2428-C6         |
| 6.5mm                   | —                 | —                 | 2428-B6D5         | 2428-C6D5       | 2428-C6D5       |
| 7mm                     | —                 | —                 | 2428-B7           | 2428-C7         | 2428-C7         |
| 7.5mm                   | —                 | —                 | 2428-B7D5         | 2428-C7D5       | 2428-C7D5       |
| 8mm                     | —                 | —                 | 2428-B8           | 2428-C8         | 2428-C8         |
| 8.5mm                   | —                 | —                 | 2428-B8D5         | 2428-C8D5       | 2428-C8D5       |
| 9mm                     | —                 | —                 | 2428-B9           | 2428-C9         | 2428-C9         |
| 9.5mm                   | —                 | —                 | 2428-B9D5         | 2428-C9D5       | 2428-C9D5       |
| 10mm                    | —                 | —                 | 2428-B10          | 2428-C10        | 2428-C10        |

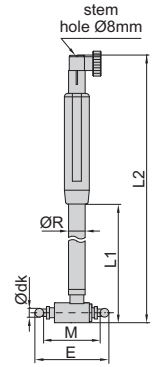
(mm)



dial comparator is optional

2428-55

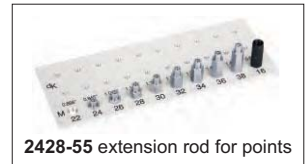
ball points (optional)



ball points (optional), in pair

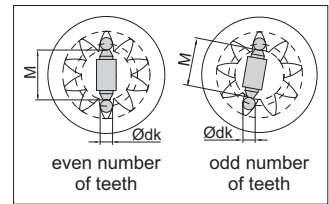
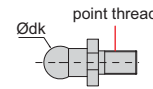


extension rod for points (included)



2428-55 extension rod for points

method of measurement



### Thread adaptor (optional)

| Code    | Thread    | Remark   |
|---------|-----------|--|
| 2428-D1 | M1.6/M2.5 | For example, use 2428-E1 with 2428-D1 to replace 2428-B1 |
| 2428-D2 | M2.5/M4   | For example, use 2428-B1 with 2428-D2 to replace 2428-C1 |

## BORE GAGES FOR BLIND HOLES

**INSIZE PLUS**  
MADE IN EUROPE

- To measure diameter of shallow and blind holes
- Optional accessory:
  - 0.01mm or 0.001mm graduation dial indicators
  - Setting ring (code 6312)
  - Long handle (code 7352)
  - Bore gage setter

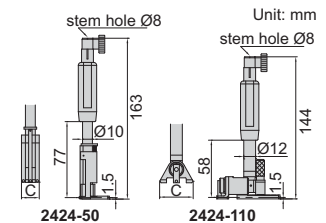


| Code     | Range     | Accuracy (without dial indicator) | Repeatability (without dial indicator) | C     |
|----------|-----------|-----------------------------------|--|-------|
| 2424-50  | 20-50mm   | 4µm                               | 1µm                                    | 18mm  |
| 2424-110 | 50-110mm  | 4µm                               | 1µm                                    | 34mm  |
| 2424-300 | 110-300mm | 4µm                               | 1µm                                    | 81mm  |
| 2424-600 | 300-600mm | 4µm                               | 1µm                                    | 140mm |

dial indicator is optional

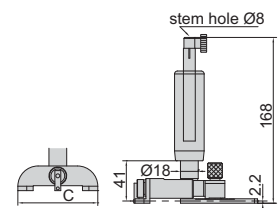


2424-300



2424-50

2424-110

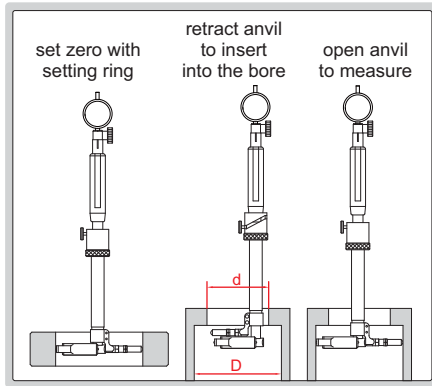


2424-300 and 2424-600



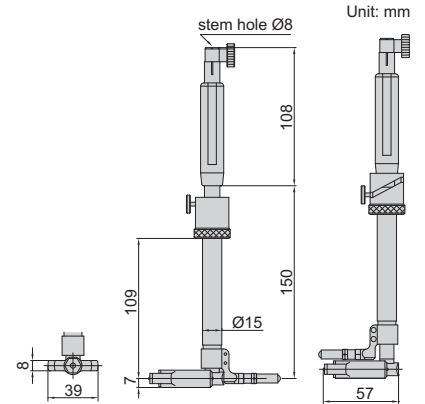
## ROTARY BORE GAGE

**INSIZE PLUS**  
MADE IN EUROPE



- Rotary anvil, to measure bores with small opening  
D: bore diameter to be measured,  
d: minimum opening diameter (see right drawing)  
d=57mm (D≤95mm)  
d=D-38 (D>95mm)
- Optional accessory:
  - 0.01mm or 0.001mm graduation dial indicator or dial comparator
  - Setting ring (code 6312)

dial indicator is optional



| Code     | Range    | Accuracy (without dial indicator) | Repeatability* (without dial indicator) |
|----------|----------|-----------------------------------|---|
| 2921-150 | 80-150mm | 2µm                               | 1µm                                     |

\*Repeatability includes the error of rotary anvil

MEASURE DIAMETER OF BORES WITH BARRIER INSIDE

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

## BORE GAGES FOR BARRIER INSIDE BORE

**INSIZE PLUS**  
MADE IN EUROPE

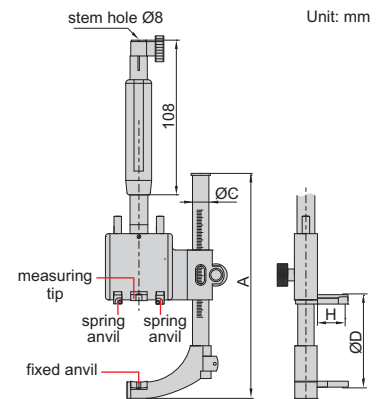


application



- Measure diameter of bores with barrier inside
- Optional accessory:
  - 0.01mm graduation dial indicators
  - Setting ring (code 6312)

dial indicator is optional



(mm)

| Code     | Range ØD  | Diameter of barrier Ød   | Travel of measuring tip | Measuring depth H | Accuracy (without dial indicator) | Measuring force | A   | ØC |
|----------|-----------|--------------------------|-------------------------|-------------------|-----------------------------------|-----------------|-----|----|
| 2432-70  | 25-70mm   | <D-6 (less than 45mm)*   | 2.5                     | 12                | 0.01                              | 1.5N            | 115 | 10 |
| 2432-105 | 35-105mm  | <D-11 (less than 70mm)*  | 3.0                     | 18                | 0.01                              | 2.5N            | 150 | 11 |
| 2432-210 | 100-210mm | <D-20 (less than 130mm)* | 3.5                     | 30                | 0.015                             | 2.5N            | 233 | 15 |
| 2432-280 | 100-280mm | <D-20 (less than 130mm)* | 3.5                     | 30                | 0.015                             | 2.5N            | 303 | 15 |
| 2432-500 | 200-500mm | <D-20 (less than 240mm)* | 3.5                     | 30                | 0.02                              | 2.5N            | 622 | 30 |

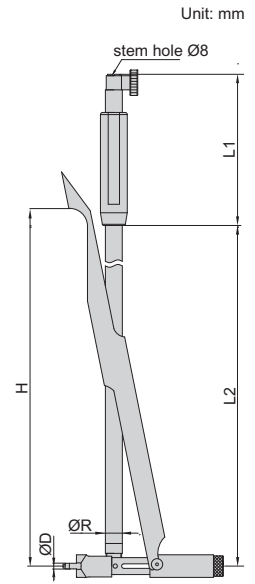
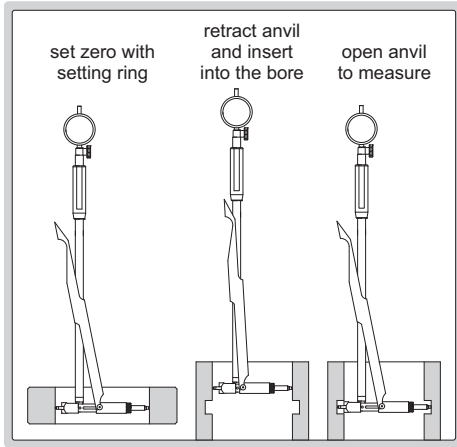
\*For example, range of 2432-70 is 25-70mm, diameter of barrier is <D-6 (less than 45mm)  
When measuring size is 40mm, D-6=34mm, so the maximum diameter of barrier is 34mm.  
When measuring size is 60mm, D-6=54mm, however it should be less than 45mm, so the maximum diameter of barrier is 45mm.

## INTERNAL GROOVE BORE GAGES

**INSIZE PLUS**  
MADE IN EUROPE

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

6



- Measure diameter of internal grooves (width of groove > 3mm)
- Anvil is needed
- Optional accessory:
  - 0.01mm or 0.001mm graduation dial indicators
  - Setting ring (code 6312)

| Code      | Range     | Retraction of anvil | Measuring depth H | Accuracy (without dial indicator) | Repeatability (without dial indicator) | ØR | ØD | L1  | L2  |
|-----------|-----------|---------------------|-------------------|-----------------------------------|--|----|----|-----|-----|
| 2433-120* | 60-120mm  | 8.5                 | 120               | 2µm                               | 1µm                                    | 10 | 3  | 85  | 150 |
| 2433-180* | 120-180mm | 23                  | 230               | 2µm                               | 1µm                                    | 12 | 4  | 108 | 285 |
| 2433-300* | 180-300mm | 30                  | 280               | 2µm                               | 1µm                                    | 18 | 4  | 120 | 245 |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

### ANVIL (OPTIONAL)

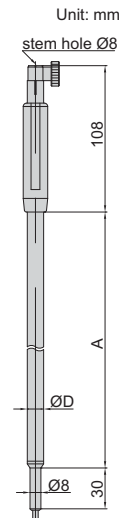
| Code       | Remark  |
|------------|---|
| 2433-P□□□□ | We design and make anvils according to the grooves to be measured.* |

\* Note: please provide the dimension of grooves to be measured.

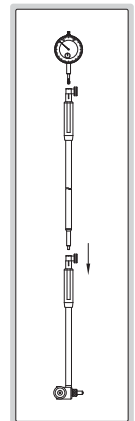
## LONG HANDLES

**INSIZE PLUS**  
MADE IN EUROPE

- To assist deep-hole measurement
- Can be used for bore gages 2422, 2428, 2423 and 2424



method of use



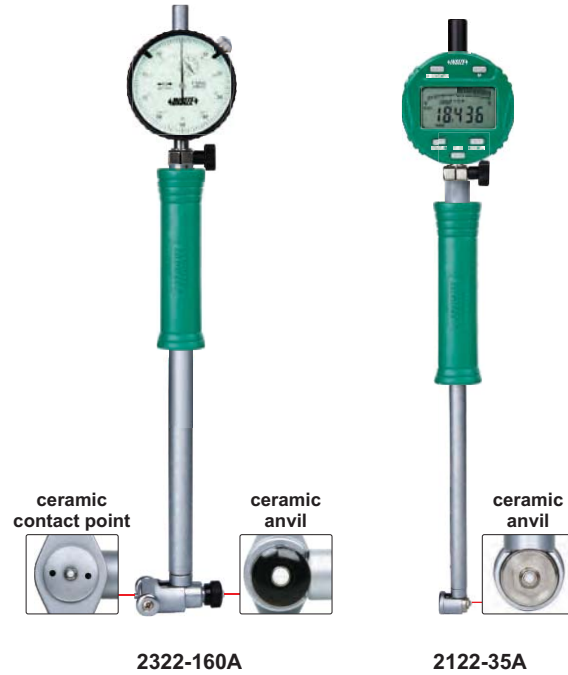
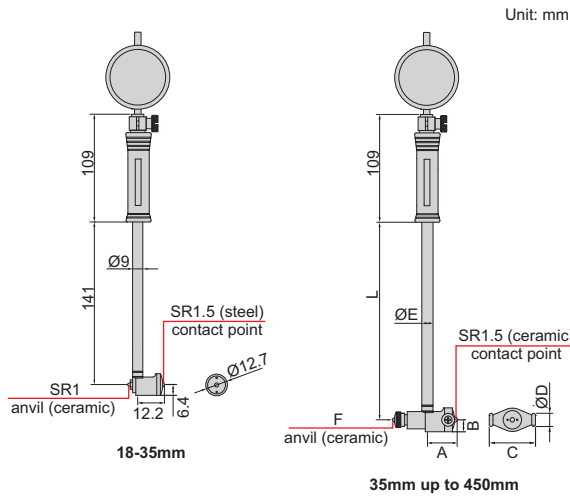
| Code      | Applicable bore gages | A   | ØD |
|-----------|-----------------------|-----|----|
| 7352-500  | above 35mm            | 438 | 12 |
| 7352-1000 |                       | 938 | 12 |

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

DATA OUTPUT



## BORE GAGES

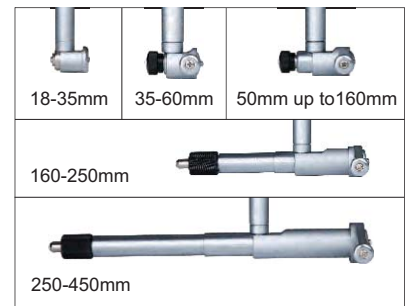


- Optional accessory: setting ring (code **6312**), long handle (code **7351**), bore gage setter

| 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 | 12.8 | SR2   | 241 |
| 250-450mm | 86.5 | 15 | 101.5 | 15 | 14.5 | SR2.5 | 241 |

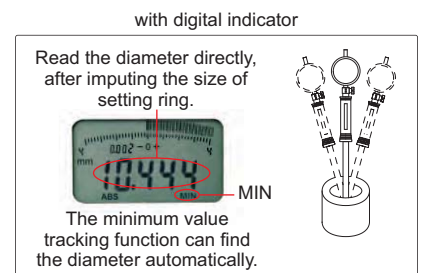
### With dial indicator

| Code      | Range     | Indicator  | Accuracy | Repeatability |
|-----------|-----------|--|----------|---------------|
| 2322-35A  | 18-35mm   | dial indicator, range 10mm, graduation 0.01mm (code <b>2308-10FA</b> ) | ±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

| Code      | Range     | Indicator   | Accuracy | Repeatability |
|-----------|-----------|---|----------|---------------|
| 2122-35A  | 18-35mm   | digital indicator, code <b>2108-10F</b> , 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       |



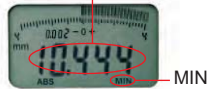
## BORE GAGES FOR SMALL HOLES

DATA OUTPUT

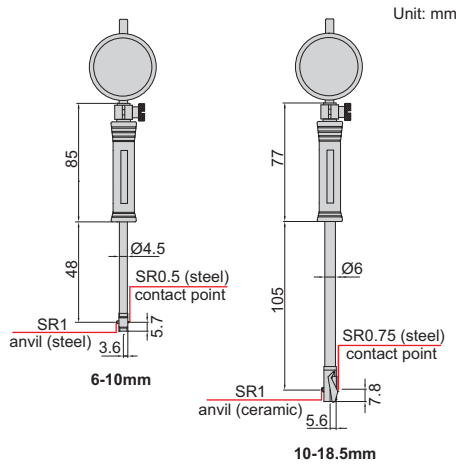
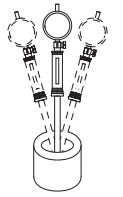
ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

with digital indicator

Read the diameter directly, after inputting the size of setting ring.



The minimum value tracking function can find the diameter automatically.



2852-10



2152-18



- Optional accessory: setting ring (code 6312), bore gage setter

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

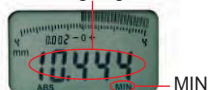
| Code    | Range     | Indicator   | Accuracy | Repeatability |
|---------|-----------|---|----------|---------------|
| 2152-10 | 6-10mm    | digital indicator, code 2108-10F, range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | ±0.012mm | 0.003mm       |
| 2152-18 | 10-18.5mm |   | ±0.012mm | 0.003mm       |

## BORE GAGES

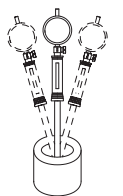
ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

with digital indicator

Read the diameter directly, after inputting the size of setting ring.



The minimum value tracking function can find the diameter automatically.

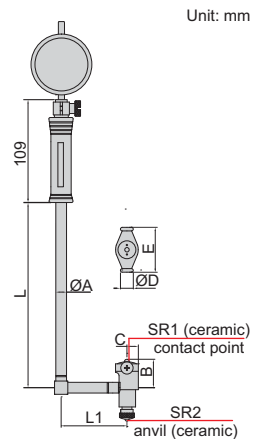


2308-10FA

2108-10F



2827-160A



- Optional accessory: setting ring (code 6312), long handle (code 7351), bore gage setter

With dial indicator

| Code      | Range     | Indicator                                     | Accuracy | Repeatability |
|-----------|-----------|---|----------|---------------|
| 2827-60A  | 35-60mm   | dial indicator                                | ±0.018mm | 0.003mm       |
| 2827-160A | 50-160mm  | code 2308-10FA, range 10mm, graduation 0.01mm | ±0.018mm | 0.003mm       |
| 2827-250A | 160-250mm |   | ±0.018mm | 0.003mm       |
| 2827-450A | 250-450mm |   | ±0.018mm | 0.003mm       |

With digital indicator

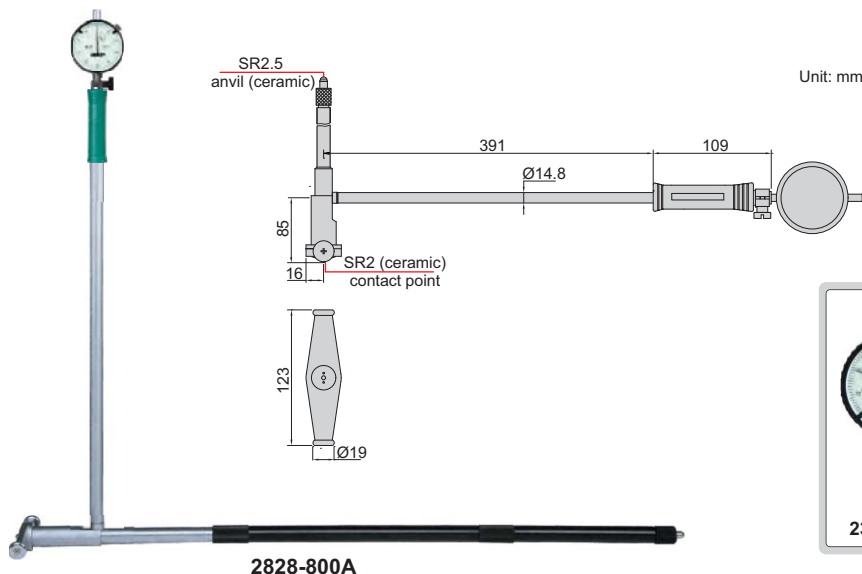
| Code     | Range     | Indicator   | Accuracy | Repeatability |
|----------|-----------|---|----------|---------------|
| 2127-60  | 35-60mm   | digital indicator, code 2108-10F, range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | ±0.018mm | 0.003mm       |
| 2127-160 | 50-160mm  |   | ±0.018mm | 0.003mm       |
| 2127-250 | 160-250mm |   | ±0.018mm | 0.003mm       |
| 2127-450 | 250-450mm |   | ±0.018mm | 0.003mm       |

|           | (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  |



ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

## BORE GAGES



Unit: mm

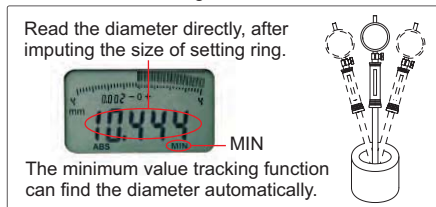


6

| Code      | Range     | Indicator   | Accuracy | Repeatability |
|-----------|-----------|---|----------|---------------|
| 2828-800A | 400-800mm | dial indicator, code <b>2308-10FA</b> , range 10mm, graduation 0.01mm   | ±0.025mm | 0.003mm       |
| 2128-800A | 400-800mm | digital indicator, code <b>2108-10F</b> , range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | ±0.025mm | 0.003mm       |



with digital indicator



ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

## BORE GAGE SETS

packaging (code 2824-S3)



- Optional accessory: setting ring (code 6312), long handle (code 7351), bore gage setter

With dial indicator

| Code      | Range    | Indicator   | Bore gages included  | Accuracy  | Repeatability |
|-----------|----------|---|--|---|---------------|
| 2824-S160 | 35-160mm | dial indicator, code <b>2308-10FA</b> , range 10mm, graduation 0.01mm | ① 35-50mm (dial indicator and handle are not included)<br>② 50-160mm                                   | 35-50mm ±0.018mm<br>50-160mm ±0.018mm                     | 0.003mm       |
| 2824-S3   | 18-160mm | dial indicator, code <b>2308-10FA</b> , range 10mm, graduation 0.01mm | ① 18-35mm<br>② 35-60mm (dial indicator is not included)<br>③ 50-160mm (dial indicator is not included) | 18-35mm ±0.015mm<br>35-60mm ±0.018mm<br>50-160mm ±0.018mm | 0.003mm       |

With digital indicator

| Code      | Range    | Indicator   | Bore gages included  | Accuracy  | Repeatability |
|-----------|----------|---|--|---|---------------|
| 2724-S160 | 35-160mm | digital indicator, code <b>2108-10F</b> range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | ① 35-50mm (digital indicator and handle are not included)<br>② 50-160mm                                      | 35-50mm ±0.018mm<br>50-160mm ±0.018mm                     | 0.003mm       |
| 2724-S3   | 18-160mm | digital indicator, code <b>2108-10F</b> range 12.7mm/0.5", resolution 0.002mm/0.0001" (can switch to: 0.01mm/0.0005") | ① 18-35mm<br>② 35-60mm (digital indicator is not included)<br>③ 50-160mm (digital indicator is not included) | 18-35mm ±0.015mm<br>35-60mm ±0.018mm<br>50-160mm ±0.018mm | 0.003mm       |

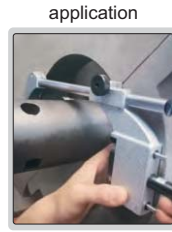
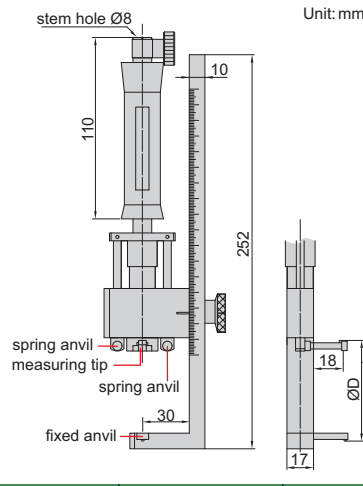
## BORE GAGE FOR BARRIER INSIDE BORE

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

MEASURE DIAMETER OF BORES WITH BARRIER INSIDE



- Measure diameter of bores with barrier inside
- Optional accessory:
  - 0.01mm graduation dial indicators
  - Setting ring (code 6312)



dial indicator is optional



2348-210

(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              |

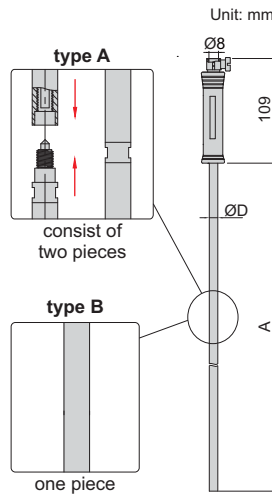
\*For example:

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

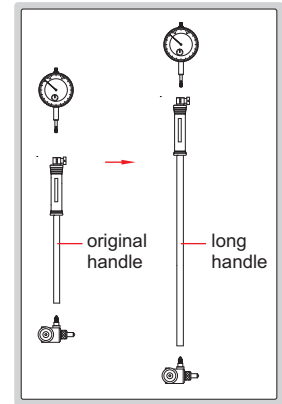
- To assist deep-hole measurement
- Can be used for bore gages 2122, 2127, 2322, 2724, 2824 and 2827

| Code      | Applicable bore gages   | A    | ØD   | Type |
|-----------|-------------------------|------|------|------|
| 7351-EX11 | 35-60mm,                | 475  | 13   | B    |
| 7351-EX12 | 50-100mm,               | 980  | 13   |      |
| 7351-EX13 | 50-160mm,<br>100-160mm  | 1480 | 14.5 | A    |
| 7351-EX14 |                         | 1980 | 14.5 |      |
| 7351-EX21 | 160-250mm,<br>250-450mm | 480  | 14.5 | B    |
| 7351-EX22 |                         | 980  | 14.5 |      |
| 7351-EX23 |                         | 1480 | 14.5 | A    |
| 7351-EX24 |                         | 1980 | 14.5 |      |



7351-EX11

method of use (replace the original handle with long handle)



## ANVILS FOR BORE GAGES

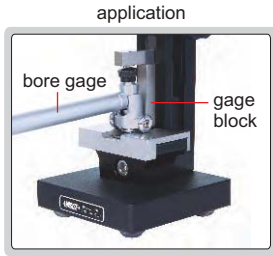


7350-160

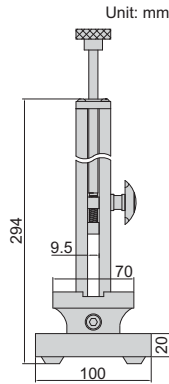
| Code     | Applicable bore gages | Material of measuring face | Quantity per set | Measuring range of anvil (mm)                    |
|----------|-----------------------|----------------------------|------------------|--|
| 7350-10  | 6-10mm                | steel                      | 9 pcs            | 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                          |

- For bore gages 2852, 2152, 2322, 2122, 2127, 2724, 2824 and 2827

## BORE GAGE SETTERS



- Vertical and horizontal use
- To be used with gage blocks



7353-160

| Code      | Range   | Repeatability | Remark                 |
|-----------|---------|---------------|------------------------|
| 7353-160  | 0-160mm | 1.2µm         | with gage block set    |
| 7353-160W | 0-160mm | 1.2µm         | without gage block set |

horizontal use



gage blocks for 7353-160



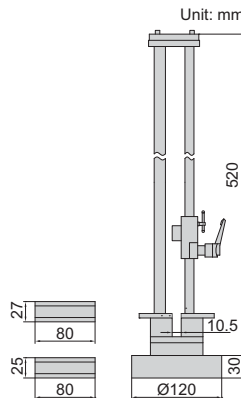
Gage block set for 7353-160

| 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     |                   |

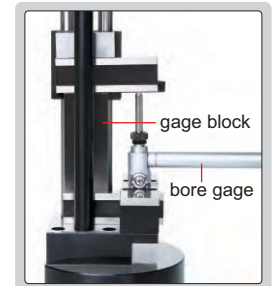
## BORE GAGE SETTER



- Used together with gage blocks to set bore gages



2395-400



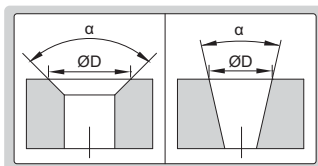
| Code     | Setting range |
|----------|---------------|
| 2395-400 | 18-400mm      |



## INTERNAL CHAMFER GAGES



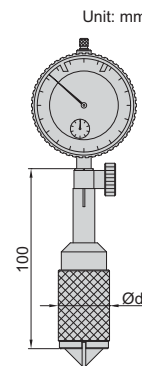
measure end diameter of chamfer or taper holes



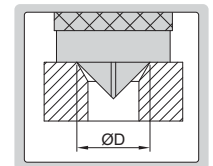
- Measure end diameter of chamfer or taper holes
- With limit pointers
- 2941-20 and 2941-203 are supplied with 5mm setting ring



2941-20



measurement principle



5mm setting ring for 2941-20 and 2941-203



| Code      | Range ØD   | Applicable angle α | Graduation | Accuracy | Ød     |
|-----------|------------|--------------------|------------|----------|--------|
| 2941-20*  | 0.5-20.1mm | 0-90°              | 0.01mm     | ±0.02mm  | 28.3mm |
| 2941-40*  | 20-40mm    | 0-90°              | 0.01mm     | ±0.02mm  | 50mm   |
| 2941-203* | 0.5-20.1mm | 90-127°            | 0.02mm     | ±0.04mm  | 28.3mm |
| 2941-403* | 20-40mm    | 90-127°            | 0.02mm     | ±0.04mm  | 50mm   |

\* Supplied with manufacturer inspection certificate traceable to DKD Germany

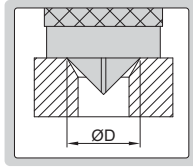
## DIGITAL INTERNAL CHAMFER GAGES

**INSIZE PLUS**  
MADE IN EUROPE



VIDEO

measurement principle



2942-20

DATA  
OUTPUT

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO DKD

5mm setting ring for  
2942-20 and 2942-203

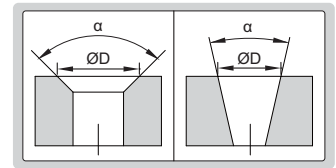


- Measure end diameter of chamfer or taper holes
- 2942-20 and 2942-203 are supplied with 5mm setting ring
- Resolution: 0.01mm/0.0005"
- Optional accessory: data output cable (code 7315-50M, 7302-40M)

| Code      | Range ØD   | Applicable angle α | Accuracy | Ød     |
|-----------|------------|--------------------|----------|--------|
| 2942-20*  | 0.5-20.1mm | 0-90°              | ±0.02mm  | 28.3mm |
| 2942-40*  | 20-40mm    | 0-90°              | ±0.02mm  | 50mm   |
| 2942-203* | 0.5-20.1mm | 90-127°            | ±0.04mm  | 28.3mm |
| 2942-403* | 20-40mm    | 90-127°            | ±0.04mm  | 50mm   |

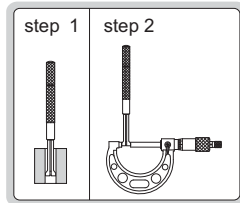
\*Supplied with manufacturer inspection certificate traceable to DKD Germany

measure end diameter of  
chamfer or taper holes

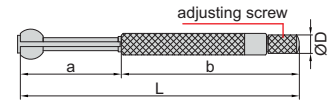


## SMALL HOLE GAGE SET

- 4 gages per set
- For small holes, slots and grooves, etc.
- Satin chrome finish

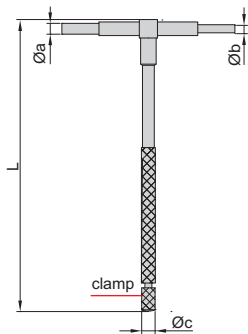


4208-1



| 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  |

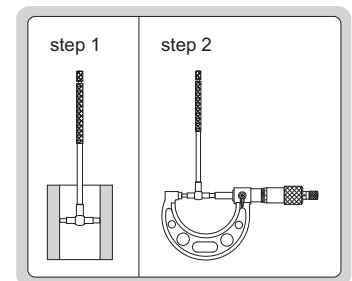
## TELESCOPING GAGE SET



- 6 gages per set
- For quick measurement of inside diameter of holes and width of slots
- Satin chrome finish



4206-1



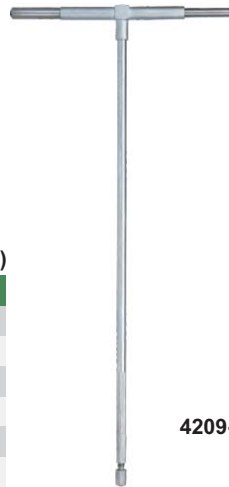
| Range     | L   | Øa  | Øb  | Øc  |
|-----------|-----|-----|-----|-----|
| 8-12.7mm  | 115 | 3.9 | 2.9 | 6.2 |
| 12.7-19mm | 115 | 5.3 | 3.8 | 6.2 |
| 19-32mm   | 115 | 5.3 | 3.8 | 6.2 |
| 32-54mm   | 137 | 7.6 | 6.1 | 7.2 |
| 54-90mm   | 137 | 7.6 | 6.1 | 7.2 |
| 90-150mm  | 137 | 7.6 | 6.1 | 7.2 |

| Code   | Total range | Gages included   |
|--------|-------------|--|
| 4206-1 | 8-150mm     | 8-12.7mm, 12.7-19mm, 19-32mm, 32-54mm, 54-90mm, 90-150mm |

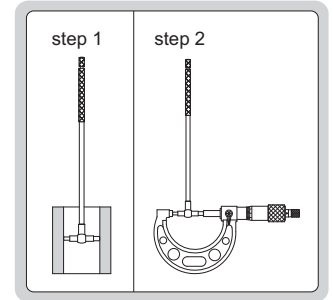
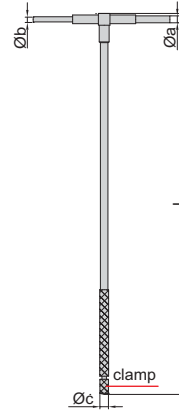
## LONG HANDLE TELESCOPING GAGES

- For quick measurement of inside diameter of deep holes and width of slots
- Satin chrome finish

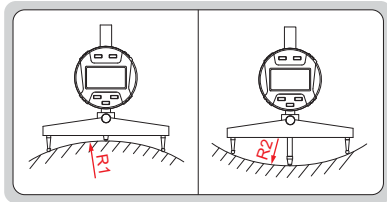
| Code   | Range     | L   | Øa  | Øb  | Øc  |
|--------|-----------|-----|-----|-----|-----|
| 4209-1 | 8-12.7mm  | 300 | 3.9 | 2.9 | 6.2 |
| 4209-2 | 12.7-19mm | 300 | 5.3 | 3.8 | 6.2 |
| 4209-3 | 19-32mm   | 300 | 5.3 | 3.8 | 6.2 |
| 4209-4 | 32-54mm   | 300 | 7.6 | 6.1 | 7.2 |
| 4209-5 | 54-90mm   | 300 | 7.6 | 6.1 | 7.2 |
| 4209-6 | 90-150mm  | 300 | 7.6 | 6.1 | 7.2 |



4209-6



## DIGITAL RADIUS GAGE



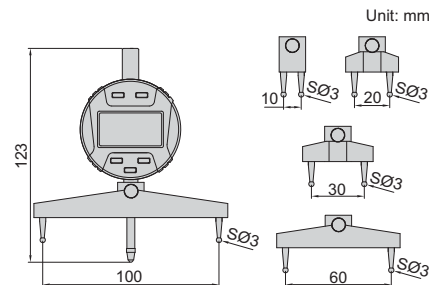
- Resolution: 0.005mm/0.0002"
- Buttons: on/off, hold, mm/inch, s (select jaws), zero
- Measure radius of internal or external arcs
- Display can be rotated by 320°
- Supplied with 5 jaws for different sizes of arc
- Battery CR2032, automatic power off



2183



ATTENTION: NO DATA OUTPUT



| 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 *      |

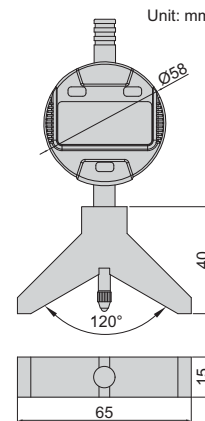
\*R is the radius to be measured. For example, radius is 100mm, the accuracy is ±0.01x100=±1mm

## DIGITAL RADIUS GAGE

- 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
- Data output
- Stainless steel base
- Supplied with pin gage for zero setting
- Optional accessory: data output cable (code 7315-50M, 7302-40M)



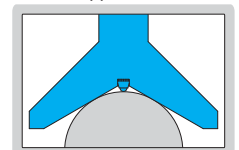
2188-55



pin gage (included)



application

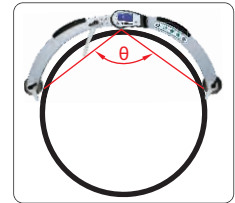


| Code    | Range (radius)    | Resolution     | Accuracy |
|---------|-------------------|----------------|----------|
| 2188-55 | 4-53mm/0.16-2.09" | 0.01mm/0.0005" | ±0.02mm  |

## LARGE DIAMETER GAGE CODE ISQ-RA600

**INSIZE PLUS**  
MADE IN EUROPE

DATA  
OUTPUT



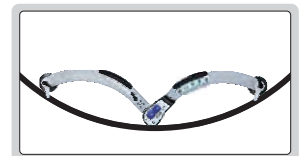
software CD  
(included)

6

- To measure large external or internal diameters
- Automatic judgment and display external or internal diameter
- Backlight LCD display, can rotate 180 ° for easy reading
- Memory of 12 readings and average calculation
- With minimum and maximum measurement mode
- Angle can be displayed



external diameter measurement



internal diameter measurement

### SPECIFICATION

|              |  |                            |
|--------------|--|----------------------------|
| Range        | external   | Ø500~6000mm/19.69~236.22"  |
|              | internal   | Ø1100~6000mm/43.31~236.22" |
| Resolution   | 0.01mm/0.001"  |                            |
| Accuracy     | ±(0.01+D <sup>2</sup> /30)mm<br>(D is the diameter to be measured, in meter) |                            |
| Power supply | rechargeable battery (for 8 hours working)                                   |                            |
| Weight       | 3.8kg  |                            |

### Accuracy sample by diameters

| Diameter | Accuracy |
|----------|----------|
| 500mm    | ±0.018mm |
| 1000mm   | ±0.043mm |
| 1500mm   | ±0.085mm |
| 2000mm   | ±0.143mm |
| 2500mm   | ±0.218mm |
| 3000mm   | ±0.310mm |
| 4000mm   | ±0.543mm |
| 5000mm   | ±0.843mm |
| 6000mm   | ±1.210mm |



software (included),  
data output, save and print

### STANDARD DELIVERY

|                        |      |
|------------------------|------|
| Main unit              | 1 pc |
| AC/DC adapter          | 1 pc |
| Software and USB cable | 1 pc |

## TAPE BORE GAGES

**INSIZE PLUS**  
MADE IN EUROPE

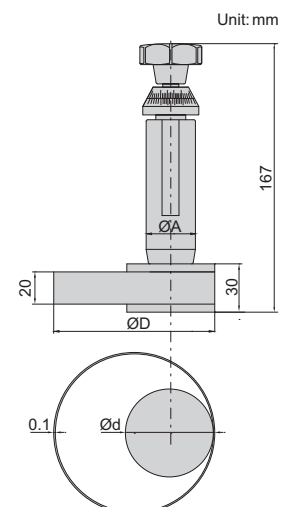


- Measure internal diameter and circumference of soft materials like tubes, belts, etc.
- Graduation: 0.1mm
- Accuracy: 0.2mm

| Code     | Range ØD  | Ød    | ØA   | Measuring depth |
|----------|-----------|-------|------|-----------------|
| 2430-24  | 14-24mm   | 13.5  | 13   | 15-60           |
| 2430-40  | 22-40mm   | 21.5  | 21   | 15-60           |
| 2430-60  | 35-60mm   | 34.5  | 30.5 | 15-96           |
| 2430-100 | 55-100mm  | 54.5  | 30.5 | 15-106          |
| 2430-180 | 95-180mm  | 94.5  | 30.5 | 15-106          |
| 2430-255 | 170-255mm | 169.5 | 30.5 | 15-106          |
| 2430-330 | 245-330mm | 244.5 | 30.5 | 15-106          |



2430-100



## INTERNAL CIRCUMFERENCE TAPES

**INSIZE PLUS**  
MADE IN EUROPE

application

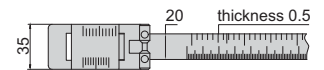
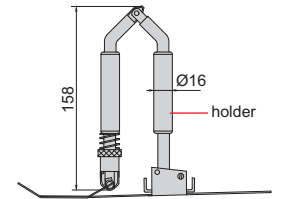


- Measure internal diameter and circumference of soft materials like tubes, belts, etc.
- Laser engraved scale
- Made of stainless steel
- Optional accessory: holder (code 7125-HOLDER)



7125-1550

Unit: mm



**HOLDER (OPTIONAL)**

Code

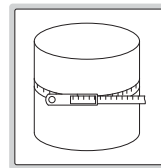
7125-HOLDER

| Code      | Circumference range | Diameter range | Graduation | Accuracy      |          |
|-----------|---------------------|----------------|------------|---------------|----------|
|           |                     |                |            | Circumference | Diameter |
| 7125-1550 | 720-1550mm          | Ø230-490mm     | 0.1mm      | ±0.35mm       | ±0.20mm  |
| 7125-2200 | 940-2200mm          | Ø300-700mm     | 0.1mm      | ±0.35mm       | ±0.20mm  |
| 7125-3460 | 2190-3460mm         | Ø700-1100mm    | 0.1mm      | ±0.45mm       | ±0.23mm  |
| 7125-4720 | 3450-4720mm         | Ø1100-1500mm   | 0.1mm      | ±0.45mm       | ±0.23mm  |
| 7125-5980 | 4710-5980mm         | Ø1500-1900mm   | 0.1mm      | ±0.50mm       | ±0.25mm  |
| 7125-7230 | 5970-7230mm         | Ø1900-2300mm   | 0.1mm      | ±0.55mm       | ±0.27mm  |
| 7125-8500 | 7220-8500mm         | Ø2300-2700mm   | 0.1mm      | ±0.55mm       | ±0.27mm  |

6

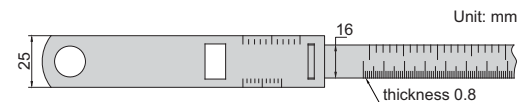
## CIRCUMFERENCE TAPES

- Measure diameter and circumference of soft materials like pipes, trees, tires, etc.
- Graduation: 0.1mm
- Laser engraved scale
- Made of stainless steel



7114-950

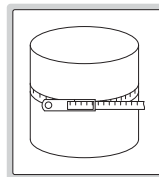
| Code      | Circumference range | Diameter range | Accuracy      |          |
|-----------|---------------------|----------------|---------------|----------|
|           |                     |                | Circumference | Diameter |
| 7114-950  | 150-950mm           | Ø50-300mm      | ±3mm          | ±1mm     |
| 7114-2200 | 940-2200mm          | Ø300-700mm     | ±3mm          | ±1mm     |
| 7114-3460 | 2190-3460mm         | Ø700-1100mm    | ±3mm          | ±1mm     |



Unit: mm

**CAN SUPPLY TAPE WIDTH  
6MM, 35MM, 60MM**

- Measure diameter and circumference of pipes, trees, tires, etc.
- Graduation: 0.1mm
- Laser engraved scale
- Made of stainless steel



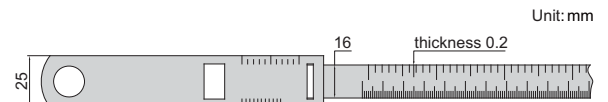
## CIRCUMFERENCE TAPES

**INSIZE PLUS**  
MADE IN EUROPE



7115-3460

| Code       | Circumference range | Diameter range | Accuracy      |          |
|------------|---------------------|----------------|---------------|----------|
|            |                     |                | Circumference | Diameter |
| 7115-950*  | 150-950mm           | Ø50-300mm      | ±0.60mm       | ±0.20mm  |
| 7115-2200  | 940-2200mm          | Ø300-700mm     | ±0.60mm       | ±0.20mm  |
| 7115-3460  | 2190-3460mm         | Ø700-1100mm    | ±0.60mm       | ±0.20mm  |
| 7115-4720  | 3450-4720mm         | Ø1100-1500mm   | ±0.90mm       | ±0.30mm  |
| 7115-5980  | 4710-5980mm         | Ø1500-1900mm   | ±0.90mm       | ±0.30mm  |
| 7115-7230  | 5970-7230mm         | Ø1900-2300mm   | ±1.05mm       | ±0.35mm  |
| 7115-8500  | 7220-8500mm         | Ø2300-2700mm   | ±1.20mm       | ±0.40mm  |
| 7115-9760  | 8490-9760mm         | Ø2700-3100mm   | ±1.35mm       | ±0.45mm  |
| 7115-11010 | 9730-11010mm        | Ø3100-3500mm   | ±1.50mm       | ±0.50mm  |

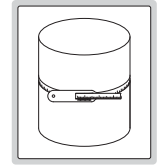


Unit: mm

\*When diameter range is Ø50-100mm, the accuracy of circumference is ±0.90mm, diameter is ±0.30mm

## CIRCUMFERENCE TAPES

**INSIZE PLUS**  
MADE IN EUROPE



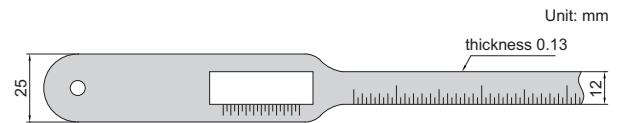
- Measure diameter of cables, thin plastic pipes, etc., which may deform
- Laser engraved scale
- Made of stainless steel

7116-115

6

7

| Code     | Diameter range | Graduation | Accuracy |
|----------|----------------|------------|----------|
| 7116-115 | Ø20-115mm      | 0.05mm     | ±0.10mm  |
| 7116-230 | Ø100-230mm     | 0.05mm     | ±0.10mm  |
| 7116-330 | Ø200-330mm     | 0.05mm     | ±0.15mm  |
| 7116-620 | Ø300-620mm     | 0.05mm     | ±0.20mm  |



## HIGH PRECISION DIGITAL INDICATORS

ABSOLUTE ENCODER, THE ORIGINAL  
DATA REMAINS AFTER POWER OFF

Ø28MM STEM SUITABLE FOR  
REINFORCED CLAMPING

DATA  
OUTPUT

LINEAR BALL BEARINGS  
FOR TEN MILLION TIMES USE

ATTENTION: RECHARGEABLE BATTERY,  
FOR 24 HOURS CONTINUOUS WORKING

- 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

### With data interface

Optional accessory:  
wireless transmitter, code **7315-60**, wireless receiver, code **7315-2**, **7315-3**  
data output cable (keyboard format), code **7302-60**  
data output cable (serial port format), code **7305-G60**  
(cable length 3m, optional cable length maximum 15m; RS232 protocol, optional RS485 protocol)

| Code   | Range         | Accuracy | Hysteresis | Remark    |
|--------|---------------|----------|------------|-----------|
| 2140-6 | 0-6mm/0-0.24" | 1.6µm    | 0.8µm      | flat back |

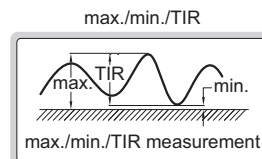
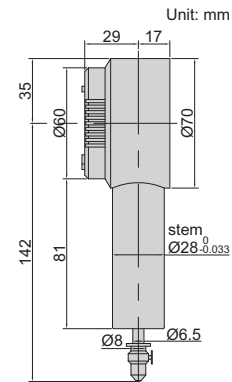
### Built-in wireless

Optional accessory:  
wireless receiver (keyboard format), code **2134-R1**  
wireless receiver (serial port format), code **2134-R2**

| Code     | Range         | Accuracy | Hysteresis | Remark    |
|----------|---------------|----------|------------|-----------|
| 2140-6WL | 0-6mm/0-0.24" | 1.6µm    | 0.8µm      | flat back |



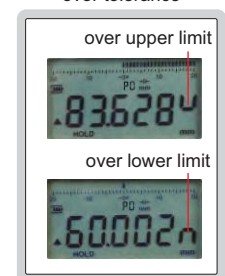
2140-6



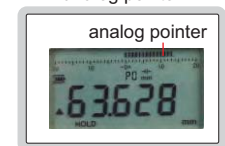
wireless receiver  
2134-R1, 2134-R2 (optional)



warning when  
over tolerance



analog pointer





LINEAR BALL BEARINGS  
FOR TEN MILLION TIMES USE

ABSOLUTE ENCODER, THE ORIGINAL  
DATA REMAINS AFTER POWER OFF

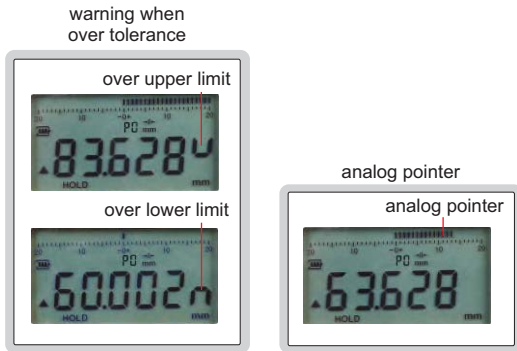
DATA  
OUTPUT

ATTENTION: RECHARGEABLE BATTERY,  
FOR 24 HOURS CONTINUOUS WORKING

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

## HIGH PRECISION DIGITAL INDICATORS

7



2133-10

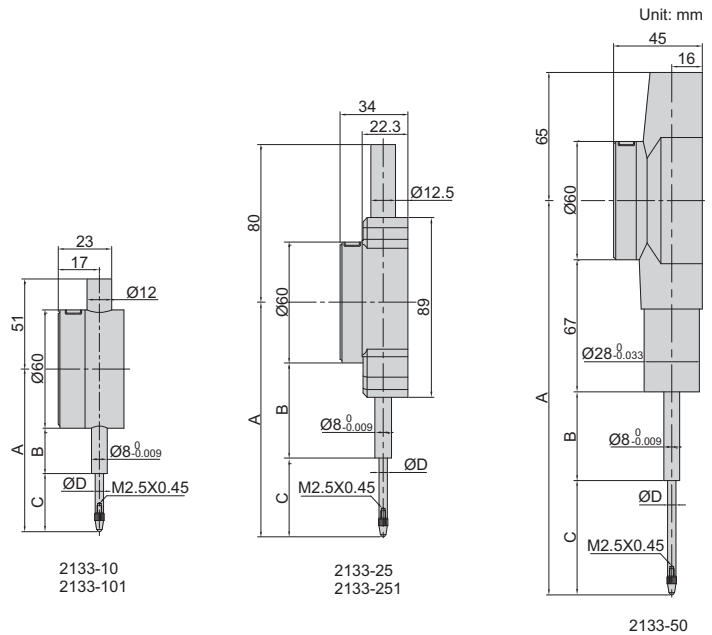


2133-25



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 161~163) wireless transmitter, code **7315-60** data output cable (keyboard format), code **7302-60** data output cable (serial port format), code **7305-G60** (cable length 3m, optional cable length maximum 15m; RS232 protocol, optional RS485 protocol)



### Low precision

Carbide probe  
Adjustable resolution: 0.0005mm/0.00002"  
0.001mm/0.00005"  
0.01mm/0.0005"

| Code     | Range       | Accuracy | Hysteresis | A       | B      | C      | ØD    | Remark    |
|----------|-------------|----------|------------|---------|--------|--------|-------|-----------|
| 2133-10* | 12.7mm/0.5" | 3µm      | 1.5µm      | 75.4mm  | 20.6mm | 24.8mm | 5mm   | flat back |
| 2133-25* | 25.4mm/1"   | 3µm      | 1.5µm      | 109.5mm | 38.5mm | 41mm   | 5mm   | flat back |
| 2133-50* | 50.8mm/2"   | 3µm      | 1.5µm      | 201mm   | 32mm   | 72mm   | 4.5mm | flat back |

### High precision

Ruby probe  
Adjustable resolution: 0.0002mm/0.00001"  
0.001mm/0.00005"  
0.01mm/0.0005"

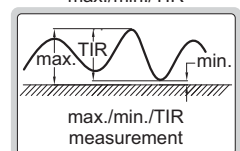
| Code      | Range       | Accuracy | Hysteresis | A       | B      | C      | ØD  | Remark    |
|-----------|-------------|----------|------------|---------|--------|--------|-----|-----------|
| 2133-101* | 12.7mm/0.5" | 1.5µm    | 1µm        | 77.4mm  | 26mm   | 21.4mm | 4mm | flat back |
| 2133-251* | 25.4mm/1"   | 1.8µm    | 1µm        | 116.1mm | 42.5mm | 44mm   | 4mm | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

spindle lift knob is included



max./min./TIR



## WIRELESS HIGH PRECISION DIGITAL INDICATORS

ATTENTION: RECHARGEABLE BATTERY, FOR 24 HOURS CONTINUOUS WORKING

LINEAR BALL BEARINGS FOR TEN MILLION TIMES USE

ABSOLUTE ENCODER, THE ORIGINAL DATA REMAINS AFTER POWER OFF

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

wireless receiver  
2134-R1, 2134-R2 (optional)



warning when over tolerance

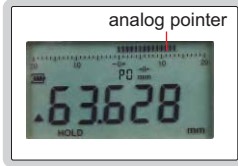
over upper limit



over lower limit



analog pointer



2134-10

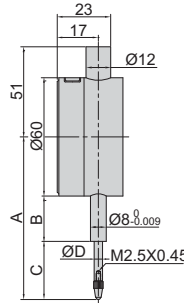


2134-25

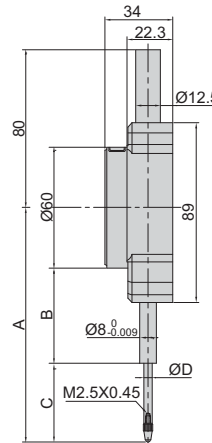


2134-50

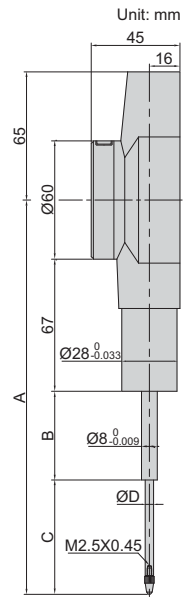
- Built-in wireless transmission, ZigBee single
- Linear ball bearings for ten million times use
- Absolute encoder, the original data remains after power off
- Reading in digital and analog
- Button function: data output, tolerance, data preset, data hold, measuring direction change, max./min./TIR, power off time, on/off, mm/inch, adjust resolution
- Power: rechargeable battery, for 24 hours continuous working
- Optional accessory: contact points (page 161~163) wireless receiver, code: **2134-R1** (keyboard format) **2134-R2** (serial port format)



2134-10  
2134-101



2134-25  
2134-251



2133-50

### Low precision

Carbide probe

Adjustable resolution: 0.0005mm/0.00002"  
0.001mm/0.00005"  
0.01mm/0.0005"

| Code     | Range       | Accuracy | Hysteresis | A       | B      | C      | ØD    | Remark    |
|----------|-------------|----------|------------|---------|--------|--------|-------|-----------|
| 2134-10* | 12.7mm/0.5" | 3µm      | 1.5µm      | 75.4mm  | 20.6mm | 24.8mm | 5mm   | flat back |
| 2134-25* | 25.4mm/1"   | 3µm      | 1.5µm      | 109.5mm | 38.5mm | 41mm   | 5mm   | flat back |
| 2134-50* | 50.8mm/2"   | 3µm      | 1.5µm      | 201mm   | 32mm   | 72mm   | 4.5mm | flat back |

### High precision

Ruby probe

Adjustable resolution: 0.0002mm/0.00001"  
0.001mm/0.00005"  
0.01mm/0.0005"

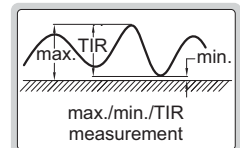
| Code      | Range       | Accuracy | Hysteresis | A       | B      | C      | ØD  | Remark    |
|-----------|-------------|----------|------------|---------|--------|--------|-----|-----------|
| 2134-101* | 12.7mm/0.5" | 1.5µm    | 1µm        | 77.4mm  | 26mm   | 21.4mm | 4mm | flat back |
| 2134-251* | 25.4mm/1"   | 1.8µm    | 1µm        | 116.1mm | 42.5mm | 44mm   | 4mm | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

spindle lift knob is included



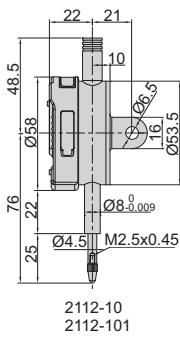
max./min./TIR



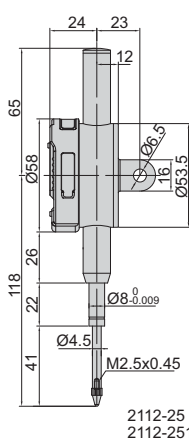
**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

DATA OUTPUT

spindle lift knob is included



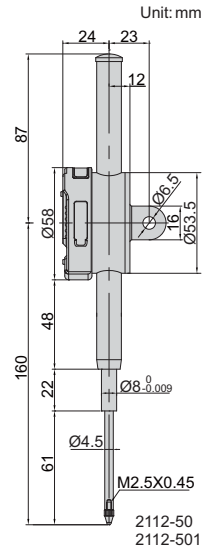
2112-10



2112-25  
2112-251



2112-251



2112-50  
2112-501



2112-501

## DIGITAL INDICATORS (STANDARD TYPE)

- 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
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-40M, 7305-40M), backs (page 164~165), contact points (page 161~163)

### Resolution 0.001mm/0.0005"

| Code       | Range       | Accuracy | Hysteresis | Remark    |
|------------|-------------|----------|------------|-----------|
| 2112-101F* | 12.7mm/0.5" | 5µm      | 2µm        | flat back |
| 2112-251F* | 25.4mm/1"   | 5µm      | 3µm        | flat back |
| 2112-501F* | 50.8mm/2"   | 6µm      | 3µm        | flat back |
| 2112-101*  | 12.7mm/0.5" | 5µm      | 2µm        | lug back  |
| 2112-251*  | 25.4mm/1"   | 5µm      | 3µm        | lug back  |
| 2112-501*  | 50.8mm/2"   | 6µm      | 3µm        | lug back  |

### Resolution 0.01mm/0.0005"

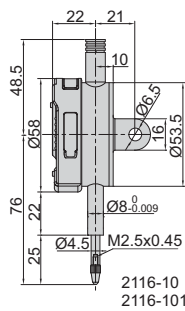
| Code      | Range       | Accuracy | Hysteresis | Remark    |
|-----------|-------------|----------|------------|-----------|
| 2112-10F* | 12.7mm/0.5" | 20µm     | 10µm       | flat back |
| 2112-25F* | 25.4mm/1"   | 20µm     | 10µm       | flat back |
| 2112-50F* | 50.8mm/2"   | 30µm     | 10µm       | flat back |
| 2112-10*  | 12.7mm/0.5" | 20µm     | 10µm       | lug back  |
| 2112-25*  | 25.4mm/1"   | 20µm     | 10µm       | lug back  |
| 2112-50*  | 50.8mm/2"   | 30µm     | 10µm       | lug back  |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

DATA OUTPUT

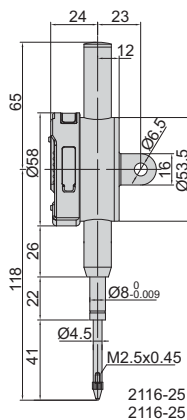
spindle lift knob is included



2116-10  
2116-101



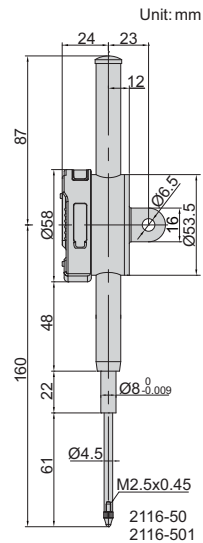
2116-10



2116-25  
2116-251



2116-251



2116-50  
2116-501



2116-501

## METRIC DIGITAL INDICATORS

- Button function: on/off, zero, change measuring direction, data preset, absolute/incremental measurement
- Keep preset data in memory after restart
- CR2032 battery, automatic power off, data output
- Optional accessory: data output cable (code 7315-50M, 7302-40M, 7305-40M), backs (page 164~165), contact points (page 161~163)

### Resolution 0.001mm

| Code       | Range  | Accuracy | Hysteresis | Remark    |
|------------|--------|----------|------------|-----------|
| 2116-101F* | 12.7mm | 5µm      | 2µm        | flat back |
| 2116-251F* | 25.4mm | 5µm      | 3µm        | flat back |
| 2116-501F* | 50.8mm | 6µm      | 3µm        | flat back |
| 2116-101*  | 12.7mm | 5µm      | 2µm        | lug back  |
| 2116-251*  | 25.4mm | 5µm      | 3µm        | lug back  |
| 2116-501*  | 50.8mm | 6µm      | 3µm        | lug back  |

### Resolution 0.01mm

| Code      | Range  | Accuracy | Hysteresis | Remark    |
|-----------|--------|----------|------------|-----------|
| 2116-10F* | 12.7mm | 20µm     | 10µm       | flat back |
| 2116-25F* | 25.4mm | 20µm     | 10µm       | flat back |
| 2116-50F* | 50.8mm | 30µm     | 10µm       | flat back |
| 2116-10*  | 12.7mm | 20µm     | 10µm       | lug back  |
| 2116-25*  | 25.4mm | 20µm     | 10µm       | lug back  |
| 2116-50*  | 50.8mm | 30µm     | 10µm       | lug back  |

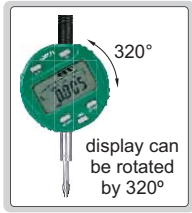
\* Supplied with manufacturer inspection certificate traceable to NIST USA

## DIGITAL INDICATORS (ADVANCED TYPE)

DATA  
OUTPUT

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

7



spindle lift knob is included

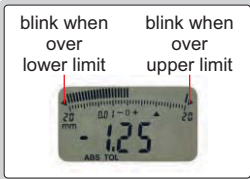


analog pointer

analog pointer



warning when over tolerance



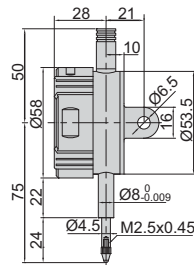
2103-10



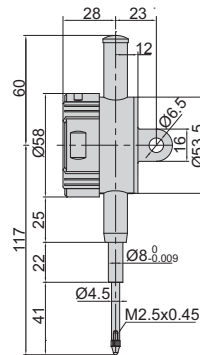
2104-25



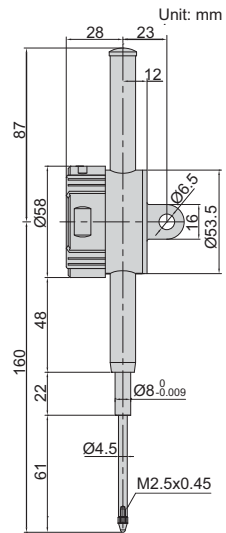
2103-50



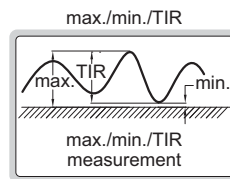
2103-10  
2104-10



2103-25  
2104-25



2103-50  
2104-50



- 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, data output
- Optional accessory: data output cable (code 7315-50M, 7302-40M, 7305-40M), backs (page 164~165), contact points (page 161~163)

### Resolution 0.001mm/0.00005"

| Code       | Range       | Accuracy | Hysteresis | Remark    |
|------------|-------------|----------|------------|-----------|
| 2103-10F * | 12.7mm/0.5" | 5µm      | 2µm        | flat back |
| 2103-25F * | 25.4mm/1"   | 5µm      | 3µm        | flat back |
| 2103-50F * | 50.8mm/2"   | 6µm      | 3µm        | flat back |
| 2103-10 *  | 12.7mm/0.5" | 5µm      | 2µm        | lug back  |
| 2103-25 *  | 25.4mm/1"   | 5µm      | 3µm        | lug back  |
| 2103-50 *  | 50.8mm/2"   | 6µm      | 3µm        | lug back  |

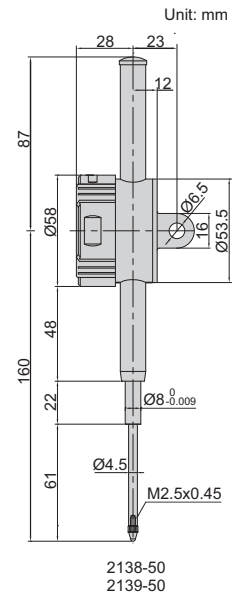
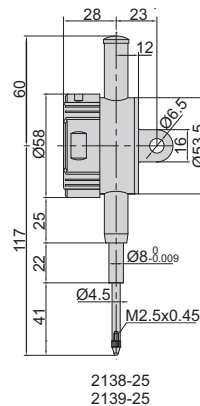
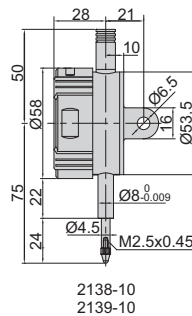
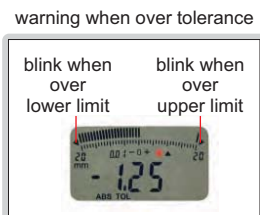
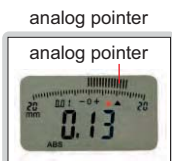
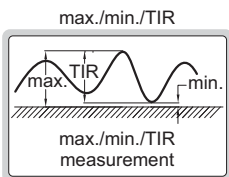
### Resolution 0.01mm/0.0005"

| Code       | Range       | Accuracy | Hysteresis | Remark    |
|------------|-------------|----------|------------|-----------|
| 2104-10F * | 12.7mm/0.5" | 20µm     | 10µm       | flat back |
| 2104-25F * | 25.4mm/1"   | 20µm     | 10µm       | flat back |
| 2104-50F * | 50.8mm/2"   | 30µm     | 10µm       | flat back |
| 2104-10 *  | 12.7mm/0.5" | 20µm     | 10µm       | lug back  |
| 2104-25 *  | 25.4mm/1"   | 20µm     | 10µm       | lug back  |
| 2104-50 *  | 50.8mm/2"   | 30µm     | 10µm       | lug back  |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

## DIGITAL INDICATORS (WITH TRANSMIT BUTTON AND LIGHT)

DATA  
OUTPUT



- Reading in digital and analog
- Display can be rotated by 320°
- 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
- Data output
- Optional accessory: data output cable, backs (page 164~165), contact points (page 161~163)

### Resolution 0.001mm/0.0005"

| Code      | Range       | Accuracy | Hysteresis | Remark    |
|-----------|-------------|----------|------------|-----------|
| 2138-10F* | 12.7mm/0.5" | 5µm      | 2µm        | flat back |
| 2138-25F* | 25.4mm/1"   | 5µm      | 3µm        | flat back |
| 2138-50F* | 50.8mm/2"   | 6µm      | 3µm        | flat back |
| 2138-10*  | 12.7mm/0.5" | 5µm      | 2µm        | lug back  |
| 2138-25*  | 25.4mm/1"   | 5µm      | 3µm        | lug back  |
| 2138-50*  | 50.8mm/2"   | 6µm      | 3µm        | lug back  |

### Resolution 0.01mm/0.0005"

| Code      | Range       | Accuracy | Hysteresis | Remark    |
|-----------|-------------|----------|------------|-----------|
| 2139-10F* | 12.7mm/0.5" | 20µm     | 10µm       | flat back |
| 2139-25F* | 25.4mm/1"   | 20µm     | 10µm       | flat back |
| 2139-50F* | 50.8mm/2"   | 30µm     | 10µm       | flat back |
| 2139-10*  | 12.7mm/0.5" | 20µm     | 10µm       | lug back  |
| 2139-25*  | 25.4mm/1"   | 20µm     | 10µm       | lug back  |
| 2139-50*  | 50.8mm/2"   | 30µm     | 10µm       | lug back  |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

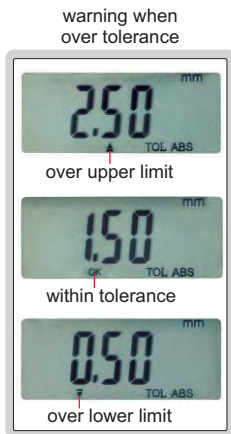
## WATERPROOF DIGITAL INDICATORS

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

WATERPROOF

DATA  
OUTPUT

7



2115-10

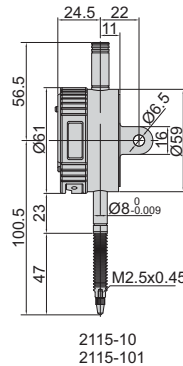


2115-25

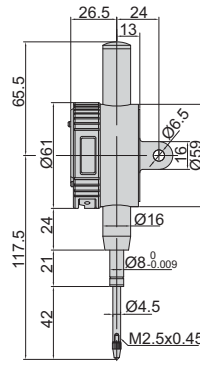


2115-50

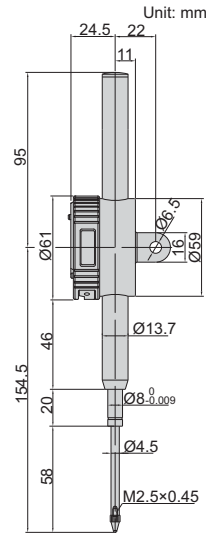
- Dust/waterproof
- Button function: on/off, zero, mm/inch, data preset, tolerance, change measuring direction, max./min./TIR measurement, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50, 7302-SPC3A, 7305-C01), backs (page 164~165), contact points (page 161~163)



2115-10  
2115-101



2115-25  
2115-251



2115-50  
2115-501

### Resolution 0.001mm/0.00005"

| Code        | Range       | Dust/waterproof | Accuracy | Hysteresis | Remark    |
|-------------|-------------|-----------------|----------|------------|-----------|
| 2115-101 *  | 12.7mm/0.5" | IP65            | 5µm      | 2µm        | lug back  |
| 2115-251 *  | 25.4mm/1"   | IP54            | 5µm      | 3µm        | lug back  |
| 2115-501 *  | 50.8mm/2"   | IP54            | 6µm      | 3µm        | lug back  |
| 2115-101F * | 12.7mm/0.5" | IP65            | 5µm      | 2µm        | flat back |
| 2115-251F * | 25.4mm/1"   | IP54            | 5µm      | 3µm        | flat back |
| 2115-501F * | 50.8mm/2"   | IP54            | 6µm      | 3µm        | flat back |

### Resolution 0.01mm/0.0005"

| Code       | Range       | Dust/waterproof | Accuracy | Hysteresis | Remark    |
|------------|-------------|-----------------|----------|------------|-----------|
| 2115-10 *  | 12.7mm/0.5" | IP65            | 20µm     | 10µm       | lug back  |
| 2115-25 *  | 25.4mm/1"   | IP54            | 20µm     | 10µm       | lug back  |
| 2115-50 *  | 50.8mm/2"   | IP54            | 30µm     | 10µm       | lug back  |
| 2115-10F * | 12.7mm/0.5" | IP65            | 20µm     | 10µm       | flat back |
| 2115-25F * | 25.4mm/1"   | IP54            | 20µm     | 10µm       | flat back |
| 2115-50F * | 50.8mm/2"   | IP54            | 30µm     | 10µm       | flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

ONE BATTERY FOR  
4000 WORKING HOURS

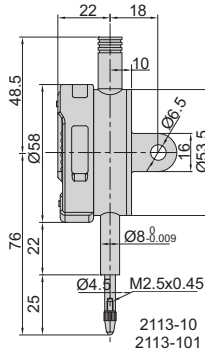
DATA  
OUTPUT

## NO AUTO POWER OFF DIGITAL INDICATORS

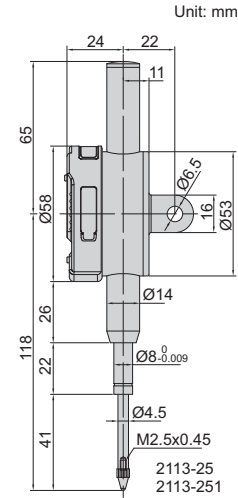
spindle lift knob is included



- No auto power off, tracking the deformation of mould and steel structure for a long time
- Low power consumption
- Button function: on/off, zero, inch/mm, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- CR2032 battery
- Data output
- Optional accessory: data output cable (code **7315-50M, 7302-40M, 7305-40M**), backs (page 164~165), contact points (page 161~163)



2113-10



2113-251

### Resolution 0.001mm/0.0005"

| Code       | Range       | Accuracy | Hysteresis | Remark    |
|------------|-------------|----------|------------|-----------|
| 2113-101F* | 12.7mm/0.5" | 5µm      | 2µm        | flat back |
| 2113-251F* | 25.4mm/1"   | 5µm      | 3µm        | flat back |
| 2113-101*  | 12.7mm/0.5" | 5µm      | 2µm        | lug back  |
| 2113-251*  | 25.4mm/1"   | 5µm      | 3µm        | lug back  |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

### Resolution 0.01mm/0.0005"

| Code      | Range       | Accuracy | Hysteresis | Remark    |
|-----------|-------------|----------|------------|-----------|
| 2113-10F* | 12.7mm/0.5" | 20µm     | 10µm       | flat back |
| 2113-25F* | 25.4mm/1"   | 20µm     | 10µm       | flat back |
| 2113-10*  | 12.7mm/0.5" | 20µm     | 10µm       | lug back  |
| 2113-25*  | 25.4mm/1"   | 20µm     | 10µm       | lug back  |

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

DATA  
OUTPUT

## DIGITAL INDICATORS (FOR HIGH SPEED MOVING OF SPINDLE)

ATTENTION: LARGE POWER CONSUMPTION,  
A BATTERY CAN BE USED FOR ABOUT HALF A YEAR

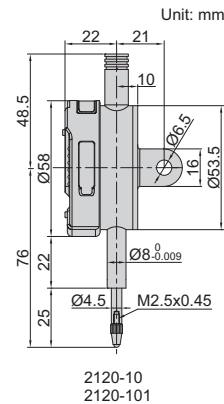
spindle lift knob is included



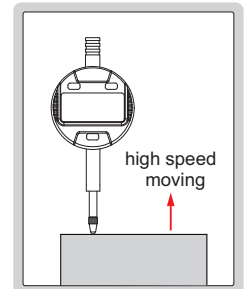
- For high speed moving of spindle
- Large power consumption, a battery can be used for about half a year
- Button function: on/off, inch/mm, zero, data preset, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (code **7315-50M, 7302-40M, 7305-40M**), backs (page 164~165), contact points (page 161~163)



2120-10



for high speed moving  
of spindle



### Resolution 0.001mm/0.0005"

| Code       | Range       | Accuracy | Hysteresis | Remark    |
|------------|-------------|----------|------------|-----------|
| 2120-101F* | 12.7mm/0.5" | 5µm      | 2µm        | flat back |
| 2120-101*  | 12.7mm/0.5" | 5µm      | 2µm        | lug back  |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

### Resolution 0.01mm/0.0005"

| Code      | Range       | Accuracy | Hysteresis | Remark    |
|-----------|-------------|----------|------------|-----------|
| 2120-10F* | 12.7mm/0.5" | 20µm     | 10µm       | flat back |
| 2120-10*  | 12.7mm/0.5" | 20µm     | 10µm       | lug back  |

## ADJUSTABLE COEFFICIENT DIGITAL INDICATORS

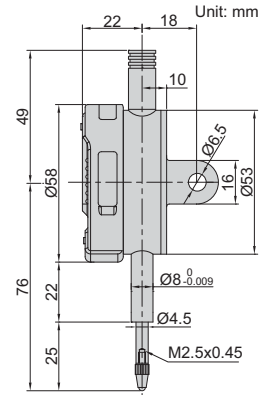
- DISPLAY READING = COEFFICIENT X SPINDLE MOVEMENT.  
The coefficient can be adjusted from 0 to 9.9999. For example, coefficient is 4.5562, spindle moves 3.60mm, display reading is  $4.5562 \times 3.60 = 16.40\text{mm}$
- Button function: on/off, zero, data preset, inch/mm, coefficient set, measuring direction change
- Keep preset data in memory after restart
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (code **7315-50M**, **7302-40M**, **7305-40M**), backs (page 164~165), contact points (page 161~163)



2501-10

DATA OUTPUT

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST



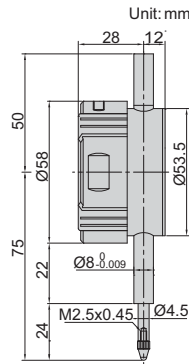
| Code      | Range       | Resolution     | Accuracy | Hysteresis | Remark    |
|-----------|-------------|----------------|----------|------------|-----------|
| 2501-10*  | 12.7mm/0.5" | 0.01mm/0.0005" | 20µm     | 10µm       | lug back  |
| 2501-10F* | 12.7mm/0.5" | 0.01mm/0.0005" | 20µm     | 10µm       | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

7

## DIGITAL INDICATORS FOR BORE GAGES

- Specially designed for bore gages
- The minimum value tracking function can find the diameter automatically
- Read the diameter directly, after inputting the size of setting ring
- Reading in digital and analog
- Display can be rotated by 320°
- Button function: minimum value tracking, calibration, data preset, inch/metric conversion, absolute/incremental measurement
- Data remains after power off, no need to recalibrate after power on
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (code **7315-50M**, **7302-40M**, **7305-40M**), backs (page 164~165), contact points (page 161~163), spindle lift knob (code **7332**)

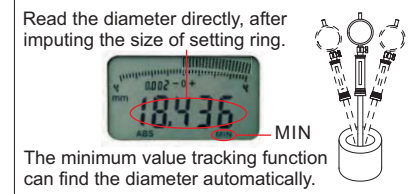
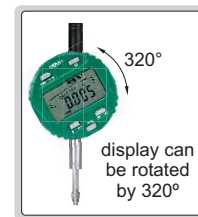


2108-10F

THE ORIGINAL DATA REMAINS AFTER POWER OFF

DATA OUTPUT

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

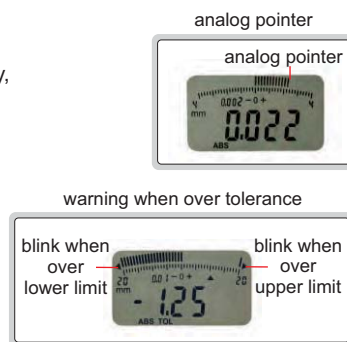


| Code       | Range       | Resolution   | Accuracy | Hysteresis | Remark    |
|------------|-------------|--|----------|------------|-----------|
| 2108-10F*  | 12.7mm/0.5" | 0.002mm/0.0001"<br>(can switch to: 0.01mm/0.0005") | 20µm     | 10µm       | flat back |
| 2108-101F* | 12.7mm/0.5" | 0.001mm/0.00005"                                   | 5µm      | 2µm        | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

## DIGITAL INDICATORS WITH LIFTING LEVER

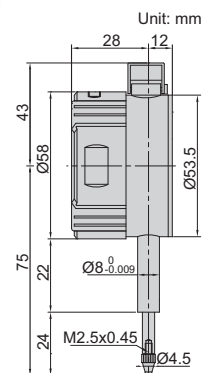
- Reading in digital and analog
- Display can be rotated by 320°
- Button function: tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (code **7315-50M**, **7302-40M**, **7305-40M**), backs (page 164~165), contact points (page 161~163)



2109-10

DATA OUTPUT

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

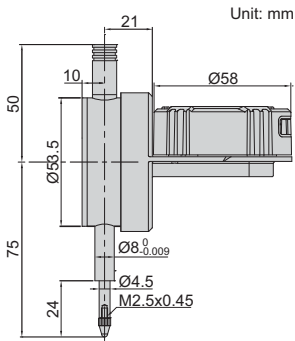


| Code      | Range     | Resolution       | Accuracy | Hysteresis | Remark    |
|-----------|-----------|------------------|----------|------------|-----------|
| 2109-10*  | 10mm/0.4" | 0.01mm/0.0005"   | 20µm     | 10µm       | flat back |
| 2109-101* | 10mm/0.4" | 0.001mm/0.00005" | 5µm      | 2µm        | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



## BACK PLUNGER TYPE DIGITAL INDICATORS

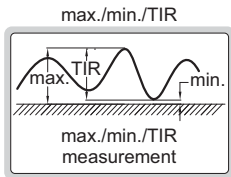


2118-10

display can rotate 320°



7



max./min./TIR



warning when over tolerance



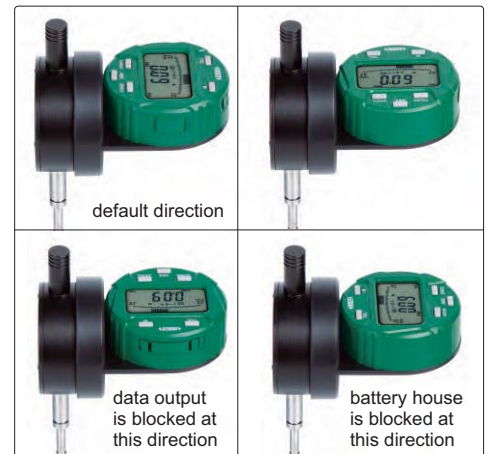
analog pointer



spindle lift knob is included

- 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
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-40M, 7305-40M), backs (page 164~165), contact points (page 161~163)

display direction is changeable



default direction

data output is blocked at this direction

battery house is blocked at this direction

| Code       | Range       | Resolution       | Accuracy | Hysteresis | Remark    |
|------------|-------------|------------------|----------|------------|-----------|
| 2118-10 *  | 12.7mm/0.5" | 0.01mm/0.0005"   | 20µm     | 10µm       | flat back |
| 2118-101 * | 12.7mm/0.5" | 0.001mm/0.00005" | 5µm      | 2µm        | flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

Remark: To change above direction, 4 fixing screws on the back of display need to be removed first.

## COMPACT DIGITAL INDICATORS

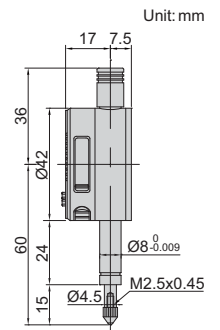
- Button function:
  - in/mm: short press for inch/metric conversion  
long press to change measuring direction
  - ABS: short press for absolute/incremental measurement  
long press to preset data
  - 0/ON: short press to turn on when power is off  
short press to set zero when power is on  
long press to turn off
- Keep preset data in memory after restart
- CR1632 battery, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50, 7302-SPC3A, 7305-C01), contact points (page 161~163)

| Code       | Range    | Resolution       | Accuracy | Hysteresis | Remark    |
|------------|----------|------------------|----------|------------|-----------|
| 2114-5F *  | 5mm/0.2" | 0.01mm/0.0005"   | 20µm     | 10µm       | flat back |
| 2114-51F * | 5mm/0.2" | 0.001mm/0.00005" | 5µm      | 2µm        | flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA



2114-51F



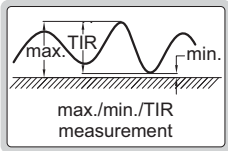
## LARGE STROKE DIGITAL INDICATORS

DATA OUTPUT

spindle lift knob is included



max./min./TIR



warning when over tolerance



- 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: data output cable (code 7315-50, 7302-SPC3A, 7305-C01), backs (page 164~165), contact points (page 161~163)

Resolution 0.01mm/0.0005"

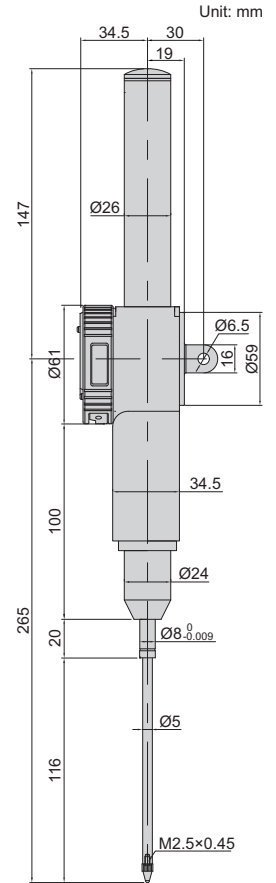
| Code     | Range    | Accuracy | Hysteresis | Remark   |
|----------|----------|----------|------------|----------|
| 2117-100 | 100mm/4" | 30µm     | 10µm       | lug back |

Resolution 0.001mm/0.00005"

| Code      | Range    | Accuracy | Hysteresis | Remark   |
|-----------|----------|----------|------------|----------|
| 2117-1001 | 100mm/4" | 9µm      | 3µm        | lug back |



2117-100



## ZEROING FOOT SWITCHES

- For zeroing of digital indicators



7360-1

application



| Code    | Description                                  | Interface of digital indicators | Applicable products    |
|---------|--|---------------------------------|------------------------|
| 7360-1  | zeroing foot switch with cable (length 2.5m) |                                 | for digital indicators |
| 7360-1M |  |                                 |                        |

LINEAR GAGE  
**IP65**  
WATERPROOF

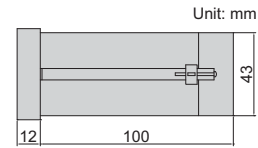
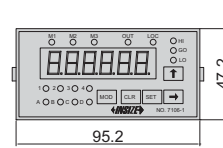
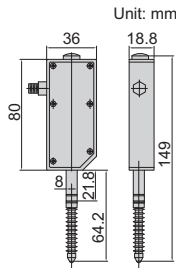
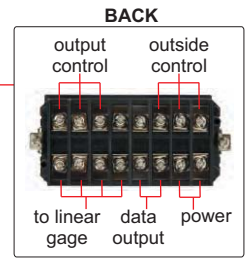
## LINEAR GAGES AND DISPLAY UNIT



linear gage



display unit  
7106-1



application



- Linear gage: shock-proof, water proof, dust proof, suitable for high speed movement, long working life
- Display unit: set tolerance and make judgment (out of upper tolerance, within tolerance, out of lower tolerance), output the judgment to control outside devices, set zero and hold reading from outside

### LINEAR GAGE SPECIFICATION

| Code                | 7106-11           | 7106-12          |
|---------------------|-------------------|------------------|
| Measuring range     | 12mm/0.47"        | 12mm/0.47"       |
| Resolution          | 0.01mm/0.0004"    | 0.001mm/0.00004" |
| Accuracy            | 20μm              | 5μm              |
| Hysteresis          | 10μm              | 2μm              |
| Measuring principle | capacity system   |                  |
| Voltage             | 5V                |                  |
| Sampling frequency  | 100 times/sec.    |                  |
| Working life        | ten million times |                  |
| Dust/waterproof     | IP65              |                  |
| Measuring force     | 1.5N              |                  |
| Cable length        | 2m                |                  |
| Data output         | four-core wire    |                  |

### DISPLAY UNIT SPECIFICATION

|  |   |
|--|---|
| Code                                     | 7106-1  |
| Display                                  | 6 digits  |
| Quantity of linear gages 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)   |
| Data output                              | connect to PC   |
| Power supply                             | DC 9~24V  |

## MULTI LINEAR GAGE SYSTEM

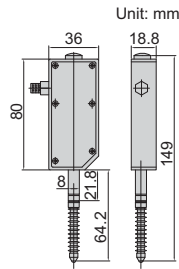
LINEAR GAGE  
**IP65**  
WATERPROOF



VIDEO



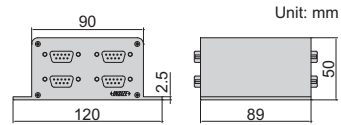
linear gage



Unit: mm



4-channel interface box  
7107-1



Unit: mm

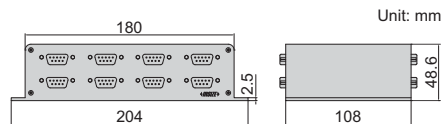


software CD  
(included)

application



8-channel interface box  
7107-2



Unit: mm

- Interface boxes are supplied with software. 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.
- 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.

### LINEAR GAGE SPECIFICATION

| Code                | 7107-11           | 7107-12          |
|---------------------|-------------------|------------------|
| Measuring range     | 12mm/0.47"        | 12mm/0.47"       |
| Resolution          | 0.01mm/0.0004"    | 0.001mm/0.00004" |
| Accuracy            | 20µm              | 5µm              |
| Hysteresis          | 10µm              | 2µm              |
| Measuring principle | capacity system   |                  |
| Voltage             | 5V                |                  |
| Sampling frequency  | 100 times/sec.    |                  |
| Working life        | ten million times |                  |
| Dust/waterproof     | IP65              |                  |
| Measuring force     | 1.5N              |                  |
| Cable length        | 2m                |                  |
| Data output         | RS232             |                  |

### INTERFACE BOX SPECIFICATION

| Code                                     | 7107-1          | 7107-2 |
|--|-----------------|--------|
| Quantity of linear gages 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   |



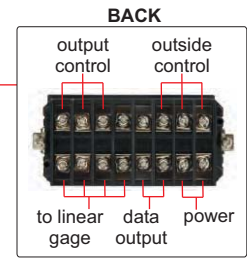
## CABLE FOR DIGITAL INDICATORS AND DISPLAY UNIT



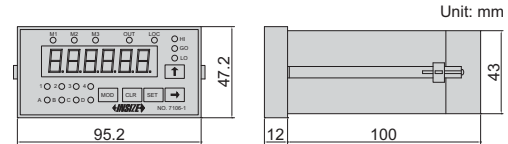
**cable of digital indicators  
7309-B01M**



**display unit  
7106-1**



application



- Display unit: set tolerance and make judgment (out of upper tolerance, within tolerance, out of lower tolerance), output the judgment to control outside devices, set zero and hold reading from outside, data preset, measuring direction change

### CABLE SPECIFICATION

| Code      | Description                              | Plug to product | Socket on product | Applicable product |
|-----------|--|-----------------|-------------------|--------------------|
| 7309-B01M | cable of digital indicator (length 2.5m) |                 |                   | digital indicators |

### DISPLAY UNIT SPECIFICATION

|   |   |
|---|---|
| Code  | 7106-1  |
| Display                                       | 6 digits  |
| Quantity of 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)   |
| Data output                                   | connect to PC   |
| Power supply                                  | DC 9~24V  |

# CABLE FOR DIGITAL INDICATORS AND MULTI CHANNEL INTERFACE BOX



application

out of lower tolerance (red)    out of upper tolerance (red)    within tolerance (green)    within tolerance (green)    real time reading    set zero

collect data



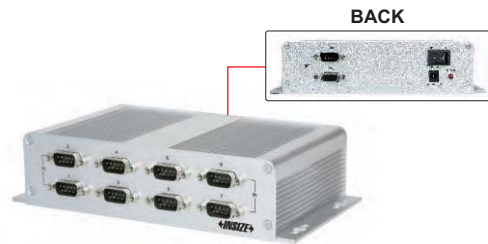
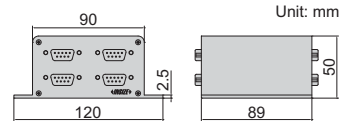
software CD (included)



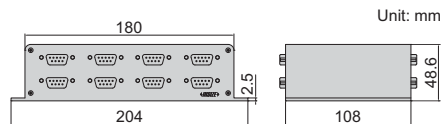
cable of digital indicators  
7309-C01M



4-channel interface box  
7107-1



8-channel interface box  
7107-2



- Interface boxes are supplied with software. 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.
- 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.

## CABLE SPECIFICATION

| Code      | Description                             | Plug to product | Socket on product | Applicable product |
|-----------|---|-----------------|-------------------|--------------------|
| 7309-C01M | cable of digital indicator (length 2 m) |                 |                   | digital indicators |

## INTERFACE BOX SPECIFICATION

| Code   | 7107-1          | 7107-2 |
|--|-----------------|--------|
| Quantity of 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   |

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

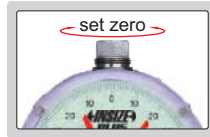
JEWELLED BEARING

SHOCK PROOF

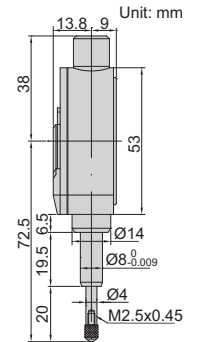
**DIAL COMPARATOR**  
**INSIZE PLUS**  
MADE IN EUROPE

- Meet DIN879-1
- Shockproof
- Jeweled bearing
- Overtravel: 3mm
- Shadow free dial face cover
- Supplied with limit pointers
- Initial measuring force 1.2N
- Optional accessory: lifting lever (code 6289-150)

lifting lever (optional)



2881-01



| Code      | Range | Graduation | Accuracy | Hysteresis | Dial reading | Remark    |
|-----------|-------|------------|----------|------------|--------------|-----------|
| 2881-01 * | 0.1mm | 0.001mm    | 1.2µm    | 0.5µm      | 50-0-50      | flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

SHOCK PROOF

**HIGH PRECISION COMPACT DIAL INDICATORS**

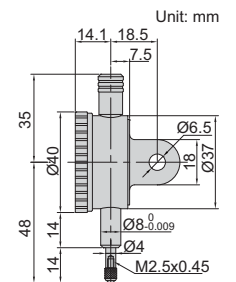
**INSIZE PLUS**  
MADE IN EUROPE

- Shockproof
- Jeweled bearing
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163), lifting lever (code 6289-150)

lifting lever (optional)



2890-1



| Code      | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|-----------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2890-1 *  | 1mm   | 0.001mm    | 3µm      | 1.5µm      | 0.1mm     | 0-100        | lug back  |
| 2890-1F * | 1mm   | 0.001mm    | 3µm      | 1.5µm      | 0.1mm     | 0-100        | flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

SHOCK PROOF

**HIGH PRECISION DIAL INDICATORS**

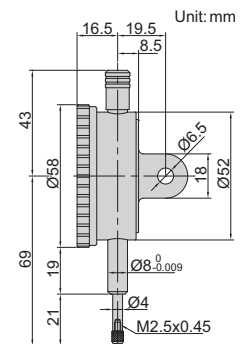
**INSIZE PLUS**  
MADE IN EUROPE

- Shockproof
- Jeweled bearing
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163), lifting lever (code 6289-150)

lifting lever (optional)



2891-1



| Code      | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|-----------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2891-1 *  | 1mm   | 0.001mm    | 3µm      | 1.5µm      | 0.1mm     | 0-100        | lug back  |
| 2891-1F * | 1mm   | 0.001mm    | 3µm      | 1.5µm      | 0.1mm     | 0-100        | flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

## PRECISION DIAL INDICATORS

**INSIZE PLUS**  
MADE IN EUROPE

- Shockproof
- Jeweled bearing
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2830-1

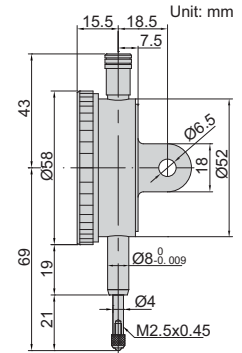
| Code     | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|----------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2830-1*  | 1mm   | 0.001mm    | 5µm      | 2µm        | 0.2mm     | 0-100-0      | lug back  |
| 2830-1F* | 1mm   | 0.001mm    | 5µm      | 2µm        | 0.2mm     | 0-100-0      | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

SHOCK PROOF

JEWELLED BEARING

INSPECTION CERTIFICATE  
TRACEABLE TO NIST



## COMPACT DIAL INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

- Meet DIN878
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)

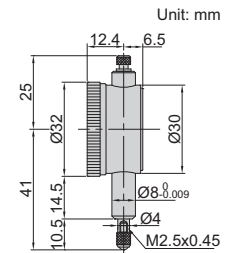


2886-3F

| Code     | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|----------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2886-3F* | 3mm   | 0.01mm     | 12µm     | 3µm        | 0.5mm     | 0-50         | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

INSPECTION CERTIFICATE  
TRACEABLE TO NIST



## COMPACT DIAL INDICATORS

**INSIZE PLUS**  
MADE IN EUROPE

- Meet DIN878
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)

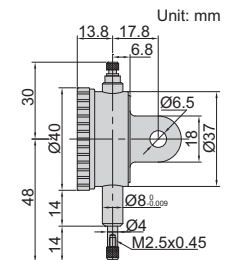


2887-5

| Code     | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|----------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2887-5*  | 5mm   | 0.01mm     | 14µm     | 3µm        | 0.5mm     | 0-50         | lug back  |
| 2887-5F* | 5mm   | 0.01mm     | 14µm     | 3µm        | 0.5mm     | 0-50         | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

INSPECTION CERTIFICATE  
TRACEABLE TO NIST



## LARGE DIAL FACE DIAL INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

- Large, easy-to-read dial face
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)

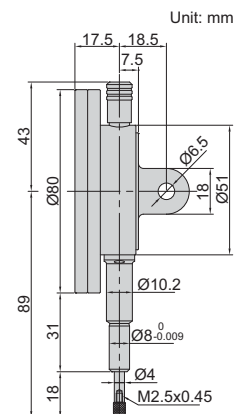


2888-10

| Code     | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark                         |
|----------|-------|------------|----------|------------|-----------|--------------|--------------------------------|
| 2888-10* | 10mm  | 0.01mm     | 17µm     | 5µm        | 1mm       | 0-100        | flat back, with spare lug back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

INSPECTION CERTIFICATE  
TRACEABLE TO NIST







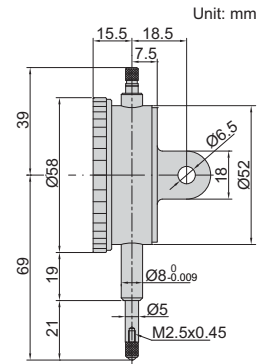
## DIAL INDICATORS

**INSIZE PLUS**  
MADE IN EUROPE

- Meet DIN878
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2892-10



| Code       | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|------------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2892-10 *  | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | lug back  |
| 2892-10F * | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA



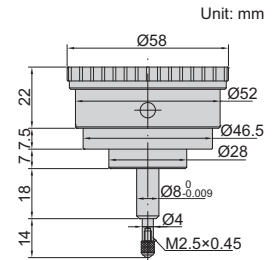
## BACK PLUNGER DIAL INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

- With limit pointers
- Optional accessory: contact points (page 161~163)



2893-3



| Code     | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading |
|----------|-------|------------|----------|------------|-----------|--------------|
| 2893-3 * | 3mm   | 0.01mm     | 15µm     | 5µm        | 1mm       | 0-100        |

\* Supplied with manufacturer inspection certificate traceable to NIST USA



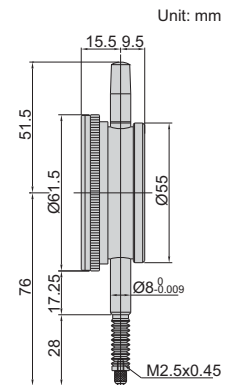
## WATERPROOF DIAL INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

- Meet DIN878
- Shockproof
- IP67 dust/waterproof
- With limit pointers
- Optional accessory: contact points (page 161~163)



2894-10F



| Code       | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|------------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2894-10F * | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

## DIAL INDICATORS (LONG STROKE)

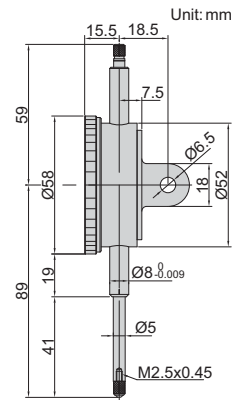
**INSIZE PLUS**  
MADE IN EUROPE

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2889-30



| Code       | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|------------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2889-30 *  | 30mm  | 0.01mm     | 25µm     | 5µm        | 1mm       | 0-100        | lug back  |
| 2889-30F * | 30mm  | 0.01mm     | 25µm     | 5µm        | 1mm       | 0-100        | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

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## ONE REVOLUTION PRECISION DIAL INDICATORS

**INSIZE PLUS**  
MADE IN EUROPE

**SHOCK  
PROOF**

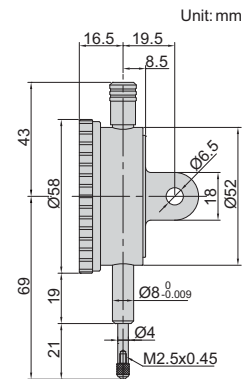
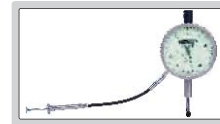
**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

- Eliminate the possibility of reading errors due to miscounting
- Shockproof
- Jeweled bearing
- Free stroke: 4.5mm
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163), lifting lever (code 6289-150)



2885-008

lifting lever (optional)



| Code        | Range  | Graduation | Accuracy | Hysteresis | Dial reading | Remark    |
|-------------|--------|------------|----------|------------|--------------|-----------|
| 2885-008 *  | 0.08mm | 0.001mm    | 3µm      | 1.5µm      | 40-0-40      | lug back  |
| 2885-008F * | 0.08mm | 0.001mm    | 3µm      | 1.5µm      | 40-0-40      | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

## ONE REVOLUTION DIAL INDICATORS

**INSIZE PLUS**  
MADE IN EUROPE

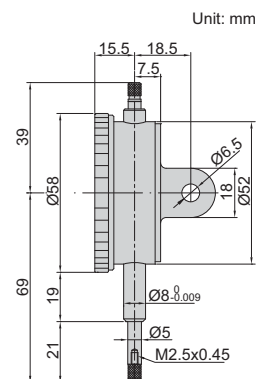
**SHOCK  
PROOF**

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

- Meet DIN878
- Eliminate the possibility of reading errors due to miscounting
- Shockproof
- Free stroke: 7mm
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2882-08



| Code       | Range | Graduation | Accuracy | Hysteresis | Dial reading | Remark    |
|------------|-------|------------|----------|------------|--------------|-----------|
| 2882-08 *  | 0.8mm | 0.01mm     | 9µm      | 3µm        | 40-0-40      | lug back  |
| 2882-08F * | 0.8mm | 0.01mm     | 9µm      | 3µm        | 40-0-40      | flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



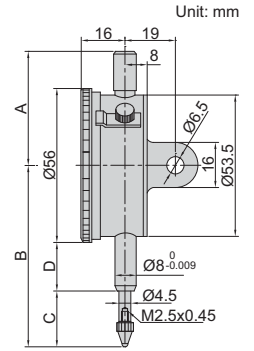
JEWELLED BEARING

## PRECISION DIAL INDICATORS

- Graduation: 0.001mm
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2313-1A



| Code       | Range | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    | A  | B    | C    | D  |
|------------|-------|----------|------------|-----------|--------------|-----------|----|------|------|----|
| 2313-1FA * | 1mm   | 5µm      | 2µm        | 0.2mm     | 0-100-0      | flat back | 45 | 62.5 | 19.5 | 15 |
| 2313-2FA * | 2mm   | 6µm      | 2.5µm      | 0.2mm     | 0-100-0      | flat back | 45 | 62.5 | 19.5 | 15 |
| 2313-1A *  | 1mm   | 5µm      | 2µm        | 0.2mm     | 0-100-0      | lug back  | 45 | 62.5 | 19.5 | 15 |
| 2313-2A *  | 2mm   | 6µm      | 2.5µm      | 0.2mm     | 0-100-0      | lug back  | 45 | 62.5 | 19.5 | 15 |

\* Supplied with manufacturer inspection certificate traceable to NIST USA



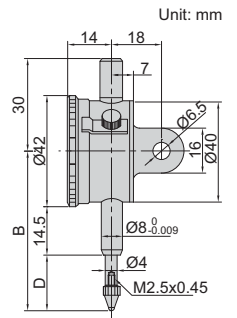
JEWELLED BEARING

## COMPACT DIAL INDICATORS

- Meet DIN878
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2311-5



| Code      | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    | B  | D    |
|-----------|-------|------------|----------|------------|-----------|--------------|-----------|----|------|
| 2311-3F * | 3mm   | 0.01mm     | 12µm     | 3µm        | 0.5mm     | 0-50         | flat back | 46 | 10.5 |
| 2311-5F * | 5mm   | 0.01mm     | 14µm     | 3µm        | 0.5mm     | 0-50         | flat back | 48 | 12.5 |
| 2311-3 *  | 3mm   | 0.01mm     | 12µm     | 3µm        | 0.5mm     | 0-50         | lug back  | 46 | 10.5 |
| 2311-5 *  | 5mm   | 0.01mm     | 14µm     | 3µm        | 0.5mm     | 0-50         | lug back  | 48 | 12.5 |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

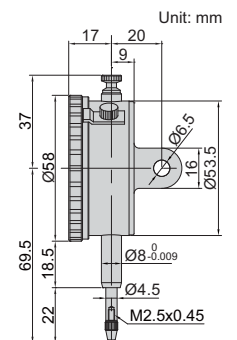


## DIAL INDICATORS (BASIC TYPE)

- Meet DIN878
- Jeweled bearing
- Supplied with limit hands and bezel clamp
- Packed in carton box
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2301-10



| Code       | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark                        |
|------------|-------|------------|----------|------------|-----------|--------------|-------------------------------|
| 2301-10F * | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | flat back                     |
| 2301-10 *  | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | lug back with spare flat back |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

## DIAL INDICATORS (STANDARD TYPE)

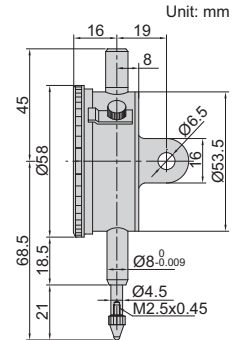
JEWELLED BEARING

INSPECTION CERTIFICATE  
TRACEABLE TO NIST

- Meet DIN878
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2308-10A



| Code        | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|-------------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2308-3FA *  | 3mm   | 0.01mm     | 12µm     | 3µm        | 1mm       | 0-100        | flat back |
| 2308-5FA *  | 5mm   | 0.01mm     | 14µm     | 3µm        | 1mm       | 0-100        | flat back |
| 2308-10FA * | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | flat back |
| 2308-3A *   | 3mm   | 0.01mm     | 12µm     | 3µm        | 1mm       | 0-100        | lug back  |
| 2308-5A *   | 5mm   | 0.01mm     | 14µm     | 3µm        | 1mm       | 0-100        | lug back  |
| 2308-10A *  | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | lug back  |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

## REVERSE READING DIAL INDICATORS

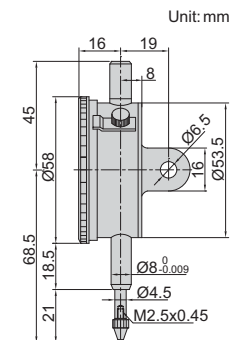
JEWELLED BEARING

INSPECTION CERTIFICATE  
TRACEABLE TO NIST

- Meet DIN878
- Suitable for depth and step measurements
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2801-10



| Code       | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|------------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2801-10F * | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 100-0        | flat back |
| 2801-10 *  | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 100-0        | lug back  |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

## SHOCKPROOF DIAL INDICATORS

SHOCK PROOF

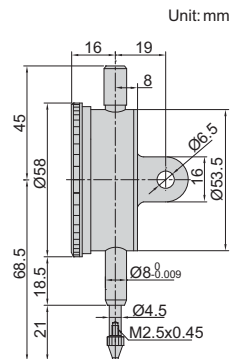
JEWELLED BEARING

INSPECTION CERTIFICATE  
TRACEABLE TO NIST

- Meet DIN878
- Shockproof
- Jeweled bearing
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2314-10A



| Code        | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|-------------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2314-3FA *  | 3mm   | 0.01mm     | 12µm     | 3µm        | 1mm       | 0-100        | flat back |
| 2314-5FA *  | 5mm   | 0.01mm     | 14µm     | 3µm        | 1mm       | 0-100        | flat back |
| 2314-10FA * | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | flat back |
| 2314-3A *   | 3mm   | 0.01mm     | 12µm     | 3µm        | 1mm       | 0-100        | lug back  |
| 2314-5A *   | 5mm   | 0.01mm     | 14µm     | 3µm        | 1mm       | 0-100        | lug back  |
| 2314-10A *  | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | lug back  |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

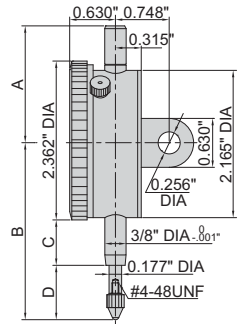


## INCH DIAL INDICATORS

- Meet ASME B89.1.10M-2001
- With lug back
- Supplied with limit pointers and bezel clamp



2307-1



| Code        | Range | Graduation | Accuracy      |          | Range/rev | Dial reading |
|-------------|-------|------------|---------------|----------|-----------|--------------|
|             |       |            | First 2.5 rev | Overall  |           |              |
| 2307-025 *  | 0.25" | 0.001"     | ±0.001"       | ±0.001"  | 0.1"      | 0-100        |
| 2307-05 *   | 0.5"  | 0.001"     | ±0.001"       | ±0.002"  | 0.1"      | 0-100        |
| 2307-1 *    | 1"    | 0.001"     | ±0.001"       | ±0.002"  | 0.1"      | 0-100        |
| 2307-2 *    | 2"    | 0.001"     | ±0.001"       | ±0.004"  | 0.1"      | 0-100        |
| 2307-0255 * | 0.25" | 0.0005"    | ±0.0005"      | ±0.0015" | 0.05"     | 0-50         |
| 2307-055 *  | 0.5"  | 0.0005"    | ±0.0005"      | ±0.0015" | 0.05"     | 0-50         |
| 2307-105 *  | 1"    | 0.0005"    | ±0.0005"      | ±0.002"  | 0.05"     | 0-50         |
| 2307-205 *  | 2"    | 0.0005"    | ±0.0005"      | ±0.002"  | 0.05"     | 0-50         |

| 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" |

\* Supplied with manufacturer inspection certificate traceable to NIST



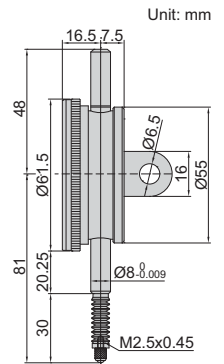
## WATERPROOF DIAL INDICATORS

- Meet DIN878
- IP54 dust/waterproof
- With limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2324-10A

| Code        | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    |
|-------------|-------|------------|----------|------------|-----------|--------------|-----------|
| 2324-10FA * | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | flat back |
| 2324-10A *  | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        | lug back  |



\* Supplied with manufacturer inspection certificate traceable to NIST USA



## DOUBLE FACE DIAL INDICATOR

- Meet DIN878
- Read from both sides
- Jeweled bearing
- Supplied with limit pointers
- Optional accessory: contact points (page 161~163)



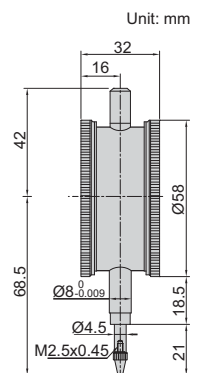
front

back

2328-10

| Code      | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading |
|-----------|-------|------------|----------|------------|-----------|--------------|
| 2328-10 * | 10mm  | 0.01mm     | 17µm     | 3µm        | 1mm       | 0-100        |

\* Supplied with manufacturer inspection certificate traceable to NIST USA



## DIAL INDICATORS (LONG STROKE)

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST



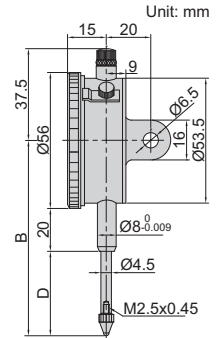
2310-30A

- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 164~165), contact points (page 161~163)

(mm)

| Code       | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    | B  | D  |
|------------|-------|------------|----------|------------|-----------|--------------|-----------|----|----|
| 2310-20FA* | 20mm  | 0.01mm     | 25μm     | 5μm        | 1mm       | 0-100        | flat back | 83 | 35 |
| 2310-30FA* | 30mm  | 0.01mm     | 35μm     | 7μm        | 1mm       | 0-100        | flat back | 88 | 40 |
| 2310-20A*  | 20mm  | 0.01mm     | 25μm     | 5μm        | 1mm       | 0-100        | lug back  | 83 | 35 |
| 2310-30A*  | 30mm  | 0.01mm     | 35μm     | 7μm        | 1mm       | 0-100        | lug back  | 88 | 40 |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



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## DIAL INDICATORS (LONG STROKE, BASIC TYPE)

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST



2302-25

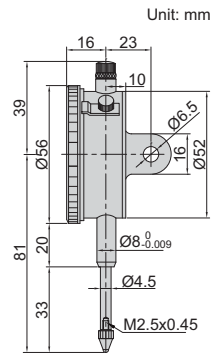
- Supplied with limit pointers and bezel clamp
- Packed in carton box
- Optional accessory: backs (page 164~165), contact points (page 161~163)

carton box



| Code      | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark                        |
|-----------|-------|------------|----------|------------|-----------|--------------|-------------------------------|
| 2302-25F* | 25mm  | 0.01mm     | 35μm     | 7μm        | 1mm       | 0-100        | flat back                     |
| 2302-25*  | 25mm  | 0.01mm     | 35μm     | 7μm        | 1mm       | 0-100        | lug back with spare flat back |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



## DIAL INDICATORS (GRADUATION 0.1mm)

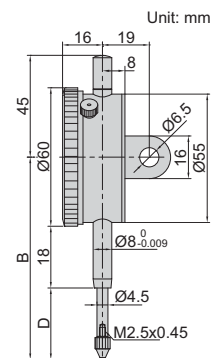
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2318-30

(mm)

| Code     | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark    | B  | D  |
|----------|-------|------------|----------|------------|-----------|--------------|-----------|----|----|
| 2318-10F | 10mm  | 0.1mm      | 40μm     | 20μm       | 10mm      | 0-10         | flat back | 70 | 20 |
| 2318-20F | 20mm  | 0.1mm      | 50μm     | 20μm       | 10mm      | 0-10         | flat back | 85 | 35 |
| 2318-25F | 25mm  | 0.1mm      | 60μm     | 20μm       | 10mm      | 0-10         | flat back | 85 | 35 |
| 2318-30F | 30mm  | 0.1mm      | 60μm     | 20μm       | 10mm      | 0-10         | flat back | 90 | 40 |
| 2318-10  | 10mm  | 0.1mm      | 40μm     | 20μm       | 10mm      | 0-10         | lug back  | 70 | 20 |
| 2318-20  | 20mm  | 0.1mm      | 50μm     | 20μm       | 10mm      | 0-10         | lug back  | 85 | 35 |
| 2318-25  | 25mm  | 0.1mm      | 60μm     | 20μm       | 10mm      | 0-10         | lug back  | 85 | 35 |
| 2318-30  | 30mm  | 0.1mm      | 60μm     | 20μm       | 10mm      | 0-10         | lug back  | 90 | 40 |



**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

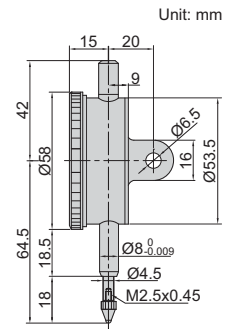
SHOCK  
PROOF

## ONE REVOLUTION DIAL INDICATORS

- Meet DIN878
- Eliminate the possibility of reading errors due to miscounting
- Shockproof
- Supplied with limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2316-05



| Code       | Range | Dial indicator stroke | Graduation | Accuracy | Hysteresis | Dial reading | Remark    |
|------------|-------|-----------------------|------------|----------|------------|--------------|-----------|
| 2316-05F * | 0.5mm | 5mm                   | 0.01mm     | 9µm      | 3µm        | 25-0-25      | flat back |
| 2316-1F *  | 1mm   | 5mm                   | 0.01mm     | 9µm      | 3µm        | 50-0-50      | flat back |
| 2316-05 *  | 0.5mm | 5mm                   | 0.01mm     | 9µm      | 3µm        | 25-0-25      | lug back  |
| 2316-1 *   | 1mm   | 5mm                   | 0.01mm     | 9µm      | 3µm        | 50-0-50      | lug back  |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

JEWELLED  
BEARING

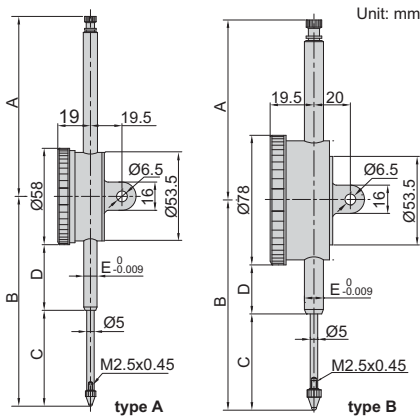
SHOCK  
PROOF

## DIAL INDICATORS (LONG STROKE)

- Shockproof
- Jeweled bearing
- Supplied with limit pointers
- Optional accessory: backs (page 164~165), contact points (page 161~163)



2309-50



stem clamp Ø10mm  
for 2309-100D



back of type B



| Code       | Type | A     | B     | C    | D    | E   | (mm) |
|------------|------|-------|-------|------|------|-----|------|
| 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 |      |

| Code       | Range | Graduation | Type | Accuracy | Hysteresis | Range/rev | Dial reading | Remark                        |
|------------|-------|------------|------|----------|------------|-----------|--------------|-------------------------------|
| 2309-30F * | 30mm  | 0.01mm     | A    | 35µm     | 7µm        | 1mm       | 0-100        | flat back                     |
| 2309-30 *  | 30mm  | 0.01mm     | A    | 35µm     | 7µm        | 1mm       | 0-100        | lug back                      |
| 2309-50 *  | 50mm  | 0.01mm     | A    | 40µm     | 8µm        | 1mm       | 0-100        | flat back with spare lug back |
| 2309-50D * | 50mm  | 0.01mm     | B    | 40µm     | 8µm        | 1mm       | 0-100        | flat back with spare lug back |
| 2309-80    | 80mm  | 0.01mm     | A    | 50µm     | 9µm        | 1mm       | 0-100        | flat back with spare lug back |
| 2309-80D   | 80mm  | 0.01mm     | B    | 50µm     | 9µm        | 1mm       | 0-100        | flat back with spare lug back |
| 2309-100D  | 100mm | 0.01mm     | B    | 50µm     | 9µm        | 1mm       | 0-100        | 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 164~165)

\* Supplied with manufacturer inspection certificate traceable to NIST USA

**INCH LONG STROKE DIAL INDICATORS**



**2326-2**

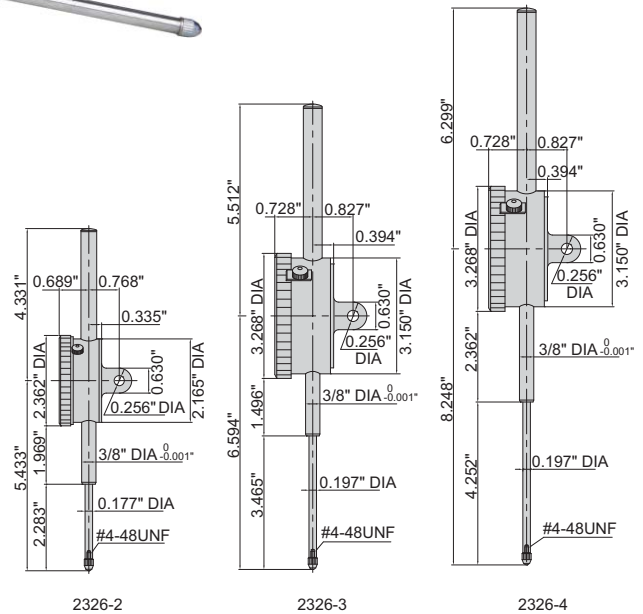
7

- Graduation 0.001"
- With lug back
- Supplied with limit pointers and bezel clamp

| Code      | Range | Accuracy      |         | Range/rev | Dial reading |
|-----------|-------|---------------|---------|-----------|--------------|
|           |       | First 2.5 rev | Overall |           |              |
| 2326-2 *  | 2"    | ±0.001"       | ±0.004" | 0.1"      | 0-100        |
| 2326-3 ** | 3"    | ±0.001"       | ±0.005" | 0.1"      | 0-100        |
| 2326-4 ** | 4"    | ±0.001"       | ±0.005" | 0.1"      | 0-100        |

\* Supplied with manufacturer inspection certificate traceable to NIST

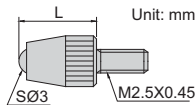
\*\* 2326-3 and 2326-4 can only be used vertically



**BALL POINTS**



**6282-0101**

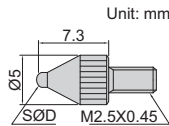


| Code      | Material of measuring face | L (mm) |
|-----------|----------------------------|--------|
| 6282-0101 | carbide                    | 7.3    |
| 6282-0103 | ceramic                    | 7.3    |
| 6282-0104 | carbide                    | 8.3    |
| 6282-0106 | carbide                    | 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     |



**6282-0301**



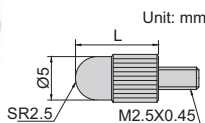
| Code      | Material of measuring face | SØD (mm) |
|-----------|----------------------------|----------|
| 6282-0301 | steel                      | 1        |
| 6282-0302 | carbide                    | 1.5      |
| 6282-0303 | carbide                    | 1.8      |

| Code      | Material of measuring face | SØD (mm) |
|-----------|----------------------------|----------|
| 6282-0304 | carbide                    | 2.5      |
| 6282-0305 | carbide                    | 4        |

**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     |

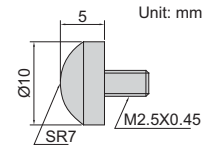


## SPHERICAL POINT

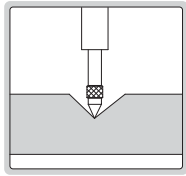
| Code      | Material of measuring face |
|-----------|----------------------------|
| 6282-0401 | steel                      |



6282-0401



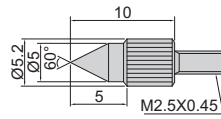
## CONICAL POINTS



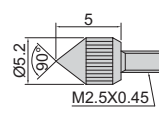
| Code      | Material of measuring face |
|-----------|----------------------------|
| 6282-0601 | steel                      |
| 6282-0701 | steel                      |
| 6282-0801 | steel                      |
| 6282-0901 | steel                      |



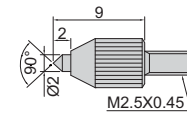
6282-0601



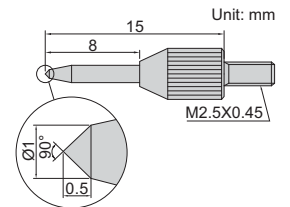
6282-0701



6282-0801



6282-0901

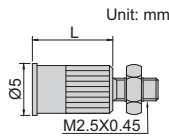


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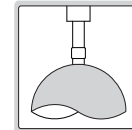
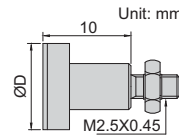
## FLAT POINTS



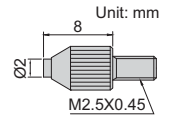
6282-1101



6282-1201



6282-1301



| Code      | Material of measuring face | L (mm) |
|-----------|----------------------------|--------|
| 6282-1101 | steel                      | 8      |
| 6282-1102 | steel                      | 10     |

| Code      | Material of measuring face | ØD (mm) |
|-----------|----------------------------|---------|
| 6282-1201 | steel                      | 10      |
| 6282-1202 | steel                      | 15      |
| 6282-1203 | steel                      | 20      |
| 6282-1204 | steel                      | 25      |
| 6282-1205 | steel                      | 30      |

| Code      | Material of measuring face |
|-----------|----------------------------|
| 6282-1301 | carbide                    |

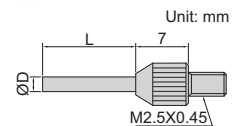
## NEEDLE POINTS

| Code      | Material of measuring face | ØD (mm) | L (mm) |
|-----------|----------------------------|---------|--------|
| 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      |

| Code      | Material of measuring face | ØD (mm) | L (mm) |
|-----------|----------------------------|---------|--------|
| 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     |



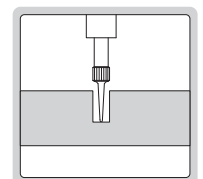
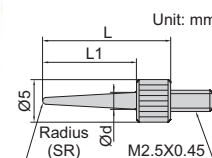
6282-1711



| Code      | Material of measuring face | L1 (mm) | L (mm) | SR  | Ød (mm) |
|-----------|----------------------------|---------|--------|-----|---------|
| 6282-1601 | steel                      | 11      | 15     | 0.4 | 2       |
| 6282-1602 | steel                      | 13      | 17     | 0.2 | 2       |
| 6282-1603 | steel                      | 21      | 25     | 0.4 | 3       |
| 6282-1604 | steel                      | 31      | 35     | 0.4 | 3       |



6282-1601

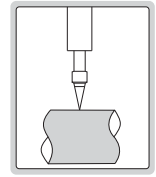
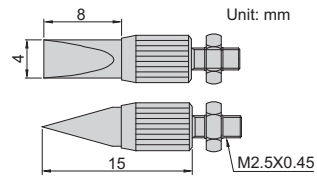


## KNIFE EDGE POINT

| Code      | Material of measuring face |
|-----------|----------------------------|
| 6282-1001 | steel                      |



6282-1001



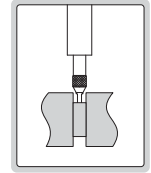
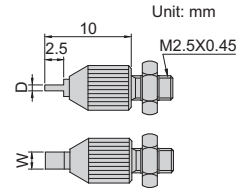
## BLADE POINTS

7

| 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

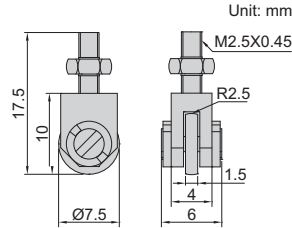


## ROLLER POINT

| Code      | Material of measuring face |
|-----------|----------------------------|
| 6282-1901 | steel                      |



6282-1901



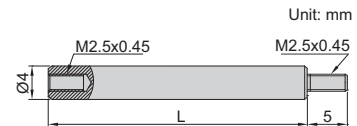
## EXTENSION RODS

| Code      | Material | L (mm) |
|-----------|----------|--------|
| 6282-2001 | steel    | 10     |
| 6282-2002 | steel    | 15     |
| 6282-2003 | steel    | 20     |
| 6282-2004 | steel    | 25     |
| 6282-2005 | steel    | 30     |
| 6282-2006 | steel    | 35     |
| 6282-2007 | steel    | 40     |
| 6282-2008 | steel    | 45     |
| 6282-2009 | steel    | 50     |

| Code      | Material | L (mm) |
|-----------|----------|--------|
| 6282-2010 | steel    | 55     |
| 6282-2011 | steel    | 60     |
| 6282-2012 | steel    | 65     |
| 6282-2013 | steel    | 70     |
| 6282-2014 | steel    | 75     |
| 6282-2015 | steel    | 80     |
| 6282-2016 | steel    | 90     |
| 6282-2017 | steel    | 100    |



6282-2010

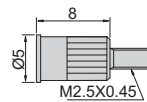


## POINT SET

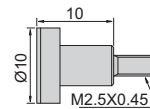


6282-S6

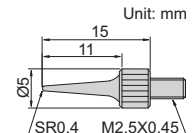
| Code    | Material of measuring face |
|---------|----------------------------|
| 6282-S6 | steel                      |



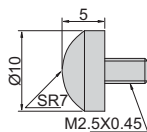
Flat Point



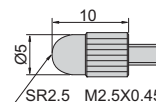
Flat Point



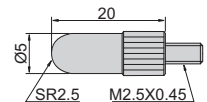
Needle Point



Spherical Point



Shell Type Point



Shell Type Point

## SPINDLE LIFT KNOB

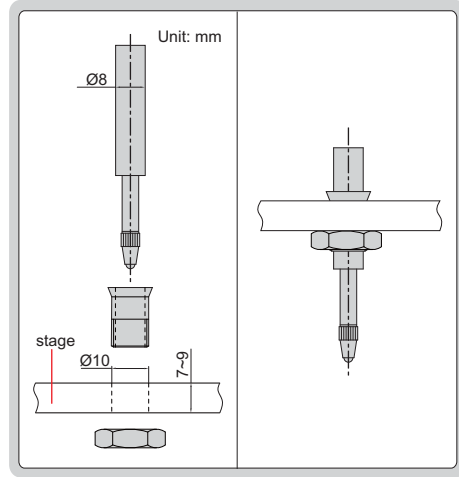
- For dial/digital indicators with spindle diameter  $\varnothing 4.5\text{mm}$  or  $\varnothing 5\text{mm}$

**Code**  
7332

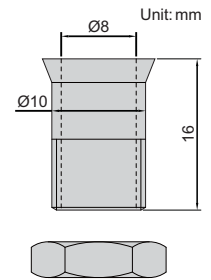


7332

## SHAFT SLEEVE



7333



- For dial indicators and probes with shaft diameter  $\varnothing 8\text{mm}$

**Code**  
7333

7

## MAGNETIC BACKS

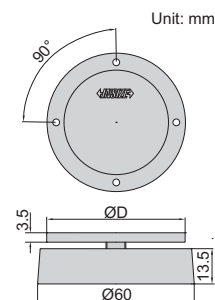
| Code    | ØD     | For digital/dial indicators     |
|---------|--------|---------------------------------|
| 7331-M1 | 51.5mm | 2103                            |
|         |        | 2104                            |
|         |        | 2108                            |
|         |        | 2109                            |
|         |        | 2112                            |
|         |        | 2113                            |
|         |        | 2115                            |
|         |        | 2116                            |
|         |        | 2117                            |
|         |        | 2118                            |
|         |        | 2120                            |
|         |        | 2501                            |
|         |        | 2301                            |
|         |        | 2302                            |
|         |        | 2308                            |
|         |        | 2309 (except 2309-30, 2309-30F) |
|         |        | 2313                            |
| 2314    |        |                                 |
| 2316    |        |                                 |
| 2324    |        |                                 |
| 2801    |        |                                 |
| 7331-M2 | 54mm   | 2318                            |



front

back

7331-M2



## FLAT BACKS

7

| Code           | For digital/dial indicators     |
|----------------|---------------------------------|
| <b>7330-F1</b> | 2311                            |
| <b>7330-F2</b> | 2301                            |
|                | 2302                            |
|                | 2308                            |
|                | 2309 (except 2309-30, 2309-30F) |
|                | 2313                            |
|                | 2314                            |
|                | 2316                            |
|                | 2324                            |
| 2801           |                                 |
| <b>7330-F5</b> | 2103                            |
|                | 2104                            |
|                | 2108                            |
|                | 2109                            |
|                | 2112                            |
|                | 2113                            |

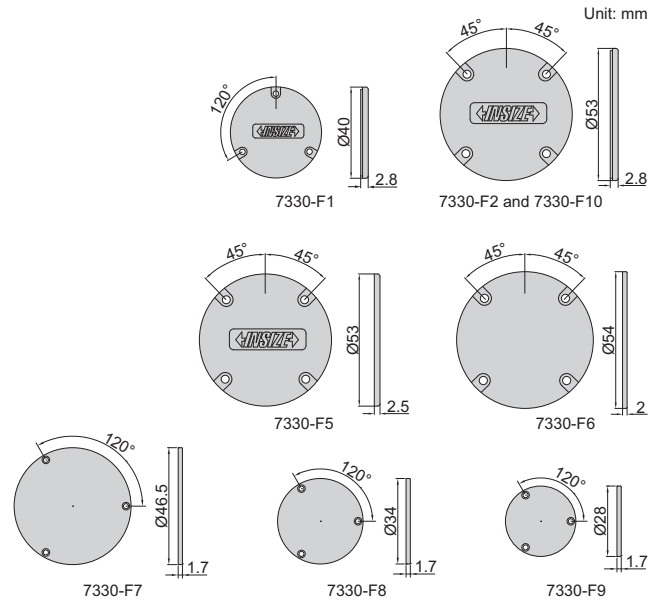
| Code            | For digital/dial indicators |
|-----------------|-----------------------------|
| <b>7330-F5</b>  | 2115                        |
|                 | 2116                        |
|                 | 2117                        |
|                 | 2118                        |
|                 | 2120                        |
|                 | 2501                        |
| <b>7330-F6</b>  | 2318                        |
| <b>7330-F7</b>  | 2830                        |
|                 | 2882                        |
|                 | 2885                        |
|                 | 2888                        |
|                 | 2889                        |
| <b>7330-F8</b>  | 2891                        |
|                 | 2892                        |
|                 | 2890                        |
| <b>7330-F9</b>  | 2887                        |
| <b>7330-F9</b>  | 2886                        |
| <b>7330-F10</b> | 2310                        |



7330-F2



7330-F8



## LUG BACKS

| Code           | For digital/dial indicators     |
|----------------|---------------------------------|
| <b>7330-L1</b> | 2311                            |
| <b>7330-L2</b> | 2301                            |
|                | 2302                            |
|                | 2308                            |
|                | 2309 (except 2309-30, 2309-30F) |
|                | 2313                            |
|                | 2314                            |
|                | 2316                            |
|                | 2324                            |
| 2801           |                                 |
| <b>7330-L5</b> | 2103                            |
|                | 2104                            |
|                | 2108                            |
|                | 2109                            |
|                | 2112                            |
|                | 2113                            |

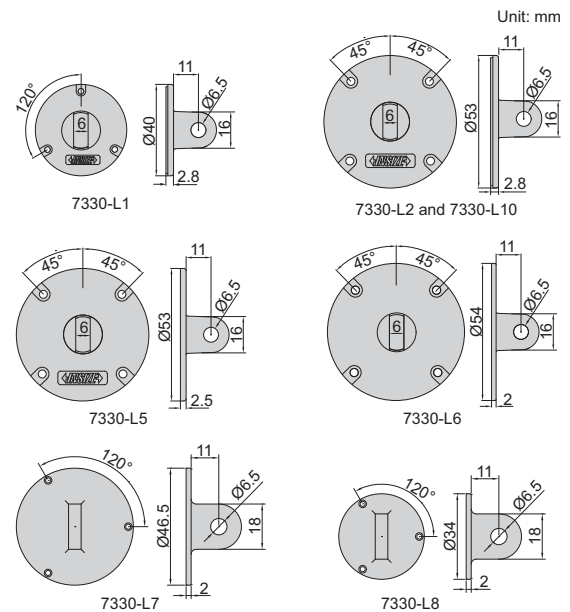
| Code            | For digital/dial indicators |
|-----------------|-----------------------------|
| <b>7330-L5</b>  | 2115                        |
|                 | 2116                        |
|                 | 2117                        |
|                 | 2118                        |
|                 | 2120                        |
|                 | 2501                        |
| <b>7330-L6</b>  | 2318                        |
| <b>7330-L7</b>  | 2830                        |
|                 | 2882                        |
|                 | 2885                        |
|                 | 2888                        |
|                 | 2889                        |
| <b>7330-L8</b>  | 2891                        |
|                 | 2892                        |
|                 | 2890                        |
| <b>7330-L8</b>  | 2887                        |
| <b>7330-L10</b> | 2310                        |



7330-L2



7330-L8



**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

ANTI MAGNETIC  
CARBIDE CONTACT POINT

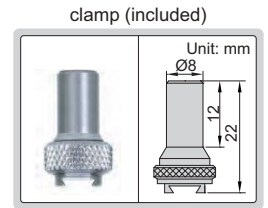
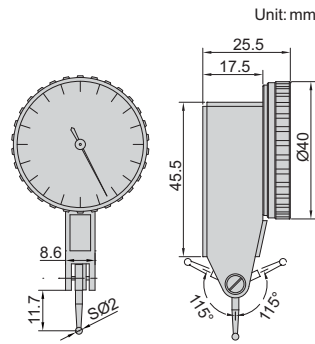
### PRECISION DIAL TEST INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

- Meet DIN2270
- Ceramic bearing
- Anti magnetic carbide contact point
- Two measuring directions
- Supplied with one clamp: diameter Ø8mm
- Optional accessory: styli (page 170)



2897-02



| Code      | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|-----------|-------|------------|----------|------------|--------------|
| 2897-02 * | 0.2mm | 0.001mm    | 4µm      | 2µm        | 0-100-0      |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

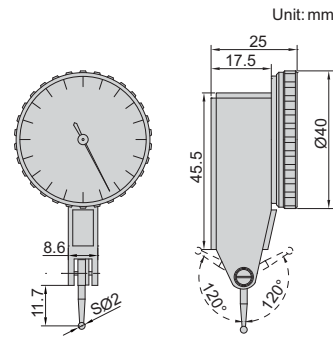
### PRECISION DIAL TEST INDICATORS

**INSIZE PLUS**  
MADE IN EUROPE

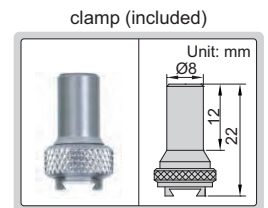
- Meet DIN2270
- Ceramic bearing
- Two measuring directions
- Supplied with one clamp: diameter Ø8mm
- Optional accessory: styli (page 170)



2880-02



ruby contact  
point of 2880-02R



| Code       | Range | Graduation | Accuracy | Hysteresis | Dial reading | Remark                              |
|------------|-------|------------|----------|------------|--------------|-------------------------------------|
| 2880-02 *  | 0.2mm | 0.002mm    | 4µm      | 2µm        | 0-100-0      | anti magnetic carbide contact point |
| 2880-02R * | 0.2mm | 0.002mm    | 4µm      | 2µm        | 0-100-0      | ruby contact point                  |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

ANTI MAGNETIC  
CARBIDE CONTACT POINT

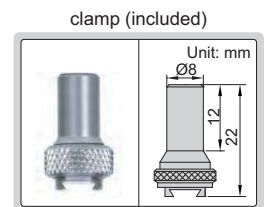
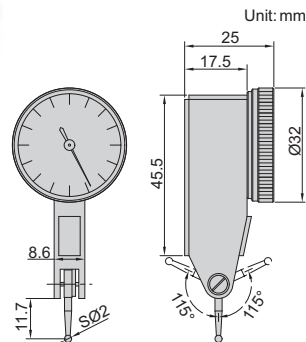
### DIAL TEST INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

- Meet DIN2270
- Ceramic bearing
- Anti magnetic carbide contact point
- Two measuring directions
- Supplied with one clamp: diameter Ø8mm
- Optional accessory: styli (page 170)



2895-08



| Code      | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|-----------|-------|------------|----------|------------|--------------|
| 2895-08 * | 0.8mm | 0.01mm     | 13µm     | 3µm        | 0-40-0       |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

## LONG STYLUS DIAL TEST INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

ANTI MAGNETIC  
CARBIDE CONTACT POINT

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

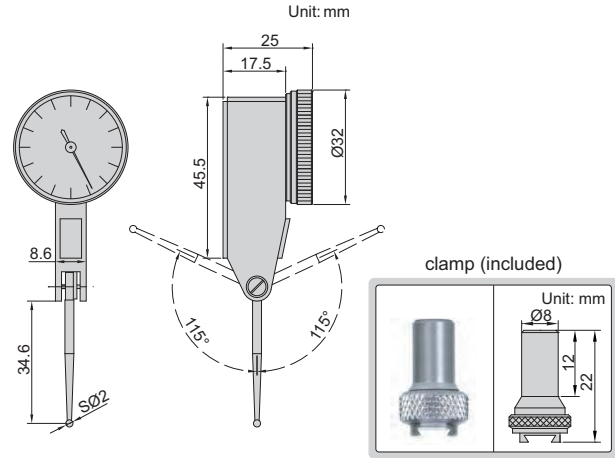


2896-05

- Meet DIN2270
- Ceramic bearing
- Anti magnetic carbide contact point
- Two measuring directions
- Supplied with one clamp: diameter Ø8mm
- Optional accessory: styli (page 170)

| Code     | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|----------|-------|------------|----------|------------|--------------|
| 2896-05* | 0.5mm | 0.01mm     | 13µm     | 3µm        | 0-25-0       |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



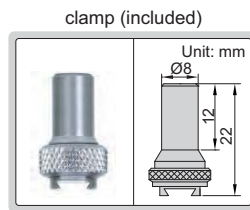
7

## VERTICAL TYPE LONG STYLUS DIAL TEST INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

ANTI MAGNETIC  
CARBIDE CONTACT POINT

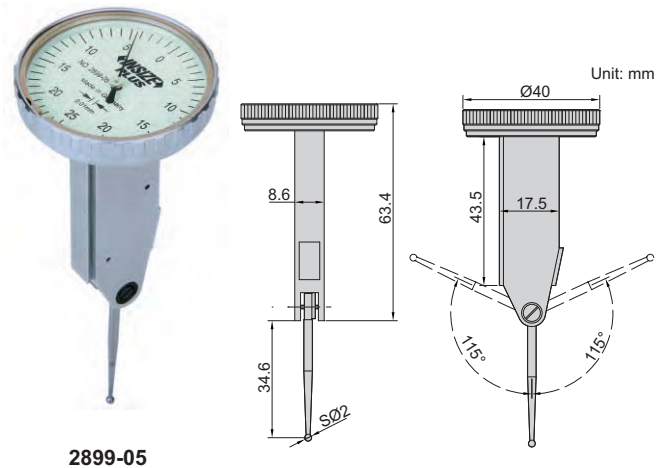
**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST



- Meet DIN2270
- Ceramic bearing
- Anti magnetic carbide contact point
- Two measuring directions
- Supplied with one clamp: diameter Ø8mm
- Optional accessory: styli (page 170)

| Code     | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|----------|-------|------------|----------|------------|--------------|
| 2899-05* | 0.5mm | 0.01mm     | 13µm     | 3µm        | 0-25-0       |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



2899-05

## SIDE TYPE DIAL TEST INDICATOR

**INSIZE PLUS**  
MADE IN EUROPE

ANTI MAGNETIC  
CARBIDE CONTACT POINT

**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

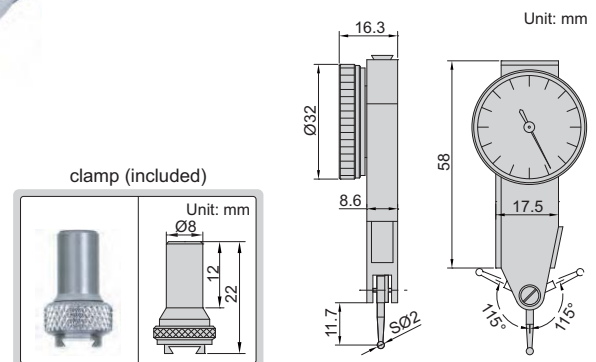


2898-08

- Meet DIN2270
- Ceramic bearing
- Anti magnetic carbide contact point
- Two measuring directions
- Supplied with one clamp: diameter Ø8mm
- Optional accessory: styli (page 170)

| Code     | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|----------|-------|------------|----------|------------|--------------|
| 2898-08* | 0.8mm | 0.01mm     | 13µm     | 3µm        | 0-40-0       |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



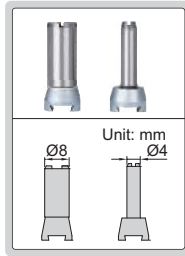
## DIAL TEST INDICATORS

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

JEWELLED BEARING

- Meet DIN2270 (except 2380-02, 2381-02)
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter Ø4mm and Ø8mm
- Optional accessory: styli (page 170)

clamp (included)

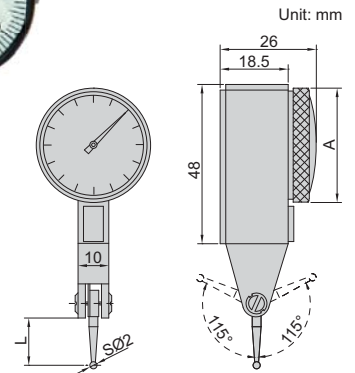


2380-08

(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 |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



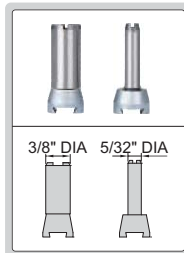
7

**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

JEWELLED BEARING

- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: 5/32" DIA and 3/8" DIA

clamp (included)

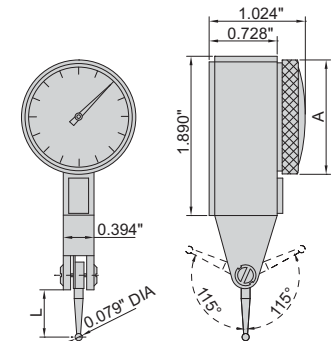


2380-31

## INCH DIAL TEST INDICATORS

| 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 traceable to NIST

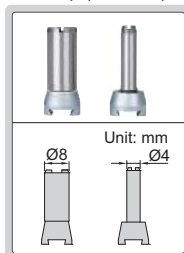


**INSPECTION CERTIFICATE**  
TRACEABLE TO NIST

JEWELLED 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 170)

clamp (included)

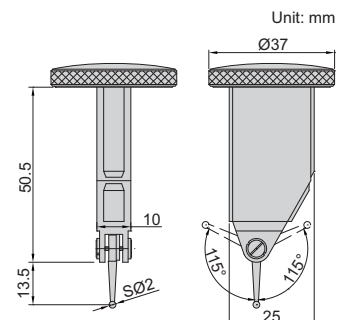


2398-08

## VERTICAL TYPE DIAL TEST INDICATOR

| Code     | Range | Graduation | Accuracy | Hysteresis | Dial reading |
|----------|-------|------------|----------|------------|--------------|
| 2398-08* | 0.8mm | 0.01mm     | 13µm     | 3µm        | 0-40-0       |

\*Supplied with manufacturer inspection certificate traceable to NIST USA



## TILTED FACE TYPE DIAL TEST INDICATOR

- Meet DIN2270
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter  $\varnothing 4\text{mm}$  and  $\varnothing 8\text{mm}$
- Optional accessory: styli (page 170)



2399-08

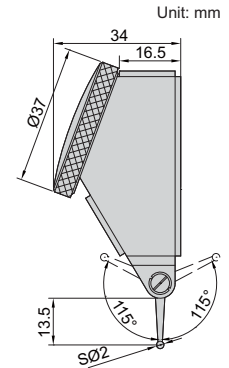
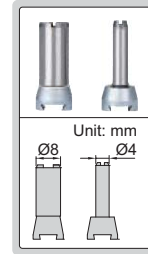
| Code     | Range | Graduation | Accuracy         | Hysteresis      | Dial reading |
|----------|-------|------------|------------------|-----------------|--------------|
| 2399-08* | 0.8mm | 0.01mm     | 13 $\mu\text{m}$ | 3 $\mu\text{m}$ | 0-40-0       |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

JEWELLED BEARING

INSPECTION CERTIFICATE  
TRACEABLE TO NIST

clamp (included)



7

## LONG STYLUS DIAL TEST INDICATOR

- Meet DIN2270
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter  $\varnothing 4\text{mm}$  and  $\varnothing 8\text{mm}$
- Optional accessory: styli (page 170)



2383-08A

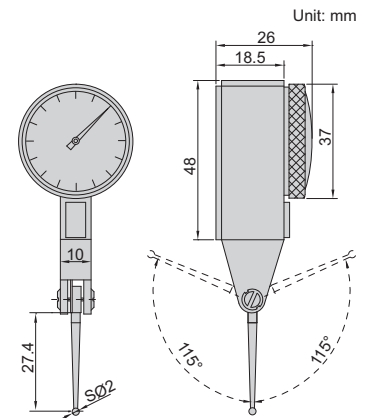
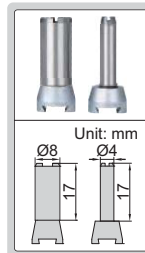
| Code      | Range | Graduation | Accuracy         | Hysteresis      | Dial reading |
|-----------|-------|------------|------------------|-----------------|--------------|
| 2383-08A* | 0.8mm | 0.01mm     | 13 $\mu\text{m}$ | 3 $\mu\text{m}$ | 0-40-0       |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

JEWELLED BEARING

INSPECTION CERTIFICATE  
TRACEABLE TO NIST

clamp (included)



## LARGE RANGE DIAL TEST INDICATOR

- Dial reading: 0-40-0
- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: diameter  $\varnothing 4\text{mm}$  and  $\varnothing 8\text{mm}$
- Optional accessory: styli (page 170)



2386-16A

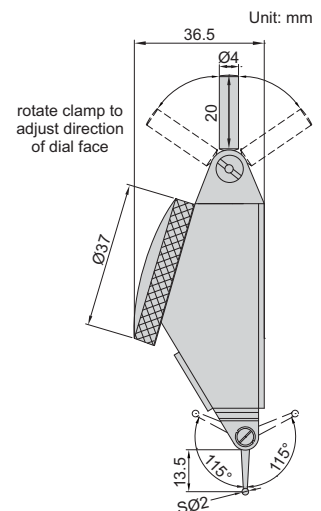
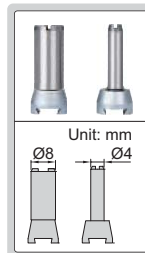
| Code      | Range | Graduation | Accuracy         | Hysteresis      |
|-----------|-------|------------|------------------|-----------------|
| 2386-16A* | 1.6mm | 0.01mm     | 25 $\mu\text{m}$ | 8 $\mu\text{m}$ |

\*Supplied with manufacturer inspection certificate traceable to NIST USA

JEWELLED BEARING

INSPECTION CERTIFICATE  
TRACEABLE TO NIST

clamp (included)



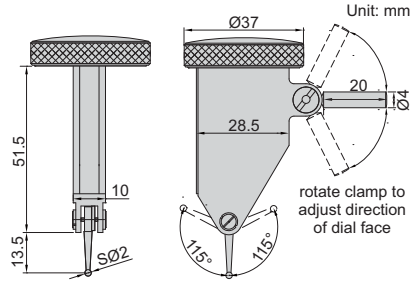


**INSPECTION  
CERTIFICATE**  
TRACEABLE TO NIST

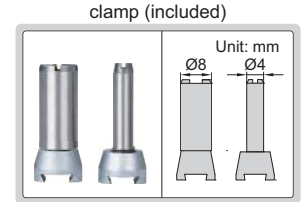
JEWELLED  
BEARING

## 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 170)



2480-16



| Code     | Range | Graduation | Accuracy | Hysteresis |
|----------|-------|------------|----------|------------|
| 2480-16* | 1.6mm | 0.01mm     | 18µm     | 3µm        |

\* Supplied with manufacturer inspection certificate traceable to NIST USA

7

## CLAMPS FOR DIAL TEST INDICATORS



6298-1



6298-2

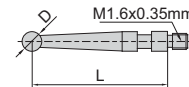


| Code   | ØD   |
|--------|------|
| 6298-1 | Ø4mm |
| 6298-2 | Ø8mm |

## STYLI FOR DIAL TEST INDICATORS



6284-3



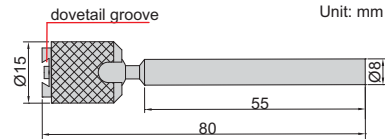
| Code    | For dial test indicator | Material of contact point | L      | D       |
|---------|-------------------------|---------------------------|--------|---------|
| 6284-1  | 2380-08                 | steel                     | 13.5mm | SØ1mm   |
| 6284-3  | 2398-08                 | carbide                   | 13.5mm | SØ2mm   |
| 6284-4  | 2381-08                 | ruby                      | 13.5mm | SØ2mm   |
| 6284-8  | 2399-08                 | carbide                   | 13.5mm | SØ3mm   |
| 6284-21 | 2380-02<br>2381-02      | steel                     | 12.5mm | SØ1mm   |
| 6284-22 |                         | carbide                   | 12.5mm | SØ2mm   |
| 6284-24 |                         | ruby                      | 12.5mm | SØ2mm   |
| 6284-23 |                         | carbide                   | 12.5mm | SØ3mm   |
| 6284-44 | 2880-02                 | carbide                   | 11.7mm | SØ0.4mm |
| 6284-41 | 2880-02R                | carbide                   | 11.7mm | SØ1mm   |
| 6284-42 | 2895-08                 | carbide                   | 11.7mm | SØ2mm   |
| 6284-45 | 2897-02                 | ruby                      | 11.7mm | SØ2mm   |
| 6284-43 | 2898-08                 | carbide                   | 11.7mm | SØ3mm   |

| Code    | For dial test indicator | Material of contact point | L      | D     |
|---------|-------------------------|---------------------------|--------|-------|
| 6284-51 | 2896-05<br>2899-05      | carbide                   | 34.6mm | SØ1mm |
| 6284-52 |                         | carbide                   | 34.6mm | SØ2mm |
| 6284-55 |                         | ruby                      | 34.6mm | SØ2mm |
| 6284-53 | 2386-16A<br>2480-16     | carbide                   | 34.6mm | SØ3mm |
| 6284-61 |                         | steel                     | 13.5mm | SØ1mm |
| 6284-62 |                         | carbide                   | 13.5mm | SØ2mm |
| 6284-63 |                         | ruby                      | 13.5mm | SØ2mm |
| 6284-64 | 2383-08A                | carbide                   | 13.5mm | SØ3mm |
| 6284-81 |                         | steel                     | 27.4mm | SØ1mm |
| 6284-82 |                         | carbide                   | 27.4mm | SØ2mm |
| 6284-83 |                         | ruby                      | 27.4mm | SØ2mm |
| 6284-84 | carbide                 | 27.4mm                    | SØ3mm  |       |

## DIAL TEST INDICATOR UNIVERSAL HOLDER



6297-1



- Set the indicators at the desired attitude to the workpiece

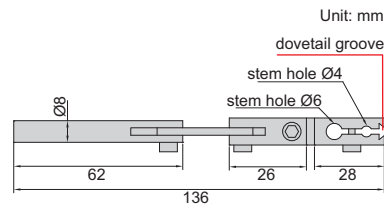
**Code**  
6297-1

7

## DIAL TEST INDICATOR HOLDER



6296-1



- Supplied with hex key

**Code**  
6296-1

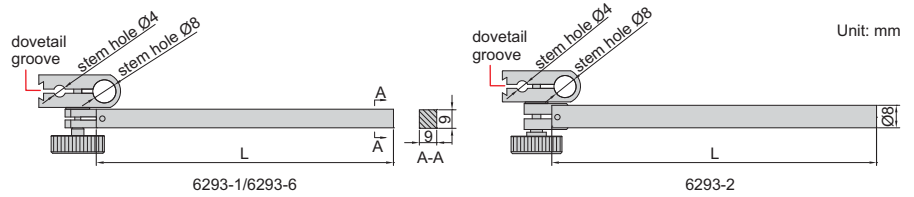
## DIAL TEST INDICATOR HOLDERS



6293-1



6293-2

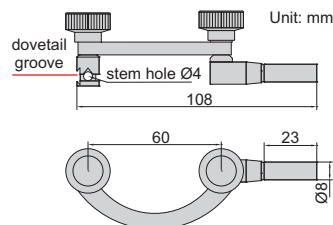


| Code   | Stem section | Stem length (L) |
|--------|--------------|-----------------|
| 6293-1 | 9x9mm        | 100mm           |
| 6293-6 | 9x9mm        | 50mm            |
| 6293-2 | Ø8mm         | 115mm           |

## DIAL TEST INDICATOR CENTERING HOLDER



6291-1

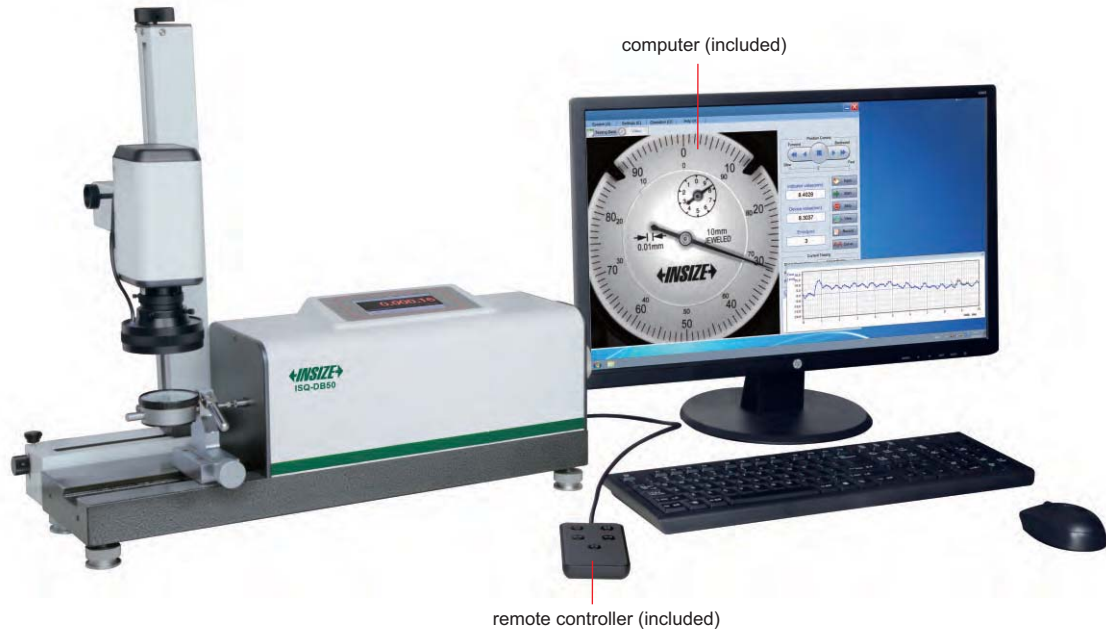


- Center cylinders or holes on machine tools

**Code**  
6291-1



## AUTOMATIC DIAL INDICATOR TESTER CODE ISQ-DB50



7

- Automatic measurement
- Semi-automatic measurement is possible, operate by hand and find graduation lines by eyes, for indicators with stains on dial faces
- Automatic zero setting
- Detection accuracy of graduation lines:  
1/15 graduation for 0.001mm dial indicators or dial test indicators,  
1/30 graduation for 0.01mm dial indicators or dial test indicators
- Suitable for dial indicators or dial test indicators with plain and convex crystals

### SPECIFICATION

|                       |  |
|-----------------------|--|
| Applicable products   | dial indicators, digital indicators, dial test indicators and bore gages   |
| Standard              | DIN878, DIN2270, ASME B89.1.10M, BS907, BS2795, JIS B7503, JIS B7533 and so on.<br>customized standard: customers can set the range, interval, accuracy and hysteresis |
| Measuring range       | 0-50mm   |
| Resolution            | 0.1 $\mu$ m  |
| Repeatability         | 0.1 $\mu$ m  |
| Speed                 | average 0.6s/point (adjustable)<br>It takes 3 minutes to calibrate a 10mm dial indicator (100 points forward and 100 points backward)                                  |
| Accuracy              | any 1mm: 0.8 $\mu$ m   |
|                       | any 2mm: 1.0 $\mu$ m   |
|                       | any 10mm: 1.3 $\mu$ m  |
|                       | any 30mm: 1.5 $\mu$ m  |
|                       | 50mm: 2.0 $\mu$ m  |
| Hysteresis            | 0.5 $\mu$ m  |
| Output                | RS232  |
| Power supply          | 220V, 50Hz   |
| Operation temperature | 20 $\pm$ 5 $^{\circ}$ C  |
| Operation humidity    | (50~70)%RH   |
| Dimension (L×W×H)     | 640×240×530mm  |
| Weight                | 35kg   |

### STANDARD DELIVERY

|  |       |
|--|-------|
| Main unit  | 1 pc  |
| Holder for dial indicators and digital indicators ( $\varnothing$ 8mm, 3/8")               | 1 pc  |
| Holder for dial test indicators ( $\varnothing$ 4mm, $\varnothing$ 6mm, $\varnothing$ 8mm) | 3 pcs |
| Holder for bore gages ( $\varnothing$ 4-28mm)  | 1 pc  |
| Computer   | 1 pc  |
| Remote controller  | 1 pc  |
| Software   | 1 pc  |

### OPTIONAL ACCESSORY

|                                     |           |
|-------------------------------------|-----------|
| Holder for split type bore gages    | ISQ-DB501 |
| Cable for INSIZE digital indicators | ISQ-DB502 |

To be continued

Continued from previous page



Ø8mm and 3/8" holder for dial indicators or digital indicators (included)



Ø4-28mm holder for bore gages (included)



holder for split type bore gages (optional)



Ø4mm, Ø6mm and Ø8mm holder for dial test indicators (included)



cable for INSIZE digital indicators (optional)

7



check dial indicators



check dial test indicators



check bore gages



check digital indicators (detect digits on screen)



check INSIZE digital indicators (connection with cable)

report

customized standard

| Dial Indicator Calibration Data Sheet |                                      | Dial Indicator Calibration Certificate |                                      |
|---------------------------------------|--------------------------------------|--|--------------------------------------|
| Measuring Range: 0-10mm               | Resolution: 0.01mm                   | Measuring Range: 0-10mm                | Resolution: 0.01mm                   |
| Serial No.: 11                        | Manufacturer: Insize                 | Serial No.: 11                         | Manufacturer: Insize                 |
| Manufacturing Date: 2021-08-24        | Application: 1                       | Manufacturing Date: 2021-08-24         | Application: 1                       |
| Measuring Point: 1                    | Cal. Area: 1                         | Measuring Point: 1                     | Cal. Area: 1                         |
| Condition No.: 1                      | Cal. Reference: A11-B1-B11-110A-2001 | Condition No.: 1                       | Cal. Reference: A11-B1-B11-110A-2001 |
| Standard No.: JJG 101-2011            | Standard Name: China Class           | Standard No.: JJG 101-2011             | Standard Name: China Class           |

table form

graph form

| Calibration certificate        |                                      |
|--------------------------------|--------------------------------------|
| Serial No.: 11                 | Inspector: 1                         |
| Measuring Range: 0-10mm        | Resolution: 0.01mm                   |
| Manufacturer: Insize           | Serial No.: 11                       |
| Manufacturing Date: 2021-08-24 | Cal. Area: 1                         |
| Measuring Point: 1             | Cal. Reference: A11-B1-B11-110A-2001 |
| Condition No.: 1               | Standard No.: JJG 101-2011           |
| Standard Name: China Class     | Standard Name: China Class           |

certificate form

**Verification Setting**

**Work Range**

Work Range 1: 0 - 3 mm    Inspection Interval 1: 0.1 mm

Work Range 2: - - mm    Inspection Interval 2: - mm

Work Range 3: - - mm    Inspection Interval 3: - mm

Forward Distance from the last test point: 0.1 mm

**Error Item**

Any 0.1mm error    Tolerance: 5 μm

Any 1mm error    Tolerance: 10 μm

The measuring range    Tolerance: 14 μm

Hysteresis Error    Tolerance: 3 μm

Repeatability    Tolerance: 3 μm

/    Tolerance: μm

/    Tolerance: μm

**Repeatability**

Position Number: 3

Testing times: 5

Testing position: 0.0 0.5 1.0 Range proportion

Movement distance: -10 Div

**Additional test**

Maximum Error Point    Additional test range: ± 0.1 mm

Inspection Interval: 0.01 mm

OK Cancel

**ATTENTION: NOT SUITABLE FOR DIAL INDICATORS WITH GRADUATION 0.001MM**



## DIAL INDICATOR TESTER CODE 2396-25A

- To calibrate dial indicators, test indicators and dial bore gages
- Dimension: 270x210x205mm
- Weight: 11kg

### Micrometer head

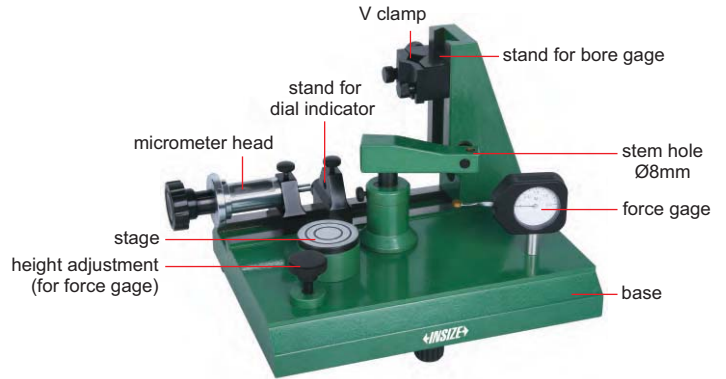
| Range  | Sampling interval | Accuracy                                      | Hysteresis |
|--------|-------------------|---|------------|
| 0-25mm | 0.1mm             | 4µm (0-25mm),<br>3µm (0-10mm),<br>2µm (0-1mm) | 1µm        |

### Force gage

| Range  | Graduation | Accuracy               |
|--------|------------|------------------------|
| 0-1.6N | 0.05N      | ±5% (of load capacity) |

### Stage

| Diameter | Flatness | Roughness |
|----------|----------|-----------|
| 50mm     | 1µm      | 0.05µm    |



2396-25A



### Half round gage block (optional)

| Code       | Parallelism |
|------------|-------------|
| 2396-block | 1µm         |



**ATTENTION: LOW LOCKING FORCE**

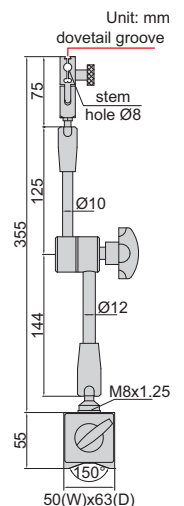
## UNIVERSAL MAGNETIC STAND (ECONOMIC TYPE)

- For digital/dial indicators and dial test indicators

| Code     | Magnetic force | Applicable holding stem | Remark                                   |
|----------|----------------|-------------------------|--|
| 6208-80A | 80kgf          | Ø8mm                    | with fine adjustment and dovetail groove |



6208-80A



## UNIVERSAL MAGNETIC STANDS

Unit: mm

dovetail groove

stem hole Ø8

75

71

Ø9

95

Ø10

M8x1.25

55

150°

50(W) X 60(D)

**6210-81**

Unit: mm

dovetail groove

stem hole Ø8

75

110

Ø10

135

Ø12

M8x1.25

55

150°

50(W) X 60(D)

**6210-80**

Unit: mm

dovetail groove

stem hole Ø8

75

167

Ø10

196

Ø12

M8x1.25

55

150°

50(W) X 75(D)

**6210-100**

■ For digital/dial indicators and dial test indicators

| Code            | Magnetic force | Applicable holding stem | Remark                                   |
|-----------------|----------------|-------------------------|--|
| <b>6210-81</b>  | 80kgf          | Ø8mm                    | with fine adjustment and dovetail groove |
| <b>6210-80</b>  | 80kgf          | Ø8mm                    | with fine adjustment and dovetail groove |
| <b>6210-100</b> | 100kgf         | Ø8mm                    | with fine adjustment and dovetail groove |

## MAGNETIC STANDS

Unit: mm

20° adjustable

stem hole Ø4

stem hole 3/8" DIA. with bush Ø8

176

165

Ø12

M8X1.25

55

150°

50(W)x60(D)

**6200-60**

Unit: mm

20° adjustable

stem hole Ø4

stem hole 3/8" DIA. with bush Ø8

176

150

Ø12

M8X1.25

55

150°

50(W)x60(D)

**6201-60**

Unit: mm

20° adjustable

stem hole Ø4

stem hole 3/8" DIA. with bush Ø8

225

200

Ø16

M8X1.25

55

150°

50(W)x60(D)

**6202-80**

Unit: mm

20° adjustable

stem hole Ø4

stem hole 3/8" DIA. with bush Ø8

355

220

Ø12

Ø20

M10X1.25

55

150°

50(W)x73(D)

**6202-100**

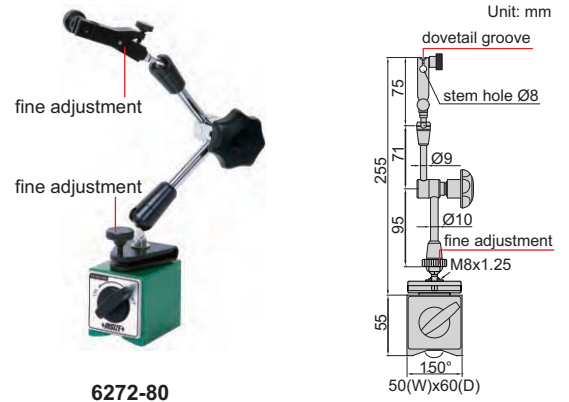
■ For digital/dial indicators and dial test indicators

| Code            | Magnetic force | Applicable holding stem | Remark                  |
|-----------------|----------------|-------------------------|-------------------------|
| <b>6200-60</b>  | 60kgf          | Ø8mm, Ø4mm, 3/8" DIA.   | without fine adjustment |
| <b>6201-60</b>  | 60kgf          | Ø8mm, Ø4mm, 3/8" DIA.   | with fine adjustment    |
| <b>6202-80</b>  | 80kgf          | Ø8mm, Ø4mm, 3/8" DIA.   | with fine adjustment    |
| <b>6202-100</b> | 100kgf         | Ø8mm, Ø4mm, 3/8" DIA.   | with fine adjustment    |

## 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

| Code    | Magnetic force | Applicable holding stem | Remark  |
|---------|----------------|-------------------------|---|
| 6272-80 | 80kgf          | Ø8mm                    | with two fine adjustments and dovetail groove |



6272-80

## MAGNETIC STAND

- For digital/dial indicators and dial test indicators

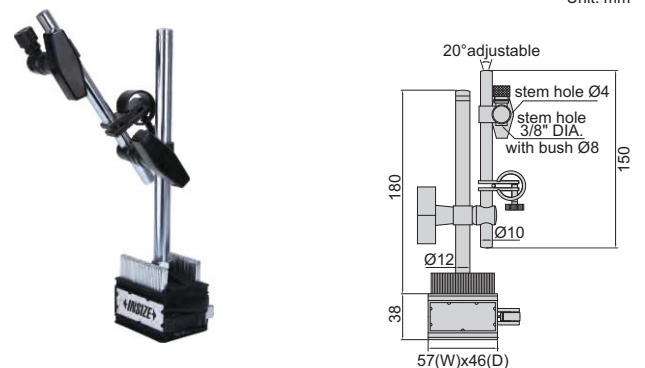
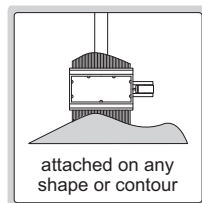
| Code    | Magnetic force | Applicable holding stem | Remark                                   |
|---------|----------------|-------------------------|--|
| 6216-80 | 80kgf          | Ø8mm                    | with fine adjustment and dovetail groove |



6216-80

## MAGNETIC STAND FOR UNEVEN SURFACE

- For digital/dial indicators and dial test indicators
- With fine adjustment

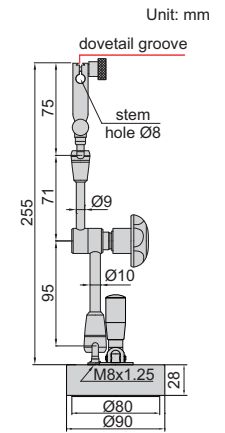


6215-60

| Code    | Magnetic force | Applicable holding stem |
|---------|----------------|-------------------------|
| 6215-60 | 60kgf          | Ø8mm, Ø4mm, 3/8" DIA.   |

## VACUUM STAND

- Suitable for granite surface plates or cast iron surface plates
- For digital/dial indicators and dial test indicators

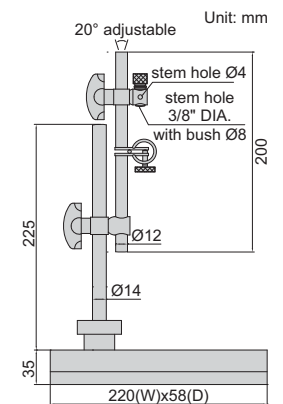


6217-B

| Code   | Diameter of vacuum disc | Vacuum force | Applicable holding stem | Remark                                   |
|--------|-------------------------|--------------|-------------------------|--|
| 6217-B | Ø80mm                   | 80kgf        | Ø8mm                    | with fine adjustment and dovetail groove |

## UNIVERSAL STAND

- For digital/dial indicators and dial test indicators
- With fine adjustment



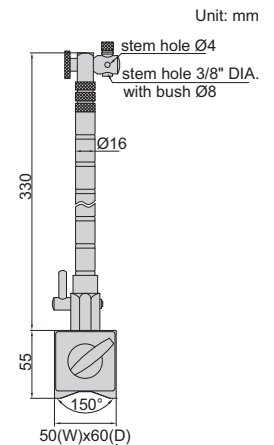
6214-A

| Code   | Applicable holding stem |
|--------|-------------------------|
| 6214-A | Ø8mm, Ø4mm, 3/8" DIA.   |

## FLEX ARM MAGNETIC STAND

ATTENTION: FOR DIAL TEST INDICATORS ONLY

- For dial test indicators



6207-80A

| Code     | Magnetic force | Applicable holding stem |
|----------|----------------|-------------------------|
| 6207-80A | 80kgf          | Ø8mm, Ø4mm, 3/8" DIA.   |



ATTENTION: FOR DIAL TEST INDICATORS ONLY

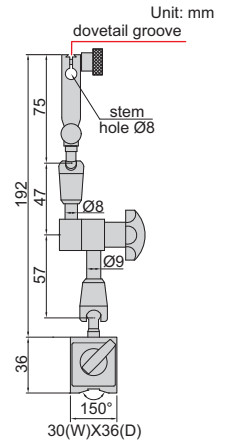
- For dial test indicators
- With fine adjustment and dovetail groove

| Code    | Magnetic force | Applicable holding stem |
|---------|----------------|-------------------------|
| 6224-40 | 40kgf          | Ø8mm                    |



6224-40

### MINI MAGNETIC STAND



ATTENTION: FOR DIAL TEST INDICATORS ONLY

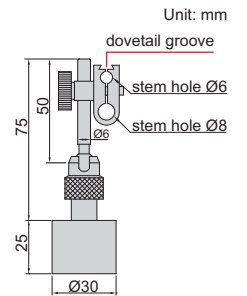
- For dial test indicators
- With dovetail groove

| Code    | Magnetic force | Applicable holding stem |
|---------|----------------|-------------------------|
| 6211-10 | 10kgf          | Ø6mm, Ø8mm              |



6211-10

### MINI MAGNETIC STAND

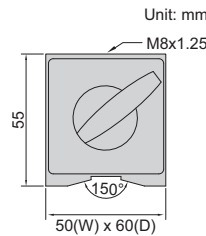


### MAGNETIC BASES

| Code     | Magnetic force |
|----------|----------------|
| 6212-80  | 80kgf          |
| 6212-100 | 100kgf         |



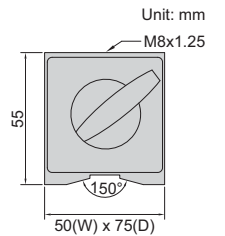
6212-80



6212-80



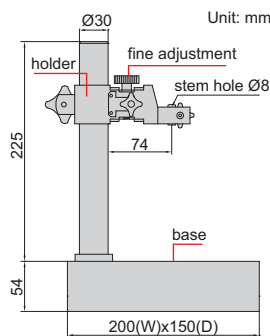
6212-100



6212-100

### GRANITE DIAL INDICATOR STAND

- Vertical travel of holder: 150mm
- Fine adjustment range: 2mm
- Supplied with dust cover

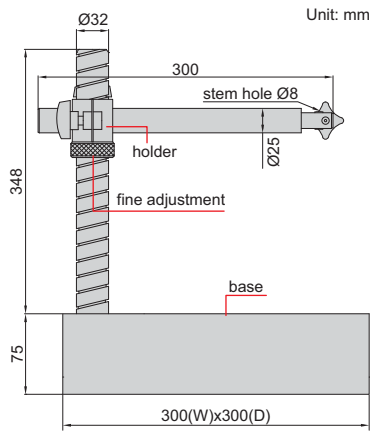


| Code     | Applicable holding stem | Base           |
|----------|-------------------------|----------------|
| 6866-150 | Ø8mm                    | flatness 2.5µm |



6866-150

## GRANITE DIAL INDICATOR STAND



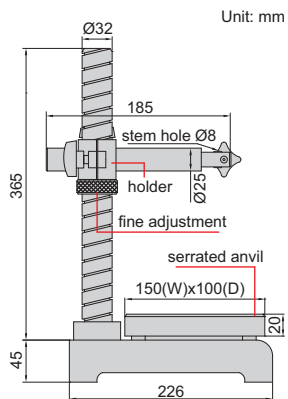
- Vertical travel of holder: 250mm
- Fine adjustment range: entire stroke
- Supplied with dust cover



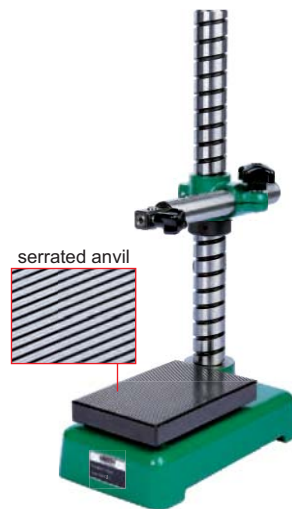
6867-250

| Code     | Applicable holding stem | Base           |
|----------|-------------------------|----------------|
| 6867-250 | Ø8mm                    | flatness 2.8µm |

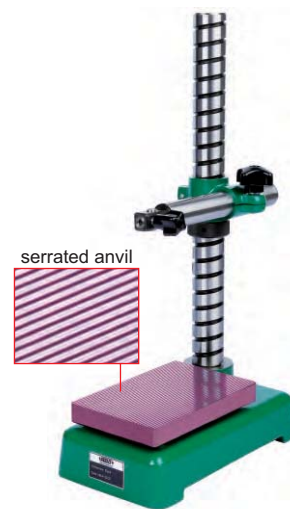
## DIAL INDICATOR STANDS



- Vertical travel of holder: 250mm
- Fine adjustment range: entire stroke
- Supplied with dust cover



6864-250

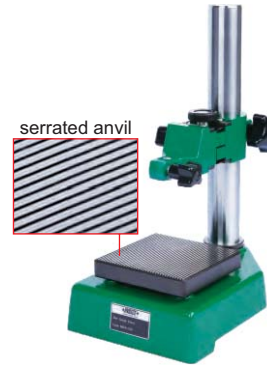
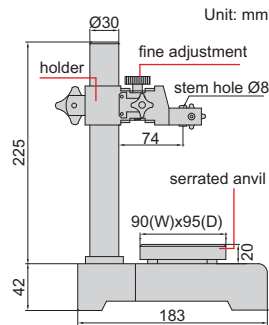


6864-250T

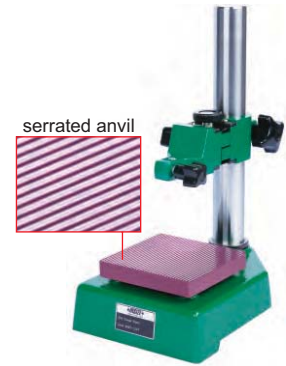
| Code      | Applicable holding stem | Anvil  |
|-----------|-------------------------|--|
| 6864-250  | Ø8mm                    | steel (hardness HRC60±2), serrated, flatness 1.5µm |
| 6864-250T | Ø8mm                    | ceramic, serrated, flatness 1.5µm                  |

## DIAL INDICATOR STANDS

- Vertical travel of holder: 150mm
- Fine adjustment range: 2mm
- Supplied with dust cover



6863-150



6863-150T

| Code      | Applicable holding stem | Anvil  |
|-----------|-------------------------|--|
| 6863-150  | Ø8mm                    | steel (hardness HRC60±2), serrated, flatness 1.5µm |
| 6863-150T | Ø8mm                    | ceramic, serrated, flatness 1.5µm                  |

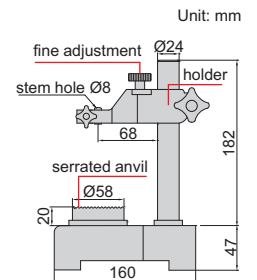
## DIAL INDICATOR STANDS



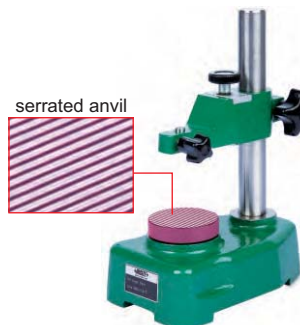
6862-1001



6862-1002



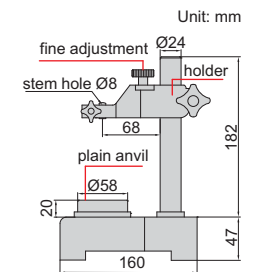
6862-1001  
6862-1001T



6862-1001T



6862-1002T



6862-1002  
6862-1002T

- 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                     |

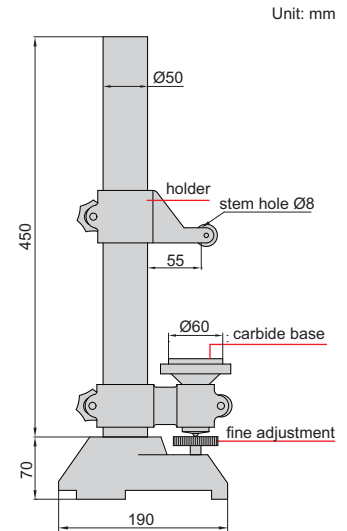
## HEAVY DUTY DIAL INDICATOR STAND

7

- Vertical travel of holder: 300mm
- Fine adjustment range: 5mm
- Carbide base
- Supplied with dust cover
- Optional accessory:  
holder with stem hole  $\varnothing 28$  (code **6869-D28**)



**6869-300**



| Code            | Applicable holding stem  | Base                                     |
|-----------------|--------------------------|--|
| <b>6869-300</b> | $\varnothing 8\text{mm}$ | plain, flatness $1\mu\text{m}$ , carbide |

## TRANSFER STANDS

### Application



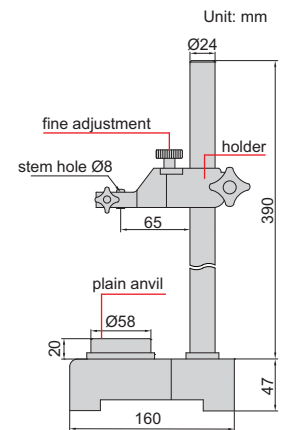
Rigid construction, designed to make comparison height measurement (set zero with gage block then measure height of workpiece) with dial indicators or digital indicators (variation of measuring force is high)



**6865-300**



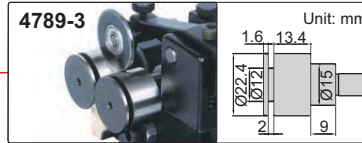
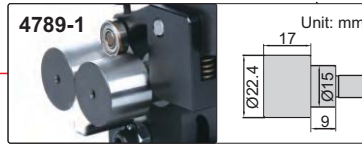
**6865-300T**



- Vertical travel of holder: 335mm
- Fine adjustment range: 2mm
- Supplied with dust cover

| Code             | Applicable holding stem  | Anvil   |
|------------------|--------------------------|---|
| <b>6865-300</b>  | $\varnothing 8\text{mm}$ | steel (hardness HRC60 $\pm 2$ ), plain, flatness $1.5\mu\text{m}$ |
| <b>6865-300T</b> | $\varnothing 8\text{mm}$ | ceramic, plain, flatness $1.5\mu\text{m}$                         |

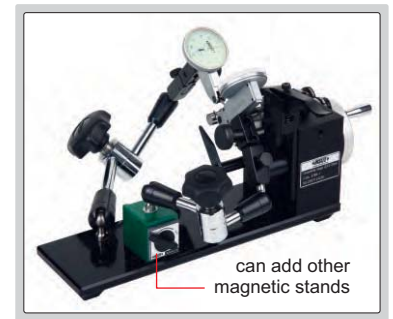
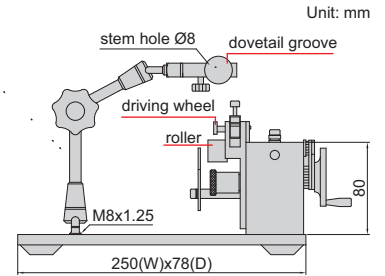
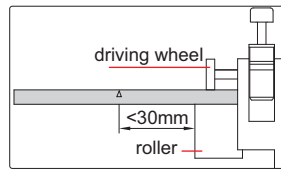
## CONCENTRICITY GAGES



- Accuracy 2µm
- Optional accessory: dial test indicator, mini magnetic stand (code 6224-40)

| Code   | Applicable diameter |
|--------|---------------------|
| 4789-1 | Ø3.5mm-25mm         |
| 4789-2 | Ø1mm-25mm           |
| 4789-3 | Ø1mm-25mm           |

to ensure the accuracy 2µm, the distance between measuring point and roller should be <30mm



HIGH STABILITY,  
LONG WORKING LIFE

## CONCENTRICITY GAGES

dial test indicator is optional



4725-45

dial test indicator is optional



4725-60

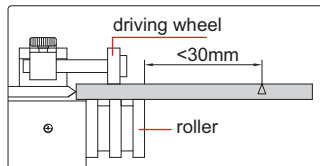
dial test indicator is optional



4725-80

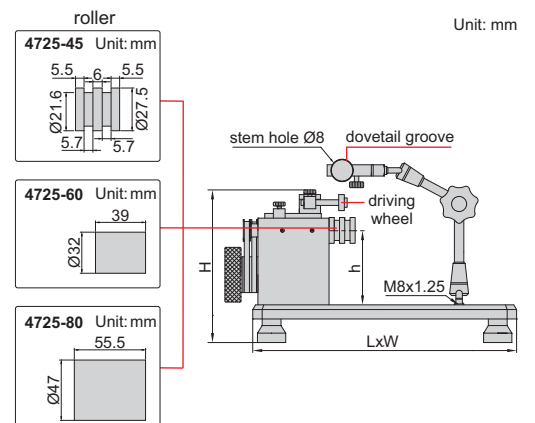


to ensure the accuracy 2µm, the distance between measuring point and roller should be <30mm



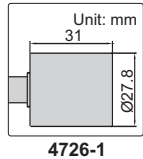
- With ball bearing, high stability, long working life
- Accuracy 2µm
- Optional accessory: dial test indicator

| Code    | Diameter range | Center height (h) | LxHxW         | Weight |
|---------|----------------|-------------------|---------------|--------|
| 4725-45 | 3-45mm         | 80mm              | 280x130x170mm | 6kg    |
| 4725-60 | 5-60mm         | 90mm              | 350x160x190mm | 15.6kg |
| 4725-80 | 8-80mm         | 130mm             | 400x200x250mm | 25kg   |

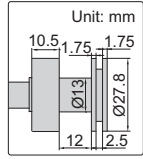


## CONCENTRICITY GAGES

QUICK-POSITIONING, SUITABLE FOR MASS MEASUREMENT



4726-1

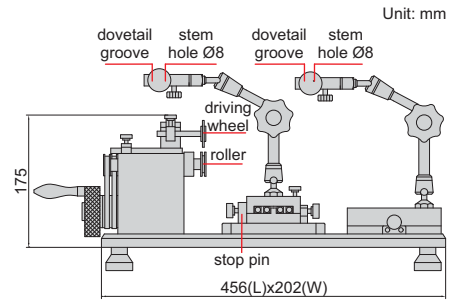


4726-2

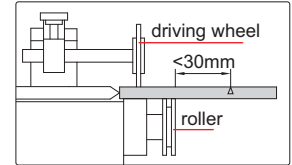
dial test indicator is optional



4726-2



to ensure the accuracy 2µm, the distance between measuring point and roller should be <30mm

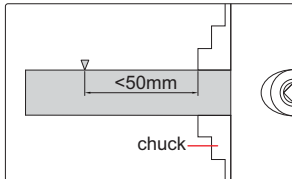


- With ball bearing, high stability, long working life
- Accuracy: 2µm
- Optional accessory: dial test indicator

| Code   | Applicable diameter |
|--------|---------------------|
| 4726-1 | Ø3-40mm             |
| 4726-2 | Ø2-40mm             |

## CONCENTRICITY GAGE

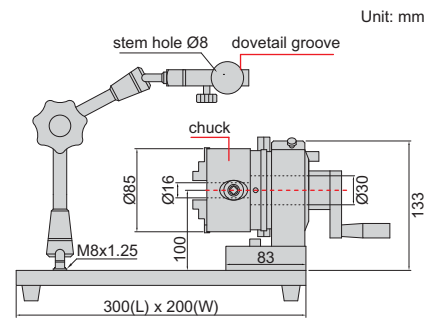
to ensure the accuracy 8µm, the distance between measuring point and roller should be <50mm



4786-1

- Accuracy: 8µm
- Optional accessory: dial test indicator

| Code   | Applicable inside diameter | Applicable outside diameter |
|--------|----------------------------|-----------------------------|
| 4786-1 | Ø24-64mm                   | Ø2-70mm                     |



for cylinder

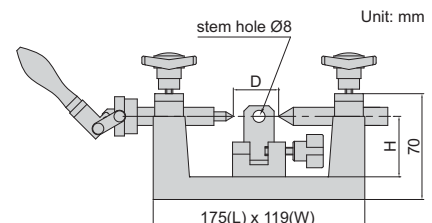
for tube



## MINI BENCH CENTER

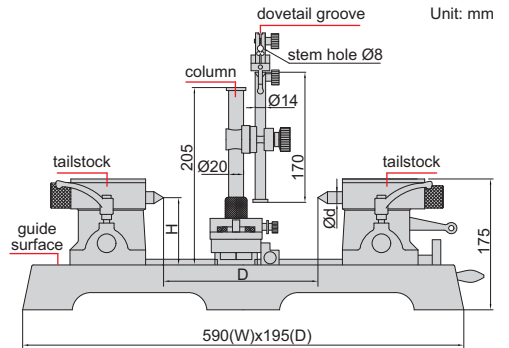
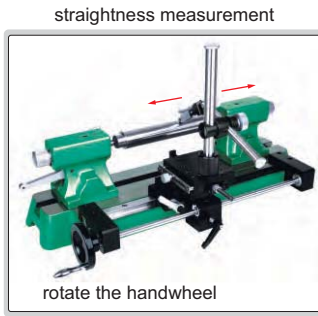


4721-75A



| 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  |

## BENCH CENTER WITH STRAIGHTNESS MEASUREMENT



- Hardened cast-iron guide surface

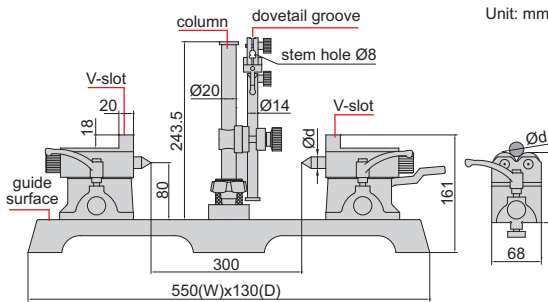
4723-300

7

| 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 CENTER WITH ROLLER TAILSTOCKS



roller tailstocks (included)



- 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

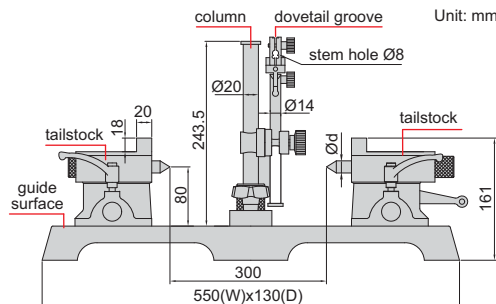
4720-300

| 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

## BENCH CENTER

- 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 | Taper of center | Diameter of center (Ød) | Load |
|----------|--------------|-----------------|---------------|------------------------------|-----------------|-------------------------|------|
| 4782-300 | 0.01mm       | 2µm             | 80mm          | 300mm                        | MT1             | Ø16mm                   | 25kg |

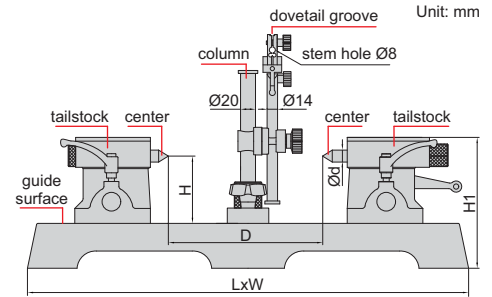
\*Parallelism of two centers to the guide surface

## BENCH CENTERS

- Movable column
- Optional accessory: umbrella centers, rotary centers



4788-300



rotary centers (optional)



umbrella centers (optional)



7

### 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 |

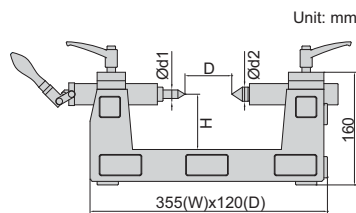
### Low accuracy

(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

## VERTICAL AND HORIZONTAL BENCH CENTER



- For vertical, side and horizontal use



horizontal use



side use

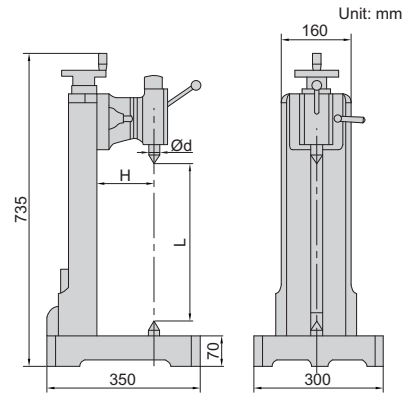


vertical use

| Code     | Runout accuracy | Center height (H) | Distance between two centers (D) | Diameter of center (Ød1/Ød2) | Taper of center | Weight | Load |
|----------|-----------------|-------------------|----------------------------------|------------------------------|-----------------|--------|------|
| 4722-200 | 2µm             | 80mm              | 200mm                            | 12mm/20.2mm                  | MT1/MT3         | 22kg   | 25kg |



## VERTICAL BENCH CENTER

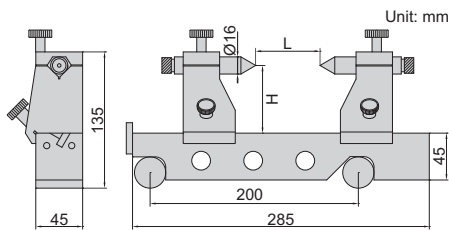


- Distance between two centers (L): 360mm
- Hardened cast-iron guide surface
- Use handwheel to move the tailstock
- Optional accessory: magnetic stands, dial test indicators

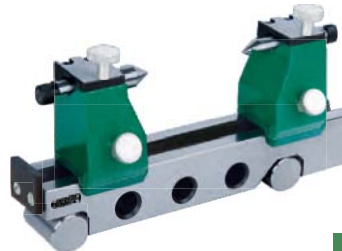
4728-360

| 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

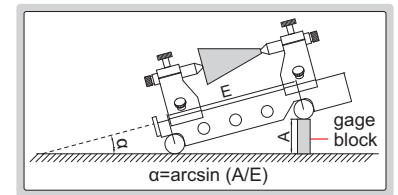


CAN BE CUSTOMIZED



4157-200

## TAPER INSPECTION INSTRUMENT



- Check the taper angle of taper bar/ taper plug gages/Morse taper/ISO taper etc. The run out can be checked as well
- Sine bar accuracy (when  $\alpha=30^\circ$ ):  $\pm 5$  seconds

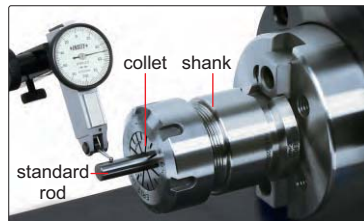
| Code     | Center height (H) | Center distance (L) |
|----------|-------------------|---------------------|
| 4157-200 | 65mm              | 200mm               |

## SHANK RUNOUT TESTERS

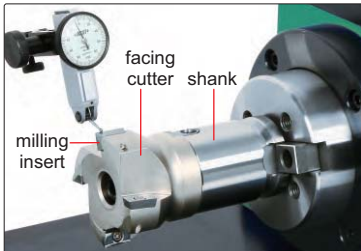
measure radial runout of shank



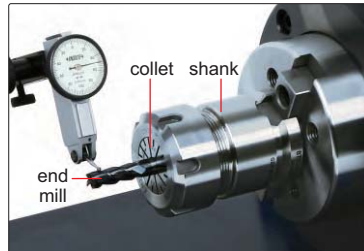
measure radial runout of collet



measure radial runout of cutter



measure radial runout of end mill

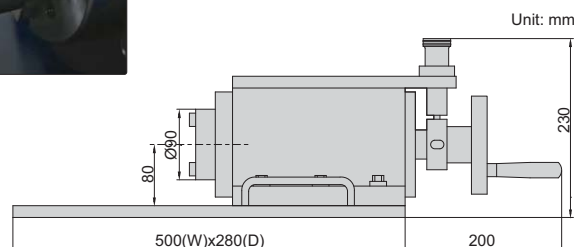


4771-30

standard shank (included)

- Measure the radial runout of shanks, collets and cutting tools
- Optional accessory: dial test indicators, magnetic stands

| Code    | Taper | Accuracy |
|---------|-------|----------|
| 4771-30 | BT30  | 1µm      |
| 4771-40 | BT40  | 1µm      |
| 4771-50 | BT50  | 1µm      |

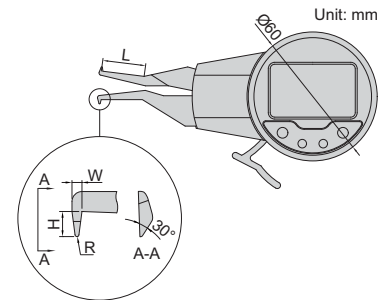
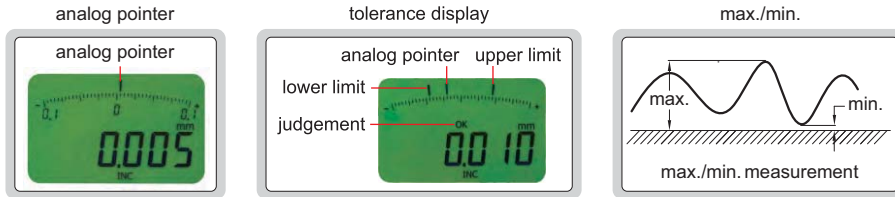


## DIGITAL INTERNAL CALIPER GAGES

- 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



2121-15



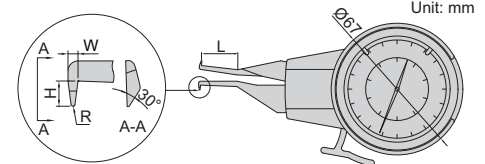
| Code    | Range            | Accuracy | Repeatability | L  | H   | W   | R    |
|---------|------------------|----------|---------------|----|-----|-----|------|
| 2121-15 | 5-15mm/0.2-0.6"  | ±0.03mm  | 0.01mm        | 20 | 2   | 1.5 | R0.3 |
| 2121-25 | 5-25mm/0.2-1.0"  | ±0.03mm  | 0.01mm        | 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 GAGES



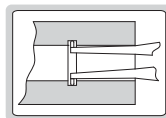
2222-15

| 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 |



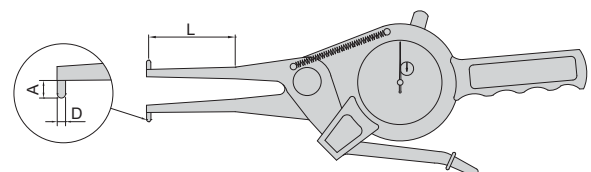
## INTERNAL DIAL CALIPER GAGES

- Carbide measuring tips



2321-35

| 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 |



**DATA OUTPUT**

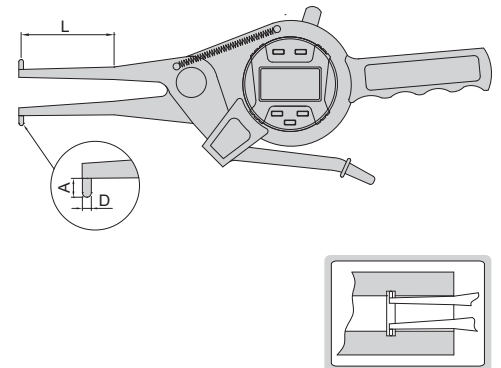
- Carbide measuring tips
- Reading in digit and analog
- Display can be rotated by 320°
- Button function: tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-50M)

**DIGITAL INTERNAL CALIPER GAGES**



2151-35

| Code      | Range              | Resolution     | Accuracy | L   | A  | D    | (mm) |
|-----------|--------------------|----------------|----------|-----|----|------|------|
| 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 |      |

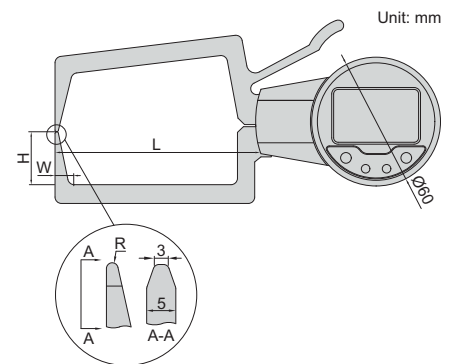
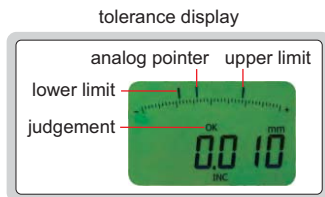
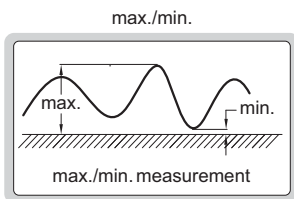


**DIGITAL EXTERNAL CALIPER GAGES**

- 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

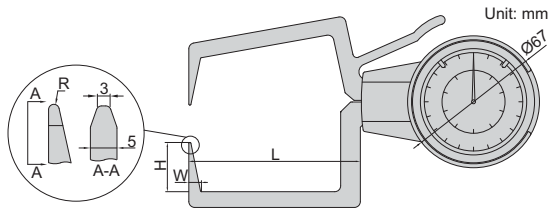


2131-21



| 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 GAGES



| 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 |

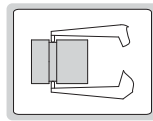


2333-201

8

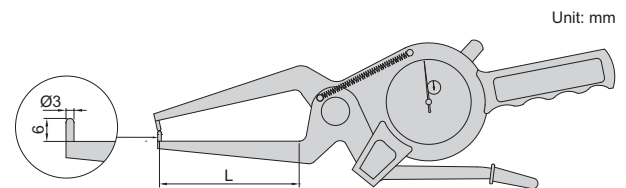
## EXTERNAL DIAL CALIPER GAGES

- Carbide measuring tips



2332-20

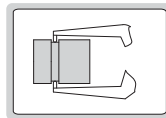
| Code     | Range    | Graduation | Accuracy | L (mm) |
|----------|----------|------------|----------|--------|
| 2332-20  | 0-20mm   | 0.01mm     | ±0.04mm  | 60     |
| 2332-40  | 20-40mm  | 0.01mm     | ±0.04mm  | 60     |
| 2332-60  | 40-60mm  | 0.01mm     | ±0.04mm  | 55     |
| 2332-80  | 60-80mm  | 0.01mm     | ±0.04mm  | 55     |
| 2332-100 | 80-100mm | 0.01mm     | ±0.04mm  | 55     |



Unit: mm

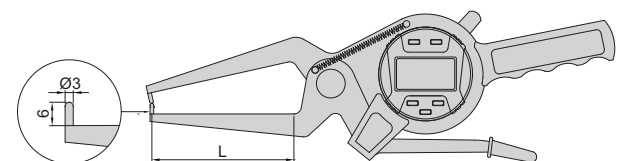
## DIGITAL EXTERNAL CALIPER GAGES

- Carbide measuring tips
- Reading in digit 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
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-50M)



2132-20

| Code     | Range            | Resolution     | Accuracy | L (mm) |
|----------|------------------|----------------|----------|--------|
| 2132-20  | 0-20mm/0-0.8"    | 0.01mm/0.0005" | ±0.04mm  | 60     |
| 2132-40  | 20-40mm/0.8-1.6" | 0.01mm/0.0005" | ±0.04mm  | 60     |
| 2132-60  | 40-60mm/1.6-2.4" | 0.01mm/0.0005" | ±0.04mm  | 55     |
| 2132-80  | 60-80mm/2.4-3.2" | 0.01mm/0.0005" | ±0.04mm  | 55     |
| 2132-100 | 80-100mm/3.2-4"  | 0.01mm/0.0005" | ±0.04mm  | 55     |



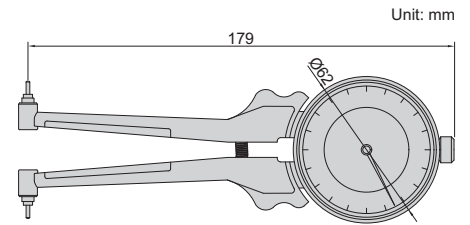
Unit: mm

DATA OUTPUT

## INTERNAL DIAL CALIPER GAGE WITH INTERCHANGEABLE POINTS

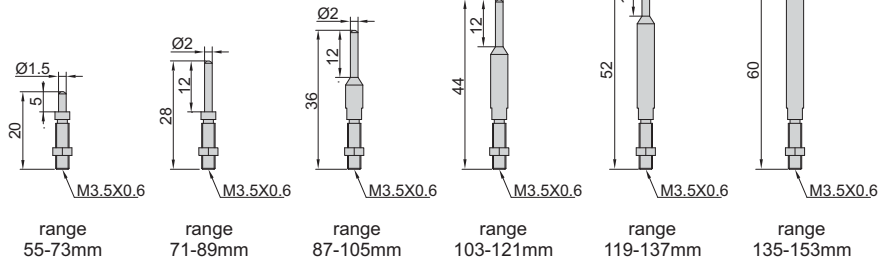


2223-153



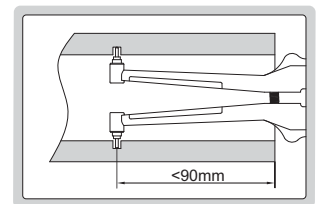
Unit: mm

6 pair of points (included)



Unit: mm

- Supplied with 6 pairs of points



| Code     | Range    | Dial indicator range | Graduation | Accuracy |
|----------|----------|----------------------|------------|----------|
| 2223-153 | 55-153mm | 2mm                  | 0.01mm     | ±0.02mm  |

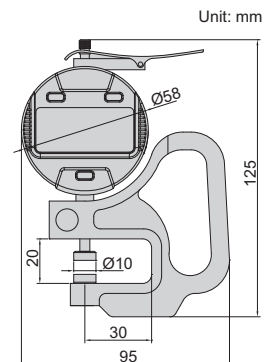
DATA OUTPUT

## DIGITAL THICKNESS GAGES

- Ceramic spindle tip and anvil
- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-50M)



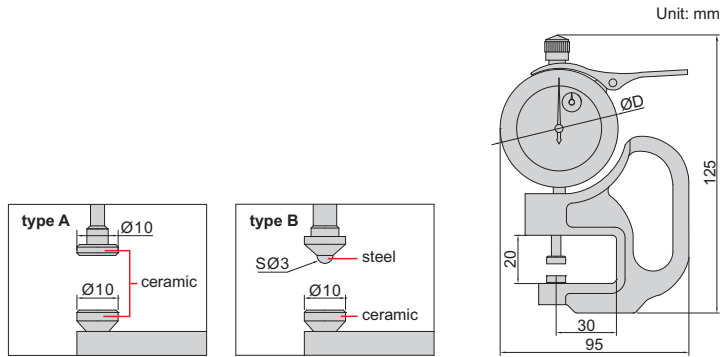
2871-101



Unit: mm

| Code     | Range         | Resolution       | Accuracy |
|----------|---------------|------------------|----------|
| 2871-10  | 0-10mm/0-0.4" | 0.01mm/0.0005"   | ±0.02mm  |
| 2871-101 | 0-10mm/0-0.4" | 0.001mm/0.00005" | ±0.005mm |

## THICKNESS GAGES



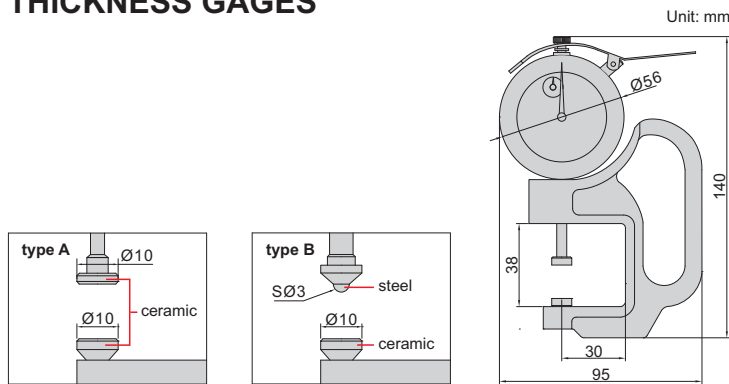
| Code     | Range  | Graduation | Accuracy | Type | ØD   |
|----------|--------|------------|----------|------|------|
| 2364-10  | 0-10mm | 0.01mm     | ±0.02mm  | A    | 58mm |
| 2364-10B | 0-10mm | 0.01mm     | ±0.02mm  | B    | 58mm |
| 2364-1   | 0-1mm  | 0.001mm    | ±0.005mm | A    | 56mm |



2364-10

2364-1

## THICKNESS GAGES

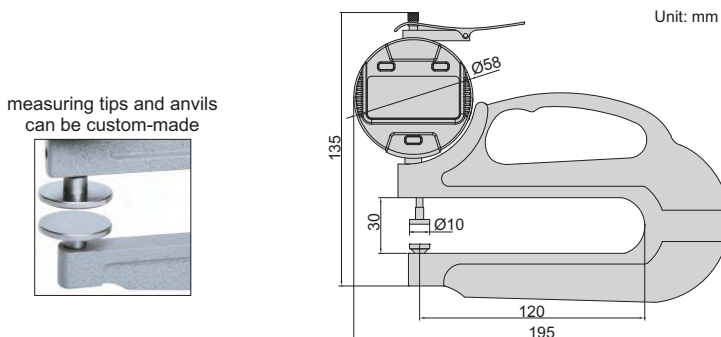


| Code     | Range  | Graduation | Accuracy | Type |
|----------|--------|------------|----------|------|
| 2366-30  | 0-30mm | 0.01mm     | ±0.035mm | A    |
| 2366-30B | 0-30mm | 0.01mm     | ±0.035mm | B    |



2366-30

## DIGITAL THICKNESS GAGE



- Ceramic spindle tip and anvil
- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-50M)

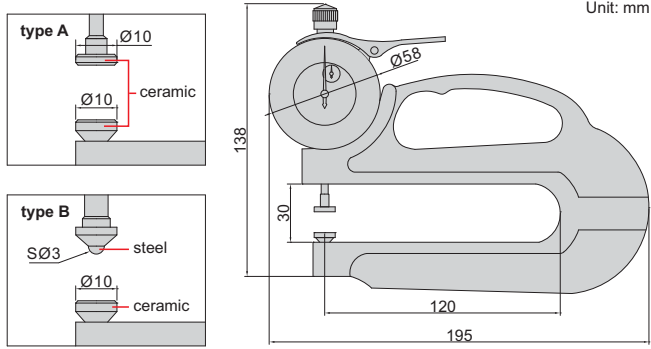


2872-10

| Code    | Range         | Resolution     | Accuracy |
|---------|---------------|----------------|----------|
| 2872-10 | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm  |

DATA OUTPUT

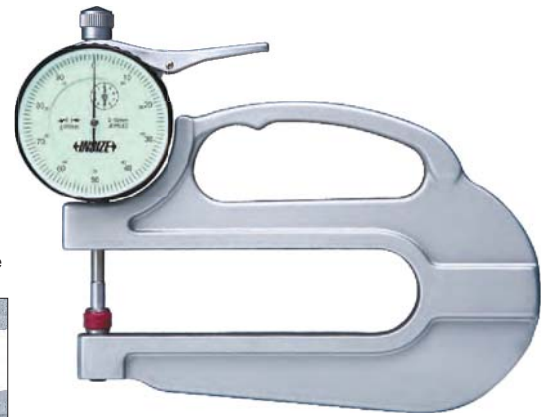
## THICKNESS GAGES



Unit: mm

| 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    |

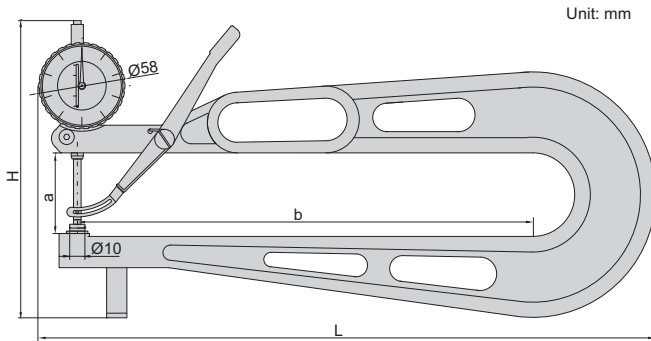
measuring tips and anvils can be custom-made



2365-10

## THICKNESS GAGES

**INSIZE PLUS**  
MADE IN EUROPE



Unit: mm

| Code    | Range  | Graduation | Accuracy | L     | H     | a    | b     |
|---------|--------|------------|----------|-------|-------|------|-------|
| 2875-30 | 0-30mm | 0.1mm      | ±0.05mm  | 400mm | 195mm | 55mm | 300mm |
| 2875-50 | 0-50mm | 0.1mm      | ±0.05mm  | 700mm | 295mm | 75mm | 600mm |

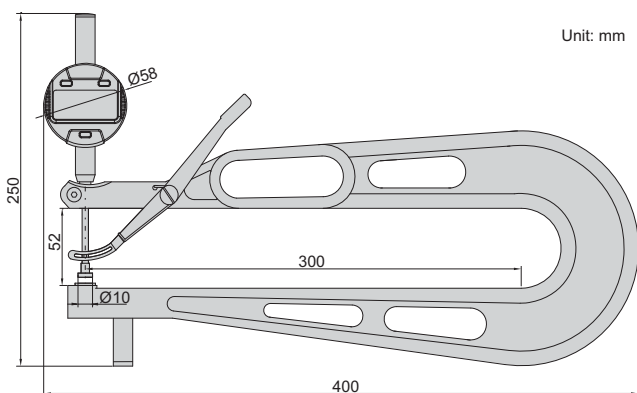


2875-30

**INSPECTION CERTIFICATE**

## DIGITAL THICKNESS GAGE

**INSIZE PLUS**  
MADE IN EUROPE



Unit: mm

| Code     | Range         | Resolution     | Accuracy |
|----------|---------------|----------------|----------|
| 2860-25* | 0-25.4mm/0-1" | 0.01mm/0.0005" | ±0.05mm  |

\* Supplied with manufacturer inspection certificate



2860-25

- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-50M)

## DIGITAL ROLLER THICKNESS GAGE

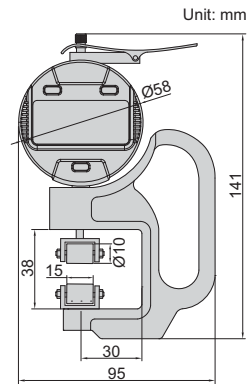
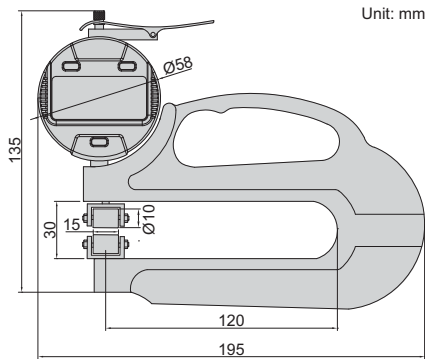
DATA  
OUTPUT



2877-4



2877-10



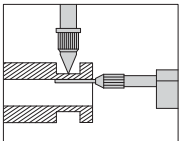
| Code    | Range           | Resolution     | Accuracy |
|---------|-----------------|----------------|----------|
| 2877-4  | 0-4.5mm/0-0.18" | 0.01mm/0.0005" | ±0.02mm  |
| 2877-10 | 0-10mm/0-0.4"   | 0.01mm/0.0005" | ±0.02mm  |

- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-50M)

## DIGITAL TUBE THICKNESS GAGE

DATA  
OUTPUT

measure wall  
thickness of grooves

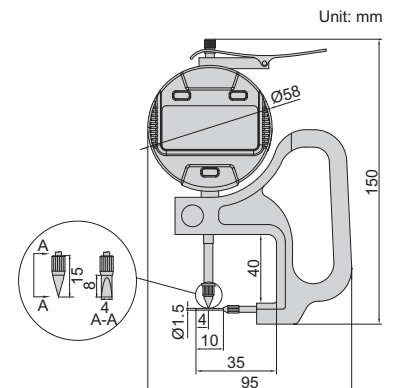


- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-50M)

| Code    | Range         | Resolution     | Accuracy |
|---------|---------------|----------------|----------|
| 2873-10 | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm  |



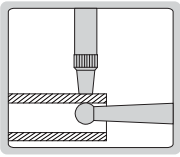
2873-10





DATA  
OUTPUT

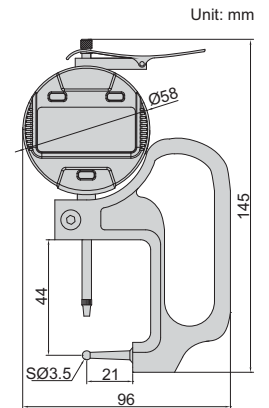
## DIGITAL TUBE THICKNESS GAGE



- Buttons: on/off, zero, mm/inch
- Battery CR2032, automatic power off
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-50M)



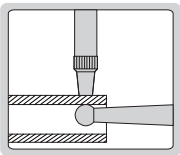
2876-10



| Code    | Range         | Resolution     | Accuracy |
|---------|---------------|----------------|----------|
| 2876-10 | 0-10mm/0-0.4" | 0.01mm/0.0005" | ±0.02mm  |

8

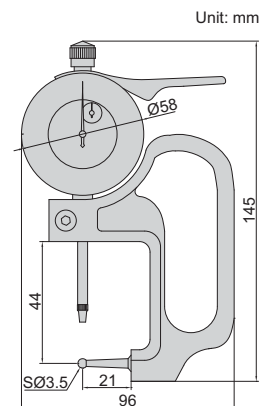
## TUBE THICKNESS GAGE



- Measure tube wall thickness



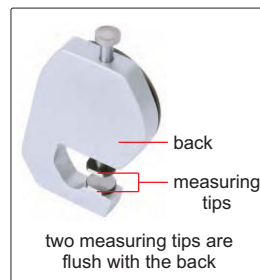
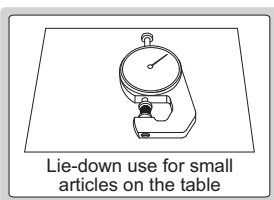
2367-10A



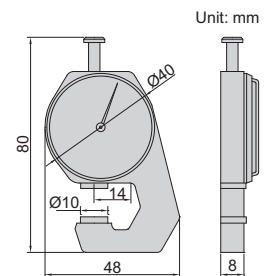
| Code     | Range  | Graduation | Accuracy |
|----------|--------|------------|----------|
| 2367-10A | 0-10mm | 0.01mm     | ±0.02mm  |

SUITABLE FOR  
JEWELLERY

## THICKNESS GAGE



2361-10



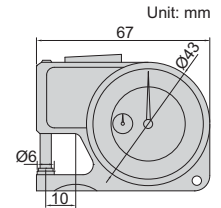
| Code    | Range  | Graduation | Accuracy |
|---------|--------|------------|----------|
| 2361-10 | 0-10mm | 0.1mm      | ±0.05mm  |

## THICKNESS GAGE

- Stainless steel spindle tip and anvil



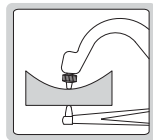
2363-10



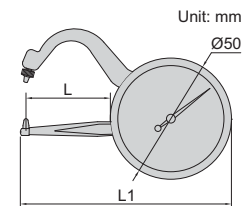
| Code    | Range  | Graduation | Accuracy |
|---------|--------|------------|----------|
| 2363-10 | 0-10mm | 0.01mm     | ±0.03mm  |

## THICKNESS GAGES

8

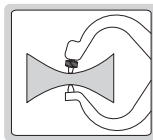


2862-101

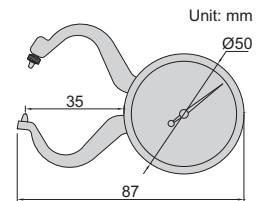


| Code     | Range  | Graduation | Accuracy | L    | L1    |
|----------|--------|------------|----------|------|-------|
| 2862-101 | 0-10mm | 0.05mm     | ±0.1mm   | 35mm | 85mm  |
| 2862-102 | 0-10mm | 0.05mm     | ±0.1mm   | 60mm | 110mm |

## THICKNESS GAGE



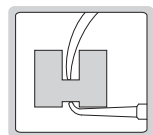
2863-10



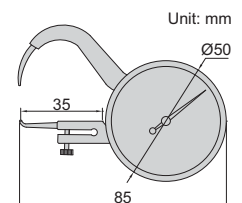
| Code    | Range  | Graduation | Accuracy |
|---------|--------|------------|----------|
| 2863-10 | 0-10mm | 0.05mm     | ±0.1mm   |

## THICKNESS GAGE 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   |

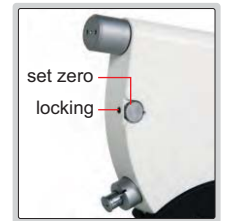
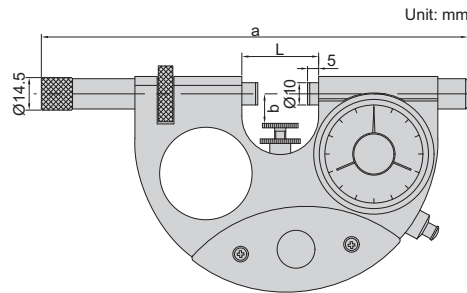
**IP54**  
WATERPROOF

**DIAL SNAP GAGES**  
**INSIZE PLUS**  
MADE IN EUROPE

- Quick Go/No-Go measurement for mass production
- Anvil retracting stroke: 2.5mm
- Dial indicator: measuring range  $\pm 0.07\text{mm}$ , graduation  $1\mu\text{m}$ , accuracy  $\pm 1\mu\text{m}$
- 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



| 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   |

**INSPECTION CERTIFICATE**  
TRACEABLE TO DKD

QUICK AND ACCURATE MEASUREMENT  
OF CYLINDRICAL WORKPIECES



**DIAL SNAP GAGES**

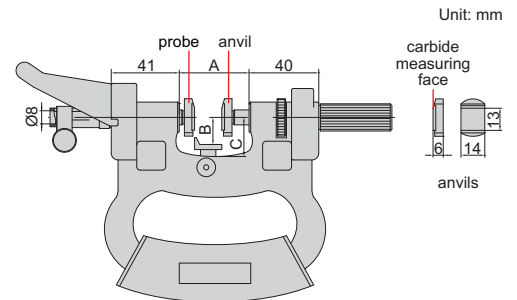
- Left anvil retracting stroke: 2mm
- Measuring force: 6-8N
- Flatness of anvil:  $1.5\mu\text{m}$
- Repeatability:  $1\mu\text{m}$
- Carbide measuring faces for anvils
- Front edges of anvils are chamfered for easy workpiece insertion
- Optional accessory: dial indicators and digital indicators (reading 0.001mm or 0.01mm)



dial indicator is optional

2186-25

| Code       | Range     | Parallelism of measuring faces | (mm) |         |     |
|------------|-----------|--------------------------------|------|---------|-----|
|            |           |                                | A    | B       | C   |
| 2186-25 *  | 0-25mm    | $4\mu\text{m}$                 | 42   | 11-18   | 20  |
| 2186-50 *  | 25-50mm   | $4\mu\text{m}$                 | 69   | 11-32   | 41  |
| 2186-75 *  | 50-75mm   | $5\mu\text{m}$                 | 94   | 17-41   | 51  |
| 2186-100 * | 75-100mm  | $6\mu\text{m}$                 | 119  | 31-55   | 65  |
| 2186-125 * | 100-125mm | $6\mu\text{m}$                 | 144  | 42-70   | 75  |
| 2186-150 * | 125-150mm | $8\mu\text{m}$                 | 169  | 55-82   | 90  |
| 2186-175 * | 150-175mm | $8\mu\text{m}$                 | 194  | 68-95   | 100 |
| 2186-200 * | 175-200mm | $10\mu\text{m}$                | 219  | 85-110  | 115 |
| 2186-225 * | 200-225mm | $10\mu\text{m}$                | 244  | 95-120  | 130 |
| 2186-250 * | 225-250mm | $10\mu\text{m}$                | 269  | 110-135 | 145 |
| 2186-275 * | 250-275mm | $12\mu\text{m}$                | 294  | 120-150 | 160 |
| 2186-300 * | 275-300mm | $12\mu\text{m}$                | 319  | 128-160 | 170 |



\* Supplied with manufacturer inspection certificate traceable to DKD Germany

## DIAL SNAP GAGES (ECONOMIC TYPE)

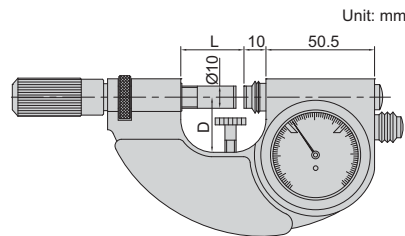
ATTENTION: SETTING STANDARDS ARE NOT INCLUDED

**IP54**  
WATERPROOF

- Quick measurement for mass production
- Dial indicator: range  $\pm 0.04\text{mm}$ , graduation  $0.001\text{mm}$ , accuracy  $0.001\text{mm}$
- IP54 dust/waterproof
- Measuring force: 5-10N
- Carbide measuring faces
- Optional accessory: gage blocks grade 0 (4101-A series), for zero setting



3334-25



| 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   |

8

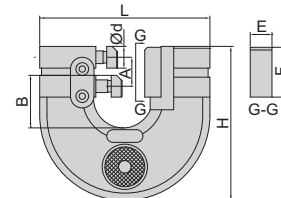
## ADJUSTABLE SNAP GAGES

FAST AND ACCURATE MEASUREMENT FOR CYLINDERS

- Used as Go/No-Go gage by setting upper and lower limits
- Flatness of anvil:  $1.5\mu\text{m}$
- Parallelism of measuring faces:
  - range 0-32mm:  $3\mu\text{m}$
  - range 32-89mm:  $4\mu\text{m}$
  - range 89-300mm:  $5\mu\text{m}$



2187-19



| 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 |

| Code     | Range     | L     | A    | B     | E    | F    | H   | Ød   |
|----------|-----------|-------|------|-------|------|------|-----|------|
| 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 |

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")

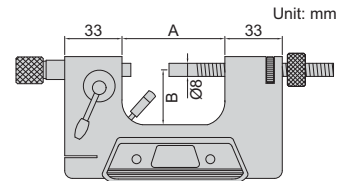
## DIAL SNAP GAGES



dial indicator is optional

2184-50W

| 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 |

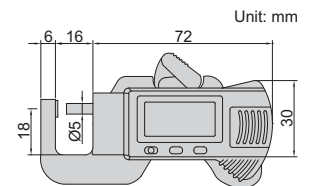


ATTENTION: NO DATA OUTPUT

## DIGITAL SNAP GAGE



2166-12



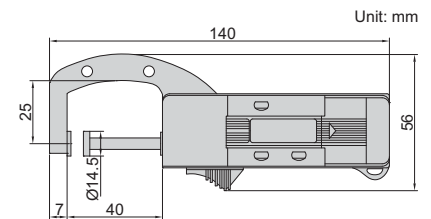
| Code    | Range         | Resolution     | Accuracy |
|---------|---------------|----------------|----------|
| 2166-12 | 0-12mm/0-0.5" | 0.01mm/0.0005" | ±0.03mm  |

ATTENTION: NO DATA OUTPUT

## DIGITAL SNAP GAGE



2167-25



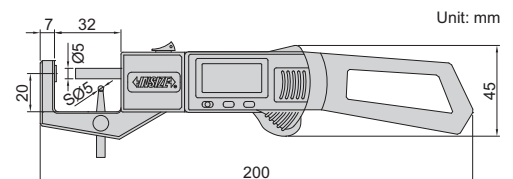
| Code    | Range       | Resolution     | Accuracy |
|---------|-------------|----------------|----------|
| 2167-25 | 0-25mm/0-1" | 0.01mm/0.0005" | ±0.03mm  |

ATTENTION: NO DATA OUTPUT

## DIGITAL SNAP GAGE

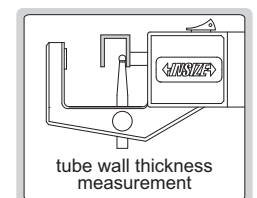
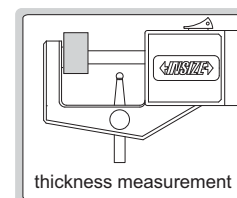


2163-25



- 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"               |



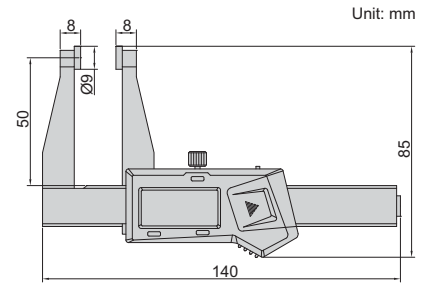
## DIGITAL SNAP GAGES

DATA OUTPUT

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



1163-50A



With data interface (data output cable code 7315-21, 7302-21, optional)

| Code     | Range       | Resolution     | Accuracy |
|----------|-------------|----------------|----------|
| 1163-50A | 0-50mm/0-2" | 0.01mm/0.0005" | ±0.03mm  |

Built-in wireless

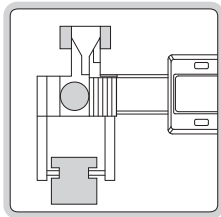
| Code       | Range       | Resolution     | Accuracy |
|------------|-------------|----------------|----------|
| 1163-50AWL | 0-50mm/0-2" | 0.01mm/0.0005" | ±0.03mm  |

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## DIGITAL 3-PURPOSE SNAP GAGE

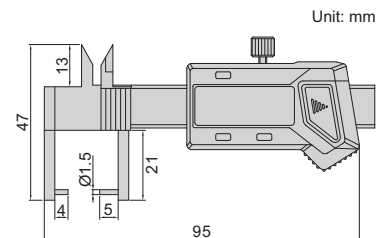
ATTENTION: NO DATA OUTPUT

SUITABLE FOR JEWELLERY



2164-25A

- Buttons: zero, mm/inch, on/off
- Battery LR44
- Made of stainless steel



| Code     | Range       | Resolution     | Accuracy |
|----------|-------------|----------------|----------|
| 2164-25A | 0-25mm/0-1" | 0.01mm/0.0005" | ±0.03mm  |

## STEP AND GAP GAGES

DATA OUTPUT

- 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



front

back

2168-12

zero setting block (included)

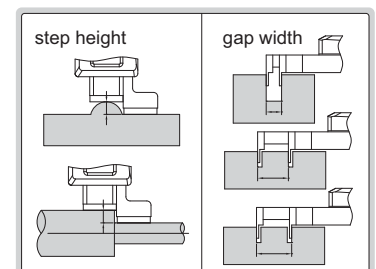
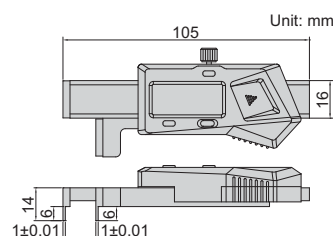


With data interface (data output cable code 7315-21, 7302-21, optional)

| Code    | Range           | Accuracy |
|---------|-----------------|----------|
| 2168-12 | 0-12.7mm/0-0.5" | ±0.03mm  |

Built-in wireless

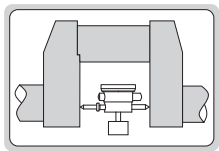
| Code      | Range           | Accuracy |
|-----------|-----------------|----------|
| 2168-12WL | 0-12.7mm/0-0.5" | ±0.03mm  |



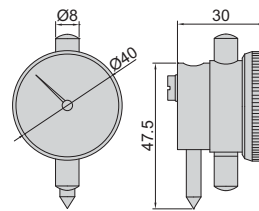
## CRANKSHAFT TESTERS



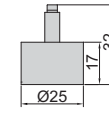
2841-500



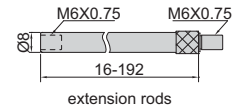
Unit: mm



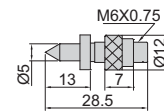
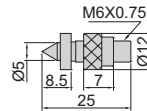
dial indicator



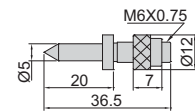
balance block



extension rods



anvils



- 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              | ±0.016mm |
| 2841-500 | 60-500mm | 3mm                  | 0.01mm     | 16mm, 32mm, 64mm, 96mm, 128mm, 192mm | ±0.016mm |

## SAW TEETH SETTING GAGE

**INSIZE PLUS**  
MADE IN EUROPE



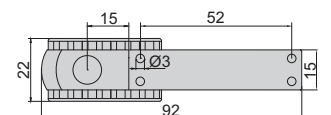
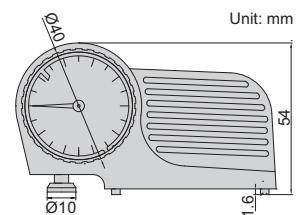
front



back

2874-02

- Supplied with limit pointer
- Read from both sides



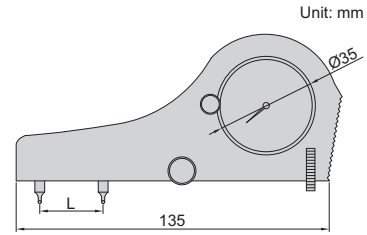
| Code    | Range | Graduation | Accuracy |
|---------|-------|------------|----------|
| 2874-02 | 0-2mm | 0.05mm     | ±0.05mm  |

## INTERNAL THREAD PITCH MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B



2235-4E



application

step 1: set zero on standard block

step 2: measurement



- 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)

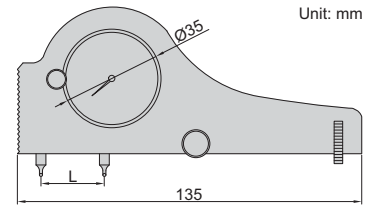
| Code    | Range (L)           | Dial indicator stroke | Dial indicator graduation | Accuracy |
|---------|---------------------|-----------------------|---------------------------|----------|
| 2235-4  | 0.5-4"/12.7-101.6mm | 0.5mm                 | 0.01mm                    | 0.02mm   |
| 2235-4E | 0.5-4"/12.7-101.6mm | 0.03"                 | 0.0005"                   | 0.0008"  |

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## THREAD PITCH MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

2234-4E



application

step 1: set zero on standard block

step 2: measurement



- 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 | 0.03"                 | 0.0005"                   | 0.0008"  |

## STANDARD PITCH BLOCKS

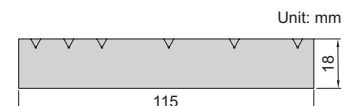
CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

- Set zero of internal and external pitch measuring instruments (code 2234, 2235)

| Code    | Taper | Threads per inch |
|---------|-------|------------------|
| 6251-S8 | 1:16  | 8, 10            |
| 6251-S5 | 1:16  | 5                |
| 6251-S4 | 1:6   | 4                |



6251-S8

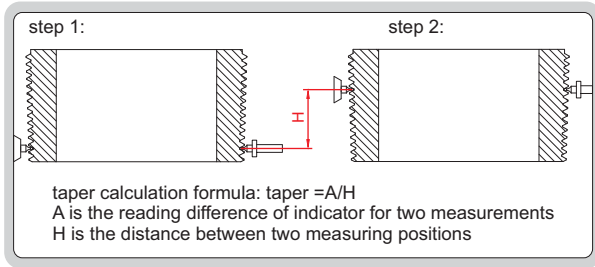




MEET INTERNATIONAL  
STANDARD API5B

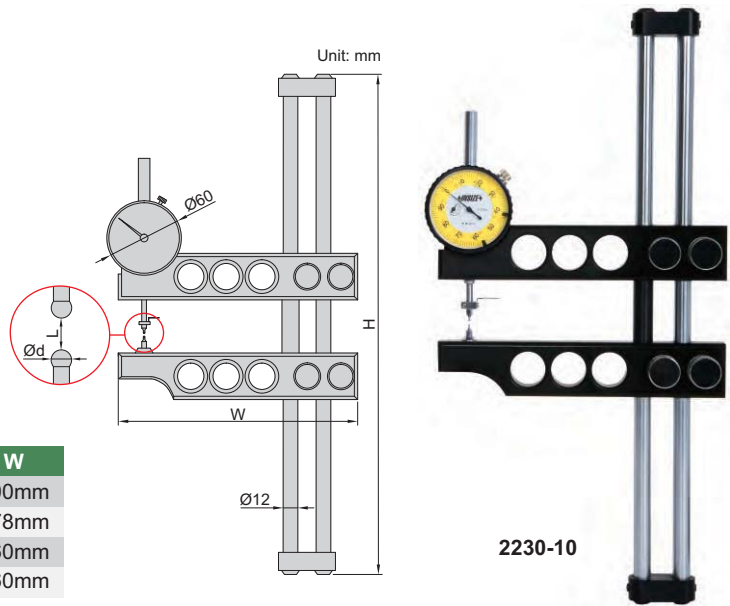
## EXTERNAL THREAD TAPER MEASURING INSTRUMENTS

principle of measurement



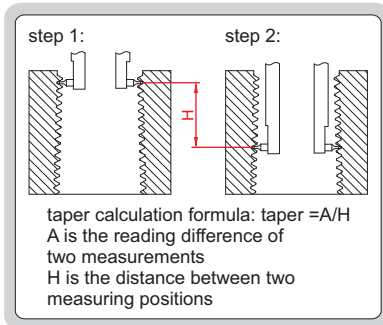
- Measure the taper of external thread
- Dial indicator stroke: 0.5"
- Dial indicator graduation: 0.001"
- Optional accessory: ball points (code 6252 series)

| 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 | 8-16"/203.2-406.4mm   | 0.0015"  | 600mm | 260mm |
| 2230-20 | 8-20"/203.2-508mm     | 0.0015"  | 680mm | 260mm |



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principle of measurement

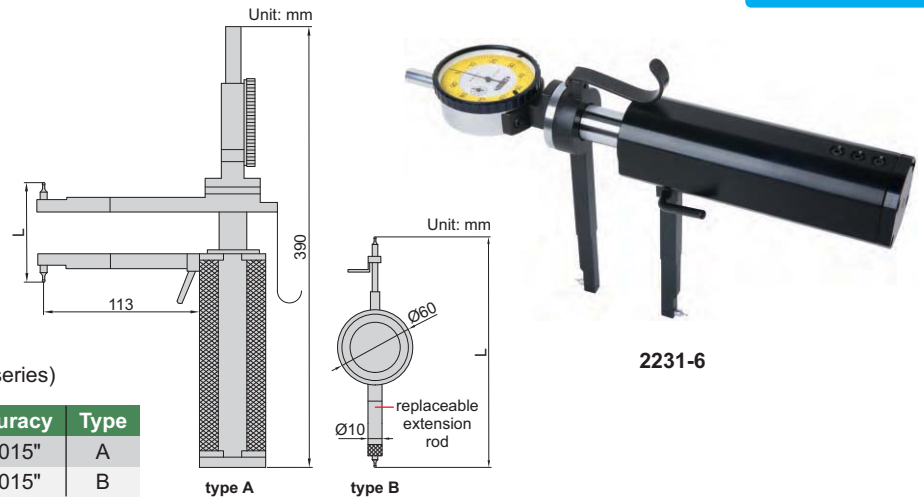


- Measure the taper of internal thread
- Dial indicator stroke: 1"
- Dial indicator graduation: 0.001"
- Optional accessory: ball points (code 6252 series)

| Code    | Range (L)                | Accuracy | Type |
|---------|--------------------------|----------|------|
| 2231-6  | 1-6"/25.4-152.4mm        | 0.0015"  | A    |
| 2231-16 | 5 1/2"-16"/139.7-406.4mm | 0.0015"  | B    |

## INTERNAL THREAD TAPER MEASURING INSTRUMENTS

MEET INTERNATIONAL  
STANDARD API5B



| 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   | butress thread          | 5                | 2.286mm        | —        |
| 6252-B51  | butress 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

## BALL POINTS

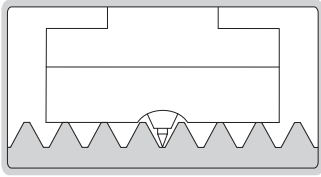


- Supplied in pair
- For taper measuring instruments (code 2230, 2231) and pitch measuring instruments (code 2234, 2235)

## THREAD HEIGHT MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

application

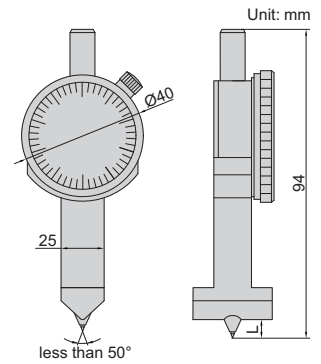


- Measure the height of external thread and internal thread with nominal diameter larger than 5 1/2" (139.7mm)
- Optional accessory: thread height standard blocks (code 6250)

| 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"  |



2232-35E

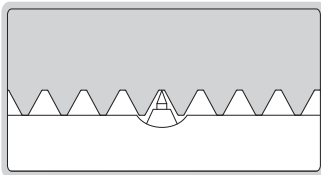


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## INTERNAL THREAD HEIGHT MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

application

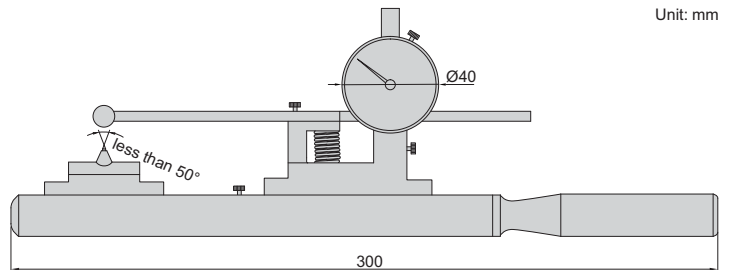


- Measure the height of internal thread with nominal diameter less than 5 1/2" (139.7mm)
- Optional accessory: thread height standard blocks (code 6250)

| Code     | Range   | Dial indicator graduation | Accuracy |
|----------|---------|---------------------------|----------|
| 2233-35  | 0-3.5mm | 0.01mm                    | 0.02mm   |
| 2233-35E | 0-1/4"  | 0.0005"                   | 0.0008"  |



2233-35E



## THREAD HEIGHT STANDARD BLOCKS

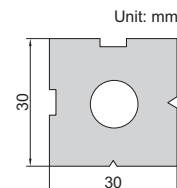
CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

- Set zero of internal and external thread height measuring instruments (code 2232, 2233)

| 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                         |

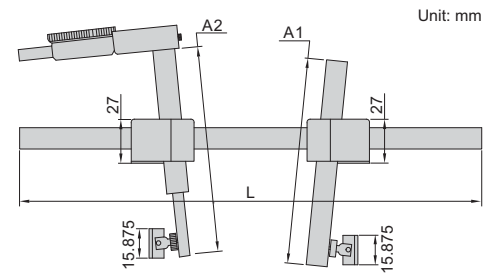


6250-8



MEET INTERNATIONAL  
STANDARD API5B

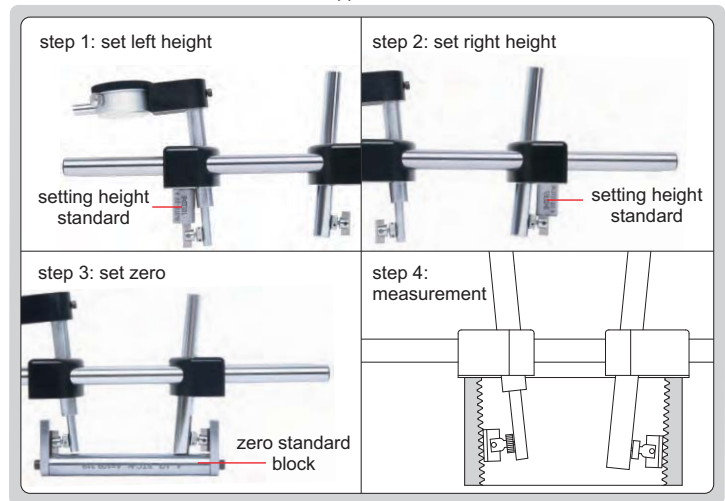
## INTERNAL THREAD CREST DIAMETER MEASURING INSTRUMENTS



2237-5E

- 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

### application



| 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 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)    |

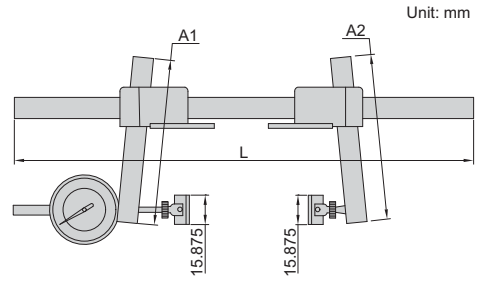
\* Can be customized according to workpieces

EXTERNAL THREAD CREST DIAMETER MEASURING INSTRUMENTS

MEET INTERNATIONAL STANDARD API5B

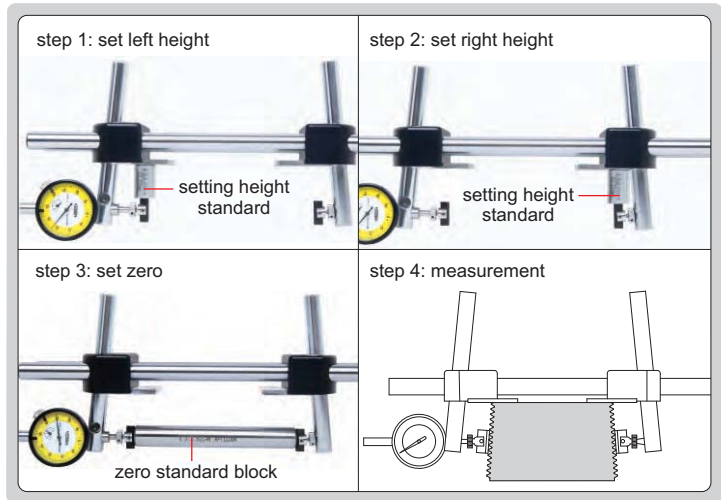


2236-5E



8

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 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

## GAGE 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 gage blocks of grade 1 and 2. |
| 1     | To be used in inspection rooms, to check gages, inspect high accuracy parts and set measuring instruments.   |
| 2     | To be used in workshops, to check production gages, set measuring instruments and mount tools.   |



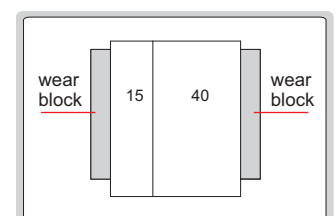
## WEAR BLOCK SETS

- Protect the measuring surfaces of gage blocks from excessive wear
- Meet ISO3650
- Supplied with manufacturer inspection certificate

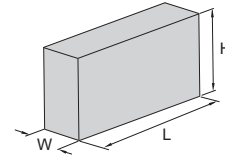


4111-2

| 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 |



## CERAMIC GAGE 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

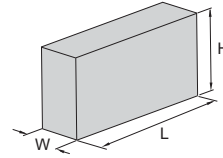
| Blocks per set | Gage blocks included in set |           |          | Code     |           |
|----------------|-----------------------------|-----------|----------|----------|-----------|
|                | Size (mm)                   | Step (mm) | Quantity | Grade 0  | Grade 1   |
| 112            | 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 | Gage 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        |          |           |
| 32             | 10                          |           | 1        | 4105-32  | 4105-132  |
|                | 1.005                       |           | 1        |          |           |
|                | 1.01-1.09                   | 0.01      | 9        |          |           |
|                | 1.1-1.9                     | 0.1       | 9        |          |           |
|                | 1-9                         | 1         | 9        |          |           |
|                | 10-30                       | 10        | 3        |          |           |
| 50             |                             | 1         |          |          |           |

# INDIVIDUAL CERAMIC GAGE BLOCKS



4106-A80



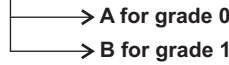
Dimension:

| Size (L)       | W   | H    |
|----------------|-----|------|
| 0.5 ≤ L ≤ 10mm | 9mm | 30mm |
| L > 10mm       | 9mm | 35mm |

- Grade 0 and 1 gage blocks are available
- Made of ceramic, extremely wear resistance and corrosion resistance
- Meet ISO3650
- Supplied with manufacturer inspection certificate

**Code explanation:**

4106-X□□□□

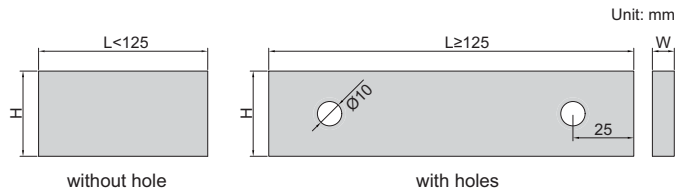


**Code examples:**

| Size (L) | Grade | Code     |
|----------|-------|----------|
| 0.5mm    | 0     | 4106-AD5 |
| 10mm     | 1     | 4106-B10 |

| Size     | Code         | Size   | Code       | Size   | Code       | Size    | Code        |
|----------|--------------|--------|------------|--------|------------|---------|-------------|
| 0.5mm    | 4106-XD5     | 1.23mm | 4106-X1D23 | 3mm    | 4106-X3    | 17.6mm  | 4106-X17D6  |
| 1mm      | 4106-X1      | 1.24mm | 4106-X1D24 | 3.5mm  | 4106-X3D5  | 18mm    | 4106-X18    |
| 1.0005mm | 4106-X1D0005 | 1.25mm | 4106-X1D25 | 4mm    | 4106-X4    | 18.5mm  | 4106-X18D5  |
| 1.001mm  | 4106-X1D001  | 1.26mm | 4106-X1D26 | 4.5mm  | 4106-X4D5  | 19mm    | 4106-X19    |
| 1.002mm  | 4106-X1D002  | 1.27mm | 4106-X1D27 | 5mm    | 4106-X5    | 19.5mm  | 4106-X19D5  |
| 1.003mm  | 4106-X1D003  | 1.28mm | 4106-X1D28 | 5.1mm  | 4106-X5D1  | 20mm    | 4106-X20    |
| 1.004mm  | 4106-X1D004  | 1.29mm | 4106-X1D29 | 5.5mm  | 4106-X5D5  | 20.2mm  | 4106-X20D2  |
| 1.005mm  | 4106-X1D005  | 1.3mm  | 4106-X1D3  | 6mm    | 4106-X6    | 20.5mm  | 4106-X20D5  |
| 1.006mm  | 4106-X1D006  | 1.31mm | 4106-X1D31 | 6.5mm  | 4106-X6D5  | 21mm    | 4106-X21    |
| 1.007mm  | 4106-X1D007  | 1.32mm | 4106-X1D32 | 7mm    | 4106-X7    | 21.5mm  | 4106-X21D5  |
| 1.008mm  | 4106-X1D008  | 1.33mm | 4106-X1D33 | 7.5mm  | 4106-X7D5  | 22mm    | 4106-X22    |
| 1.009mm  | 4106-X1D009  | 1.34mm | 4106-X1D34 | 7.7mm  | 4106-X7D7  | 22.5mm  | 4106-X22D5  |
| 1.01mm   | 4106-X1D01   | 1.35mm | 4106-X1D35 | 8mm    | 4106-X8    | 22.8mm  | 4106-X22D8  |
| 1.02mm   | 4106-X1D02   | 1.36mm | 4106-X1D36 | 8.5mm  | 4106-X8D5  | 23mm    | 4106-X23    |
| 1.03mm   | 4106-X1D03   | 1.37mm | 4106-X1D37 | 9mm    | 4106-X9    | 23.5mm  | 4106-X23D5  |
| 1.04mm   | 4106-X1D04   | 1.38mm | 4106-X1D38 | 9.5mm  | 4106-X9D5  | 24mm    | 4106-X24    |
| 1.05mm   | 4106-X1D05   | 1.39mm | 4106-X1D39 | 10mm   | 4106-X10   | 24.5mm  | 4106-X24D5  |
| 1.06mm   | 4106-X1D06   | 1.4mm  | 4106-X1D4  | 10.3mm | 4106-X10D3 | 25mm    | 4106-X25    |
| 1.07mm   | 4106-X1D07   | 1.41mm | 4106-X1D41 | 10.5mm | 4106-X10D5 | 30mm    | 4106-X30    |
| 1.08mm   | 4106-X1D08   | 1.42mm | 4106-X1D42 | 11mm   | 4106-X11   | 40mm    | 4106-X40    |
| 1.09mm   | 4106-X1D09   | 1.43mm | 4106-X1D43 | 11.5mm | 4106-X11D5 | 41.3mm  | 4106-X41D3  |
| 1.1mm    | 4106-X1D1    | 1.44mm | 4106-X1D44 | 12mm   | 4106-X12   | 50mm    | 4106-X50    |
| 1.11mm   | 4106-X1D11   | 1.45mm | 4106-X1D45 | 12.5mm | 4106-X12D5 | 60mm    | 4106-X60    |
| 1.12mm   | 4106-X1D12   | 1.46mm | 4106-X1D46 | 12.9mm | 4106-X12D9 | 70mm    | 4106-X70    |
| 1.13mm   | 4106-X1D13   | 1.47mm | 4106-X1D47 | 13mm   | 4106-X13   | 75mm    | 4106-X75    |
| 1.14mm   | 4106-X1D14   | 1.48mm | 4106-X1D48 | 13.5mm | 4106-X13D5 | 80mm    | 4106-X80    |
| 1.15mm   | 4106-X1D15   | 1.49mm | 4106-X1D49 | 14mm   | 4106-X14   | 90mm    | 4106-X90    |
| 1.16mm   | 4106-X1D16   | 1.5mm  | 4106-X1D5  | 14.5mm | 4106-X14D5 | 100mm   | 4106-X100   |
| 1.17mm   | 4106-X1D17   | 1.6mm  | 4106-X1D6  | 15mm   | 4106-X15   | 125mm   | 4106-X125   |
| 1.18mm   | 4106-X1D18   | 1.7mm  | 4106-X1D7  | 15.5mm | 4106-X15D5 | 131.4mm | 4106-X131D4 |
| 1.19mm   | 4106-X1D19   | 1.8mm  | 4106-X1D8  | 16mm   | 4106-X16   | 150mm   | 4106-X150   |
| 1.2mm    | 4106-X1D2    | 1.9mm  | 4106-X1D9  | 16.5mm | 4106-X16D5 |         |             |
| 1.21mm   | 4106-X1D21   | 2mm    | 4106-X2    | 17mm   | 4106-X17   |         |             |
| 1.22mm   | 4106-X1D22   | 2.5mm  | 4106-X2D5  | 17.5mm | 4106-X17D5 |         |             |

## STEEL GAGE BLOCK SETS



Dimension:

| Size (L)       | W   | H    |
|----------------|-----|------|
| 0.5 ≤ L ≤ 10mm | 9mm | 30mm |
| L > 10mm       | 9mm | 35mm |

Code example:  
 “-122” stands for “4100-122”



4100-87

- Made of alloy steel
- Meet ISO3650
- Gage blocks ≥ 125mm have clamping holes
- Supplied with manufacturer inspection certificate

9

| Blocks per set | Gage blocks included in set |           |          | Code (4100) |         |         |
|----------------|-----------------------------|-----------|----------|-------------|---------|---------|
|                | Size (mm)                   | Step (mm) | Quantity | Grade 0     | Grade 1 | Grade 2 |
| 122            | 1.0005                      |           | 1        |             |         |         |
|                | 1.001-1.009                 | 0.001     | 9        |             |         |         |
|                | 1.01-1.49                   | 0.01      | 49       |             |         |         |
|                | 1.6-1.9                     | 0.1       | 4        | -122        | -1122   | -2122   |
|                | 0.5-24.5                    | 0.5       | 49       |             |         |         |
|                | 30-100                      | 10        | 8        |             |         |         |
|                | 25-75                       | 50        | 2        |             |         |         |
|                |                             |           |          |             |         |         |
| 112            | 1.0005                      |           | 1        |             |         |         |
|                | 1.001-1.009                 | 0.001     | 9        |             |         |         |
|                | 1.01-1.49                   | 0.01      | 49       | -112        | -1112   | -2112   |
|                | 0.5-24.5                    | 0.5       | 49       |             |         |         |
|                | 25-100                      | 25        | 4        |             |         |         |
| 103            | 1.005                       |           | 1        |             |         |         |
|                | 1.01-1.49                   | 0.01      | 49       | -103        | -1103   | -2103   |
|                | 0.5-24.5                    | 0.5       | 49       |             |         |         |
|                | 25-100                      | 25        | 4        |             |         |         |
| 88             | 1.0005                      |           | 1        |             |         |         |
|                | 1.001-1.009                 | 0.001     | 9        |             |         |         |
|                | 1.01-1.49                   | 0.01      | 49       | -88         | -188    | -288    |
|                | 0.5-9.5                     | 0.5       | 19       |             |         |         |
|                | 10-100                      | 10        | 10       |             |         |         |
| 87             | 1.001-1.009                 | 0.001     | 9        |             |         |         |
|                | 1.01-1.49                   | 0.01      | 49       | -87         | -187    | -287    |
|                | 0.5-9.5                     | 0.5       | 19       |             |         |         |
|                | 10-100                      | 10        | 10       |             |         |         |
| 83             | 0.5                         |           | 1        |             |         |         |
|                | 1                           |           | 1        |             |         |         |
|                | 1.005                       |           | 1        |             |         |         |
|                | 1.01-1.49                   | 0.01      | 49       | -83         | -183    | -283    |
|                | 1.5-1.9                     | 0.1       | 5        |             |         |         |
|                | 2-9.5                       | 0.5       | 16       |             |         |         |
| 10-100         | 10                          | 10        |          |             |         |         |
| 76             | 1.005                       |           | 1        |             |         |         |
|                | 1.01-1.49                   | 0.01      | 49       |             |         |         |
|                | 0.5-9.5                     | 0.5       | 19       | -76         | -176    | -276    |
|                | 10-40                       | 10        | 4        |             |         |         |
|                | 50-100                      | 25        | 3        |             |         |         |

| Blocks per set | Gage blocks included in set |           |          | Code (4100) |         |         |
|----------------|-----------------------------|-----------|----------|-------------|---------|---------|
|                | Size (mm)                   | Step (mm) | Quantity | Grade 0     | Grade 1 | Grade 2 |
| 56             | 0.5                         |           | 1        |             |         |         |
|                | 1.001-1.009                 | 0.001     | 9        |             |         |         |
|                | 1.01-1.09                   | 0.01      | 9        | -56         | -156    | -256    |
|                | 1.1-1.9                     | 0.1       | 9        |             |         |         |
|                | 1-24                        | 1         | 24       |             |         |         |
|                | 25-100                      | 25        | 4        |             |         |         |
|                |                             |           |          |             |         |         |
| 47             | 1.005                       |           | 1        |             |         |         |
|                | 1.01-1.09                   | 0.01      | 9        |             |         |         |
|                | 1.1-1.9                     | 0.1       | 9        | -47A        | -147A   | -247A   |
|                | 1-24                        | 1         | 24       |             |         |         |
| 47             | 1.005                       |           | 1        |             |         |         |
|                | 1.01-1.19                   | 0.01      | 19       |             |         |         |
|                | 1.2-1.9                     | 0.1       | 8        | -47         | -147    | -247    |
|                | 1-9                         | 1         | 9        |             |         |         |
|                | 10-100                      | 10        | 10       |             |         |         |
| 46             | 1.001-1.009                 | 0.001     | 9        |             |         |         |
|                | 1.01-1.09                   | 0.01      | 9        |             |         |         |
|                | 1.1-1.9                     | 0.1       | 9        | -46         | -146    | -246    |
|                | 1-9                         | 1         | 9        |             |         |         |
|                | 10-100                      | 10        | 10       |             |         |         |
|                |                             |           |          |             |         |         |
| 34             | 1.0005                      |           | 1        |             |         |         |
|                | 1.001-1.009                 | 0.001     | 9        |             |         |         |
|                | 1.01-1.09                   | 0.01      | 9        | -34         | -134    | -234    |
|                | 1.1-1.9                     | 0.1       | 9        |             |         |         |
|                | 1-5                         | 1         | 5        |             |         |         |
|                | 10                          |           | 1        |             |         |         |
| 32             | 1.005                       |           | 1        |             |         |         |
|                | 1.01-1.09                   | 0.01      | 9        |             |         |         |
|                | 1.1-1.9                     | 0.1       | 9        |             |         |         |
|                | 1-9                         | 1         | 9        | -32         | -132    | -232    |
|                | 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        |             |         |         |
|                | 200-250                     | 50        | 2        | -8          | -18     | -28     |
|                | 300-500                     | 100       | 3        |             |         |         |



**CUSTOM-MADE**  
CAN SUPPLY ANY SIZES FROM  
0.5 TO 1000MM, SUCH AS 72.672MM



## INDIVIDUAL STEEL GAGE BLOCKS

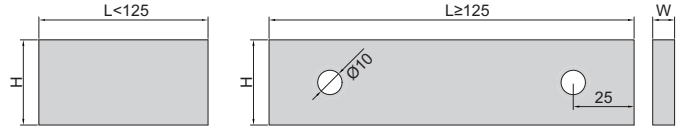


4101-A70



4101-A200

Unit: mm



without hole

with holes

- Grade 0, 1 and 2 gage blocks are available
- Made of alloy steel
- Meet ISO3650
- Gage blocks  $\geq 125$ mm have clamping holes
- Supplied with manufacturer inspection certificate

### 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 |

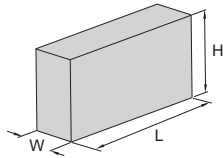
| Size     | Code         |
|----------|--------------|
| 0.5mm    | 4101-XD5     |
| 0.991mm  | 4101-XD991   |
| 0.992mm  | 4101-XD992   |
| 0.993mm  | 4101-XD993   |
| 0.994mm  | 4101-XD994   |
| 0.995mm  | 4101-XD995   |
| 0.996mm  | 4101-XD996   |
| 0.997mm  | 4101-XD997   |
| 0.998mm  | 4101-XD998   |
| 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  |

## CARBIDE GAGE BLOCK SETS



Dimension:

| Size (L)       | W   | H    |
|----------------|-----|------|
| 0.5 ≤ L ≤ 10mm | 9mm | 30mm |
| L > 10mm       | 9mm | 35mm |



4164-32

- Made of carbide, extremely wear resistance and corrosion resistance, excellent dimension stability
- Meet ISO3650
- Supplied with manufacturer inspection certificate

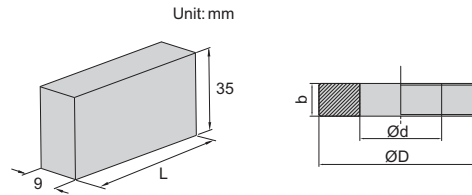
| Blocks per set | Gage blocks included in set |           |          | Code     |           |
|----------------|-----------------------------|-----------|----------|----------|-----------|
|                | Size (mm)                   | Step (mm) | Quantity | Grade 0  | Grade 1   |
| 122            | 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 | Gage 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       |          |           |
| 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 GAGE BLOCK AND RING GAGE SET



4176-30



Ring gage sizes:

| diameter (Ød)* | b    | ØD   |
|----------------|------|------|
| Ø4mm           | 5mm  | 22mm |
| Ø25mm          | 14mm | 53mm |

\* The size of the ring gage when supplied may have deviation. For example, the size Ø25mm may be 24.996mm

- Gage blocks meet ISO3650/grade 2
- Ring gages meet DIN2250-1:2008
- Supplied with manufacturer inspection certificate

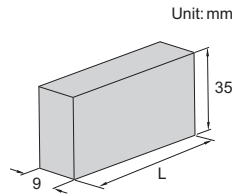
(mm)

| Code    | Material    | Gage blocks included in set (L) | Ring gages included in set (Ød) | Applicable calipers |
|---------|-------------|---------------------------------|---------------------------------|---------------------|
| 4176-30 | alloy steel | 30, 41.3, 131.4                 | 4, 25                           | 0-150               |

## CALIPER INSPECTION GAGE BLOCK SET



4108-3005



- Meet ISO3650/grade 2
- Supplied with manufacturer inspection certificate

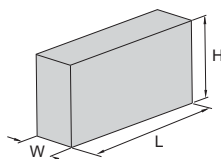
(mm)

| Code      | Material    | Gage 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 |

## MICROMETER INSPECTION GAGE BLOCK SETS



4107-10



Dimension:

| Size (L)       | W   | H    |
|----------------|-----|------|
| 0.5 ≤ L ≤ 10mm | 9mm | 30mm |
| L > 10mm       | 9mm | 35mm |

- One piece of optical flat is included in 4107-10 and 4107-101
- Meet ISO3650/grade 0
- Supplied with manufacturer inspection certificate



| Code     | Material    | Gage blocks included in set  | Applicable micrometer | Optical flat |
|----------|-------------|--|-----------------------|--------------|
| 4107-10  | ceramic     | 2.5mm, 5.1mm, 7.7mm, 10.3mm, 12.9mm, 15mm, 17.6mm, 20.2mm, 22.8mm, 25mm, optical flat  | 0-25mm                | included     |
| 4107-101 | alloy steel | 2.5mm, 5.1mm, 7.7mm, 10.3mm, 12.9mm, 15mm, 17.6mm, 20.2mm, 22.8mm, 25mm, optical flat  | 0-25mm                | included     |
| 4107-112 | alloy steel | 25mm, 27.5mm, 30.1mm, 32.7mm, 35.3mm, 37.9mm, 40mm, 42.6mm, 45.2mm, 47.8mm, 50mm   | 25-50mm               | not included |
| 4107-113 | alloy steel | 50mm, 52.5mm, 55.1mm, 57.7mm, 60.3mm, 62.9mm, 65mm, 67.6mm, 70.2mm, 72.8mm, 75mm   | 50-75mm               | not included |
| 4107-114 | alloy steel | 75mm, 77.5mm, 80.1mm, 82.7mm, 85.3mm, 87.9mm, 90mm, 92.6mm, 95.2mm, 97.8mm, 100mm  | 75-100mm              | not included |
| 4107-115 | alloy steel | 5.12mm, 10.24mm, 15.36mm, 21.5mm, 25mm, 30.12mm, 35.24mm, 40.36mm, 46.5mm, 50mm, 55.12mm, 60.24mm, 65.36mm, 71.5mm, 75mm, 80.12mm, 85.24mm, 90.36mm, 96.5mm, 100mm | 0-100mm               | not included |

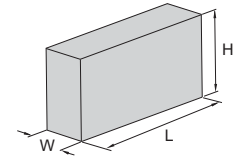
## MICROMETER INSPECTION GAGE BLOCK SET



application



4160-10



Dimension:

| Size (L)                      | W   | H    |
|-------------------------------|-----|------|
| $0.5 \leq L \leq 10\text{mm}$ | 9mm | 30mm |
| $L > 10\text{mm}$             | 9mm | 35mm |

- Meet ISO3650/grade 0
- One piece of optical flat is included (size  $\varnothing 30 \times 12\text{mm}$ )
- Supplied with manufacturer inspection certificate

optical flat (included)



| Code    | Material    | Gage 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                |

9

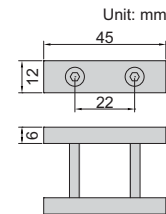
## GAGE BLOCK HOLDERS

- Made of aluminum
- To be used with individual steel gage blocks (code 4101) as Go and No-Go gage

| Code   | Applicable gage block size |
|--------|----------------------------|
| 6883-1 | 1.5-5mm                    |
| 6883-2 | 5-10mm                     |
| 6883-3 | 10-15mm                    |
| 6883-4 | 15-20mm                    |
| 6883-5 | 20-25mm                    |



6883-4



To be used as Go and No-Go gage



## GAGE BLOCK HOLDER



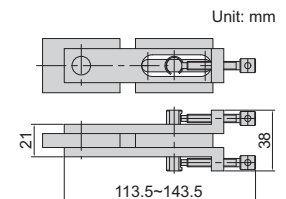
VIDEO

- For gage blocks over 100mm with clamping holes
- Optional accessory: gage block holder accessory, gage block accessory (code 6881)

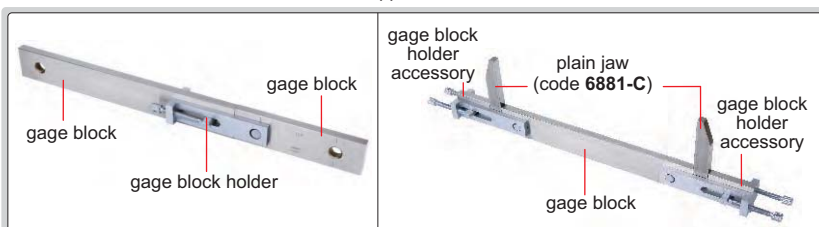
Code  
6886-1



6886-1



application

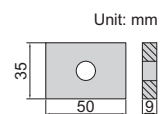


## GAGE BLOCK HOLDER ACCESSORY

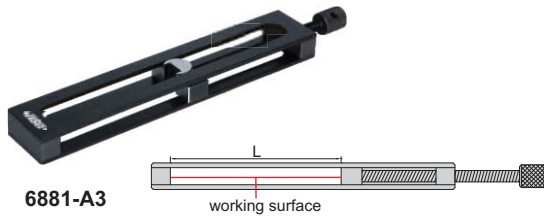
Code  
6886-A



6886-A



## GAGE BLOCK ACCESSORIES



6881-A3

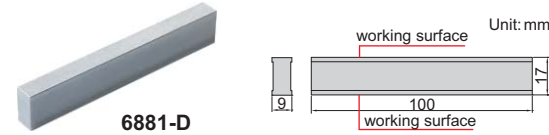
| Code      | Name   | Clamping range* (L) |
|-----------|--------|---------------------|
| 6881-A1   | holder | 0-25mm              |
| 6881-A2   | holder | 25-50mm             |
| 6881-A3   | holder | 50-100mm            |
| 6881-A4   | holder | 100-200mm           |
| 6881-A5   | holder | 200-300mm           |
| 6881-A6** | holder | 300-500mm           |

\* The actual clamping range should deduct the width of jaws  
 \*\* Not suitable for base 6881-B



6881-F

| Code   | Name    | Remark          |
|--------|---------|-----------------|
| 6881-F | scraper | made of carbide |



6881-D

| Code   | Name         | Remark          |
|--------|--------------|-----------------|
| 6881-D | parallel jaw | made of carbide |



6881-S17

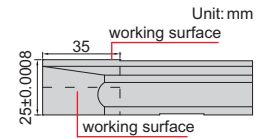
|                                      |        |
|--------------------------------------|--------|
| holder, 0-25mm (code 6881-A1)        | 1 pc   |
| holder, 25-50mm (code 6881-A2)       | 1 pc   |
| holder, 50-100mm (code 6881-A3)      | 1 pc   |
| holder, 100-200mm (code 6881-A4)     | 1 pc   |
| 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 |
| scraper (code 6881-F)                | 1 pc   |
| centre point (code 6881-G)           | 1 pc   |



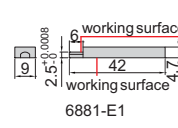
| Code   | Name |
|--------|------|
| 6881-B | base |



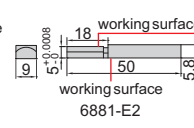
6881-B



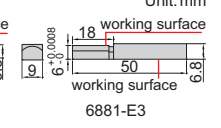
6881-E2



6881-E1



6881-E2

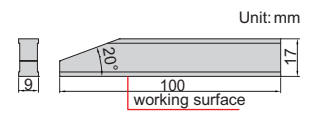


6881-E3

| 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 |



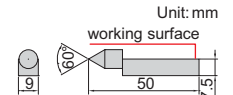
6881-C



| Code   | Name      | Remark                            |
|--------|-----------|-----------------------------------|
| 6881-C | plain jaw | made of carbide, supplied in pair |



6881-G



| Code   | Name         | Remark                     |
|--------|--------------|----------------------------|
| 6881-G | centre point | the tip is made of carbide |

### GAGE BLOCK ACCESSORY SET

| Code     | Remark                         |
|----------|--------------------------------|
| 6881-S17 | 17 pcs (including below items) |

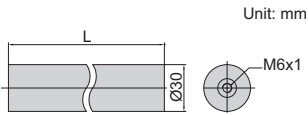
#### application

|   |  |  |
|---|--|--|
| <p>(plain jaw+holder)<br/>set zero for<br/>bore gage and<br/>inside micrometers</p> | <p>(base+holder+scraper)<br/>measure height or scribe</p>          | <p>(half round jaw+holder)<br/>measure inside diameter</p> |
| <p>(scraper+centre point+holder)<br/>scribe circle</p>                              | <p>(plain jaw+parallel jaw+holder)<br/>Go and No Go inspection</p> |  |

## CYLINDER GAGE BLOCKS

CUSTOM-MADE  
CAN SUPPLY ANY LENGTH, SUCH AS 80.672MM

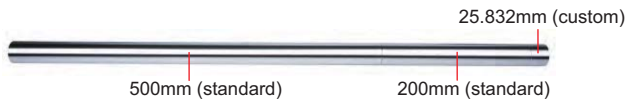
**INSPECTION  
CERTIFICATE**



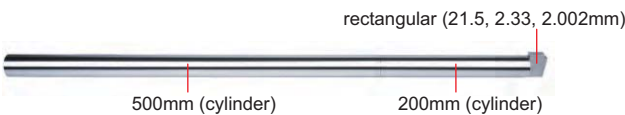
- Made of special alloy steel, hardness HRC64, high stability, wear resistance and easy combination
- Meet ISO3650 grade 1
- Can be connected with M6x1 screw and combined to any sizes up to 4m

can be combined to any sizes up to 4m

Combination 1: combined by several standard size cylinder gage blocks and one custom size cylinder gage 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 gage blocks and rectangular gage blocks  
For example: 500 (cylinder) + 200 (cylinder) + 21.5 (rectangular) + 2.33 (rectangular) + 2.002 (rectangular)=725.832mm



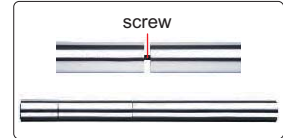
| Code       | Length (L) |
|------------|------------|
| 4001-25 *  | 25mm       |
| 4001-50 *  | 50mm       |
| 4001-75 *  | 75mm       |
| 4001-100 * | 100mm      |
| 4001-200 * | 200mm      |
| 4001-300 * | 300mm      |
| 4001-400 * | 400mm      |
| 4001-500 * | 500mm      |

\* Supplied with manufacturer inspection certificate

high stability in vertical position,  
suitable for checking height gages



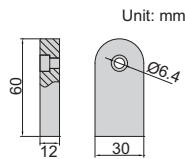
connected with M6x1mm screw



## INTERNAL BLOCKS



4001-A



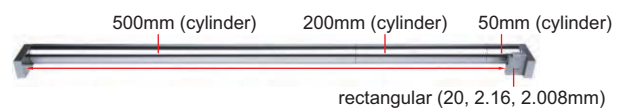
- Can be attached to cylinder and rectangular gage blocks
- Made of special alloy steel, hardness HRC64, high stability, wear resistance and easy combination
- Supplied in a matched pair

| Code   | Size | Flatness |
|--------|------|----------|
| 4001-A | 12mm | 0.2µm    |

Combination 1: combined by several standard size cylinder gage blocks and one custom size cylinder gage block  
For example: 500 (standard) + 200 (standard) + 25.832 (custom)=725.832mm  
Note: in order to reduce cost, custom size should be within 100mm



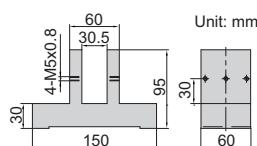
Combination 2: combined by standard size cylinder gage blocks and rectangular gage blocks  
For example: 500 (cylinder) + 200 (cylinder) + 50 (rectangular) - 20 (rectangular) - 2.16 (rectangular) - 2.008 (rectangular)=725.832mm



## BASE

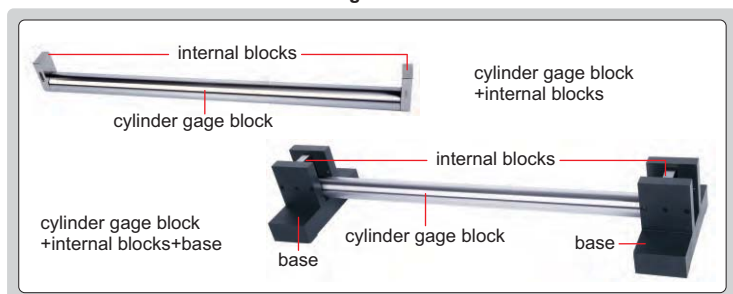


4001-B

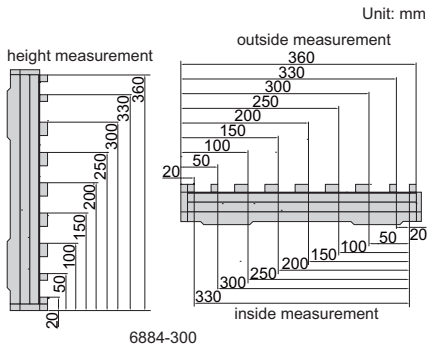


| Code   | Remark           |
|--------|------------------|
| 4001-B | supplied in pair |

working with base



# CALIPER/HEIGHT GAGE CHECKERS



6884-300

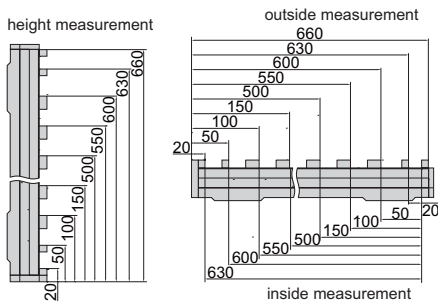


horizontal use



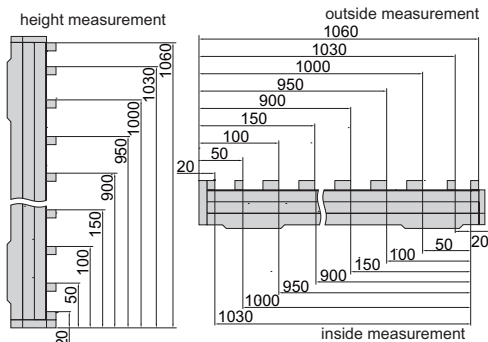
vertical use

6884-300



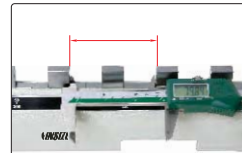
6884-600

- To check calipers and height gages
- Constructed with steel gage blocks

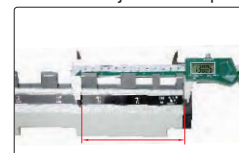


6884-1000

check upper jaws of calipers



check lower jaws of calipers



check height gages



| 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     |

\* Supplied with manufacturer inspection certificate

## INSIDE MICROMETER ACCESSORIES

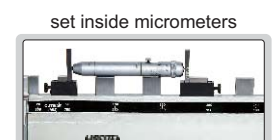
- Supplied with a pair of 5mm carbide gage blocks

| Code      | Applicable caliper/height gage checker |
|-----------|--|
| 6884-A3*  | 0-300mm/0-600mm                        |
| 6884-A10* | 0-1000mm                               |

\* Supplied with manufacturer inspection certificate



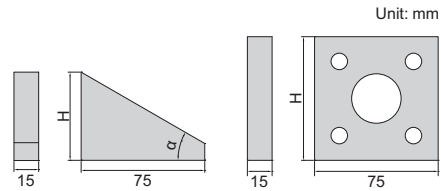
6884-A3



## ANGLE GAGE BLOCKS



4002-15



inspect angle



set angle of plate

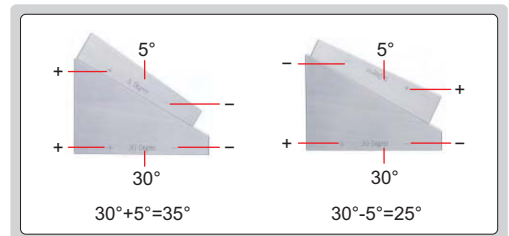


- Accuracy:  $\pm 2''$
- To inspect protractor, taper gage, index plate, index head and goniometer, can also be used to set angle
- Made of special alloy steel, hardness HRC64, high stability, wear resistance and easy combination
- Can be combined to any angle with interval 6 seconds after combination (6", 12", 18", ... , 360°)

### Individual

| Code       | Angle ( $\alpha$ ) | 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

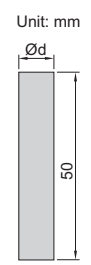
| Code      | Angle ( $\alpha$ )   | Total quantity |
|-----------|--|----------------|
| 4002-13 * | 1°, 3°, 9°, 27°, 41°, 1', 3', 9', 27', 6", 18", 30", 90°/90°/90°/90°           | 13             |
| 4002-15 * | 1°, 3°, 5°, 15°, 30°, 45°, 1', 3', 5', 20', 30', 6", 12", 30", 90°/90°/90°/90° | 15             |

\* Supplied with manufacturer inspection certificate



## PIN GAGE SETS

- Meet DIN2269, grade 1
- Made of alloy steel
- Hardness HRC62-65
- Diameter accuracy:  $\pm 1\mu\text{m}$



4166-6D

| Code     | Diameter Ød (mm)             | Step   | Pin gages 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 gages 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 gages 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 gages 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                |

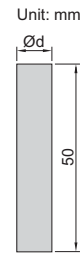
## INDIVIDUAL PIN GAGES WITH TWO DECIMAL PLACES (0.01MM STEP)

- Meet DIN2269, grade 1
- Diameter range: Ø0.20~Ø20.00mm
- Diameter accuracy: ±1µm
- Made of alloy steel
- Hardness HRC62-65
- Optional accessory: wooden box

| Diameter Ød (mm)                | Diameter Ød (mm)                    |
|---------------------------------|-------------------------------------|
| 0.20, 0.21, 0.22, 0.23, … 1.00  | 10.01, 10.02, 10.03, 10.04, … 11.00 |
| 1.01, 1.02, 1.03, 1.04, … 2.00  | 11.01, 11.02, 11.03, 11.04, … 12.00 |
| 2.01, 2.02, 2.03, 2.04, … 3.00  | 12.01, 12.02, 12.03, 12.04, … 13.00 |
| 3.01, 3.02, 3.03, 3.04, … 4.00  | 13.01, 13.02, 13.03, 13.04, … 14.00 |
| 4.01, 4.02, 4.03, 4.04, … 5.00  | 14.01, 14.02, 14.03, 14.04, … 15.00 |
| 5.01, 5.02, 5.03, 5.04, … 6.00  | 15.01, 15.02, 15.03, 15.04, … 16.00 |
| 6.01, 6.02, 6.03, 6.04, … 7.00  | 16.01, 16.02, 16.03, 16.04, … 17.00 |
| 7.01, 7.02, 7.03, 7.04, … 8.00  | 17.01, 17.02, 17.03, 17.04, … 18.00 |
| 8.01, 8.02, 8.03, 8.04, … 9.00  | 18.01, 18.02, 18.03, 18.04, … 19.00 |
| 9.01, 9.02, 9.03, 9.04, … 10.00 | 19.01, 19.02, 19.03, 19.04, … 20.00 |



4110-9D98



**Code**  
4110-□□□□

**Ordering examples:**  
 Diameter Code  
 0.21mm 4110-0D21  
 5.56mm 4110-5D56  
 16.00mm 4110-16D00  
 Note : "D" stands for "."

## INDIVIDUAL PIN GAGES WITH THREE DECIMAL PLACES (0.001MM STEP)



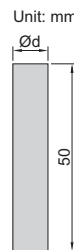
- Meet DIN2269, grade 1
- Diameter range: Ø0.200~Ø30.000mm with three decimal, for example 0.211mm, 5.562mm, 16.298mm
- Diameter accuracy: ±1µm
- Made of alloy steel
- Hardness HRC62-65
- Optional accessory: wooden box

| 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 "."

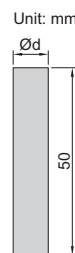
## INDIVIDUAL CERAMIC PIN GAGES WITH TWO DECIMAL PLACES (0.01MM STEP)

- Meet DIN2269, grade 1
- Diameter range: Ø0.50~Ø10.00mm
- Diameter accuracy: ±1µm
- Made of ceramic, extremely wear resistance, corrosion resistance and dimensional stability
- Optional accessory: wooden box (code 7340)

| Diameter Ød (mm)                |
|---------------------------------|
| 0.50, 0.51, 0.52, 0.53, … 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 |



4113-3D00



**Code**  
4113-□□□□

**Ordering examples:**  
 Diameter Code  
 0.21mm 4113-0D21  
 5.56mm 4113-5D56  
 10.00mm 4113-10D00  
 Note : "D" stands for "."

## BOXES FOR PIN GAGES

- For individual pin gages (4110, 4113 and 4118 series)

| Code     | Applicable pin gage diameter Ød | Quantity of pin gages |
|----------|---------------------------------|-----------------------|
| 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 GAGE HANDLES



- Wrench is needed to install pins
- Clamping bushes (0.2~7.14mm) are made of brass, clamping bushes (7.14~25.65mm) are made of aluminum



Handle



brass clamping bush (0.2~7.14mm)



aluminum clamping bush (7.14~25.65mm)

| Code    | Applicable pin gage diameter | Including |   |
|---------|------------------------------|-----------|---|
|         |                              | 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)                        |
| 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)            |
| 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) |
| 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)            |
| 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)                       |
| 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)                       |

| Code     | Applicable pin gage diameter | Including |   |
|----------|------------------------------|-----------|---|
|          |                              | Handle    | Clamping bush (mm)  |
| 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)                                       |
| 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)                                    |
| 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)   |
| 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)  |
| 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)   |
| 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)   |
| 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)   |
| 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)   |
| 7341-15S | 19.30-25.65mm                | 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, 24.59-25.65) |

## SETTING RINGS

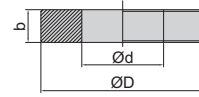
CAN SUPPLY CUSTOM SETTING RINGS FROM Ø1.500MM TO Ø315.000MM, FOR EXAMPLE, Ø17.085MM



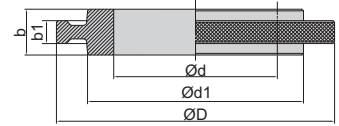
- For zero setting of inside micrometers, three points internal micrometers and bore gages
- Deviation (difference between the ordered size and the size marked on the setting ring when supplied): For example, the ordered size is Ø10.125mm, the size marked on the setting ring when supplied may be Ø10.127mm
- Meet DIN2250-1:2008



6312-20



Ø1.5mm-100mm



Ø100mm-315mm

| (mm)         |    |     |           |                            |
|--------------|----|-----|-----------|----------------------------|
| Diameter d** | b  | D   | Deviation | 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                      |

| (mm)         |    |    |     |     |           |                            |
|--------------|----|----|-----|-----|-----------|----------------------------|
| Diameter d** | b  | b1 | d1  | D   | Deviation | Roundness and cylindricity |
| Ø100-110     | 28 | 14 | 132 | 170 | ±10.0µm   | 1.0µm                      |
| Ø110-120     | 28 | 16 | 140 | 180 | ±10.0µm   | 1.0µm                      |
| Ø120-130     | 28 | 16 | 150 | 190 | ±10.0µm   | 1.2µm                      |
| Ø130-140     | 28 | 18 | 160 | 200 | ±10.0µm   | 1.2µm                      |
| Ø140-150     | 28 | 18 | 170 | 212 | ±10.0µm   | 1.2µm                      |
| Ø150-160     | 28 | 20 | 180 | 224 | ±10.0µm   | 1.2µm                      |
| Ø160-170     | 32 | 20 | 190 | 236 | ±10.0µm   | 1.2µm                      |
| Ø170-180     | 32 | 20 | 200 | 250 | ±10.0µm   | 1.2µm                      |
| Ø180-190     | 32 | 22 | 212 | 265 | ±10.0µm   | 1.4µm                      |
| Ø190-200     | 32 | 22 | 224 | 280 | ±10.0µm   | 1.4µm                      |
| Ø200-212     | 32 | 22 | 236 | 300 | ±10.0µm   | 1.4µm                      |
| Ø212-224     | 32 | 25 | 250 | 315 | ±10.0µm   | 1.4µm                      |
| Ø224-236     | 36 | 25 | 265 | 335 | ±10.0µm   | 1.4µm                      |
| Ø236-250     | 36 | 28 | 280 | 355 | ±10.0µm   | 1.4µm                      |
| Ø250-265     | 36 | 28 | 300 | 375 | ±10.0µm   | 1.6µm                      |
| Ø265-280     | 36 | 28 | 315 | 400 | ±10.0µm   | 1.6µm                      |
| Ø280-300     | 36 | 32 | 335 | 425 | ±10.0µm   | 1.6µm                      |
| Ø300-315     | 36 | 32 | 355 | 450 | ±10.0µm   | 1.6µm                      |

\*\* For example Ø3-5mm means Ø3mm < diameter d ≤ Ø5mm

| (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   |

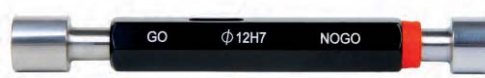
| (mm)       |       |
|------------|-------|
| Code       | Size  |
| 6312-23D5* | Ø23.5 |
| 6312-24*   | Ø24   |
| 6312-24D5* | Ø24.5 |
| 6312-25*   | Ø25   |
| 6312-25D5* | Ø25.5 |
| 6312-26*   | Ø26   |
| 6312-26D5* | Ø26.5 |
| 6312-27*   | Ø27   |
| 6312-27D5* | Ø27.5 |
| 6312-28*   | Ø28   |
| 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   |

\* Supplied with manufacturer inspection certificate

- Supplied with Go and No-Go gages together
- Class H7
- Hardness HRC 60±2
- Standard DIN7150-2



4124-12

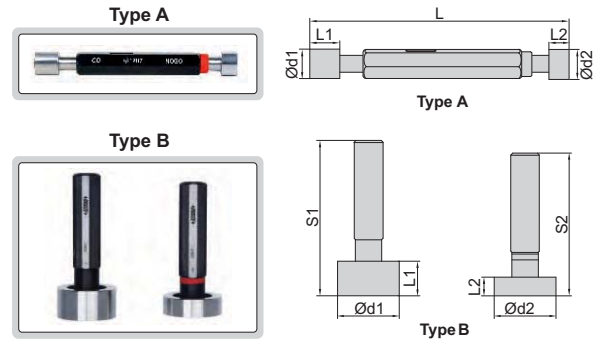
## PLAIN PLUG GAGES

**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

Size tolerance of H7

(mm)

| Diameter Ød | Type | Size tolerance of Go gage (µm) | Size tolerance of No-Go gage (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 | Code    | Diameter | Type | Code    | Diameter | Type | Code     | Diameter | Type |
|---------|----------|------|---------|----------|------|---------|----------|------|----------|----------|------|
| 4124-2  | 2mm      | A    | 4124-17 | 17mm     | A    | 4124-32 | 32mm     | A    | 4124-47  | 47mm     | A    |
| 4124-3  | 3mm      | A    | 4124-18 | 18mm     | A    | 4124-33 | 33mm     | A    | 4124-48  | 48mm     | A    |
| 4124-4  | 4mm      | A    | 4124-19 | 19mm     | A    | 4124-34 | 34mm     | A    | 4124-49  | 49mm     | A    |
| 4124-5  | 5mm      | A    | 4124-20 | 20mm     | A    | 4124-35 | 35mm     | A    | 4124-50  | 50mm     | A    |
| 4124-6  | 6mm      | A    | 4124-21 | 21mm     | A    | 4124-36 | 36mm     | A    | 4124-52  | 52mm     | B    |
| 4124-7  | 7mm      | A    | 4124-22 | 22mm     | A    | 4124-37 | 37mm     | A    | 4124-55  | 55mm     | B    |
| 4124-8  | 8mm      | A    | 4124-23 | 23mm     | A    | 4124-38 | 38mm     | A    | 4124-60  | 60mm     | B    |
| 4124-9  | 9mm      | A    | 4124-24 | 24mm     | A    | 4124-39 | 39mm     | A    | 4124-65  | 65mm     | B    |
| 4124-10 | 10mm     | A    | 4124-25 | 25mm     | A    | 4124-40 | 40mm     | A    | 4124-70  | 70mm     | B    |
| 4124-11 | 11mm     | A    | 4124-26 | 26mm     | A    | 4124-41 | 41mm     | A    | 4124-75  | 75mm     | B    |
| 4124-12 | 12mm     | A    | 4124-27 | 27mm     | A    | 4124-42 | 42mm     | A    | 4124-80  | 80mm     | B    |
| 4124-13 | 13mm     | A    | 4124-28 | 28mm     | A    | 4124-43 | 43mm     | A    | 4124-85  | 85mm     | B    |
| 4124-14 | 14mm     | A    | 4124-29 | 29mm     | A    | 4124-44 | 44mm     | A    | 4124-90  | 90mm     | B    |
| 4124-15 | 15mm     | A    | 4124-30 | 30mm     | A    | 4124-45 | 45mm     | A    | 4124-95  | 95mm     | B    |
| 4124-16 | 16mm     | A    | 4124-31 | 31mm     | A    | 4124-46 | 46mm     | A    | 4124-100 | 100mm    | B    |



- Supplied with Go and No-Go gages together
- Standard ISO1502
- Supplied with manufacturer inspection certificate



4130-10

## METRIC THREAD PLUG GAGES

ATTENTION:  
LIFE TIME IS LIMITED

Code example:  
"-D8" stands for "4130-D8"

| Size (mm)        |       | Code (4130) |          |          |
|------------------|-------|-------------|----------|----------|
| Nominal diameter | Pitch | Class 6H    | Class 6G | Class 4H |
| M0.8             | 0.2   | -D8         | -D8G     | -D8H     |
| M0.9             | 0.225 | -D9         | -D9G     | -D9H     |
| M1               | 0.25  | -1          | -1G      | -1H      |
| M1.1             | 0.25  | -1D1        | -1D1G    | -1D1H    |
| M1.2             | 0.25  | -1D2        | -1D2G    | -1D2H    |
| M1.4             | 0.3   | -1D4        | -1D4G    | -1D4H    |
| M1.6             | 0.35  | -1D6        | -1D6G    | -1D6H    |
| M1.7             | 0.35  | -1D7        | -1D7G    | -1D7H    |
| M1.8             | 0.35  | -1D8        | -1D8G    | -1D8H    |
| M2               | 0.4   | -2          | -2G      | -2H      |
| M2.2             | 0.45  | -2D2        | -2D2G    | -2D2H    |
| M2.3             | 0.4   | -2D3        | -2D3G    | -2D3H    |
| M2.5             | 0.45  | -2D5        | -2D5G    | -2D5H    |
| M2.6             | 0.45  | -2D6        | -2D6G    | -2D6H    |
| M3               | 0.5   | -3          | -3G      | -3H      |

| Size (mm)        |       | Code (4130) |          |          |
|------------------|-------|-------------|----------|----------|
| Nominal diameter | Pitch | Class 6H    | Class 6G | Class 4H |
| M3.5             | 0.6   | -3D5        | -3D5G    | 5H       |
| M4               | 0.7   | -4          | -4G      | -4H      |
| M4.5             | 0.75  | -4D5        | -4D5G    | -4D5H    |
| M5               | 0.8   | -5          | -5G      | -5H      |
| M6               | 1     | -6          | -6G      | -6H      |
| M7               | 1     | -7          | -7G      | -7H      |
| M8               | 1.25  | -8          | -8G      | -8H      |
| M9               | 1.25  | -9          | -9G      | -9H      |
| M10              | 1.5   | -10         | -10G     | -10H     |
| M11              | 1.5   | -11         | -11G     | -11H     |
| M12              | 1.75  | -12         | -12G     | -12H     |
| M14              | 2     | -14         | -14G     | -14H     |
| M16              | 2     | -16         | -16G     | -16H     |
| M18              | 2.5   | -18         | -18G     | -18H     |
| M20              | 2.5   | -20         | -20G     | -20H     |

| Size (mm)        |       | Code (4130) |          |          |
|------------------|-------|-------------|----------|----------|
| Nominal diameter | Pitch | Class 6H    | Class 6G | Class 4H |
| M22              | 2.5   | -22         | -22G     | -22H     |
| M24              | 3     | -24         | -24G     | -24H     |
| M27              | 3     | -27         | -27G     | -27H     |
| M30              | 3.5   | -30         | -30G     | -30H     |
| M33              | 3.5   | -33         | -33G     | -33H     |
| M36              | 4     | -36         | -36G     | -36H     |
| M39              | 4     | -39         | -39G     | -39H     |
| M42              | 4.5   | -42         | -42G     | -42H     |
| M45              | 4.5   | -45         | -45G     | -45H     |
| M48              | 5     | -48         | -48G     | -48H     |
| M52              | 5     | -52         | -52G     | -52H     |
| M56              | 5.5   | -56         | -56G     | -56H     |
| M60              | 5.5   | -60         | -60G     | -60H     |

# METRIC FINE THREAD PLUG GAGES



ATTENTION:  
LIFE TIME IS LIMITED



4139-20G

- Supplied with Go and No-Go gages together
- Standard ISO1502
- Supplied with manufacturer inspection certificate

Code example:  
"-1A" stands for "4139-1A"

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| 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     |
|                  | 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    |

| Size (mm)        |       | Code (4139) |          |          |
|------------------|-------|-------------|----------|----------|
| Nominal diameter | Pitch | Class 6H    | Class 6G | Class 4H |
| 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    |
| M17              | 1.5   | -16R        | -16RG    | -16RH    |
|                  | 0.5   | -17G        | -17GG    | -17GH    |
|                  | 1     | -17P        | -17PG    | -17PH    |
| M18              | 1.5   | -17R        | -17RG    | -17RH    |
|                  | 0.5   | -18G        | -18GG    | -18GH    |
|                  | 1     | -18P        | -18PG    | -18PH    |
| M19              | 1.25  | -18Q        | -18QG    | -18QH    |
|                  | 1.5   | -18R        | -18RG    | -18RH    |
|                  | 2     | -18T        | -18TG    | -18TH    |
|                  | 0.5   | -19G        | -19GG    | -19GH    |
| M20              | 1     | -19P        | -19PG    | -19PH    |
|                  | 1.5   | -19R        | -19RG    | -19RH    |
|                  | 0.5   | -20G        | -20GG    | -20GH    |
| M21              | 1     | -20P        | -20PG    | -20PH    |
|                  | 1.25  | -20Q        | -20QG    | -20QH    |
|                  | 1.5   | -20R        | -20RG    | -20RH    |
|                  | 2     | -20T        | -20TG    | -20TH    |
| M22              | 0.5   | -21G        | -21GG    | -21GH    |
|                  | 1     | -21P        | -21PG    | -21PH    |
|                  | 1.5   | -21R        | -21RG    | -21RH    |
|                  | 0.5   | -22G        | -22GG    | -22GH    |
| M23              | 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    |

To be continued

Continued from previous page

| Size (mm)        |       | Code (4139) |          |          |
|------------------|-------|-------------|----------|----------|
| Nominal diameter | Pitch | Class 6H    | Class 6G | Class 4H |
| 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    |
| 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    |
| M31              | 0.5   | -31G        | -31GG    | -31GH    |
|                  | 0.75  | -31L        | -31LG    | -31LH    |
|                  | 1     | -31P        | -31PG    | -31PH    |
| 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    |

| Size (mm)        |       | Code (4139) |          |          |
|------------------|-------|-------------|----------|----------|
| Nominal diameter | Pitch | Class 6H    | Class 6G | Class 4H |
| 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    |
| M40              | 0.75  | -40L        | -40LG    | -40LH    |
|                  | 1     | -40P        | -40PG    | -40PH    |
|                  | 1.5   | -40R        | -40RG    | -40RH    |
| M42              | 2     | -40T        | -40TG    | -40TH    |
|                  | 3     | -40V        | -40VG    | -40VH    |
|                  | 1     | -42P        | -42PG    | -42PH    |
| M45              | 1.5   | -42R        | -42RG    | -42RH    |
|                  | 2     | -42T        | -42TG    | -42TH    |
|                  | 3     | -42V        | -42VG    | -42VH    |
| M48              | 1     | -45P        | -45PG    | -45PH    |
|                  | 1.5   | -45R        | -45RG    | -45RH    |
|                  | 2     | -45T        | -45TG    | -45TH    |
| M50              | 3     | -45V        | -45VG    | -45VH    |
|                  | 1     | -48P        | -48PG    | -48PH    |
|                  | 1.5   | -48R        | -48RG    | -48RH    |
| M52              | 2     | -48T        | -48TG    | -48TH    |
|                  | 3     | -48V        | -48VG    | -48VH    |
|                  | 1     | -50P        | -50PG    | -50PH    |
| M55              | 1.5   | -50R        | -50RG    | -50RH    |
|                  | 2     | -50T        | -50TG    | -50TH    |
|                  | 3     | -50V        | -50VG    | -50VH    |
| M56              | 1     | -52P        | -52PG    | -52PH    |
|                  | 1.5   | -52R        | -52RG    | -52RH    |
|                  | 2     | -52T        | -52TG    | -52TH    |
|                  | 3     | -52V        | -52VG    | -52VH    |
| M58              | 4     | -52X        | -52XG    | -52XH    |
|                  | 1     | -55P        | -55PG    | -55PH    |
|                  | 1.5   | -55R        | -55RG    | -55RH    |
|                  | 2     | -55T        | -55TG    | -55TH    |
| M60              | 3     | -55V        | -55VG    | -55VH    |
|                  | 4     | -55X        | -55XG    | -55XH    |
|                  | 1     | -56P        | -56PG    | -56PH    |
|                  | 1.5   | -56R        | -56RG    | -56RH    |
| M60              | 2     | -56T        | -56TG    | -56TH    |
|                  | 3     | -56V        | -56VG    | -56VH    |
|                  | 4     | -56X        | -56XG    | -56XH    |
|                  | 1     | -58P        | -58PG    | -58PH    |
| M60              | 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    |
| M60              | 4     | -60X        | -60XG    | -60XH    |

# METRIC THREAD RING GAGES



ATTENTION:  
LIFE TIME IS LIMITED



4120-16



4120-16N

- Standard ISO1502
- Supplied with manufacturer inspection certificate

Code example:  
"-2" stands for "4120-2"

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| Size (mm)        |       | Code (4120) |       |          |        |          |        |
|------------------|-------|-------------|-------|----------|--------|----------|--------|
| Nominal diameter | Pitch | Class 6g    |       | Class 6e |        | Class 6h |        |
|                  |       | 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  |



ATTENTION:  
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## METRIC FINE THREAD RING GAGES

- Standard ISO1502
- Supplied with manufacturer inspection certificate



4129-10P



4129-10PN

Code example:  
"-2D5D" stands for "4129-2D5D"

| Size (mm)        |       | Code (4129) |        |          |         |          |         |
|------------------|-------|-------------|--------|----------|---------|----------|---------|
|                  |       | Class 6g    |        | Class 6e |         | Class 6h |         |
| Nominal diameter | Pitch | GO          | NOGO   | GO       | NOGO    | GO       | NOGO    |
| M2.5             | 0.35  | -2D5D       | -2D5DN | -2D5DE   | -2D5DEN | -2D5DH   | -2D5DHN |
| M3               | 0.35  | -3D         | -3DN   | -3DE     | -3DEN   | -3DH     | -3DHN   |
| M3.5             | 0.35  | -3D5D       | -3D5DN | -3D5DE   | -3D5DEN | -3D5DH   | -3D5DHN |
|                  | 0.5   | -3D5G       | -3D5GN | -3D5GE   | -3D5GEN | -3D5GH   | -3D5GHN |
| M4               | 0.35  | -4D         | -4DN   | -4DE     | -4DEN   | -4DH     | -4DHN   |
|                  | 0.5   | -4G         | -4GN   | -4GE     | -4GEN   | -4GH     | -4GHN   |
| M4.5             | 0.35  | -4D5D       | -4D5DN | -4D5DE   | -4D5DEN | -4D5DH   | -4D5DHN |
|                  | 0.5   | -4D5G       | -4D5GN | -4D5GE   | -4D5GEN | -4D5GH   | -4D5GHN |
| M5               | 0.35  | -5D         | -5DN   | -5DE     | -5DEN   | -5DH     | -5DHN   |
|                  | 0.5   | -5G         | -5GN   | -5GE     | -5GEN   | -5GH     | -5GHN   |
| M5.5             | 0.5   | -5D5G       | -5D5GN | -5D5GE   | -5D5GEN | -5D5GH   | -5D5GHN |
|                  | 0.35  | -6D         | -6DN   | -6DE     | -6DEN   | -6DH     | -6DHN   |
| M6               | 0.5   | -6G         | -6GN   | -6GE     | -6GEN   | -6GH     | -6GHN   |
|                  | 0.75  | -6L         | -6LN   | -6LE     | -6LEN   | -6LH     | -6LHN   |
|                  | 0.5   | -6D5G       | -6D5GN | -6D5GE   | -6D5GEN | -6D5GH   | -6D5GHN |
| M6.5             | 0.35  | -7D         | -7DN   | -7DE     | -7DEN   | -7DH     | -7DHN   |
|                  | 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 |
|                  | 0.35  | -8D         | -8DN   | -8DE     | -8DEN   | -8DH     | -8DHN   |
| 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 |
|                  | 0.35  | -9D         | -9DN   | -9DE     | -9DEN   | -9DH     | -9DHN   |
| 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              | 0.35  | -10D        | -10DN  | -10DE    | -10DEN  | -10DH    | -10DHN  |
|                  | 0.5   | -10G        | -10GN  | -10GE    | -10GEN  | -10GH    | -10GHN  |
|                  | 0.75  | -10L        | -10LN  | -10LE    | -10LEN  | -10LH    | -10LHN  |
|                  | 1     | -10P        | -10PN  | -10PE    | -10PEN  | -10PH    | -10PHN  |
| M11              | 1.25  | -10Q        | -10QN  | -10QE    | -10QEN  | -10QH    | -10QHN  |
|                  | 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  |
| M13              | 1.5   | -12R        | -12RN  | -12RE    | -12REN  | -12RH    | -12RHN  |
|                  | 0.5   | -13G        | -13GN  | -13GE    | -13GEN  | -13GH    | -13GHN  |
|                  | 0.75  | -13L        | -13LN  | -13LE    | -13LEN  | -13LH    | -13LHN  |
| M13              | 1     | -13P        | -13PN  | -13PE    | -13PEN  | -13PH    | -13PHN  |
|                  | 1.5   | -13R        | -13RN  | -13RE    | -13REN  | -13RH    | -13RHN  |

To be continued

Continued from previous page

| Size (mm)        |       | Code (4129) |       |          |        |          |        |
|------------------|-------|-------------|-------|----------|--------|----------|--------|
| Nominal diameter | Pitch | Class 6g    |       | Class 6e |        | Class 6h |        |
|                  |       | GO          | NOGO  | GO       | NOGO   | GO       | NOGO   |
| 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 |
| 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 |
| M21              | 0.75  | -20T        | -20TN | -20TE    | -20TEN | -20TH    | -20THN |
|                  | 0.75  | -21L        | -21LN | -21LE    | -21LEN | -21LH    | -21LHN |
|                  | 1     | -21P        | -21PN | -21PE    | -21PEN | -21PH    | -21PHN |
| M22              | 1.5   | -21R        | -21RN | -21RE    | -21REN | -21RH    | -21RHN |
|                  | 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 |
| M23              | 2     | -22T        | -22TN | -22TE    | -22TEN | -22TH    | -22THN |
|                  | 0.75  | -23L        | -23LN | -23LE    | -23LEN | -23LH    | -23LHN |
| M24              | 1     | -23P        | -23PN | -23PE    | -23PEN | -23PH    | -23PHN |
|                  | 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 |
| M25              | 2     | -24T        | -24TN | -24TE    | -24TEN | -24TH    | -24THN |
|                  | 0.75  | -25L        | -25LN | -25LE    | -25LEN | -25LH    | -25LHN |
|                  | 1     | -25P        | -25PN | -25PE    | -25PEN | -25PH    | -25PHN |
|                  | 1.5   | -25R        | -25RN | -25RE    | -25REN | -25RH    | -25RHN |
| M26              | 2     | -25T        | -25TN | -25TE    | -25TEN | -25TH    | -25THN |
|                  | 0.75  | -26L        | -26LN | -26LE    | -26LEN | -26LH    | -26LHN |
|                  | 1     | -26P        | -26PN | -26PE    | -26PEN | -26PH    | -26PHN |
| M26              | 1.5   | -26R        | -26RN | -26RE    | -26REN | -26RH    | -26RHN |
|                  | 2     | -26T        | -26TN | -26TE    | -26TEN | -26TH    | -26THN |

To be continued

Continued from previous page

| Size (mm)        |       | Code (4129) |       |          |        |          |        |
|------------------|-------|-------------|-------|----------|--------|----------|--------|
| Nominal diameter | Pitch | Class 6g    |       | Class 6e |        | Class 6h |        |
|                  |       | 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 |
| M31              | 3     | -30V        | -30VN | -30VE    | -30VEN | -30VH    | -30VHN |
|                  | 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 |
| 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 |

To be continued

Continued from previous page

| Size (mm)        |       | Code (4129) |       |          |        |          |        |
|------------------|-------|-------------|-------|----------|--------|----------|--------|
| Nominal diameter | Pitch | Class 6g    |       | Class 6e |        | Class 6h |        |
|                  |       | GO          | NOGO  | GO       | NOGO   | GO       | NOGO   |
| 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 |

## AMERICAN STANDARD THREAD PLUG GAGES

ATTENTION:  
LIFE TIME IS LIMITED

- Supplied with Go and No-Go gages together
- Standard ANSI/ASME B1.2
- Supplied with manufacturer inspection certificate



4131-102

| Size          | Code     |           | Size         | Code        |              | Size          | Code       |             |
|---------------|----------|-----------|--------------|-------------|--------------|---------------|------------|-------------|
|               | Class 2B | Class 3B  |              | Class 2B    | Class 3B     |               | Class 2B   | Class 3B    |
| No. 0-80UNF   | 4131-02  | 4131-02B  | 5/16-18UNC   | 4131-5D1    | 4131-5D1B    | 13/16-20UNEF  | 4131-13D3  | 4131-13D3B  |
| No. 1-64UNC   | 4131-11  | 4131-11B  | 5/16-24UNF   | 4131-5D2    | 4131-5D2B    | 7/8-9UNC      | 4131-7C1   | 4131-7C1B   |
| No. 1-72UNF   | 4131-12  | 4131-12B  | 5/16-32UNEF  | 4131-5D3    | 4131-5D3B    | 7/8-14UNF     | 4131-7C2   | 4131-7C2B   |
| No. 2-56UNC   | 4131-21  | 4131-21B  | 3/8-16UNC    | 4131-3C1    | 4131-3C1B    | 7/8-16UN      | 4131-7C516 | 4131-7C516B |
| No. 2-64UNF   | 4131-22  | 4131-22B  | 3/8-24UNF    | 4131-3C2    | 4131-3C2B    | 7/8-20UNEF    | 4131-7C3   | 4131-7C3B   |
| No. 3-48UNC   | 4131-31  | 4131-31B  | 3/8-32UNEF   | 4131-3C3    | 4131-3C3B    | 15/16-20UNEF  | 4131-15D3  | 4131-15D3B  |
| No. 3-56UNF   | 4131-32  | 4131-32B  | 7/16-14UNC   | 4131-7D1    | 4131-7D1B    | 1-8UNC        | 4131-2A1   | 4131-2A1B   |
| No. 4-40UNC   | 4131-41  | 4131-41B  | 7/16-20UNF   | 4131-7D2    | 4131-7D2B    | 1-12UNF       | 4131-2A2   | 4131-2A2B   |
| No. 4-48UNF   | 4131-42  | 4131-42B  | 7/16-28UNEF  | 4131-7D3    | 4131-7D3B    | 1-14UNS       | 4131-2A514 | 4131-2A514B |
| No. 5-40UNC   | 4131-51  | 4131-51B  | 1/2-13UNC    | 4131-1A1    | 4131-1A1B    | 1-20UNEF      | 4131-2A3   | 4131-2A3B   |
| No. 5-44UNF   | 4131-52  | 4131-52B  | 1/2-20UNF    | 4131-1A2    | 4131-1A2B    | 1-32UN        | 4131-2A532 | 4131-2A532B |
| No. 6-32UNC   | 4131-61  | 4131-61B  | 1/2-28UNEF   | 4131-1A3    | 4131-1A3B    | 1 1/16-12UN   | 4131-1E512 | 4131-1E512B |
| No. 6-40UNF   | 4131-62  | 4131-62B  | 9/16-12UNC   | 4131-9D1    | 4131-9D1B    | 1 1/16-18UNEF | 4131-1E3   | 4131-1E3B   |
| No. 8-32UNC   | 4131-81  | 4131-81B  | 9/16-18UNF   | 4131-9D2    | 4131-9D2B    | 1 1/8-7UNC    | 4131-1F1   | 4131-1F1B   |
| No. 8-36UNF   | 4131-82  | 4131-82B  | 9/16-24UNEF  | 4131-9D3    | 4131-9D3B    | 1 1/8-8UN     | 4131-1F58  | 4131-1F58B  |
| No. 10-24UNC  | 4131-101 | 4131-101B | 5/8-11UNC    | 4131-5C1    | 4131-5C1B    | 1 1/8-12UNF   | 4131-1F2   | 4131-1F2B   |
| No. 10-32UNF  | 4131-102 | 4131-102B | 5/8-18UNF    | 4131-5C2    | 4131-5C2B    | 1 1/8-18UNEF  | 4131-1F3   | 4131-1F3B   |
| No. 12-24UNC  | 4131-121 | 4131-121B | 5/8-24UNEF   | 4131-5C3    | 4131-5C3B    | 1 3/16-12UN   | 4131-3E512 | 4131-3E512B |
| No. 12-28UNF  | 4131-122 | 4131-122B | 11/16-16UN   | 4131-11D516 | 4131-11D516B | 1 3/16-18UNEF | 4131-3E3   | 4131-3E3B   |
| No. 12-32UNEF | 4131-123 | 4131-123B | 11/16-24UNEF | 4131-11D3   | 4131-11D3B   | 1 1/4-7UNC    | 4131-1G1   | 4131-1G1B   |
| 1/4-20UNC     | 4131-1B1 | 4131-1B1B | 3/4-10UNC    | 4131-3B1    | 4131-3B1B    | 1 1/4-8UN     | 4131-1G58  | 4131-1G58B  |
| 1/4-28UNF     | 4131-1B2 | 4131-1B2B | 3/4-16UNF    | 4131-3B2    | 4131-3B2B    | 1 1/4-12UNF   | 4131-1G2   | 4131-1G2B   |
| 1/4-32UNEF    | 4131-1B3 | 4131-1B3B | 3/4-20UNEF   | 4131-3B3    | 4131-3B3B    | 1 1/4-18UNEF  | 4131-1G3   | 4131-1G3B   |
| 1/4-36UNS     | 4131-1B4 | 4131-1B4B | 13/16-16UN   | 4131-13D516 | 4131-13D516B | 1 5/16-12UN   | 4131-5E512 | 4131-5E512B |

ATTENTION:  
LIFE TIME IS LIMITED



## AMERICAN STANDARD THREAD RING GAGES

- 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 |

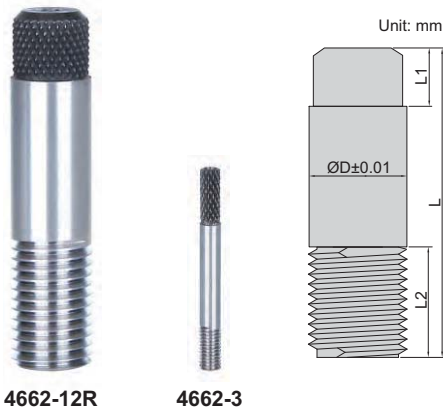


| Size         | Code        |              |
|--------------|-------------|--------------|
|              | GO          | NOGO         |
| 3/8-32UNEF   | 4121-3C3    | 4121-3C3N    |
| 7/16-14UNC   | 4121-7D1    | 4121-7D1N    |
| 7/16-20UNF   | 4121-7D2    | 4121-7D2N    |
| 7/16-28UNEF  | 4121-7D3    | 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    |
| 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    |

| Size          | Code       |             |
|---------------|------------|-------------|
|               | GO         | NOGO        |
| 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 |

## THREADED HOLE LOCATION GAGES

**INSIZE PLUS**  
MADE IN EUROPE



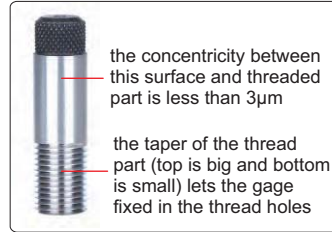
4662-12R

4662-3

■ Hardness: HRC60-63

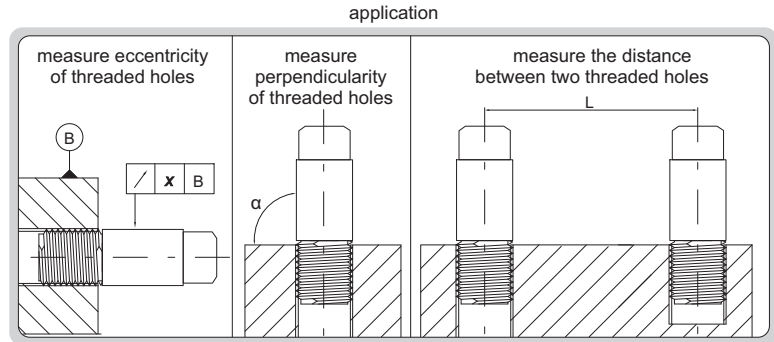
### Metric thread (mm)

| 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 |



ANY SIZE WITHIN THE RANGE OF M3-M150MM CAN BE CUSTOMIZED

ACCURACY CLASS CAN BE CUSTOMIZED



### American standard thread (mm)

| Code     | Size         | L    | L1 | L2   | ØD     |
|----------|--------------|------|----|------|--------|
| 4665-61  | No.6-32UNC   | 32.5 | 8  | 9.5  | 3.505  |
| 4665-62  | No.6-40UNF   | 30.6 | 8  | 7.6  | 3.505  |
| 4665-81  | No.8-32UNC   | 32.5 | 8  | 9.5  | 4.166  |
| 4665-82  | No.8-36UNF   | 31.5 | 8  | 8.5  | 4.166  |
| 4665-101 | No.10-24UNC  | 35.7 | 8  | 12.7 | 4.826  |
| 4665-102 | No.10-32UNF  | 32.5 | 8  | 9.5  | 4.826  |
| 4665-121 | No.12-24UNC  | 47.7 | 10 | 12.7 | 5.486  |
| 4665-122 | No.12-28UNF  | 45.9 | 10 | 10.9 | 5.486  |
| 4665-123 | No.12-32UNEF | 44.5 | 10 | 9.5  | 5.486  |
| 4665-1B1 | 1/4-20UNC    | 50.2 | 10 | 15.2 | 6.350  |
| 4665-1B2 | 1/4-28UNF    | 45.9 | 10 | 10.9 | 6.350  |
| 4665-1B3 | 1/4-32UNEF   | 44.5 | 10 | 9.5  | 6.350  |
| 4665-3C1 | 3/8-16UNC    | 54.1 | 10 | 19.1 | 9.525  |
| 4665-3C2 | 3/8-24UNF    | 47.7 | 10 | 12.7 | 9.525  |
| 4665-3C3 | 3/8-32UNEF   | 44.5 | 10 | 9.5  | 9.525  |
| 4665-1A1 | 1/2-13UNC    | 58.4 | 10 | 23.4 | 12.700 |
| 4665-1A2 | 1/2-20UNF    | 50.2 | 10 | 15.2 | 12.700 |
| 4665-1A3 | 1/2-28UNEF   | 45.9 | 10 | 10.9 | 12.700 |
| 4665-3B1 | 3/4-16UNC    | 54.1 | 10 | 19.1 | 19.050 |
| 4665-3B3 | 3/4-20UNEF   | 50.2 | 10 | 15.2 | 19.050 |

## STEEL BALL SET

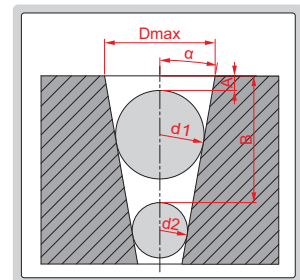
**INSPECTION CERTIFICATE**

- To measure angle and diameter of taper holes
- Each size has a pair of steel ball
- Material: tool steel
- Hardness: HRC63
- Diameter accuracy:  $\pm 3\mu\text{m}$
- Roundness:  $1\mu\text{m}$
- Supplied with manufacturer inspection certificate



4168-S25

Calculate angle ( $\alpha$ ) and diameter ( $D_{\text{max}}$ ) according to the ball diameter ( $d_1$ ,  $d_2$ ), height (A) and depth (B)



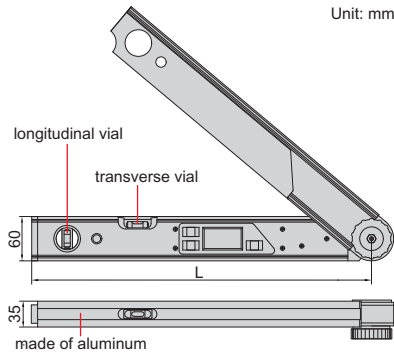
| Code     | Diameter  | Steel balls per set |
|----------|---|---------------------|
| 4168-S25 | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25mm | 25 pairs            |

**AUTOMATIC  
BACKLIGHT**

**ABSOLUTE  
LEVEL**

**IP54  
WATERPROOF**

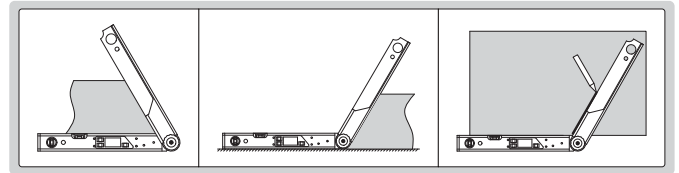
## WATERPROOF DIGITAL PROTRACTOR (HEAVY DUTY)



2174-225

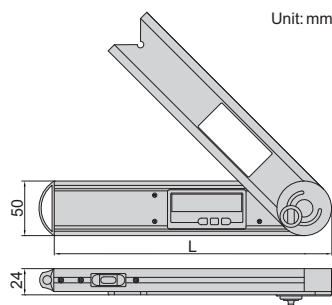
- Suitable for setting horizontal and vertical mitre angles of cutting machines
- Buttons: ON/OFF, HOLD/SUP, SPR/CNR/MTR/BVL
- IP54 dust/waterproof
- With transverse and longitudinal vials
- 2xAAA batteries
- Absolute level, zero setting is not needed when batteries are replaced
- Backlight turns off 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°   |



10

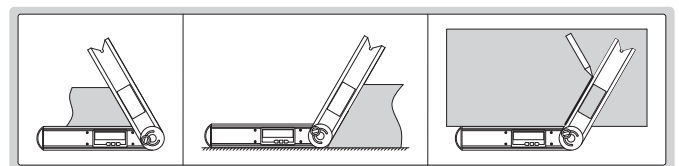
## DIGITAL PROTRACTOR



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°   |

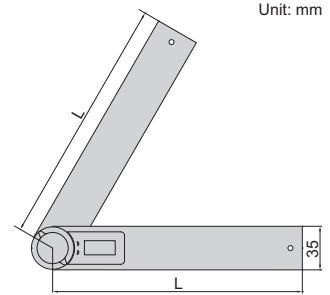


## DIGITAL PROTRACTORS

- 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

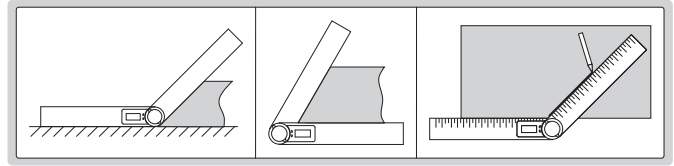


2176-200



Unit: mm

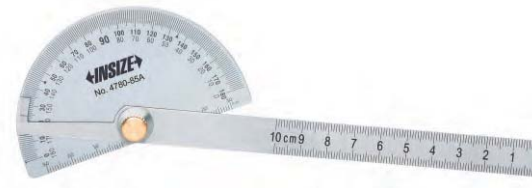
| Code     | Size (L) | Range  | Resolution | Accuracy |
|----------|----------|--------|------------|----------|
| 2176-200 | 200mm    | 0-360° | 0.1°       | ±0.3°    |
| 2176-300 | 300mm    | 0-360° | 0.1°       | ±0.3°    |



10

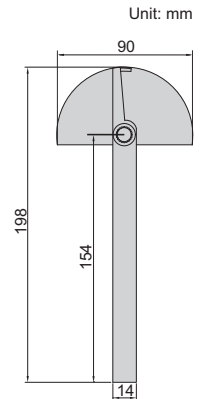
## PROTRACTOR (ECONOMIC TYPE)

- Graduation: 1°
- Made of stainless steel
- With clamping screw



4780-85A

| Code     | Size     | Range  | Accuracy |
|----------|----------|--------|----------|
| 4780-85A | 90x154mm | 0-180° | ±0.5°    |



Unit: mm

## DIGITAL PROTRACTORS

ATTENTION:  
NO DATA OUTPUT

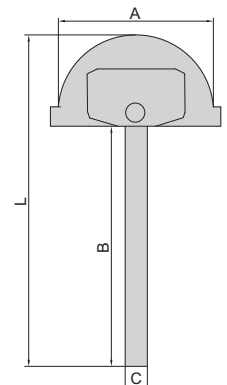
- Range: 0-180°
- Buttons: on/off, zero, hold/turn
- Made of stainless steel
- With clamping screw



4779-120

| Code     | Size (AxB) | Resolution | Accuracy | L     | C    |
|----------|------------|------------|----------|-------|------|
| 4779-120 | 120x150mm  | 0.05°      | ±0.3°    | 221mm | 22mm |
| 4779-150 | 150x200mm  | 0.05°      | ±0.3°    | 286mm | 22mm |
| 4779-200 | 200x300mm  | 0.05°      | ±0.3°    | 409mm | 22mm |

the reading can turn over



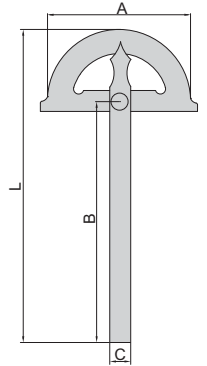


## PROTRACTORS

- 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 |

**ATTENTION:**  
NO DATA OUTPUT

## DIGITAL PROTRACTORS

10

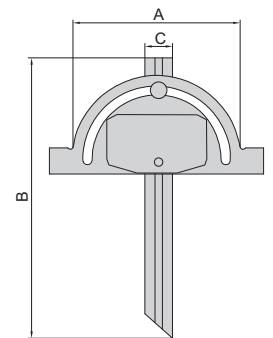
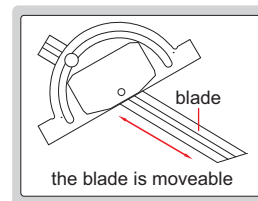
the reading can turn over



4778-100

- Range: 0-180°
- Buttons: on/off, zero, hold/turn
- Made of stainless steel
- With clamping screw
- The blade is moveable

| Code     | Size (AxB) | Resolution | Accuracy | C    |
|----------|------------|------------|----------|------|
| 4778-100 | 126x150mm  | 0.05°      | ±0.3°    | 22mm |
| 4778-150 | 150x300mm  | 0.05°      | ±0.3°    | 22mm |
| 4778-200 | 200x400mm  | 0.05°      | ±0.3°    | 24mm |



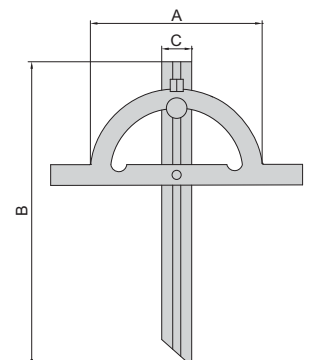
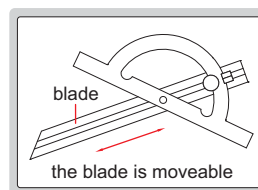
## PROTRACTORS

- Graduation: 1°
- Made of carbon steel
- Satin chrome plated
- With clamping screw
- The blade is moveable



4797-100

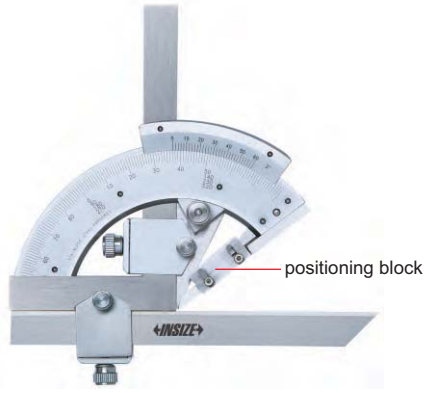
| Code     | Size (AxB) | Range   | Accuracy | C    |
|----------|------------|---------|----------|------|
| 4797-100 | 100x150mm  | 10-170° | ±0.3°    | 18mm |
| 4797-150 | 150x300mm  | 10-170° | ±0.3°    | 22mm |
| 4797-200 | 200x400mm  | 10-170° | ±0.3°    | 24mm |
| 4797-250 | 250x500mm  | 10-170° | ±0.3°    | 28mm |
| 4797-300 | 300x600mm  | 10-170° | ±0.3°    | 32mm |



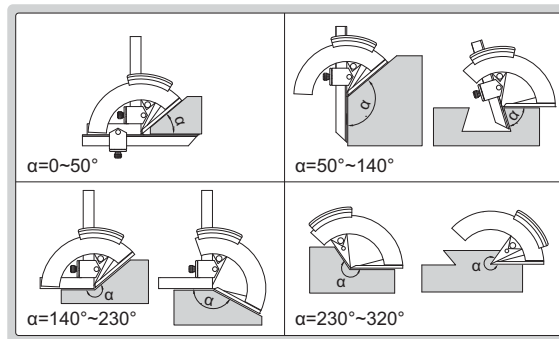
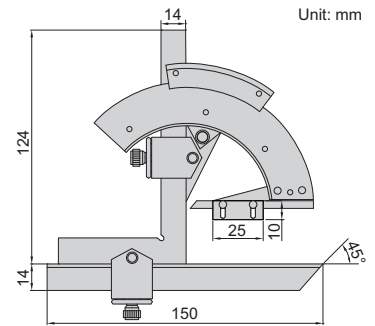
## PROTRACTORS



2374-320



2374-320D



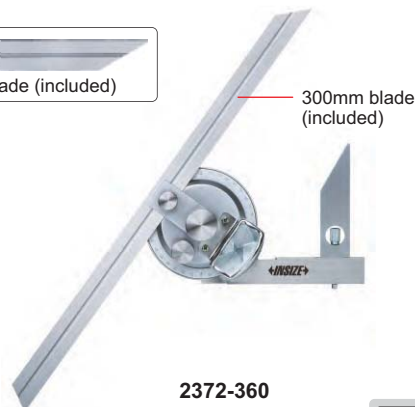
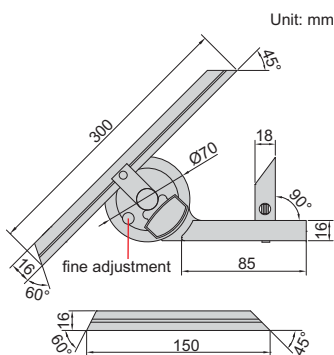
- Made of stainless steel
- Satin chrome plated scale



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    |

## UNIVERSAL PROTRACTOR

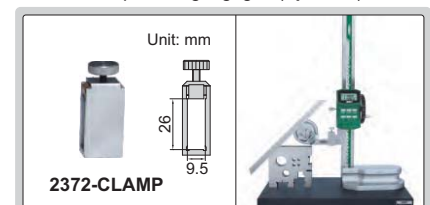


2372-360

- Parallax-free reading
- Made of stainless steel
- Optional accessory: clamp (code 2372-CLAMP), suitable for height gages 1156, 1351 and 1250

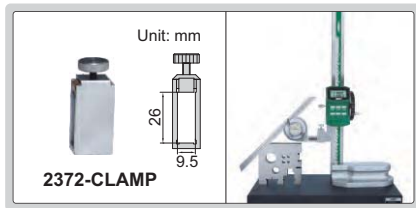
| Code     | Range  | Graduation | Accuracy |
|----------|--------|------------|----------|
| 2372-360 | 0-360° | 5'         | ±5'      |

clamp for height gages (optional)



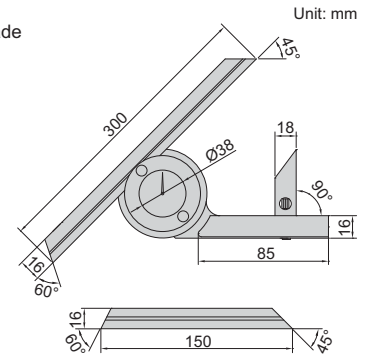
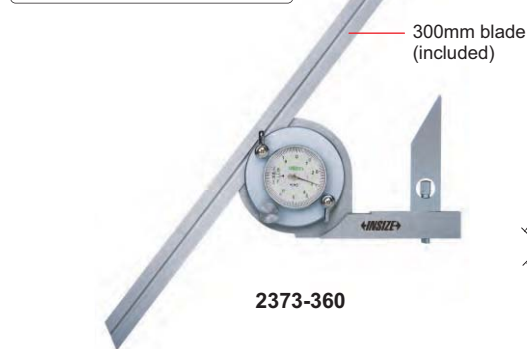
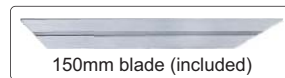
## DIAL PROTRACTOR

clamp for height gages (optional)



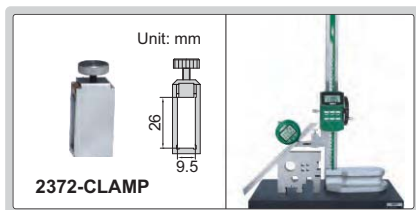
- Made of stainless steel
- Optional accessory: clamp (code **2372-CLAMP**), suitable for height gages **1156**, **1351** and **1250**

| Code            | Range  | Graduation | Accuracy |
|-----------------|--------|------------|----------|
| <b>2373-360</b> | 0-360° | 5'         | ±5'      |



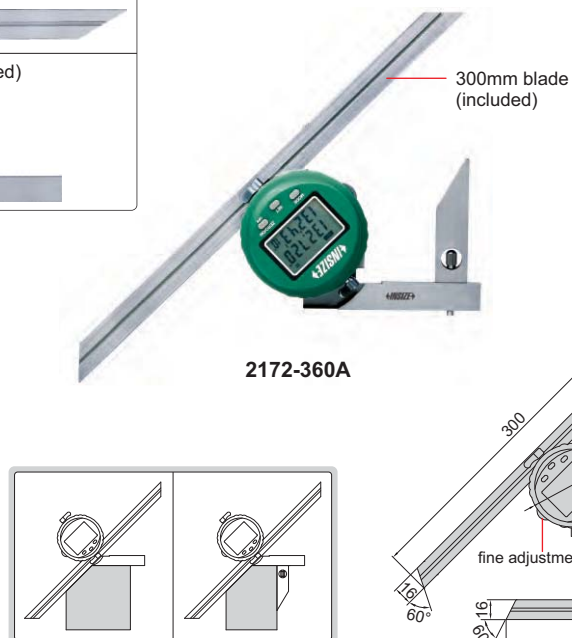
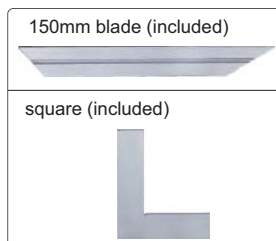
## DIGITAL PROTRACTOR

clamp for height gages (optional)

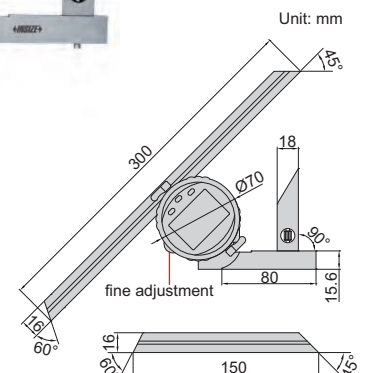


- Display in degree (for example 32.655°) and degree/minute/second (for example 32°39'30")
- SET button: preset the reading, change measuring direction
- MODE button: choose 0~90°, 0~180° or 0~360° display
- ZERO/ON/OFF button: zero and power on/off
- Battery CR2032, automatic power off
- Data output
- Supplied with square to set 90°
- Made of stainless steel
- Optional accessory: data output cable (code **7315-50**, **7302-SPC3B**), clamp (code **2372-CLAMP**), suitable for height gages **1156**, **1351** and **1250**

| Code             | Range  | Resolution | Accuracy |
|------------------|--------|------------|----------|
| <b>2172-360A</b> | 0-360° | 10"/0.005° | ±5'      |



DATA OUTPUT



10



## CYLINDER SQUARES

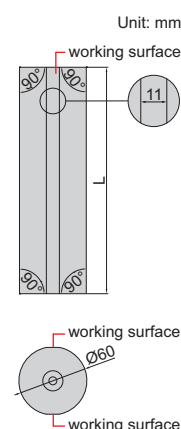
- Made of special alloy steel, hardness HRC58~60
- The handle can be removed

| Code             | Length (L) | Squareness |
|------------------|------------|------------|
| <b>4710-200*</b> | 200mm      | 1µm        |
| <b>4710-300*</b> | 300mm      | 2µm        |

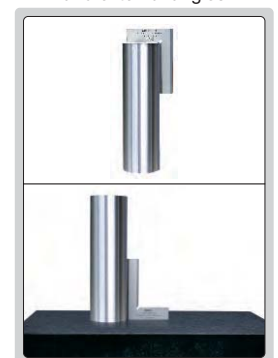
\* Supplied with manufacturer inspection certificate



**4710-200**



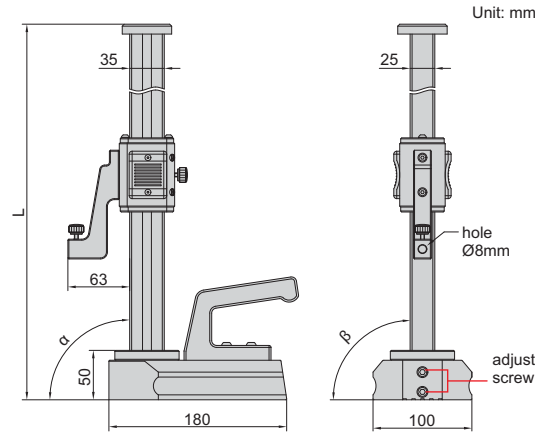
inspect 90° internal and external angles



## PERPENDICULARITY TESTERS



dial test indicator is optional



4770-300

- Optional accessory:  
dial test indicators (graduation: 1µm or 2µm)

| Code     | Range (H) | Perpendicularity ( $\alpha$ ) | Side perpendicularity ( $\beta$ ) | L     |
|----------|-----------|-------------------------------|-----------------------------------|-------|
| 4770-300 | 0-300mm   | 3µm                           | 10µm                              | 460mm |
| 4770-600 | 0-600mm   | 5µm                           | 20µm                              | 760mm |

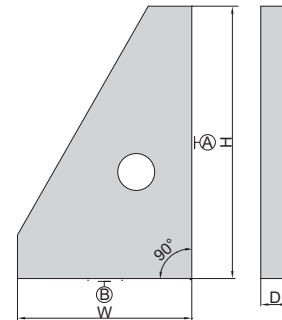
10

## GRANITE SQUARES

CUSTOM-MADE  
SUPPLY SPECIAL SIZES ACCORDING  
TO CUSTOMER'S REQUEST



4141-250



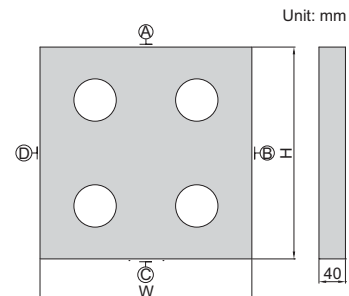
| Code     | Size (HxW) | Flatness of A | Flatness of B | Squareness of A to B | D    |
|----------|------------|---------------|---------------|----------------------|------|
| 4141-250 | 250x160mm  | 1µm           | 1µm           | 2µm                  | 25mm |
| 4141-400 | 400x250mm  | 1.5µm         | 1µm           | 3µm                  | 40mm |
| 4141-630 | 630x400mm  | 2µm           | 1.5µm         | 4µm                  | 63mm |

## GRANITE SQUARE

CUSTOM-MADE  
SUPPLY SPECIAL SIZES ACCORDING  
TO CUSTOMER'S REQUEST



4144-315



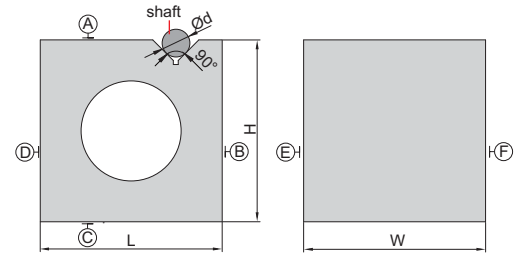
| Code     | Size (HxW) | Flatness of A, B, C and D | Squareness and parallelism between A, B, C and D |
|----------|------------|---------------------------|--|
| 4144-315 | 315x315mm  | 1.1µm                     | 2.6µm  |

## GRANITE SQUARE WITH V GROOVE

- Parallelism and squareness of A, B, C, D, E and F:  $6\mu\text{m}$
- Parallelism and squareness of V groove to A, B, C, D, E and F:  $6\mu\text{m}$



4142-200



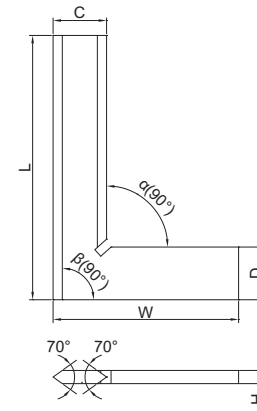
| Code     | Size (LxWxH)  | Range of shaft (Ød) |
|----------|---------------|---------------------|
| 4142-200 | 200x200x200mm | 9~70mm              |

## 90° BEVELED EDGE SQUARES

- Satin chrome plating
- Beveled edges for inside and outside measurements
- Made of hardened stainless steel



4790-0100



| Code      | Size (LxW) | Squareness          |                     | C  | D  | H |
|-----------|------------|---------------------|---------------------|----|----|---|
|           |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |
| 4790-050  | 50x40mm    | $2.4\mu\text{m}$    | $2.5\mu\text{m}$    | 13 | 13 | 4 |
| 4790-075  | 75x50mm    | $2.6\mu\text{m}$    | $2.8\mu\text{m}$    | 15 | 15 | 4 |
| 4790-0100 | 100x70mm   | $2.8\mu\text{m}$    | $3.0\mu\text{m}$    | 20 | 20 | 5 |
| 4790-0150 | 150x100mm  | $3.2\mu\text{m}$    | $3.5\mu\text{m}$    | 30 | 30 | 6 |
| 4790-0200 | 200x130mm  | $3.7\mu\text{m}$    | $4.0\mu\text{m}$    | 34 | 34 | 7 |
| 4790-0250 | 250x165mm  | $4.2\mu\text{m}$    | $4.5\mu\text{m}$    | 35 | 35 | 7 |
| 4790-0300 | 300x200mm  | $4.6\mu\text{m}$    | $5.0\mu\text{m}$    | 40 | 40 | 8 |

| Code      | Size (LxW) | Squareness          |                     | C  | D  | H |
|-----------|------------|---------------------|---------------------|----|----|---|
|           |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |
| 4790-500  | 50x40mm    | $6\mu\text{m}$      | $6\mu\text{m}$      | 13 | 13 | 4 |
| 4790-750  | 75x50mm    | $6\mu\text{m}$      | $7\mu\text{m}$      | 15 | 15 | 4 |
| 4790-1000 | 100x70mm   | $7\mu\text{m}$      | $7\mu\text{m}$      | 20 | 20 | 5 |
| 4790-1500 | 150x100mm  | $7\mu\text{m}$      | $8\mu\text{m}$      | 30 | 30 | 6 |
| 4790-2000 | 200x130mm  | $8\mu\text{m}$      | $9\mu\text{m}$      | 34 | 34 | 7 |
| 4790-2500 | 250x165mm  | $9\mu\text{m}$      | $10\mu\text{m}$     | 35 | 35 | 7 |
| 4790-3000 | 300x200mm  | $10\mu\text{m}$     | $11\mu\text{m}$     | 40 | 40 | 8 |

## 90° TOOL MAKER SQUARES

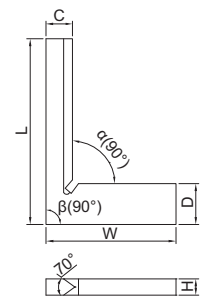
- DIN875 grade 00
- Beveled edge for inside measurement
- Made of hardened stainless steel

(mm)

| Code     | Size (LxW) | Squareness          |                     | C   | D   | H   |
|----------|------------|---------------------|---------------------|-----|-----|-----|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |     |     |     |
| 4794-025 | 25x20mm    | $2.2\mu\text{m}$    | $2.3\mu\text{m}$    | 4   | 6.5 | 3.5 |
| 4794-040 | 40x28mm    | $2.3\mu\text{m}$    | $2.4\mu\text{m}$    | 5.5 | 8.5 | 3.5 |



4794-040



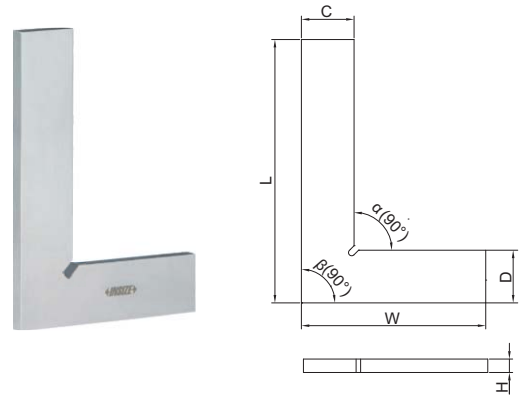
## 90° FLAT EDGE SQUARES

### DIN875 grade 0 (mm)

| Code     | Size (LxW) | Squareness          |                     | C  | D  | H |
|----------|------------|---------------------|---------------------|----|----|---|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |
| 4791-50  | 50x40mm    | 6 $\mu$ m           | 6 $\mu$ m           | 15 | 15 | 4 |
| 4791-75  | 75x50mm    | 6 $\mu$ m           | 7 $\mu$ m           | 15 | 15 | 4 |
| 4791-100 | 100x70mm   | 7 $\mu$ m           | 7 $\mu$ m           | 20 | 20 | 5 |
| 4791-150 | 150x100mm  | 7 $\mu$ m           | 8 $\mu$ m           | 30 | 30 | 6 |
| 4791-200 | 200x130mm  | 8 $\mu$ m           | 9 $\mu$ m           | 30 | 30 | 7 |
| 4791-250 | 250x165mm  | 9 $\mu$ m           | 10 $\mu$ m          | 35 | 35 | 7 |
| 4791-300 | 300x200mm  | 10 $\mu$ m          | 11 $\mu$ m          | 40 | 40 | 8 |

### DIN875 grade 1 (mm)

| Code      | Size (LxW) | Squareness          |                     | C  | D  | H |
|-----------|------------|---------------------|---------------------|----|----|---|
|           |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |
| 4791-501  | 50x40mm    | 12 $\mu$ m          | 13 $\mu$ m          | 15 | 15 | 4 |
| 4791-751  | 75x50mm    | 13 $\mu$ m          | 14 $\mu$ m          | 15 | 15 | 4 |
| 4791-1001 | 100x70mm   | 14 $\mu$ m          | 15 $\mu$ m          | 20 | 20 | 5 |
| 4791-1501 | 150x100mm  | 16 $\mu$ m          | 18 $\mu$ m          | 30 | 30 | 6 |
| 4791-2001 | 200x130mm  | 19 $\mu$ m          | 20 $\mu$ m          | 30 | 30 | 6 |



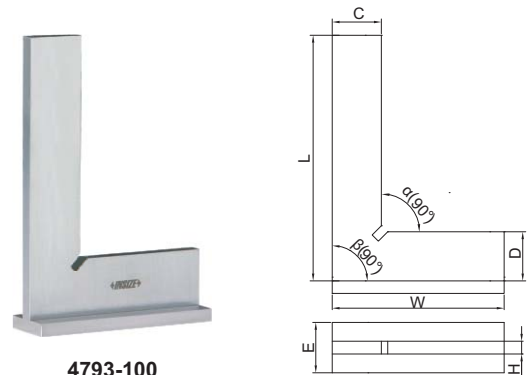
4791-100

- Made of hardened stainless steel

## 90° FLAT EDGE SQUARES WITH WIDE BASE

- DIN875 grade 0
- Made of hardened stainless steel

| Code     | Size (LxW) | Squareness          |                     | C  | D  | H | E  |
|----------|------------|---------------------|---------------------|----|----|---|----|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |    |
| 4793-50  | 50x40mm    | 6 $\mu$ m           | 6 $\mu$ m           | 13 | 13 | 4 | 13 |
| 4793-75  | 75x50mm    | 6 $\mu$ m           | 7 $\mu$ m           | 15 | 15 | 4 | 15 |
| 4793-100 | 100x70mm   | 7 $\mu$ m           | 7 $\mu$ m           | 20 | 20 | 5 | 20 |
| 4793-150 | 150x100mm  | 7 $\mu$ m           | 8 $\mu$ m           | 30 | 30 | 6 | 30 |
| 4793-200 | 200x130mm  | 8 $\mu$ m           | 9 $\mu$ m           | 30 | 30 | 7 | 30 |
| 4793-250 | 250x165mm  | 9 $\mu$ m           | 10 $\mu$ m          | 35 | 35 | 7 | 35 |
| 4793-300 | 300x200mm  | 10 $\mu$ m          | 11 $\mu$ m          | 40 | 40 | 8 | 40 |

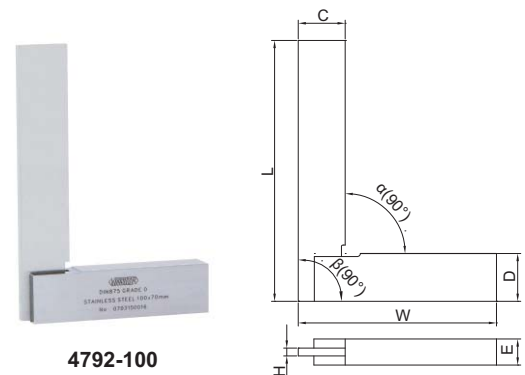


4793-100

## 90° FLAT EDGE SQUARES WITH WIDE BASE

- DIN875 grade 0
- Made of hardened stainless steel

| Code     | Size (LxW) | Squareness          |                     | C  | D  | H | E  |
|----------|------------|---------------------|---------------------|----|----|---|----|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |    |
| 4792-50  | 50x40mm    | 6 $\mu$ m           | 6 $\mu$ m           | 12 | 12 | 3 | 10 |
| 4792-75  | 75x50mm    | 6 $\mu$ m           | 7 $\mu$ m           | 14 | 14 | 3 | 10 |
| 4792-100 | 100x70mm   | 7 $\mu$ m           | 7 $\mu$ m           | 18 | 18 | 3 | 10 |
| 4792-150 | 150x100mm  | 8 $\mu$ m           | 8 $\mu$ m           | 22 | 22 | 4 | 12 |
| 4792-200 | 200x130mm  | 9 $\mu$ m           | 9 $\mu$ m           | 25 | 25 | 4 | 12 |

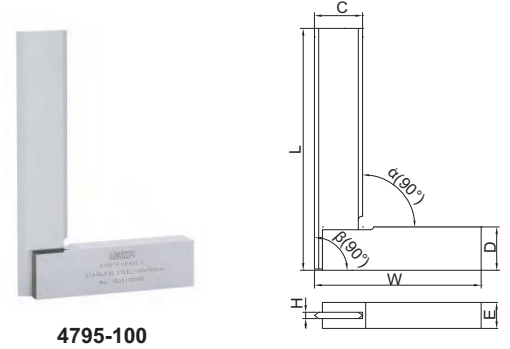


4792-100

## 90° BEVELED EDGE SQUARES WITH WIDE BASE

- DIN875 grade 0
- Beveled edges for inside and outside measurements
- Made of hardened stainless steel

| Code     | Size (LxW) | Squareness          |                     | C  | D  | H | E  |
|----------|------------|---------------------|---------------------|----|----|---|----|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |    |
| 4795-50  | 50x40mm    | 6 $\mu$ m           | 6 $\mu$ m           | 12 | 12 | 3 | 10 |
| 4795-75  | 75x50mm    | 6 $\mu$ m           | 7 $\mu$ m           | 14 | 14 | 3 | 10 |
| 4795-100 | 100x70mm   | 7 $\mu$ m           | 7 $\mu$ m           | 18 | 18 | 3 | 10 |
| 4795-150 | 150x100mm  | 8 $\mu$ m           | 8 $\mu$ m           | 22 | 22 | 4 | 12 |
| 4795-200 | 200x130mm  | 9 $\mu$ m           | 9 $\mu$ m           | 25 | 25 | 4 | 12 |



4795-100

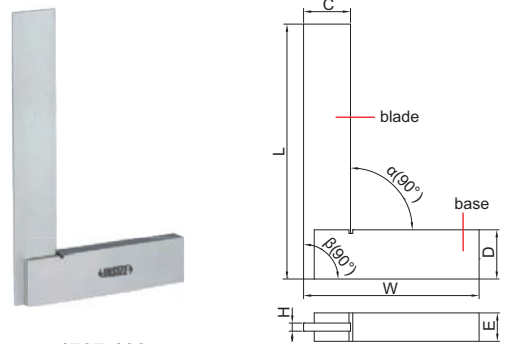
ATTENTION: NO ANTI-RUST TREATMENT, NOT HARDEND

ATTENTION: LOW ACCURACY

## MACHINIST SQUARES WITH WIDE BASE (ECONOMIC TYPE)

- DIN875 grade 2
- Made of carbon steel, no anti-rust treatment, not hardend

| Code      | Size (LxW) | Squareness          |                     | C  | D  | H | E  |
|-----------|------------|---------------------|---------------------|----|----|---|----|
|           |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |    |
| 4707-50   | 50x40mm    | 24 $\mu$ m          | 25 $\mu$ m          | 16 | 12 | 3 | 9  |
| 4707-75   | 75x50mm    | 26 $\mu$ m          | 28 $\mu$ m          | 16 | 16 | 3 | 9  |
| 4707-100  | 100x70mm   | 28 $\mu$ m          | 30 $\mu$ m          | 19 | 19 | 3 | 12 |
| 4707-150  | 150x100mm  | 33 $\mu$ m          | 35 $\mu$ m          | 25 | 25 | 3 | 16 |
| 4707-200  | 200x130mm  | 37 $\mu$ m          | 40 $\mu$ m          | 30 | 32 | 4 | 16 |
| 4707-250  | 250x165mm  | 42 $\mu$ m          | 45 $\mu$ m          | 30 | 32 | 4 | 19 |
| 4707-300  | 300x200mm  | 47 $\mu$ m          | 50 $\mu$ m          | 32 | 32 | 4 | 19 |
| 4707-400  | 400x250mm  | 56 $\mu$ m          | 60 $\mu$ m          | 38 | 38 | 5 | 22 |
| 4707-500  | 500x300mm  | 65 $\mu$ m          | 70 $\mu$ m          | 45 | 50 | 6 | 25 |
| 4707-600  | 600x350mm  | 75 $\mu$ m          | 80 $\mu$ m          | 50 | 50 | 6 | 30 |
| 4707-750  | 750x400mm  | 90 $\mu$ m          | 95 $\mu$ m          | 55 | 55 | 6 | 50 |
| 4707-900  | 900x500mm  | 103 $\mu$ m         | 110 $\mu$ m         | 65 | 75 | 9 | 50 |
| 4707-1000 | 1000x550mm | 113 $\mu$ m         | 120 $\mu$ m         | 65 | 75 | 9 | 50 |



4707-100

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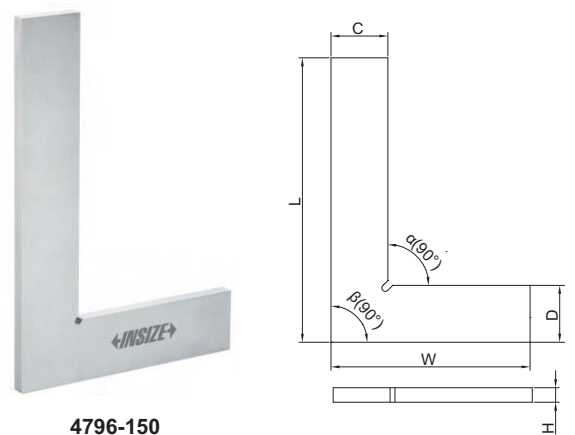
ATTENTION: NO ANTI-RUST TREATMENT, NOT HARDEND

ATTENTION: LOW ACCURACY

## MACHINIST SQUARES (ECONOMIC TYPE)

- DIN875 grade 2
- Made of carbon steel, no anti-rust treatment, not hardend

| Code     | Size (LxW) | Squareness          |                     | C  | D  | H |
|----------|------------|---------------------|---------------------|----|----|---|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |
| 4796-50  | 50x30mm    | 24 $\mu$ m          | 25 $\mu$ m          | 12 | 12 | 3 |
| 4796-75  | 75x50mm    | 26 $\mu$ m          | 28 $\mu$ m          | 16 | 16 | 3 |
| 4796-100 | 100x70mm   | 28 $\mu$ m          | 30 $\mu$ m          | 19 | 19 | 5 |
| 4796-125 | 125x80mm   | 30 $\mu$ m          | 33 $\mu$ m          | 22 | 22 | 5 |
| 4796-150 | 150x100mm  | 33 $\mu$ m          | 35 $\mu$ m          | 25 | 25 | 6 |
| 4796-200 | 200x130mm  | 38 $\mu$ m          | 40 $\mu$ m          | 25 | 25 | 6 |
| 4796-250 | 250x165mm  | 43 $\mu$ m          | 45 $\mu$ m          | 25 | 25 | 6 |
| 4796-300 | 300x200mm  | 47 $\mu$ m          | 50 $\mu$ m          | 30 | 30 | 6 |
| 4796-350 | 350x200mm  | 51 $\mu$ m          | 55 $\mu$ m          | 38 | 38 | 6 |
| 4796-400 | 400x200mm  | 56 $\mu$ m          | 60 $\mu$ m          | 38 | 38 | 9 |
| 4796-450 | 450x250mm  | 58 $\mu$ m          | 65 $\mu$ m          | 38 | 38 | 9 |
| 4796-500 | 500x300mm  | 69 $\mu$ m          | 70 $\mu$ m          | 38 | 38 | 9 |



4796-150

## MACHINIST SQUARES WITH WIDE BASE AND SCALE (ECONOMIC TYPE)

ATTENTION: NO ANTI-RUST TREATMENT, NOT HARDEND

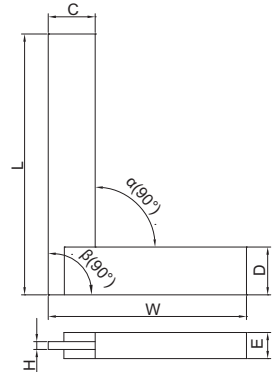
ATTENTION: LOW ACCURACY

- DIN875 grade 2
- Made of carbon steel, no anti-rust treatment, not hardend

| Code     | Size (LxW) | Squareness          |                     | C  | D  | H   | E  | (mm) |
|----------|------------|---------------------|---------------------|----|----|-----|----|------|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |     |    |      |
| 4711-50  | 50x30mm    | 24 $\mu$ m          | 25 $\mu$ m          | 16 | 12 | 2.5 | 9  |      |
| 4711-75  | 75x50mm    | 26 $\mu$ m          | 28 $\mu$ m          | 16 | 16 | 2.5 | 9  |      |
| 4711-100 | 100x70mm   | 28 $\mu$ m          | 30 $\mu$ m          | 19 | 19 | 3   | 12 |      |
| 4711-150 | 150x100mm  | 33 $\mu$ m          | 35 $\mu$ m          | 25 | 25 | 3   | 16 |      |
| 4711-200 | 200x130mm  | 37 $\mu$ m          | 40 $\mu$ m          | 30 | 32 | 3   | 16 |      |
| 4711-250 | 250x165mm  | 42 $\mu$ m          | 45 $\mu$ m          | 30 | 32 | 3   | 19 |      |
| 4711-300 | 300x200mm  | 47 $\mu$ m          | 50 $\mu$ m          | 32 | 32 | 3   | 19 |      |
| 4711-400 | 400x200mm  | 56 $\mu$ m          | 60 $\mu$ m          | 38 | 38 | 4.5 | 22 |      |
| 4711-500 | 500x300mm  | 65 $\mu$ m          | 70 $\mu$ m          | 44 | 50 | 6   | 25 |      |
| 4711-600 | 600x350mm  | 75 $\mu$ m          | 80 $\mu$ m          | 50 | 50 | 6   | 30 |      |
| 4711-750 | 750x400mm  | 90 $\mu$ m          | 95 $\mu$ m          | 55 | 55 | 6   | 50 |      |



4711-100



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## MAGNALIUM 90° FLAT EDGE SQUARES WITH WIDE BASE

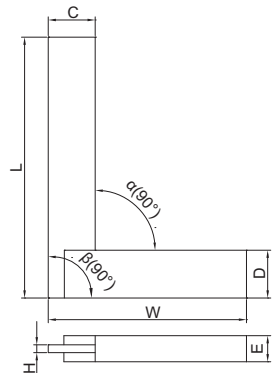
ATTENTION: LOW ACCURACY

- Made of magnalium, light weight, non-deform, no rusty

| Code      | Size (LxW)  | Squareness          |                     | C  | D  | H  | E  | Weight | (mm) |
|-----------|-------------|---------------------|---------------------|----|----|----|----|--------|------|
|           |             | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |    |    |        |      |
| 4705-630  | 630x400mm   | 107 $\mu$ m         | 113 $\mu$ m         | 40 | 60 | 18 | 40 | 5kg    |      |
| 4705-800  | 800x500mm   | 123 $\mu$ m         | 130 $\mu$ m         | 50 | 70 | 25 | 50 | 7kg    |      |
| 4705-1000 | 1000x630mm  | 143 $\mu$ m         | 150 $\mu$ m         | 50 | 70 | 25 | 50 | 9kg    |      |
| 4705-1250 | 1250x800mm  | 168 $\mu$ m         | 175 $\mu$ m         | 50 | 70 | 25 | 50 | 11kg   |      |
| 4705-1600 | 1600x1000mm | 203 $\mu$ m         | 210 $\mu$ m         | 50 | 70 | 25 | 50 | 13kg   |      |
| 4705-2000 | 2000x1250mm | 243 $\mu$ m         | 250 $\mu$ m         | 50 | 70 | 25 | 50 | 15kg   |      |
| 4705-2600 | 2600x1500mm | 303 $\mu$ m         | 310 $\mu$ m         | 50 | 70 | 25 | 50 | 20kg   |      |



4705-630



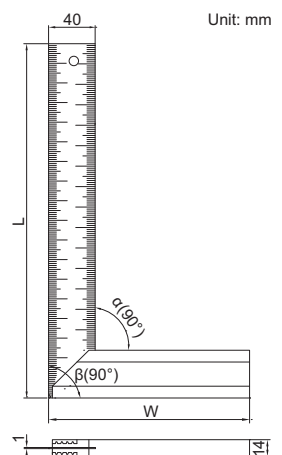
## TRY SQUARE

- Graduation: 1mm
- Stainless steel blade, aluminum base

| Code     | Size (LxW) | Squareness          |                     |
|----------|------------|---------------------|---------------------|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |
| 2275-300 | 300x170mm  | 0.5mm               | 0.5mm               |



2275-300

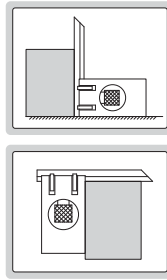




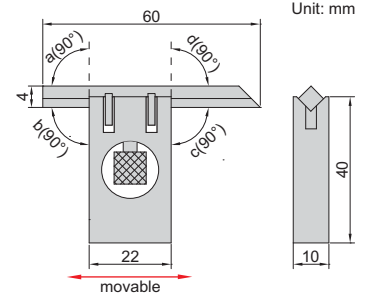
## ADJUSTABLE SQUARE

- 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 | 7 $\mu$ m               |



4701-1



Unit: mm

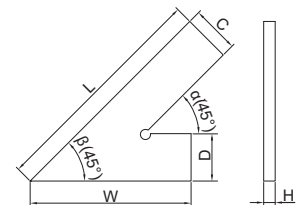
## 45° SQUARES

- Made of hardened stainless steel

| Code      | Size (LxW) | Accuracy            |                     | (mm) |    |   |
|-----------|------------|---------------------|---------------------|------|----|---|
|           |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) | C    | D  | H |
| 4745-1120 | 120x80mm   | 29 $\mu$ m          | 32 $\mu$ m          | 20   | 20 | 5 |
| 4745-1150 | 150x100mm  | 32 $\mu$ m          | 35 $\mu$ m          | 20   | 20 | 5 |
| 4745-1200 | 200x130mm  | 36 $\mu$ m          | 40 $\mu$ m          | 25   | 25 | 5 |



4745-1120



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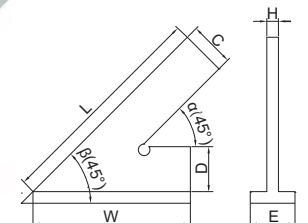
## 45° SQUARES WITH WIDE BASE

- Made of hardened stainless steel

| Code     | Size (LxW) | Accuracy            |                     | (mm) |    |   |    |
|----------|------------|---------------------|---------------------|------|----|---|----|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) | C    | D  | H | E  |
| 4747-120 | 120x80mm   | 29 $\mu$ m          | 33 $\mu$ m          | 20   | 20 | 5 | 20 |
| 4747-150 | 150x100mm  | 32 $\mu$ m          | 36 $\mu$ m          | 20   | 20 | 5 | 20 |
| 4747-200 | 200x130mm  | 36 $\mu$ m          | 41 $\mu$ m          | 25   | 25 | 5 | 25 |



4747-120



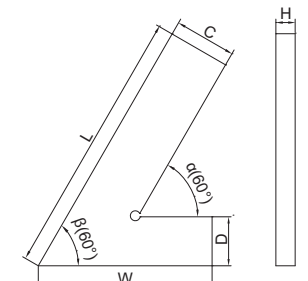
## 60° SQUARES

- Made of hardened stainless steel

| Code      | Size (LxW) | Accuracy            |                     | (mm) |    |   |
|-----------|------------|---------------------|---------------------|------|----|---|
|           |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) | C    | D  | H |
| 4760-1120 | 120x80mm   | 30 $\mu$ m          | 32 $\mu$ m          | 20   | 20 | 5 |
| 4760-1150 | 150x100mm  | 32 $\mu$ m          | 35 $\mu$ m          | 20   | 20 | 5 |
| 4760-1200 | 200x130mm  | 37 $\mu$ m          | 40 $\mu$ m          | 25   | 25 | 5 |

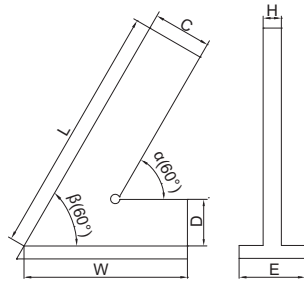


4760-1120



## 60° SQUARES WITH WIDE BASE

- Made of hardened stainless steel



(mm)

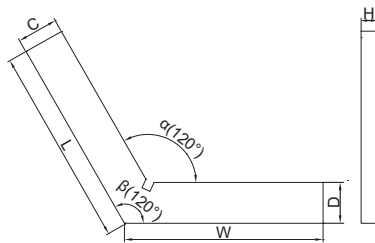
| Code     | Size (LxW) | Accuracy            |                     | C  | D  | H | E  |
|----------|------------|---------------------|---------------------|----|----|---|----|
|          |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |    |
| 4762-120 | 120x80mm   | 30 $\mu$ m          | 33 $\mu$ m          | 20 | 20 | 5 | 20 |
| 4762-150 | 150x100mm  | 33 $\mu$ m          | 36 $\mu$ m          | 20 | 20 | 5 | 20 |
| 4762-200 | 200x130mm  | 37 $\mu$ m          | 41 $\mu$ m          | 25 | 25 | 5 | 25 |



4762-120

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## 120° SQUARES



(mm)

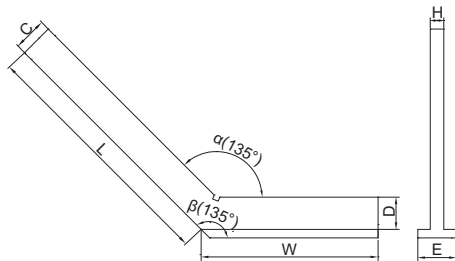
| Code      | Size (LxW) | Accuracy            |                     | C  | D  | H |
|-----------|------------|---------------------|---------------------|----|----|---|
|           |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |
| 4706-150  | 50x50mm    | 24 $\mu$ m          | 25 $\mu$ m          | 15 | 15 | 5 |
| 4706-175  | 75x75mm    | 26 $\mu$ m          | 28 $\mu$ m          | 20 | 20 | 5 |
| 4706-1100 | 100x100mm  | 29 $\mu$ m          | 30 $\mu$ m          | 20 | 20 | 5 |
| 4706-1150 | 150x150mm  | 34 $\mu$ m          | 35 $\mu$ m          | 25 | 25 | 5 |
| 4706-1200 | 200x200mm  | 38 $\mu$ m          | 40 $\mu$ m          | 30 | 30 | 7 |



4706-1100

- Made of hardened stainless steel

## 135° SQUARES WITH WIDE BASE



(mm)

| Code      | Size (LxW) | Accuracy            |                     | C  | D  | H | E  |
|-----------|------------|---------------------|---------------------|----|----|---|----|
|           |            | Inside ( $\alpha$ ) | Outside ( $\beta$ ) |    |    |   |    |
| 4754-3120 | 120x80mm   | 31 $\mu$ m          | 33 $\mu$ m          | 20 | 20 | 5 | 20 |
| 4754-3150 | 150x100mm  | 34 $\mu$ m          | 36 $\mu$ m          | 20 | 20 | 5 | 20 |
| 4754-3200 | 200x130mm  | 39 $\mu$ m          | 41 $\mu$ m          | 30 | 30 | 7 | 30 |

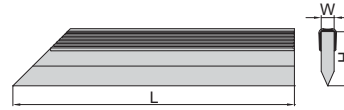


4754-3120

- Made of hardened stainless steel

## STRAIGHT EDGES

| Code     | Size (L) | Straightness | W    | H    |
|----------|----------|--------------|------|------|
| 4700-50  | 50mm     | 2.2µm        | 5mm  | 20mm |
| 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 |

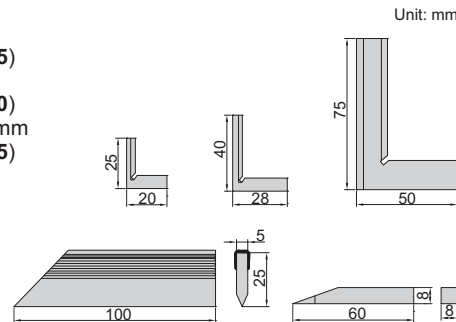


4700-100

- DIN874
- Beveled edge
- Made of hardened stainless steel
- Satin chrome plating

## 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

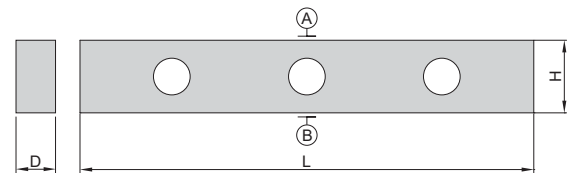
| Code   |
|--------|
| 4702-1 |

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4147-500A

## GRANITE STRAIGHT EDGES



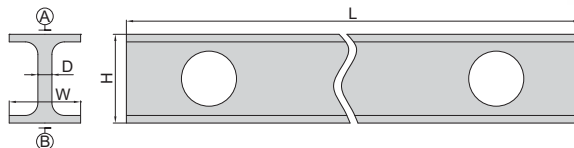
| Code       | Length (L) | Flatness of A and B | Parallelism between A and B | D    | H     |
|------------|------------|---------------------|-----------------------------|------|-------|
| 4147-500A  | 500mm      | 2.1µm               | 3.2µm                       | 50mm | 80mm  |
| 4147-1000A | 1000mm     | 3.0µm               | 4.5µm                       | 60mm | 120mm |

## MAGNALIUM STRAIGHT EDGES

- Made of magnalium, light weight, non-deform, no rusty



4180-1500



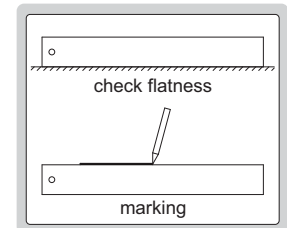
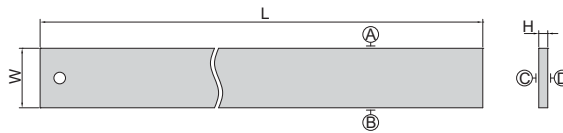
| Code      | Length (L) | Flatness of A and B | Parallelism between A and B | H     | W    | D   | Weight |
|-----------|------------|---------------------|-----------------------------|-------|------|-----|--------|
| 4180-500  | 500mm      | 3µm                 | 4µm                         | 60mm  | 30mm | 5mm | 0.8kg  |
| 4180-1000 | 1000mm     | 5µm                 | 8µm                         | 60mm  | 30mm | 5mm | 1.5kg  |
| 4180-1500 | 1500mm     | 15µm                | 22µm                        | 100mm | 40mm | 7mm | 2.3kg  |
| 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 |

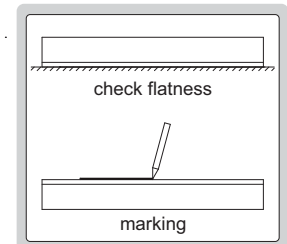
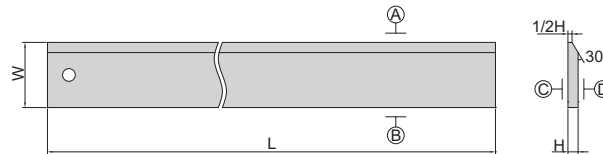
## PRECISION STRAIGHT EDGES WITH BEVELED EDGE

10



7118-300

- Check flatness and for marking
- Made of tool steel



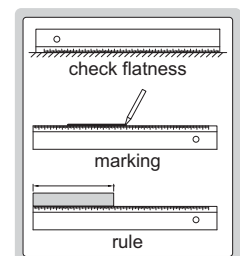
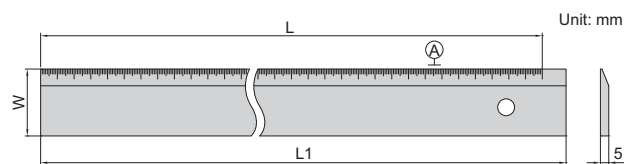
| Code     | Range (L) | Flatness of A and B | Flatness of C and D | W    | H     |
|----------|-----------|---------------------|---------------------|------|-------|
| 7118-300 | 305mm     | 0.005mm             | 0.05mm              | 41mm | 6.3mm |
| 7118-600 | 610mm     | 0.006mm             | 0.06mm              | 51mm | 7.9mm |
| 7118-900 | 914mm     | 0.007mm             | 0.06mm              | 64mm | 9.5mm |

## STRAIGHT EDGES



7111-300A

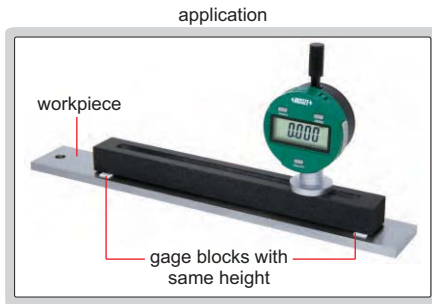
- Check flatness and straightness, as well as for marking
- Graduation on the beveled edge
- Made of hardened tool steel
- Chrome plated



| 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 |

GRANITE HODLER CAN BE CUSTOMIZED ACCORDING TO WORKPIECES

## STRAIGHTNESS/FLATNESS GAGE



| Code     | Range | Digital indicator resolution | Straightness measurement accuracy | Parallelism of top and bottom surfaces of granite holder | Flatness of top and bottom surfaces of granite holder |
|----------|-------|------------------------------|-----------------------------------|--|---|
| 2144-200 | 200mm | 0.001mm/0.00005"             | 3µm                               | 2µm  | 1.5µm   |

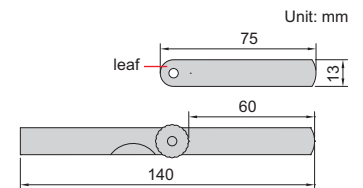
10  
11

## FEELER GAGE

- Made of hardened alloy steel
- Meet DIN2275
- Accuracy:  $\pm(3+T/80)$  µm, 'T' is the thickness of leaves in µm



4601-25



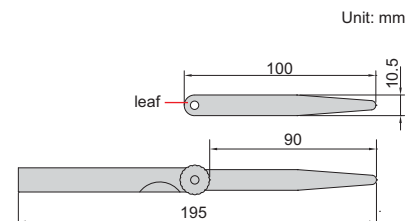
| Code    | Range       | Thickness of leaves included (mm)  | Quantity of leaves |
|---------|-------------|--|--------------------|
| 4601-25 | 0.04-1.00mm | 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00 | 25                 |

## FEELER GAGES

- Made of hardened alloy steel
- Meet DIN2275
- Accuracy:  $\pm(3+T/80)$  µm, 'T' is the thickness of leaves in µm



4602-20



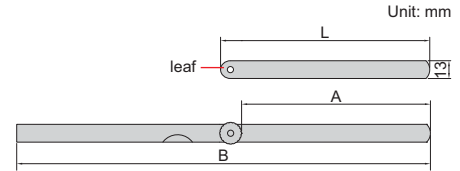
| Code     | Range       | Thickness of leaves included (mm)  | Quantity of leaves |
|----------|-------------|--|--------------------|
| 4602-13A | 0.03-0.50mm | 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.30, 0.40, 0.50   | 13                 |
| 4602-13  | 0.05-1.00mm | 0.05, 0.10, 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                 |

## LONG FEELER GAGES



4605-20

- Made of hardened alloy steel
- Meet DIN2275
- Accuracy:  $\pm(3+T/80) \mu\text{m}$ , 'T' is the thickness of leaves in  $\mu\text{m}$



| 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 GAGE

11

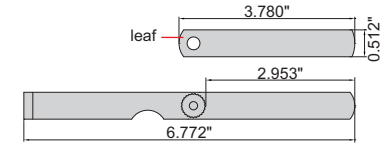


4608-31

- 0.010" is made of brass, others are made of hardened alloy steel
- Each blade is marked with inch/metric size

| Code    | Range          | Quantity of Leaves |
|---------|----------------|--------------------|
| 4608-31 | 0.0015"~0.035" | 32                 |

| Thickness of leaves included                    | Accuracy       |
|---|----------------|
| 0.010" (brass)                                  | $\pm 0.00039"$ |
| 0.0015", 0.002"                                 | $\pm 0.0002"$  |
| 0.0025", 0.003", 0.004", 0.005", 0.006", 0.007" | $\pm 0.00028"$ |
| 0.008", 0.009"                                  | $\pm 0.00035"$ |
| 0.010", 0.011"                                  | $\pm 0.00039"$ |
| 0.012", 0.013"                                  | $\pm 0.00047"$ |
| 0.014", 0.015"                                  | $\pm 0.00051"$ |



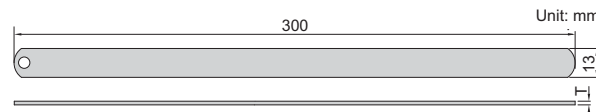
| Thickness of leaves included | Accuracy       |
|------------------------------|----------------|
| 0.016", 0.017"               | $\pm 0.00055"$ |
| 0.018", 0.019"               | $\pm 0.00059"$ |
| 0.020", 0.021"               | $\pm 0.00067"$ |
| 0.022", 0.023"               | $\pm 0.00071"$ |
| 0.024", 0.025", 0.026"       | $\pm 0.00075"$ |
| 0.028"                       | $\pm 0.00091"$ |
| 0.030"                       | $\pm 0.00094"$ |
| 0.032", 0.035"               | $\pm 0.00102"$ |

## FEELER GAGE 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           | Code    | Thickness (T) | Accuracy           | Code     | Thickness (T) | Accuracy            |
|---------|---------------|--------------------|---------|---------------|--------------------|----------|---------------|---------------------|
| 4622-02 | 0.02mm        | $\pm 3\mu\text{m}$ | 4622-15 | 0.15mm        | $\pm 5\mu\text{m}$ | 4622-60  | 0.60mm        | $\pm 9\mu\text{m}$  |
| 4622-03 | 0.03mm        | $\pm 3\mu\text{m}$ | 4622-18 | 0.18mm        | $\pm 6\mu\text{m}$ | 4622-65  | 0.65mm        | $\pm 9\mu\text{m}$  |
| 4622-04 | 0.04mm        | $\pm 3\mu\text{m}$ | 4622-20 | 0.20mm        | $\pm 6\mu\text{m}$ | 4622-70  | 0.70mm        | $\pm 12\mu\text{m}$ |
| 4622-05 | 0.05mm        | $\pm 3\mu\text{m}$ | 4622-25 | 0.25mm        | $\pm 6\mu\text{m}$ | 4622-75  | 0.75mm        | $\pm 12\mu\text{m}$ |
| 4622-06 | 0.06mm        | $\pm 3\mu\text{m}$ | 4622-30 | 0.30mm        | $\pm 7\mu\text{m}$ | 4622-80  | 0.80mm        | $\pm 13\mu\text{m}$ |
| 4622-07 | 0.07mm        | $\pm 4\mu\text{m}$ | 4622-35 | 0.35mm        | $\pm 7\mu\text{m}$ | 4622-85  | 0.85mm        | $\pm 13\mu\text{m}$ |
| 4622-08 | 0.08mm        | $\pm 4\mu\text{m}$ | 4622-40 | 0.40mm        | $\pm 8\mu\text{m}$ | 4622-90  | 0.90mm        | $\pm 14\mu\text{m}$ |
| 4622-09 | 0.09mm        | $\pm 4\mu\text{m}$ | 4622-45 | 0.45mm        | $\pm 8\mu\text{m}$ | 4622-95  | 0.95mm        | $\pm 14\mu\text{m}$ |
| 4622-10 | 0.10mm        | $\pm 4\mu\text{m}$ | 4622-50 | 0.50mm        | $\pm 9\mu\text{m}$ | 4622-100 | 1.00mm        | $\pm 16\mu\text{m}$ |
| 4622-12 | 0.12mm        | $\pm 5\mu\text{m}$ | 4622-55 | 0.55mm        | $\pm 9\mu\text{m}$ |          |               |                     |

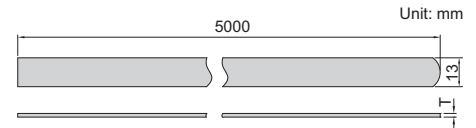
## FEELER GAGE TAPES

| 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    |



4621-30



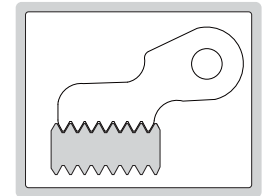
- Used as shims to accurately set spacing
- Made of hardened alloy steel
- Length 5m
- Width 13mm

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



4820-122

## PITCH GAGES



### 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

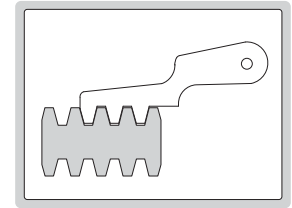
| Code     | Range     | Pitch of leaves included  | Quantity of leaves |
|----------|-----------|---|--------------------|
| 4820-552 | 0.4-7.0mm | 0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7mm                           | 52                 |
|          | 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 GAGES

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



4824-12



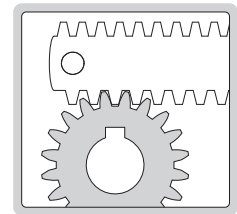
| Code    | Range   | Thread type | Pitch of leaves included  | Quantity of leaves |
|---------|---------|-------------|---|--------------------|
| 4824-12 | 2-20mm  | Tr30°       | 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 16, 20mm                                | 12                 |
| 4824-16 | 1-12TPI | ACME 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                 |

## GEAR TOOTH PITCH GAGES

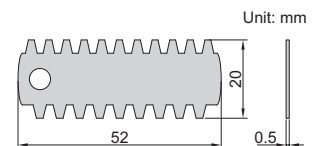
- Check the module pitch of gear tooth
- Accuracy:  $\pm 0.05\text{mm}$
- Made of hardened stainless steel



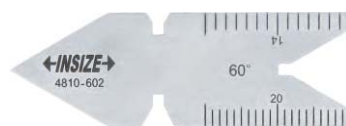
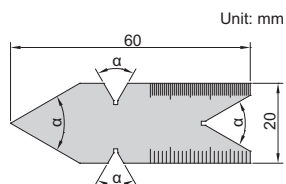
4860-245



| 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                  |

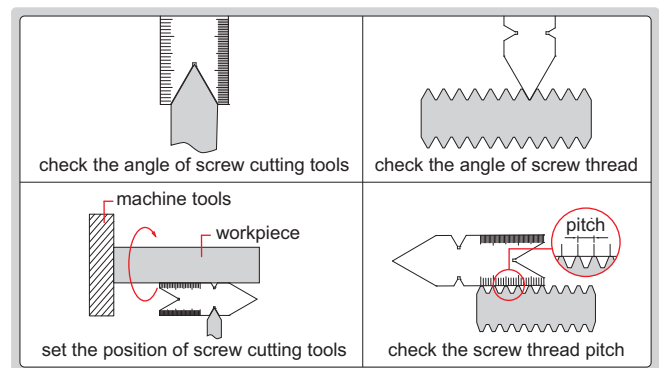


## CENTER GAGES



4810-602

- To check and set screw cutting tools, and check the angle and pitch of screw thread
- Angle accuracy:  $\pm 30\text{min}$ .
- Made of stainless steel



| Code     | Thread type   | Angle ( $\alpha$ ) | 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 |

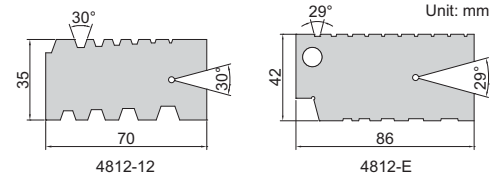


## THREAD GAGES

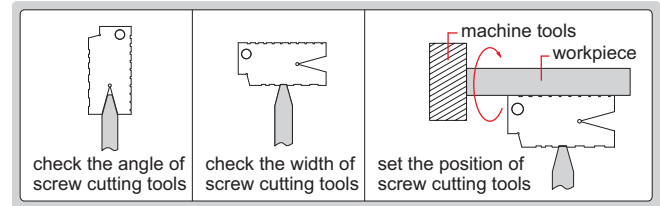


4812-E

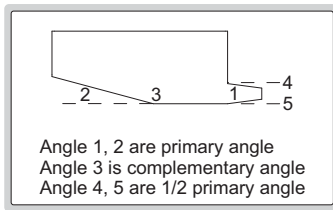
- To check and set screw cutting tools
- Made of medium carbon steel



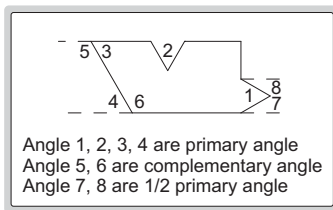
| Code    | Range   | Thread type | Pitch  |
|---------|---------|-------------|--|
| 4812-12 | 2-12mm  | Tr 30°      | 2, 3, 4, 5, 6, 7, 8, 9, 10, 12mm                             |
| 4812-E  | 1-10TPI | ACME 29°    | 1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 4, 5, 6, 7, 8, 9, 10TPI |



## ANGLE GAGE SET



type A



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'     |

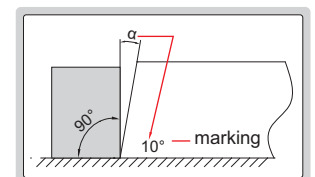
| Primary angle | 1/2 primary angle | Complementary angle | Type |
|---------------|-------------------|---------------------|------|
| 5°            | 2°30'             | 175°                | A    |
| 10°           | 5°                | 170°                | A    |
| 15°           | 7°30'             | 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    |

## ANGLE GAGE

- To check complementary angles
- Made of stainless steel



4806-20



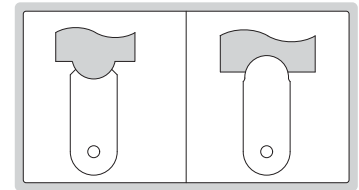
| Code    | Range (α) | Angle of leaves included  | Quantity of leaves | Accuracy |
|---------|-----------|---|--------------------|----------|
| 4806-20 | 1°-45°    | 1°, 2°, 3°, 4°, 5°, 6°, 7°, 8°, 9°, 10°, 12°, 14°, 16°, 18°, 20°, 25°, 30°, 35°, 40°, 45° | 20                 | ±30'     |

## RADIUS GAGES

- Made of medium carbon steel



4801-17

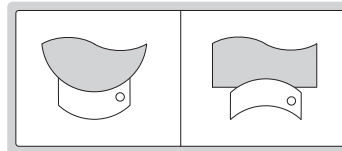


| Code    | Range     | Radius of leaves included (mm)  | Quantity of leaves (internal + external) |
|---------|-----------|---|--|
| 4801-17 | 1-7mm     | 1, 1.25, 1.5, 1.75, 2, 2.25, 2.5, 2.75, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7 | 17+17                                    |
| 4801-16 | 7.5-15mm  | 7.5, 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                                    |

## RADIUS GAGE

11

- Made of stainless steel



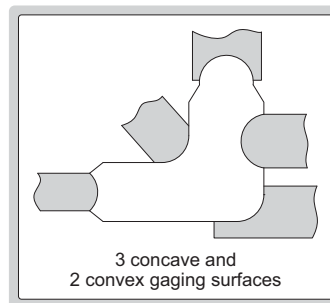
| Code    | Range   | Radius of leaves included (mm)   | Quantity of leaves |
|---------|---------|--|--------------------|
| 4802-31 | 25-40mm | 25, 25.5, 26, 26.5, 27, 27.5, 28, 28.5, 29, 29.5, 30, 30.5, 31, 31.5, 32, 32.5, 33, 33.5, 34, 34.5, 35, 35.5, 36, 36.5, 37, 37.5, 38, 38.5, 39, 39.5, 40 | 31 pcs             |



4802-31

## RADIUS GAGE SET

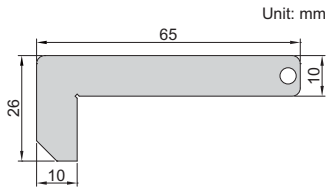
- Each piece has 3 concave and 2 convex gauging surfaces
- Supplied with handle
- Made of medium carbon steel



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                 |

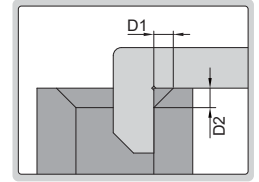
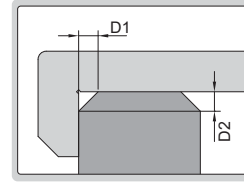
## CHAMFER GAGE



- To measure internal and external chamfers
- Made of stainless steel



4844-1



| Code   | Graduation | Accuracy |
|--------|------------|----------|
| 4844-1 | 0.5mm      | ±0.25mm  |

### DATA OUTPUT

## DIGITAL CHAMFER GAGES

- Measure 30°/45°/60° 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
- Made of stainless steel



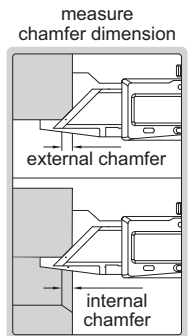
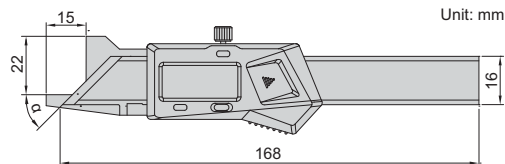
1180-6

With data interface (data output cable code 7315-21, 7302-21, optional)

| Code    | Range          | Accuracy | Chamfer ( $\alpha$ ) |
|---------|----------------|----------|----------------------|
| 1180-6  | 0-10mm/0-0.39" | ±0.06mm  | 45°                  |
| 1180-63 | 0-10mm/0-0.39" | ±0.06mm  | 30°                  |
| 1180-66 | 0-10mm/0-0.39" | ±0.06mm  | 60°                  |

Built-in wireless

| Code      | Range          | Accuracy | Chamfer ( $\alpha$ ) |
|-----------|----------------|----------|----------------------|
| 1180-6WL  | 0-10mm/0-0.39" | ±0.06mm  | 45°                  |
| 1180-63WL | 0-10mm/0-0.39" | ±0.06mm  | 30°                  |
| 1180-66WL | 0-10mm/0-0.39" | ±0.06mm  | 60°                  |



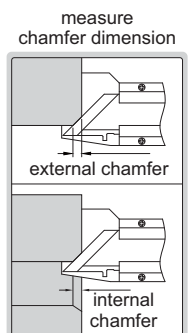
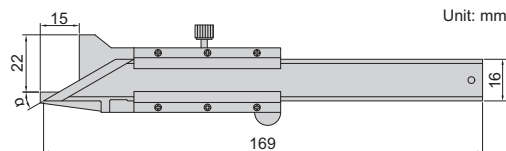
## CHAMFER GAGES

- Measure 30°/45°/60° chamfer dimension
- Graduation: 0.02mm
- Made of stainless steel
- Satin chrome plated reading surface



1267-6

| Code    | Range  | Accuracy | Chamfer ( $\alpha$ ) |
|---------|--------|----------|----------------------|
| 1267-6  | 0-10mm | ±0.06mm  | 45°                  |
| 1267-63 | 0-10mm | ±0.06mm  | 30°                  |
| 1267-66 | 0-10mm | ±0.06mm  | 60°                  |



## CHAMFER HEIGHT GAGE

**INSIZE PLUS**  
MADE IN EUROPE

setting gage (included)

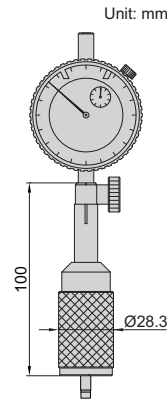


- Measure outside or inside chamfer height
- Suitable for diameter of bores  $\geq 6\text{mm}$ , chamfer angle  $\alpha \geq 30^\circ$
- Setting gage is included

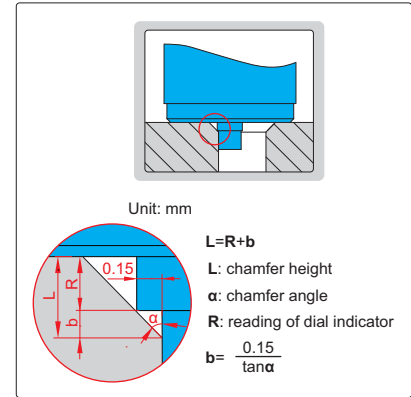
| Code   | Range (L) | Graduation | Accuracy            |
|--------|-----------|------------|---------------------|
| 2943-1 | 0.2-5mm   | 0.01mm     | $\pm 0.02\text{mm}$ |



2943-1



principle of measurement



## DIGITAL CHAMFER HEIGHT GAGE

**INSIZE PLUS**  
MADE IN EUROPE

setting gage (included)

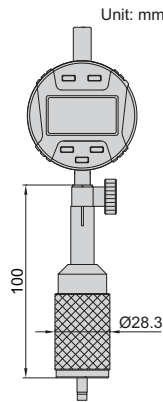


- Measure outside or inside chamfer height
- Suitable for diameter of bores  $\geq 6\text{mm}$ , chamfer angle  $\alpha \geq 30^\circ$
- Resolution: 0.01mm/0.0005"
- Setting gage is included
- Optional accessory: data output cable (code 7315-50M, 7302-40M)

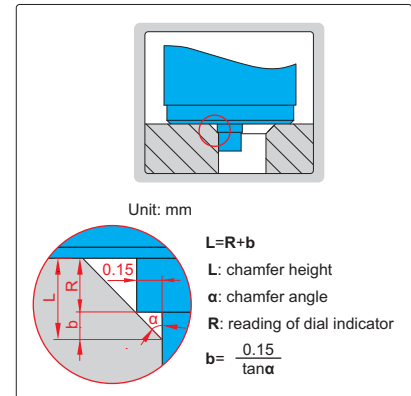
| Code   | Range (L)            | Accuracy            |
|--------|----------------------|---------------------|
| 2944-1 | 0.2-5mm/0.008-0.197" | $\pm 0.02\text{mm}$ |



2944-1



principle of measurement



## DIGITAL TAPER SLOT GAGES

DATA OUTPUT

ATTENTION: ACTUAL SLOT WIDTH IS 1/10 OF THE READING

- 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
- Made of stainless steel

With data interface (data output cable code 7315-21, 7302-21, optional)

| Code    | Range               | Accuracy            | h    |
|---------|---------------------|---------------------|------|
| 1160-10 | 0.2-10mm/0.01-0.39" | $\pm 0.03\text{mm}$ | —    |
| 1160-20 | 10-20mm/0.39-0.79"  | $\pm 0.05\text{mm}$ | 10mm |
| 1160-30 | 20-30mm/0.79-1.18"  | $\pm 0.05\text{mm}$ | 20mm |
| 1160-40 | 30-40mm/1.18-1.58"  | $\pm 0.05\text{mm}$ | 30mm |

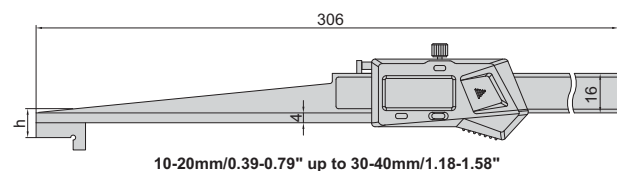
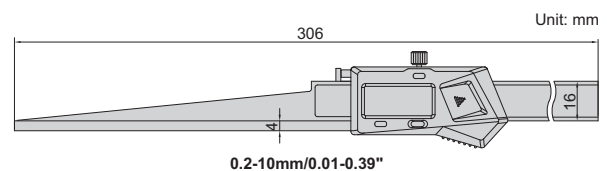
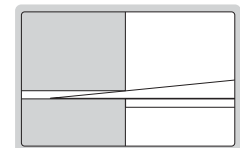
Built-in wireless

| Code      | Range               | Accuracy            | h    |
|-----------|---------------------|---------------------|------|
| 1160-10WL | 0.2-10mm/0.01-0.39" | $\pm 0.03\text{mm}$ | —    |
| 1160-20WL | 10-20mm/0.39-0.79"  | $\pm 0.05\text{mm}$ | 10mm |
| 1160-30WL | 20-30mm/0.79-1.18"  | $\pm 0.05\text{mm}$ | 20mm |
| 1160-40WL | 30-40mm/1.18-1.58"  | $\pm 0.05\text{mm}$ | 30mm |

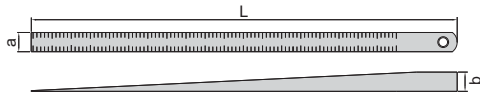


1160-10

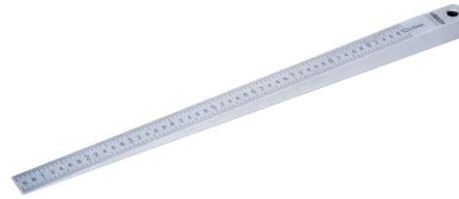
measure slot width



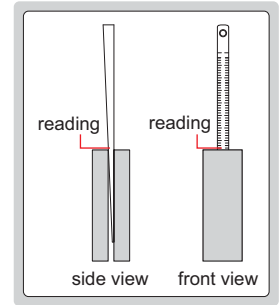
## TAPER SLOT GAGES



- For quick measurement of slot width
- Satin chrome plated reading surface
- Made of stainless steel

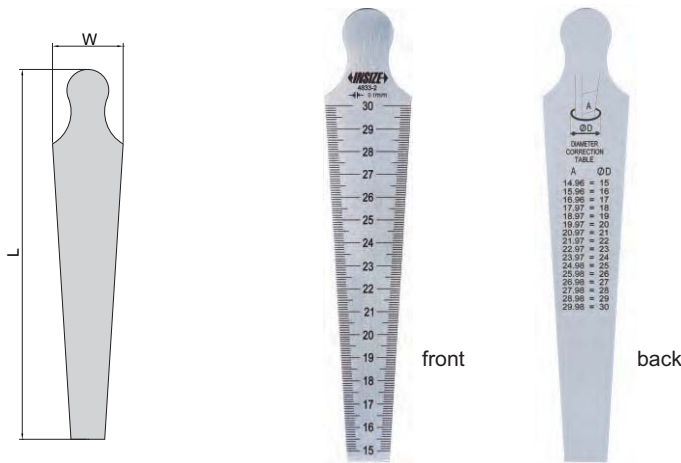


4630-1

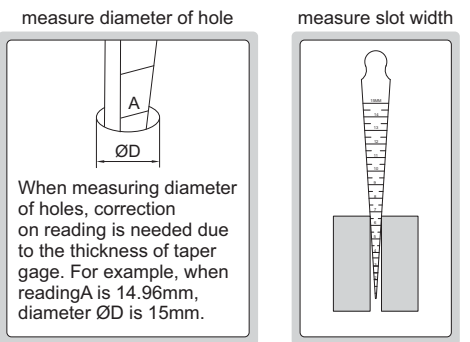


| Code   | Range    | Graduation | Accuracy | L     | a      | b      |
|--------|----------|------------|----------|-------|--------|--------|
| 4630-3 | 0.4-6mm  | 0.05mm     | ±0.04mm  | 164mm | 12.5mm | 6.5mm  |
| 4630-1 | 0.5-10mm | 0.05mm     | ±0.07mm  | 220mm | 10mm   | 10.5mm |
| 4630-2 | 0.5-15mm | 0.1mm      | ±0.08mm  | 184mm | 12.5mm | 16.5mm |

## TAPER GAGES



4833-2



measure diameter of hole

When measuring diameter of holes, correction on reading is needed due to the thickness of taper gage. For example, when reading A is 14.96mm, diameter  $\varnothing D$  is 15mm.

- Measure opening, slot width, hole diameter, etc.
- Diameter correction table on the back (only for 4833-1, 4833-2)
- Made of stainless steel

| Code   | Range    | Graduation | Accuracy | L   | W    |
|--------|----------|------------|----------|-----|------|
| 4833-1 | 0.8-15mm | 0.1mm      | ±0.05mm  | 146 | 17   |
| 4833-2 | 15-30mm  | 0.1mm      | ±0.05mm  | 159 | 30.4 |
| 4833-3 | 30-45mm  | 0.1mm      | ±0.05mm  | 166 | 45.4 |
| 4833-4 | 45-60mm  | 0.1mm      | ±0.05mm  | 170 | 60.5 |

## TAPER GAGE SET



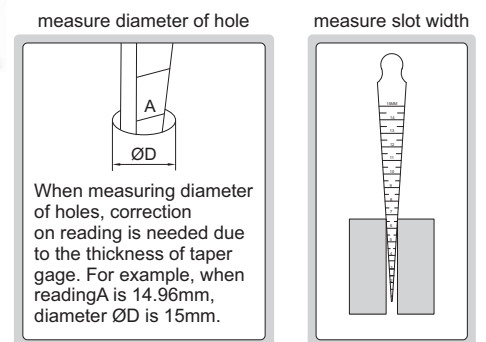
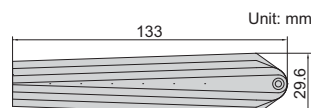
front

back

4837-1

- 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  |



measure diameter of hole

measure slot width

When measuring diameter of holes, correction on reading is needed due to the thickness of taper gage. For example, when reading A is 14.96mm, diameter  $\varnothing D$  is 15mm.

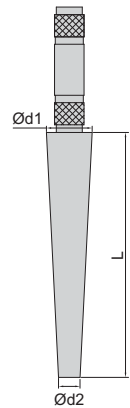
## TAPER BORE GAGES

- Quick measurement of bore diameter
- Hardened steel, HRC50-58
- Satin chrome plated surface
- Aluminium oxidized handle

| 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 |

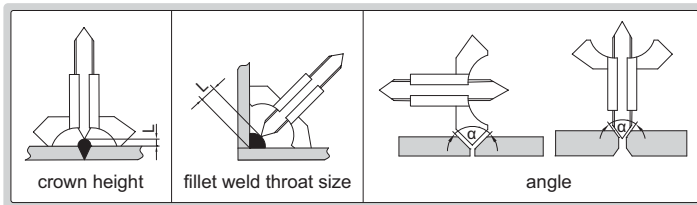


4852-15



## WELDING GAGE

11

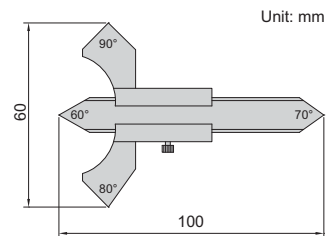


- Made of stainless steel
- Satin chrome plated reading surface

| 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°      |

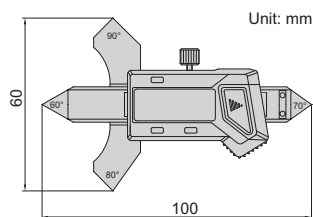


4830



## DIGITAL WELDING GAGE

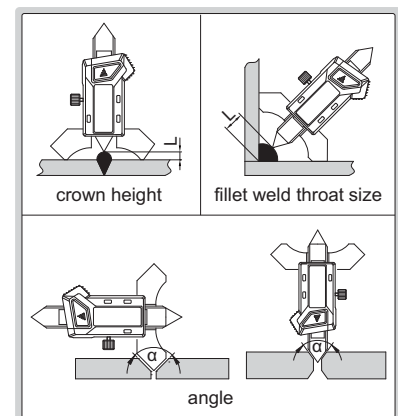
ATTENTION:  
NO DATA OUTPUT



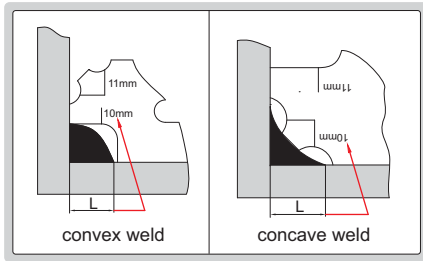
4831-20A

- 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°      |



## FILLET WELDING GAGES



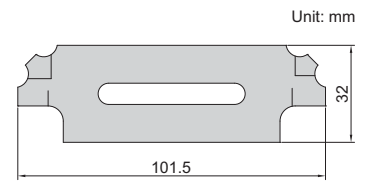
4836-1



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) |



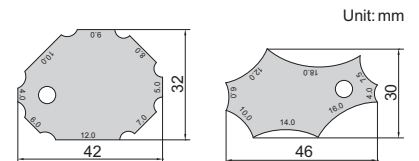
11

## FILLET WELDING GAGE

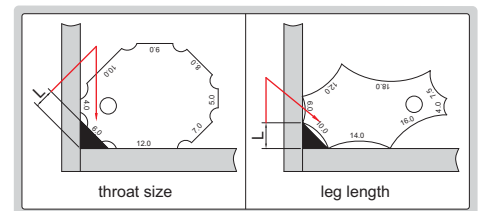


4832-1

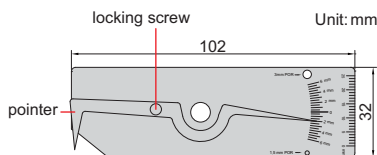
- Made of stainless steel
- Sizes marked on both faces



| 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   |



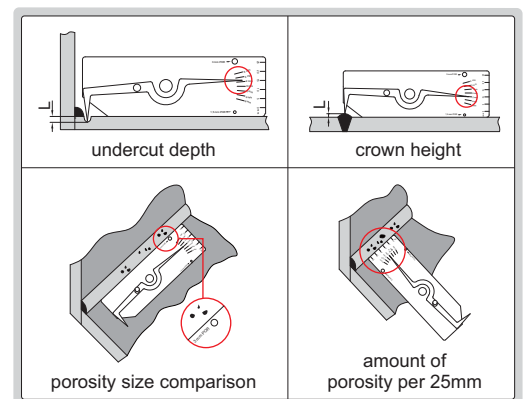
## WELDING GAGE



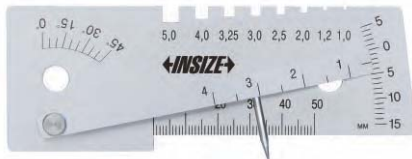
4834-1

- Pointer can be locked for later reference
- Made of stainless steel

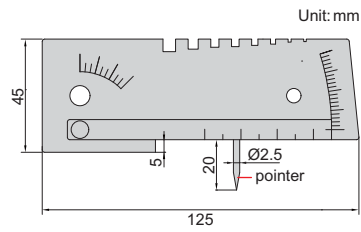
| Code   | Measurement                 | Range      | Graduation | Accuracy |
|--------|-----------------------------|------------|------------|----------|
| 4834-1 | undercut depth              | 0-6mm      | 0.5mm      | ±0.5mm   |
|        | crown height                | 0-6mm      | 0.5mm      | ±0.5mm   |
|        | porosity size comparison    | 1.5mm, 3mm | —          | ±0.2mm   |
|        | amount of porosity per 25mm | 25mm       | 1mm        | —        |



## WELDING GAGE

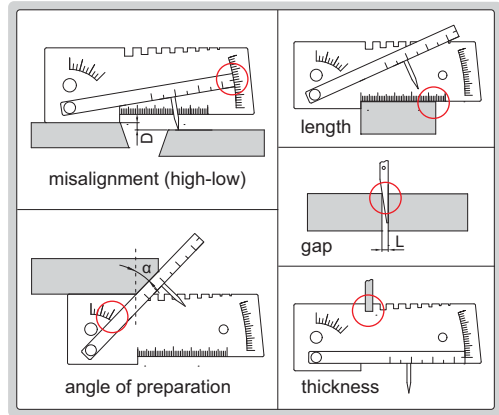


4848-1



Unit: mm

- Made of stainless steel

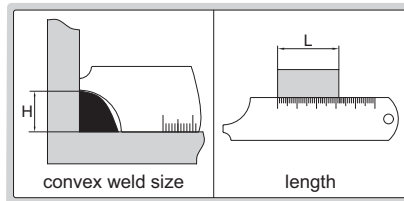


| Code   | Measurement             | Range                                   | Graduation | Accuracy |
|--------|-------------------------|---|------------|----------|
| 4848-1 | misalignment (high-low) | -5mm~+15mm                              | 1mm        | ±0.5mm   |
|        | angle of preparation    | 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   |

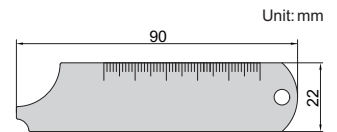
## FILLET WELDING GAGE

11

- Measure convex weld sizes
- 3 blades are included
- Made of stainless steel



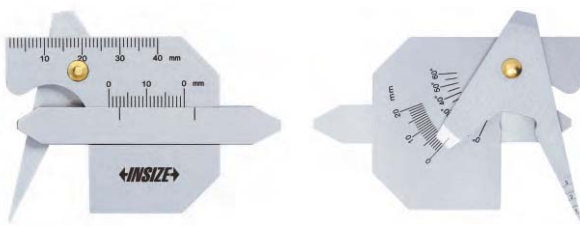
4847-1



Unit: mm

| Code   | Measurement      | Range                 | Graduation | Accuracy |
|--------|------------------|-----------------------|------------|----------|
| 4847-1 | convex weld size | 4, 6, 8, 10, 12, 14mm | —          | ±0.5mm   |
|        | length           | 0 - 50mm              | 1mm        | ±0.5mm   |

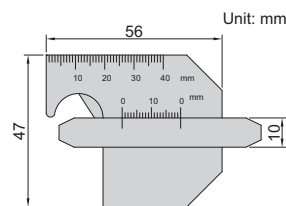
## WELDING GAGE



front

6832-1

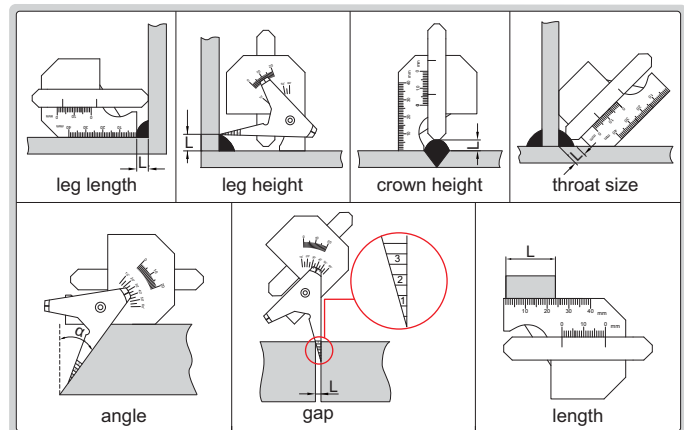
back



Unit: mm

- 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   |





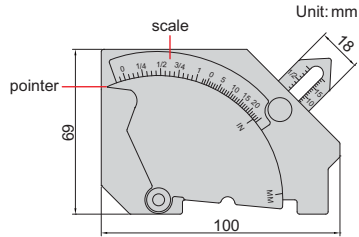
## WELDING GAGE



front

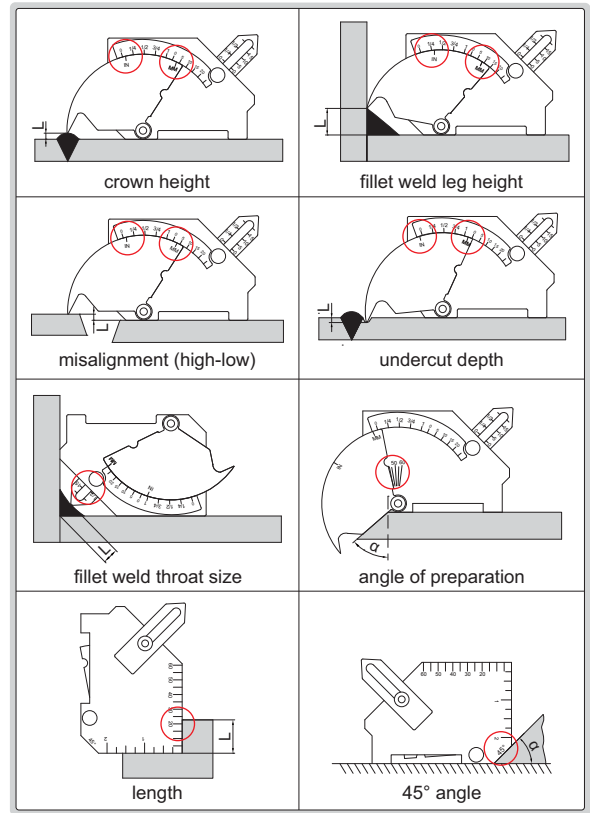
back

4835-1



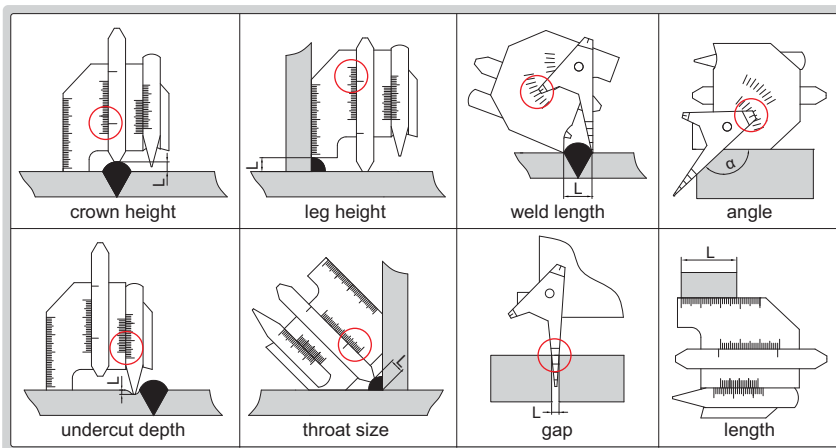
- Adjustable scale to compensate pointer wear
- Made of stainless steel

| 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°      |



11

## WELDING GAGES



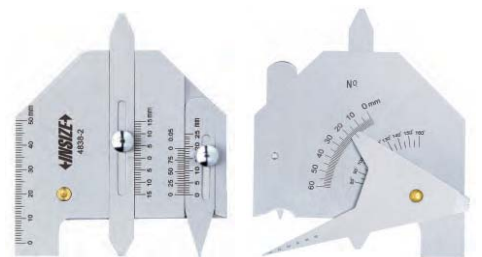
- Made of stainless steel



front

4838-1

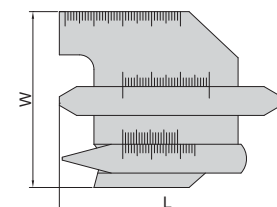
back



front

4838-2

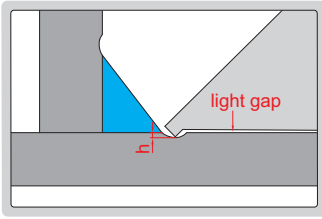
back



| Measurement    | Range    | Code 4838-1 |          |          | Code 4838-2 |          |  |
|----------------|----------|-------------|----------|----------|-------------|----------|--|
|                |          | 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 UNDERCUT GAGE

application



when there is a light gap,  $h < 0.25\text{mm}$ ;  
when there is no light gap,  $h \geq 0.25\text{mm}$

- Measure undercut
- Calibration block is included
- Made of stainless steel

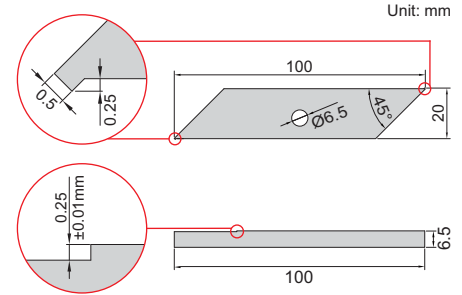


4849-1

calibration block (included)



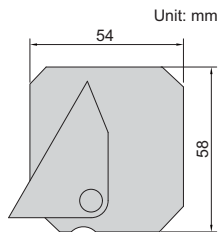
**Code**  
4849-1



## WELDING GAGE

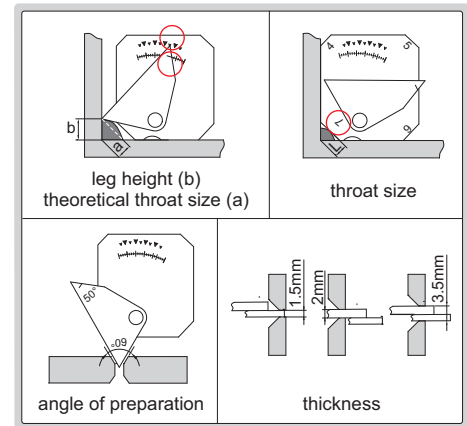
11

- Made of stainless steel

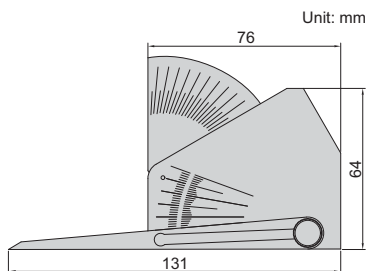


4850-1

| 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   |



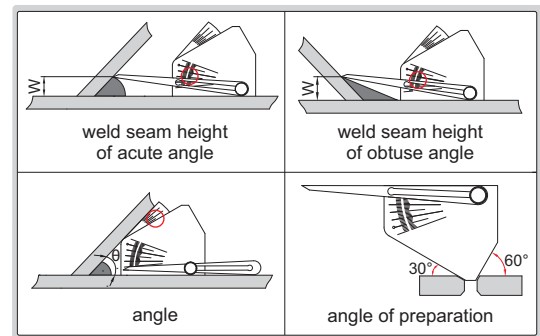
## FILLET WELDING GAGE



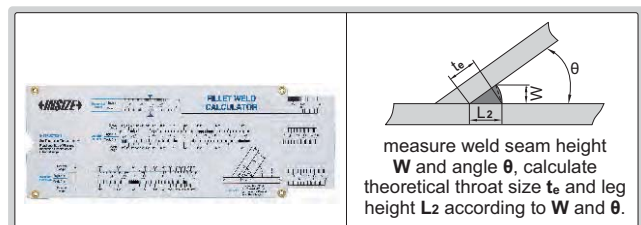
4846-1

- Calculating card is included
- Made of stainless steel

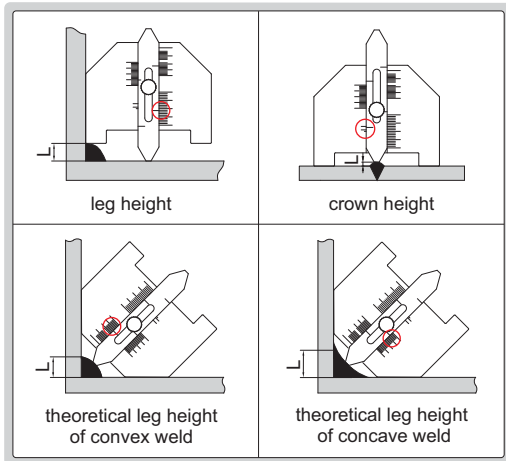
| Code   | Measurement        | Range       | Graduation | Accuracy |
|--------|--------------------|-------------|------------|----------|
| 4846-1 | weld seam height W | 0-50mm/0-2" | 2mm/0.05"  | ±1mm     |
|        | angle $\theta$     | 30°-90°     | 2.5°       | ±1°      |
|        | 60° angle          | —           | —          | ±0.5°    |



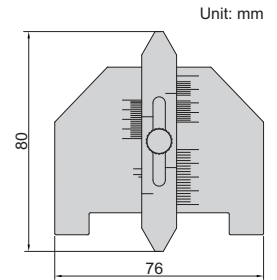
calculating card (included)



## WELDING GAGE



4851-1

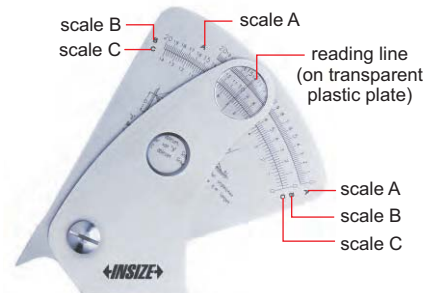
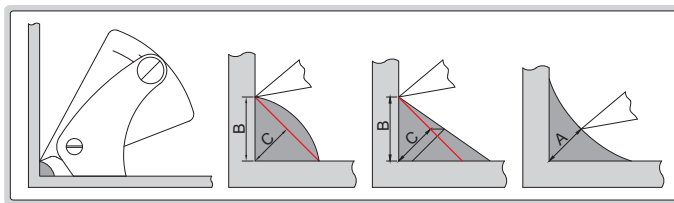


| Code   | Measurement                            | Range  | Graduation | Accuracy |
|--------|--|--------|------------|----------|
| 4851-1 | leg height                             | 0-20mm | 1mm        | ±0.5mm   |
|        | crown height                           | 0-3mm  | —          | ±0.5mm   |
|        | theoretical leg height of convex weld  | 0-20mm | 1mm        | ±0.5mm   |
|        | theoretical leg height of concave weld | 0-20mm | 1mm        | ±0.5mm   |

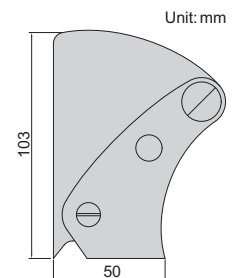
■ Made of stainless steel

## WELDING GAGE

■ Made of stainless steel



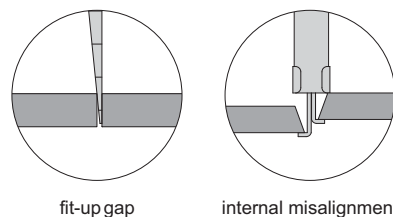
4840-1



| Code   | Graduation | Accuracy |
|--------|------------|----------|
| 4840-1 | 0.2mm      | ±0.3mm   |

## PIPE WELDING GAGE

■ Made of stainless steel

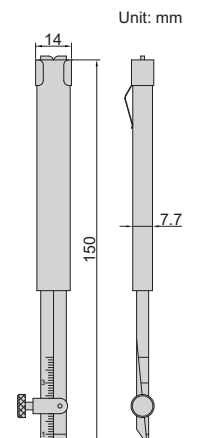


fit-up gap

internal misalignment

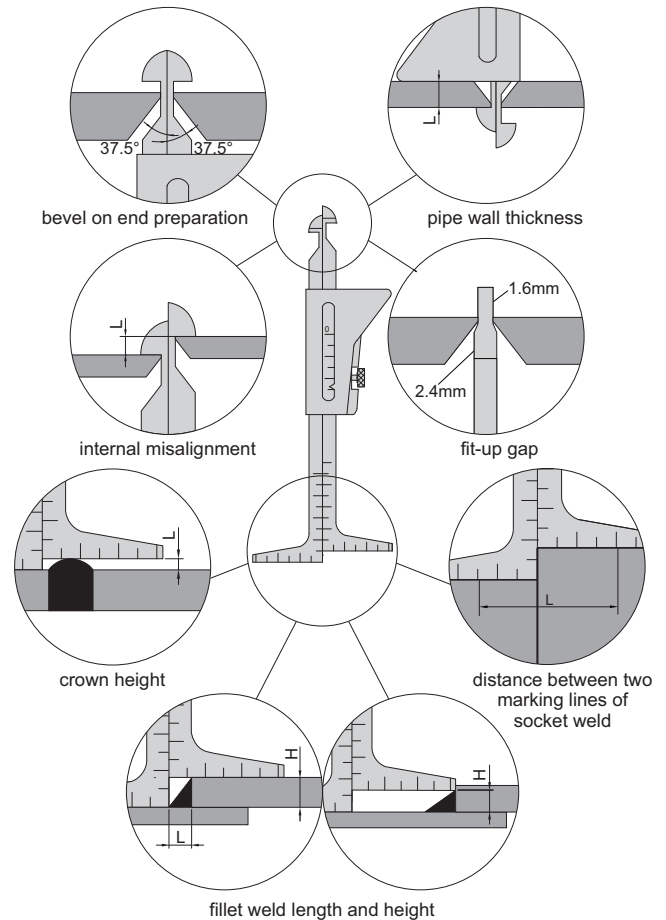
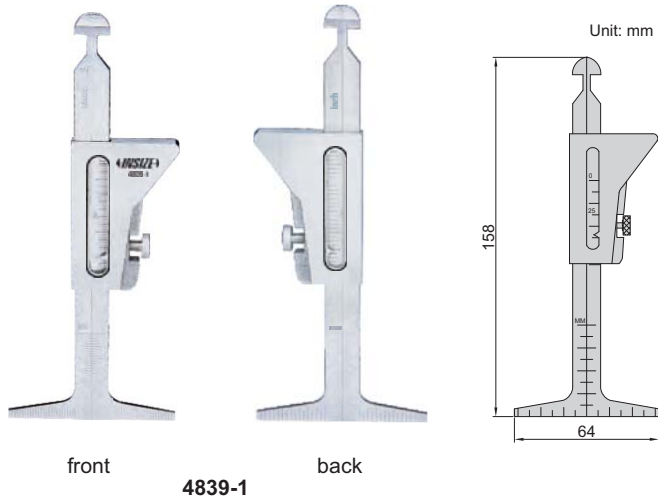


4841-1



| 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 GAGE



- Made of stainless steel

| 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   |

## 6-PIECE WELDING GAGE SET

- Includes:
  - 1) Welding gage (code **4834-1**)
  - 2) Fillet welding gage, size 3~25mm, 7 blades (code **4836-1**)
  - 3) Pipe welding gage (code **4841-1**)
  - 4) Telescoping inspection mirror, size of mirror Ø32mm, length 178~505mm (code **7160-1**)
  - 5) Pocket rule with sliding clip, range 150mm/6", graduation 1mm, 1/64" (code **7119-150**)
  - 6) LED flashlight (code **ISGF-0501**)



Code  
**5064**

**5064**

## 7-PIECE WELDING GAGE SET

- Includes:
  - 1) Welding gage (code **4834-1**)
  - 2) Welding gage (code **4851-1**)
  - 3) Pipe welding gage (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 rule, range 150mm/6", graduation 0.5mm, 1mm, 1/64", 1/32", 1/16" (code **7110-150**)

**Code**  
**5071**



5071

## 7-PIECE WELDING GAGE SET

- Includes:
  - 1) Welding gage (code **4834-1**)
  - 2) Welding gage (code **4851-1**)
  - 3) Fillet welding gage, 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 rule with sliding clip, range 150mm/6", graduation 1mm, 1/64" (code **7119-150**)
  - 7) Magnifier with illumination, magnification 4X (code **7513-4**)

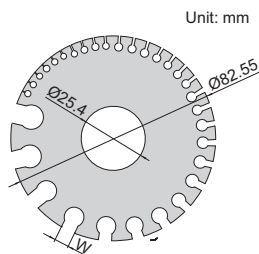
**Code**  
**5072**



5072

11

## AMERICAN STANDARD WIRE GAGE



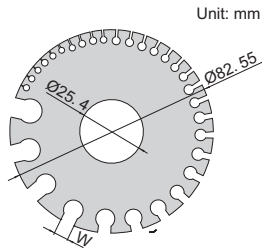
4808

- For gaging wire
- Hardened and satin chrome finish

| Code        | Range                               |
|-------------|-------------------------------------|
| <b>4808</b> | 0-36 (8.250-0.127mm/0.3249-0.0050") |

| No. | W               | No. | W               |
|-----|-----------------|-----|-----------------|
| 0   | 8.250mm/0.3249" | 18  | 1.020mm/0.0403" |
| 1   | 7.350mm/0.2893" | 19  | 0.912mm/0.0359" |
| 2   | 6.540mm/0.2576" | 20  | 0.813mm/0.0320" |
| 3   | 5.830mm/0.2294" | 21  | 0.724mm/0.0285" |
| 4   | 5.190mm/0.2043" | 22  | 0.643mm/0.0253" |
| 5   | 4.620mm/0.1819" | 23  | 0.574mm/0.0226" |
| 6   | 4.110mm/0.1620" | 24  | 0.511mm/0.0201" |
| 7   | 3.670mm/0.1443" | 25  | 0.440mm/0.0179" |
| 8   | 3.260mm/0.1285" | 26  | 0.404mm/0.0159" |
| 9   | 2.910mm/0.1144" | 27  | 0.361mm/0.0142" |
| 10  | 2.590mm/0.1019" | 28  | 0.320mm/0.0126" |
| 11  | 2.300mm/0.0907" | 29  | 0.287mm/0.0113" |
| 12  | 2.050mm/0.0808" | 30  | 0.254mm/0.0100" |
| 13  | 1.820mm/0.0720" | 31  | 0.226mm/0.0089" |
| 14  | 1.630mm/0.0641" | 32  | 0.203mm/0.0080" |
| 15  | 1.450mm/0.0571" | 33  | 0.180mm/0.0071" |
| 16  | 1.290mm/0.0508" | 34  | 0.160mm/0.0063" |
| 17  | 1.150mm/0.0453" | 35  | 0.142mm/0.0056" |
|     |                 | 36  | 0.127mm/0.0050" |

## U.S. STANDARD SHEET METAL GAGE



4809

- For gaging sheet metal
- Hardened and satin chrome finish

| Code | Range                               |
|------|-------------------------------------|
| 4809 | 0-36 (7.938-0.179mm/0.3125-0.0070") |

| 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" |

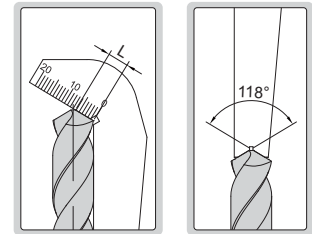
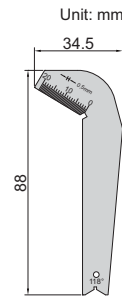
11

## DRILL POINT GAGE

- For twist drills with 118° angle, to check if the center of tip is concentric with the drill body
- Made of stainless steel



4843-1



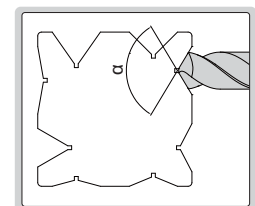
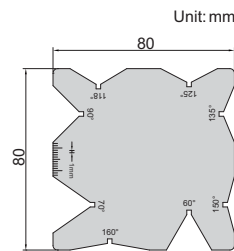
| Code   | Accuracy |        |
|--------|----------|--------|
|        | Angle    | Length |
| 4843-1 | ±0.5°    | ±0.5mm |

## DRILL ANGLE GAGE

- Check drills with angle 60°, 70°, 90°, 118°, 125°, 135°, 150° or 160°
- Made of stainless steel

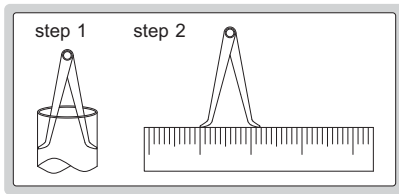


4842-1



| Code   | Accuracy |
|--------|----------|
| 4842-1 | ±0.5°    |

## INSIDE CALIPERS

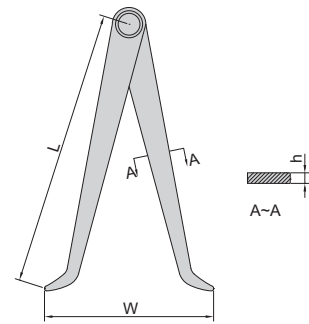


- Made of carbon steel

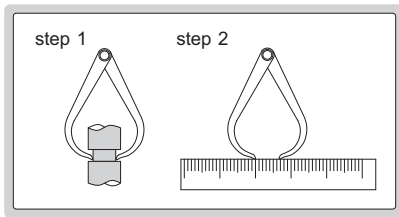
| Code     | Size (L) | Range (W) | h   |
|----------|----------|-----------|-----|
| 7240-150 | 150mm    | 17-150mm  | 2mm |
| 7240-200 | 200mm    | 17-200mm  | 3mm |
| 7240-300 | 300mm    | 18-300mm  | 3mm |



7240-150



## OUTSIDE CALIPERS

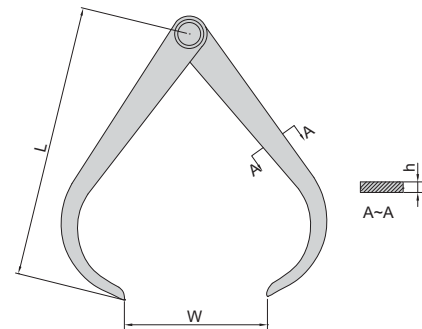


- Made of carbon steel

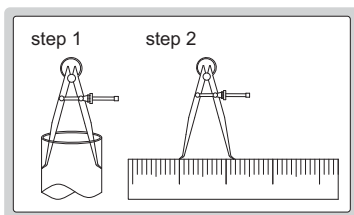
| Code     | Size (L) | Range (W) | h   |
|----------|----------|-----------|-----|
| 7241-150 | 150mm    | 0-150mm   | 2mm |
| 7241-200 | 200mm    | 0-200mm   | 3mm |
| 7241-300 | 300mm    | 0-300mm   | 3mm |



7241-150



## INSIDE SPRING CALIPERS

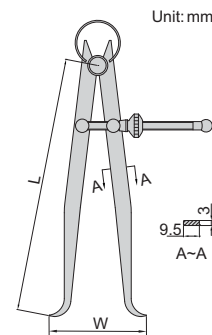


- Made of carbon steel

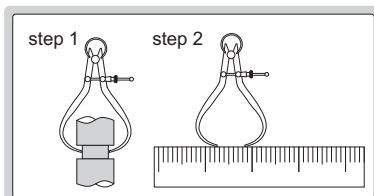
| Code     | Size (L) | Range (W) |
|----------|----------|-----------|
| 7261-150 | 150mm    | 20-170mm  |
| 7261-200 | 200mm    | 22-220mm  |
| 7261-250 | 245mm    | 30-270mm  |
| 7261-300 | 300mm    | 30-320mm  |



7261-150



## OUTSIDE SPRING CALIPERS

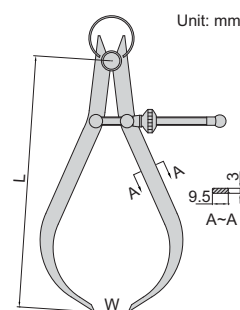


- Made of carbon steel

| Code     | Size (L) | Range (W) |
|----------|----------|-----------|
| 7262-150 | 155mm    | 0-140mm   |
| 7262-200 | 210mm    | 0-210mm   |
| 7262-250 | 265mm    | 0-270mm   |
| 7262-300 | 310mm    | 0-320mm   |

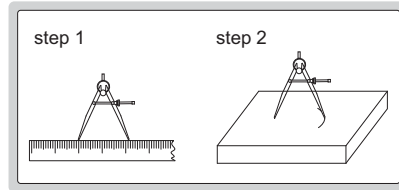


7262-150

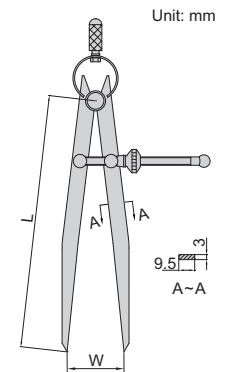


## SPRING DIVIDERS

- Made of carbon steel
- Hardened points



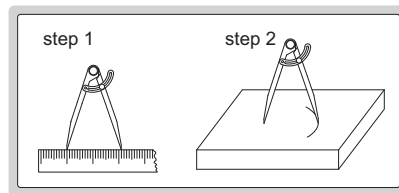
7260-150



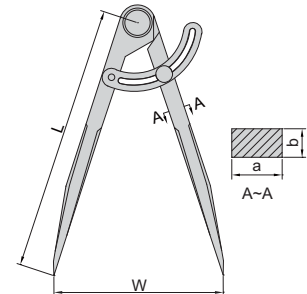
| Code     | Size (L) | Range (W) |
|----------|----------|-----------|
| 7260-150 | 150mm    | 0-150mm   |
| 7260-200 | 200mm    | 0-210mm   |
| 7260-250 | 245mm    | 0-260mm   |
| 7260-300 | 300mm    | 0-320mm   |

## DIVIDERS

- Made of carbon steel
- Hardened points

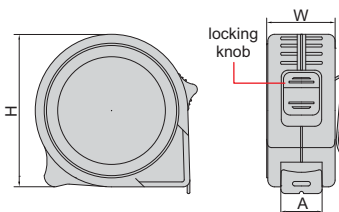


7247-150



| Code     | Size (L) | Range (W) | (mm) |   |
|----------|----------|-----------|------|---|
|          |          |           | a    | b |
| 7247-150 | 150mm    | 0-140mm   | 8.5  | 7 |
| 7247-200 | 200mm    | 0-190mm   | 10   | 7 |
| 7247-300 | 300mm    | 0-290mm   | 12   | 7 |

## MEASURING TAPES



- Non-glare nylon surface for wear resistance

| 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 |



7140-5

graduation

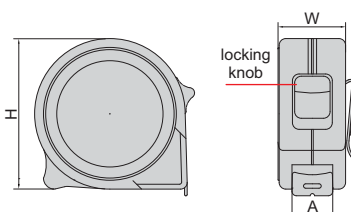


packaging



EG II

## MEASURING TAPE (BASIC TYPE)



- Non-glare nylon coating tape, wear resistance

| Code   | Range       | Graduation | Width of tape A | W    | H    |
|--------|-------------|------------|-----------------|------|------|
| 7142-5 | 0-5m/0-16ft | 1mm, 1/16" | 19mm            | 31mm | 64mm |



7142-5

graduation



packaging

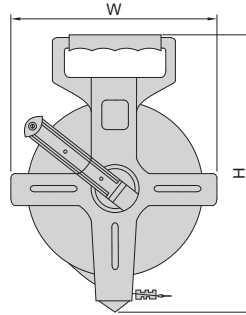
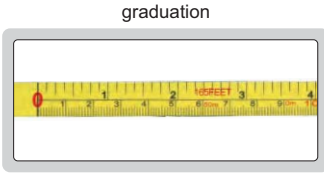


EG II



**EG II**

**LONG MEASURING TAPE**



7143-50

- High tensile strength fibreglass tape
- Nylon coating tape, wear resistance

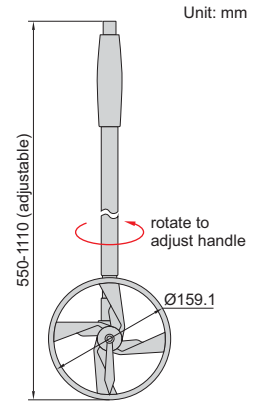
| Code    | Range         | Graduation | Width of tape | W     | H     |
|---------|---------------|------------|---------------|-------|-------|
| 7143-50 | 0-50m/0-165ft | 1mm, 1/8"  | 13mm          | 220mm | 320mm |

**MEASURING WHEEL (BASIC TYPE)**

- ABS plastic frame, wear-resistant PU tire
- Three-section adjustable handle



7144-1



Unit: mm

11

| Code   | Range       | Resolution |
|--------|-------------|------------|
| 7144-1 | 0.1-9999.9m | 0.1m       |

**MEASURING WHEEL**

- ABS plastic frame, wear-resistant PU tire
- Two-section foldable handle



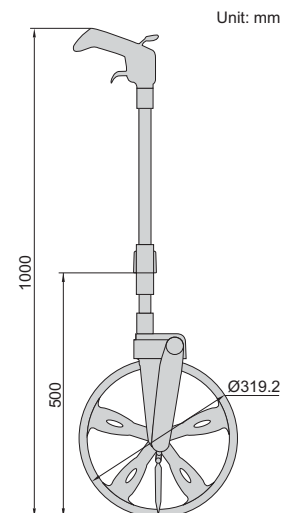
after folding



backpack (included)



7145-1



Unit: mm

| Code   | Range       | Resolution |
|--------|-------------|------------|
| 7145-1 | 0.1-9999.9m | 0.1m       |

## RIGID RULE

- Rigid rules
- With groove on the back, suitable for combination square set (2278 series)
- Satin chrome plated

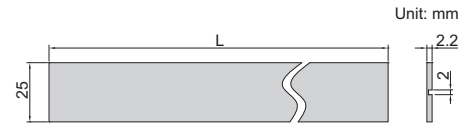


7113-300A



groove on the back

| Code      | Range     | Graduation      |               | Accuracy | L     |
|-----------|-----------|-----------------|---------------|----------|-------|
|           |           | front           | back          |          |       |
| 7113-300A | 300mm/12" | 0.5mm and 1/32" | 1mm and 1/64" | ±0.15mm  | 300mm |



Unit: mm

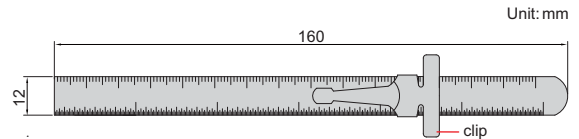
## POCKET RULE WITH SLIDING CLIP

- With sliding clip, clip can be inserted in the pocket, also can be used as depth gage base
- Inch/metric conversion table on the back
- Made of stainless steel



7119-150

| Code     | Range    | Graduation | Accuracy |
|----------|----------|------------|----------|
| 7119-150 | 150mm/6" | 1mm, 1/64" | ±0.15mm  |



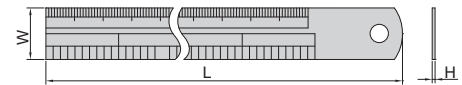
Unit: mm

## STEEL RULES (ECONOMIC TYPE)

**ATTENTION:  
LOW ACCURACY**



7110-300



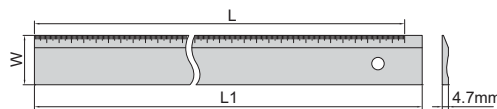
(mm)

| Code      | Range      | Accuracy | L    | W  | H   | Remark                       |
|-----------|------------|----------|------|----|-----|------------------------------|
| 7110-150  | 150mm/6"   | ±0.18mm  | 170  | 18 | 1.0 | graduation on front and back |
| 7110-200  | 200mm/8"   | ±0.18mm  | 220  | 18 | 1.0 | graduation on front and back |
| 7110-300  | 300mm/12"  | ±0.27mm  | 330  | 25 | 1.0 | graduation on front and back |
| 7110-3001 | 300mm/12"  | ±0.27mm  | 325  | 30 | 1.0 | graduation on front and back |
| 7110-500  | 500mm/20"  | ±0.27mm  | 530  | 30 | 1.2 | graduation on front and back |
| 7110-600  | 600mm/24"  | ±0.45mm  | 630  | 30 | 1.2 | graduation on front and back |
| 7110-1000 | 1000mm/40" | ±0.45mm  | 1040 | 32 | 1.5 | graduation on front and back |
| 7110-1200 | 1200mm/48" | ±0.63mm  | 1240 | 35 | 1.8 | graduation on front          |
| 7110-1500 | 1500mm/60" | ±0.63mm  | 1550 | 38 | 1.8 | graduation on front          |
| 7110-2000 | 2000mm/80" | ±0.80mm  | 2065 | 40 | 2.0 | graduation on front          |

- Graduation: 0.5mm, 1mm, 1/64", 1/32", 1/16"
- Rigid rules
- Made of stainless steel
- Non-glare surface

## ALUMINUM RULES

- Made of aluminum, oxidized surface



| 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 |

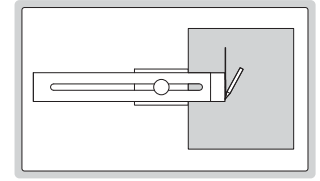


7123-300

## MARKING GAGES

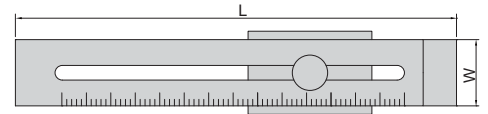


7120-200A

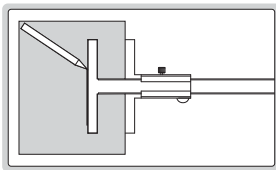


- Made of carbon steel
- Satin chrome plated

| 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 |



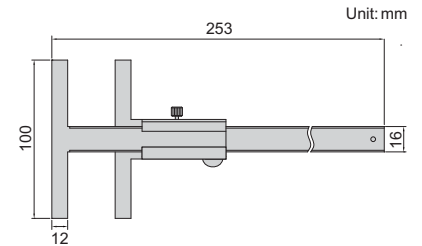
## T-SHAPE MARKING GAGE



1275-150B

- Made of stainless steel
- Satin chrome plated reading surface

| Code      | Range   | Graduation | Accuracy |
|-----------|---------|------------|----------|
| 1275-150B | 0-150mm | 0.02mm     | ±0.04mm  |

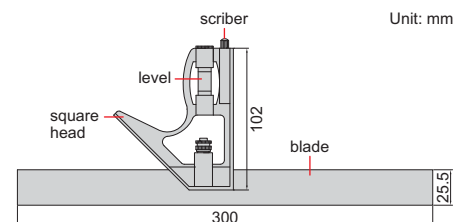
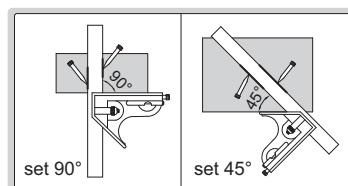


## COMBINATION SQUARE (ECONOMIC TYPE)

- 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 |

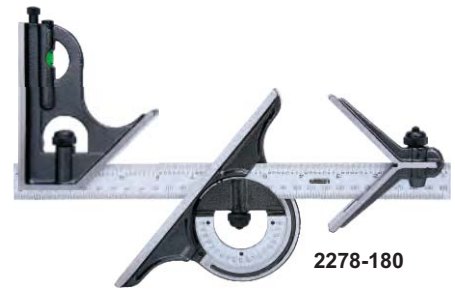
## COMBINATION SQUARE SETS



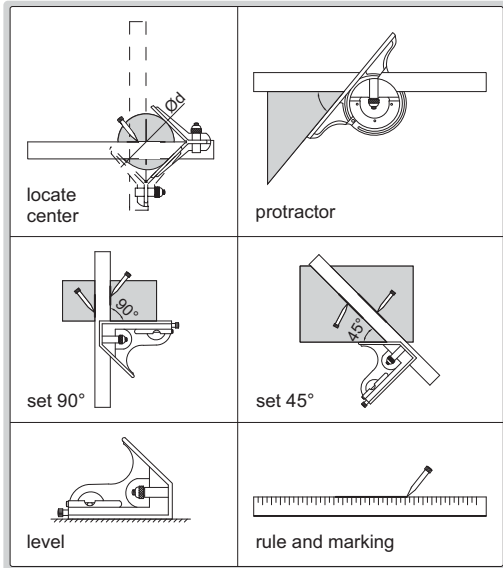
2278-2



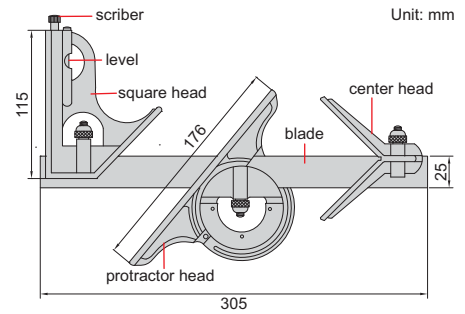
2278-3



2278-180



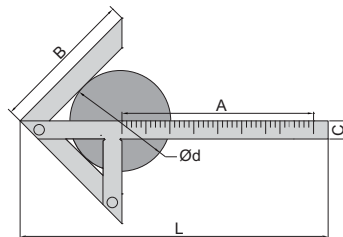
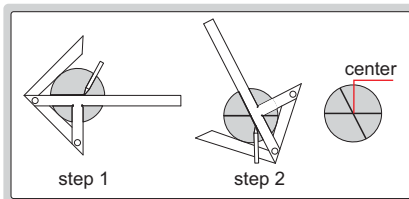
- Center head (made of cast iron): to locate center of cylinders with diameter (Ød): 30-100mm accuracy: ±0.15mm
- Protractor head (made of cast iron): set the blade at desired angle to an edge of a workpiece, and can be used to measure angles range: 0-180° accuracy: ±20min.
- Square head (made of cast 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 rule (code 7113)



| Code     | Remark      |
|----------|-------------|
| 2278-2   | 2-piece set |
| 2278-3   | 3-piece set |
| 2278-180 | 4-piece set |

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## CENTER MARKING GAGES



7205-100

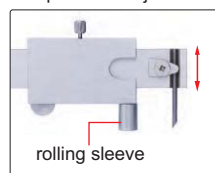
| Code     | Size (AxB) | Diameter of shafts (Ød) | Accuracy | C    | L     |
|----------|------------|-------------------------|----------|------|-------|
| 7205-100 | 100x70mm   | 4-90mm                  | ±0.15mm  | 12mm | 153mm |
| 7205-150 | 150x130mm  | 4-190mm                 | ±0.15mm  | 15mm | 245mm |
| 7205-200 | 200x150mm  | 6-220mm                 | ±0.15mm  | 15mm | 310mm |
| 7205-300 | 300x180mm  | 6-270mm                 | ±0.15mm  | 20mm | 435mm |

- Marking the center of round plates and shafts
- Made of stainless steel
- Satin chrome plated

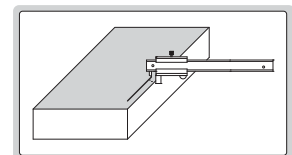
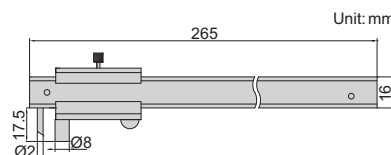
## SCRIBING CALIPER

- Made of stainless steel
- Satin chrome plated reading surface
- Carbide scribe tip
- Optional accessory: carbide scribe tip (code SP-SCRIBER-7202)

the position of scribe tip can be adjusted



7202-200A



| Code      | Range        | Graduation    | Accuracy |
|-----------|--------------|---------------|----------|
| 7202-200A | 0-200mm/0-8" | 0.1mm, 1/128" | ±0.1mm   |

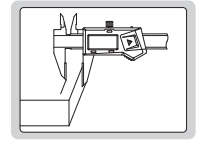
**DATA OUTPUT**

**DIGITAL SCRIBING CALIPERS**

- 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**

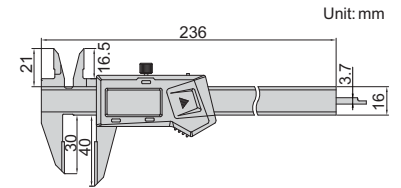


With data interface (data output cable code 7315-21, 7302-21, optional)

| Code             | Range        | Accuracy |
|------------------|--------------|----------|
| <b>1166-150A</b> | 0-150mm/0-6" | ±0.03mm  |

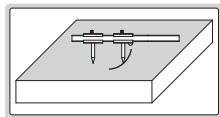
Built-in wireless

| Code               | Range        | Accuracy |
|--------------------|--------------|----------|
| <b>1166-150AWL</b> | 0-150mm/0-6" | ±0.03mm  |

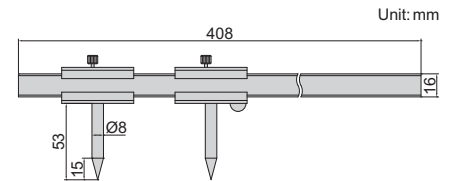


Unit: mm

**SCRIBING CALIPER**



**7203-300A**



Unit: mm

- Made of stainless steel
- Satin chrome plated reading surface
- Hardened scriber tips

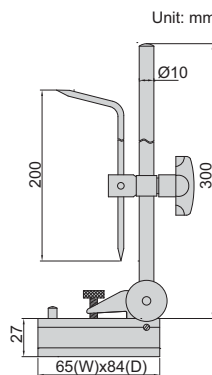
| Code             | Range    | Graduation | Accuracy |
|------------------|----------|------------|----------|
| <b>7203-300A</b> | 51-300mm | 0.1mm      | ±0.1mm   |

**HEIGHT SCRIBER**

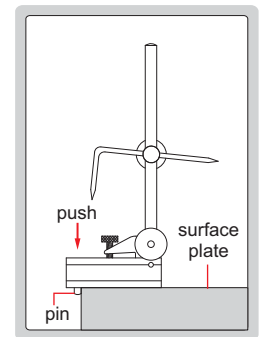
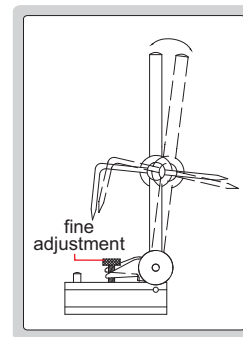
- Grooved bottom for cylinders
- Two pins to be set against the edge of surface plate



**6990-300A**



Unit: mm



**SCRIBERS**

- Nickel plated



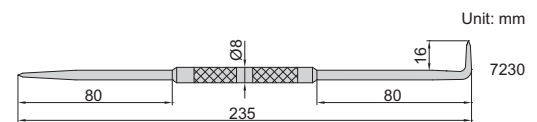
**7230**



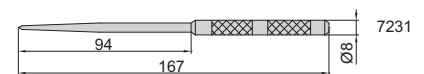
**7231**



**7232**



Unit: mm



**7231**



**7232**

| Code        | Tip           |
|-------------|---------------|
| <b>7230</b> | hardened tips |
| <b>7231</b> | hardened tip  |
| <b>7232</b> | carbide tip   |

## 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**)



5021

| Code   | Remark  |
|--------|---|
| 5021   | Vernier caliper, graduation 0.05mm/1/128" (code <b>1205-150S</b> )  |
| 5021-2 | Vernier caliper, graduation 0.02mm/0.001" (code <b>1205-1502S</b> ) |

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## 2-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code **1108-150**)
- 2) Digital outside micrometer, range 0-25mm/0-1", resolution 0.001mm/0.00005" (code **3109-25A**)



5022

| Code |
|------|
| 5022 |

## 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**)

**Code**  
**5024**



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



**Code**  
**5031**



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 rule, 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



**Code**  
**5032**



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 rule, 150mm/6" (code **7110-150**)



5041

| Code   | Remark  |
|--------|---|
| 5041   | Vernier caliper, graduation 0.05mm/1/128" (code <b>1205-150S</b> )  |
| 5041-2 | Vernier caliper, graduation 0.02mm/0.001" (code <b>1205-1502S</b> ) |

## 4-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code **1108-150**)
- 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 rule, 150mm/6" (code **7110-150**)



5042

| Code |
|------|
| 5042 |

## 5-PIECE MEASURING TOOL SET

■ Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005", (code **1108-150**)
- 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**)



5051

| Code |
|------|
| 5051 |



## 5-PIECE MEASURING TOOL SET

- Includes:
  - 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code **1108-150**)
  - 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**  
**5052**



5052

## 6-PIECE MEASURING TOOL SET

- Includes:
  - 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code **1108-150**)
  - 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 rule, 150mm/6" (code **7110-150**)

**Code**  
**5061**



5061

## 6-PIECE MEASURING TOOL SET

- Includes:
  - 1) Digital caliper, range 0-150mm/0-6" resolution 0.01mm/0.0005" (code **1108-150**)
  - 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 rule, 200mm/8" (code **7110-200**)

**Code**  
**5062**



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 rule, 200mm/8" (code **7110-200**)

| Code          | Remark  |
|---------------|---|
| <b>5063</b>   | Vernier caliper, graduation 0.05mm/1/128" (code <b>1205-150S</b> )  |
| <b>5063-2</b> | Vernier caliper, graduation 0.02mm/0.001" (code <b>1205-1502S</b> ) |



5063

## 9-PIECE MEASURING TOOL SET

Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (code **1108-150**)
- 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, 24pcs, metric 60° thread (code **4820-124**)
- 5) Radius gauge, range 1-7mm (code **4801-17**)
- 6) Feeler gauge, range 0.05-1.00mm, 20pcs (code **4602-20**)
- 7) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
- 8) Scriber (code **7230**)
- 9) Steel rule, 150mm/6" (code **7110-150**)

| Code        |
|-------------|
| <b>5091</b> |



5091

## 13-PIECE MEASURING TOOL SET

Includes:

- 1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005", (code **1108-150**)
- 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, 24pcs, metric 60° thread (code **4820-124**)
- 7) Radius gauge, range 1-7mm (code **4801-17**)
- 8) Feeler gauge, range 0.05-1.00mm, 20pcs (code **4602-20**)
- 9) 90° beveled edge square, 100x70mm, grade 0 (code **4790-1000**)
- 10) Scriber (code **7230**)
- 11) Steel rule, 150mm/6" (code **7110-150**)
- 12) Depth base attachment (code **6140**)
- 13) Zero setting bar for depth base attachment

| Code        |
|-------------|
| <b>5013</b> |



5013

CUSTOM-MADE  
SUPPLY SPECIAL SIZES ACCORDING  
TO CUSTOMER'S REQUEST

## GRANITE SURFACE PLATES

**INSPECTION  
CERTIFICATE**



6900-132

### Grade 00

| Code       | Size (LxWxH)    | Flatness | Weight | Max. load |
|------------|-----------------|----------|--------|-----------|
| 6900-132*  | 300x200x60mm    | 2.7µm    | 11kg   | 30kg      |
| 6900-142*  | 400x250x60mm    | 2.9µm    | 18kg   | 50kg      |
| 6900-144*  | 400x400x60mm    | 3.1µm    | 29kg   | 60kg      |
| 6900-153*  | 500x315x70mm    | 3.2µm    | 33kg   | 60kg      |
| 6900-164*  | 630x400x80mm    | 3.5µm    | 60kg   | 65kg      |
| 6900-166*  | 630x630x100mm   | 3.8µm    | 119kg  | 75kg      |
| 6900-185*  | 800x500x100mm   | 3.9µm    | 120kg  | 100kg     |
| 6900-1106* | 1000x630x140mm  | 4.4µm    | 265kg  | 200kg     |
| 6900-1101* | 1000x1000x150mm | 4.8µm    | 450kg  | 400kg     |
| 6900-1128* | 1200x800x160mm  | 4.9µm    | 461kg  | 500kg     |
| 6900-1161* | 1600x1000x180mm | 5.8µm    | 864kg  | 600kg     |
| 6900-1201* | 2000x1000x220mm | 6.5µm    | 1320kg | 650kg     |
| 6900-1202* | 2000x1500x250mm | 7.0µm    | 2250kg | 750kg     |



- Made of granite, 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)

### Grade 0

| Code       | Size (LxWxH)    | Flatness | Weight | Max. load |
|------------|-----------------|----------|--------|-----------|
| 6900-032*  | 300x200x60mm    | 5.4µm    | 11kg   | 60kg      |
| 6900-042*  | 400x250x60mm    | 5.9µm    | 18kg   | 100kg     |
| 6900-044*  | 400x400x60mm    | 6.3µm    | 29kg   | 120kg     |
| 6900-053*  | 500x315x70mm    | 6.4µm    | 33kg   | 120kg     |
| 6900-064*  | 630x400x80mm    | 7.0µm    | 60kg   | 130kg     |
| 6900-066*  | 630x630x100mm   | 7.6µm    | 119kg  | 150kg     |
| 6900-085*  | 800x500x100mm   | 7.8µm    | 120kg  | 200kg     |
| 6900-0106* | 1000x630x140mm  | 8.7µm    | 265kg  | 400kg     |
| 6900-0101* | 1000x1000x150mm | 9.7µm    | 450kg  | 800kg     |
| 6900-0128* | 1200x800x160mm  | 9.8µm    | 461kg  | 1000kg    |
| 6900-0161* | 1600x1000x180mm | 11.5µm   | 864kg  | 1200kg    |
| 6900-0201* | 2000x1000x220mm | 12.9µm   | 1320kg | 1300kg    |
| 6900-0202* | 2000x1500x250mm | 14.0µm   | 2250kg | 1500kg    |

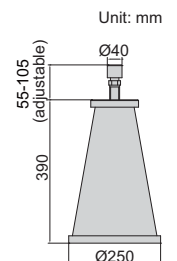
\*Supplied with manufacturer inspection certificate

## JACK SET FOR GRANITE SURFACE PLATES

- 5 jacks per set
- Adjustable height
- For large granite surface plates:  
2000x1000x220mm  
(code 6900-0201 and 6900-1201)  
2000x1500x250mm  
(code 6900-0202 and 6900-1202)



6903-B

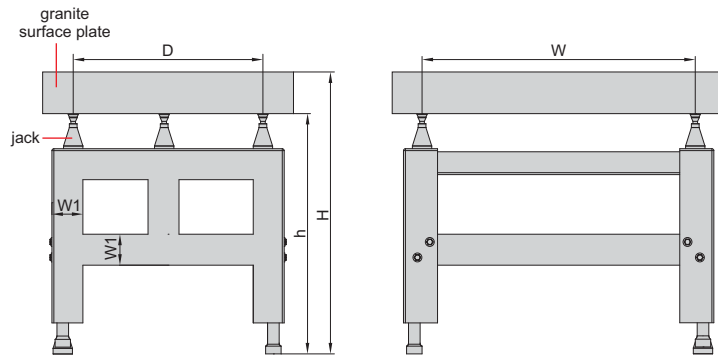


Code  
6903-B

## STANDS FOR GRANITE SURFACE PLATES



6902-64A



12

- For medium size granite surface plates
- 5 jacks are included
- Adjusting range of jacks: 25mm
- One foot on the bottom is adjustable

### Low stands

| Code      | For granite surface plate                      | W    | D   | H (with granite surface plate) | h (without granite surface plate) | W1  |
|-----------|--|------|-----|--------------------------------|-----------------------------------|-----|
| 6902-64A  | 630x400x80mm (code 6900-064 and 6900-164)      | 352  | 224 | 775-800                        | 695-720                           | 80  |
| 6902-66A  | 630x630x100mm (code 6900-066 and 6900-166)     | 352  | 352 | 775-800                        | 675-700                           | 80  |
| 6902-85A  | 800x500x100mm (code 6900-085 and 6900-185)     | 448  | 280 | 775-800                        | 675-700                           | 80  |
| 6902-106A | 1000x630x140mm (code 6900-0106 and 6900-1106)  | 560  | 352 | 755-780                        | 615-640                           | 80  |
| 6902-101A | 1000x1000x150mm (code 6900-0101 and 6900-1101) | 560  | 560 | 755-780                        | 605-630                           | 80  |
| 6902-128A | 1200x800x160mm (code 6900-0128 and 6900-1128)  | 672  | 448 | 755-780                        | 595-620                           | 80  |
| 6902-161A | 1600x1000x180mm (code 6900-0161 and 6900-1161) | 896  | 560 | 755-780                        | 575-600                           | 80  |
| 6902-201A | 2000x1000x220mm (code 6900-0201 and 6900-1201) | 1120 | 560 | 755-780                        | 535-560                           | 100 |
| 6902-202A | 2000x1500x250mm (code 6900-0202 and 6900-1202) | 1120 | 840 | 755-780                        | 505-530                           | 100 |

### High stands

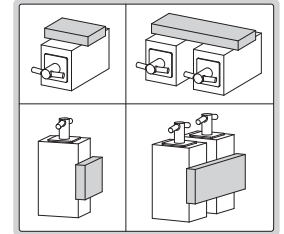
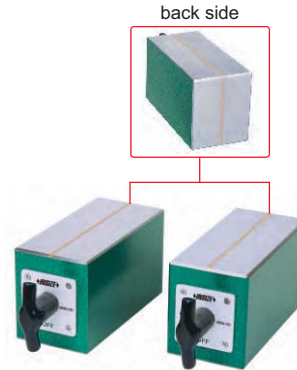
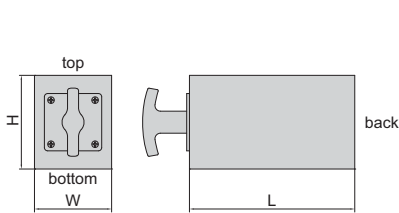
| Code      | For granite surface plate                      | W    | D   | H (with granite surface plate) | h (without granite surface plate) | W1  |
|-----------|--|------|-----|--------------------------------|-----------------------------------|-----|
| 6902-64H  | 630x400x80mm (code 6900-064 and 6900-164)      | 352  | 224 | 1000-1025                      | 920-945                           | 80  |
| 6902-66H  | 630x630x100mm (code 6900-066 and 6900-166)     | 352  | 352 | 1000-1025                      | 900-925                           | 80  |
| 6902-85H  | 800x500x100mm (code 6900-085 and 6900-185)     | 448  | 280 | 1000-1025                      | 900-925                           | 80  |
| 6902-106H | 1000x630x140mm (code 6900-0106 and 6900-1106)  | 560  | 352 | 1000-1025                      | 860-885                           | 80  |
| 6902-101H | 1000x1000x150mm (code 6900-0101 and 6900-1101) | 560  | 560 | 1000-1025                      | 850-875                           | 80  |
| 6902-128H | 1200x800x160mm (code 6900-0128 and 6900-1128)  | 672  | 448 | 1000-1025                      | 840-865                           | 80  |
| 6902-161H | 1600x1000x180mm (code 6900-0161 and 6900-1161) | 896  | 560 | 1000-1025                      | 820-845                           | 80  |
| 6902-201H | 2000x1000x220mm (code 6900-0201 and 6900-1201) | 1120 | 560 | 1000-1025                      | 780-805                           | 100 |
| 6902-202H | 2000x1500x250mm (code 6900-0202 and 6900-1202) | 1120 | 840 | 1000-1025                      | 750-775                           | 100 |

**HARDENED SURFACES**

**HIGH PRECISION**

**STRONG MAGNETIC FORCE**

## MAGNETIC RECTANGULAR BLOCKS



- 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

**6898-150**

| Code            | Size (LxWxH) | Magnetic force | Parallelism of top to bottom side | Squareness of top and bottom to back side | Height difference of a matched pair |
|-----------------|--------------|----------------|-----------------------------------|---|-------------------------------------|
| <b>6898-100</b> | 100x70x70mm  | 100kgf         | 5µm                               | 5µm                                       | 5µm                                 |
| <b>6898-150</b> | 150x70x85mm  | 125kgf         | 5µm                               | 5µm                                       | 5µm                                 |

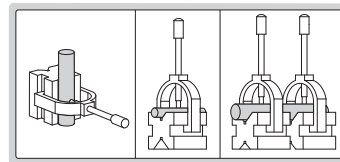
## V-BLOCK SETS



**6896-10**

**6896-11**

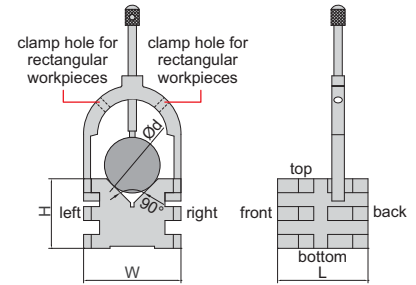
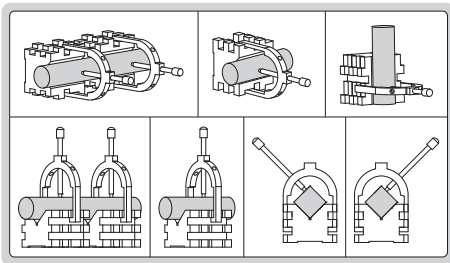
- Hold cylindrical workpieces for inspection and machining
- Two V-blocks per set
- Made of alloy steel
- Hardened to HRC60±2
- V groove on the top for large shafts
- V groove on the bottom for small shafts (except **6896-10**)



| Code           | Size (LxWxH) | 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 |
|----------------|--------------|----------------------|---|--|-------------------------------------|
| <b>6896-10</b> | 25x20x20mm   | 3-20mm               | 3µm   | 3µm  | 3µm                                 |
| <b>6896-11</b> | 50x40x40mm   | 5-30mm               | 5µm   | 5µm  | 5µm                                 |
| <b>6896-12</b> | 80x63x63mm   | 7-63mm               | 5µm   | 5µm  | 5µm                                 |
| <b>6896-13</b> | 100x80x80mm  | 7-80mm               | 5µm   | 5µm  | 5µm                                 |
| <b>6896-14</b> | 70x140x140mm | 9-140mm              | 5µm   | 5µm  | 5µm                                 |

## V-BLOCK SET

SIDE LIE-DOWN USE IS POSSIBLE



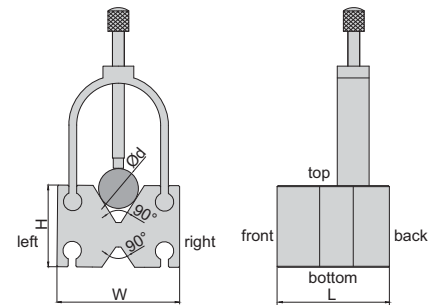
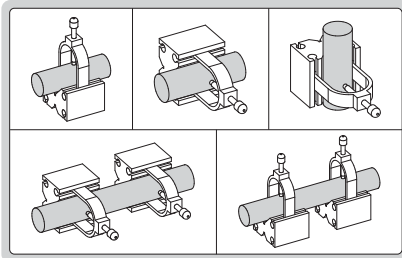
6802-1

- Hold cylindrical or rectangular workpieces for inspection and machining
- Two V-blocks per set
- Made of alloy steel
- Hardened to HRC60±2
- Applicable for cylinder with diameter (Ød): 5-50mm
- Applicable for rectangular workpieces with thickness: ≤35mm

| Code   | Size (LxWxH) | 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 | 65x70x50mm   | 5µm   | 5µm  | 5µm                                 |

## V-BLOCK SETS

SIDE LIE-DOWN USE IS POSSIBLE



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 (LxWxH) | 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 | 55x60x40mm   | 4-35mm               | 5µm   | 5µm  | 5µm                                 |
| 6803-2 | 65x70x45mm   | 4-47mm               | 5µm   | 5µm  | 5µm                                 |

## V-BLOCK

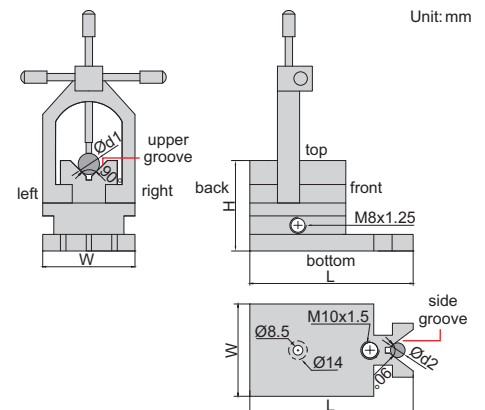
the adjustable screw can support the block and prevent tilting



side groove is for shouldered studs and pins



6804-M2

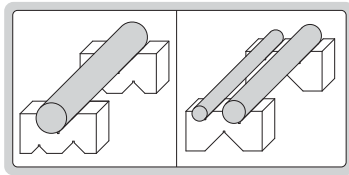


Unit: mm

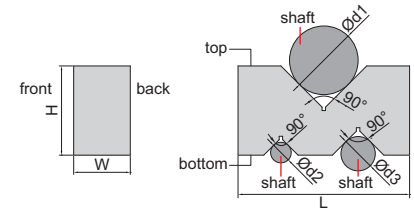
- Hold cylindrical workpieces for inspection and machining
- Made of alloy steel
- Hardened to HRC60±2

| Code    | Size (LxWxH) | 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 | 90x48x48mm   | 5-33mm                        | 5µm   | 5µm                                     | 5µm                                     |

## V-BLOCK SETS



6887-3

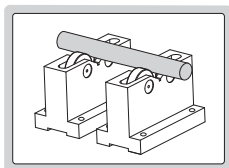


- Two V-blocks per set
- Made of hardened tool steel

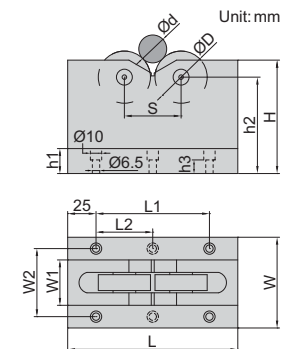
| Code   | Size (LxWxH) | Range of shafts (Ød1) | Range of shafts (Ød2) | Range of shafts (Ød3) |
|--------|--------------|-----------------------|-----------------------|-----------------------|
| 6887-1 | 50x19x24mm   | 3-32mm                | 3-16mm                | 3-22mm                |
| 6887-2 | 75x24x35mm   | 3-50mm                | 3-20mm                | 3-32mm                |
| 6887-3 | 100x33x52mm  | 3-68mm                | 3-26mm                | 3-40mm                |
| 6887-4 | 125x44x69mm  | 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



6888-1

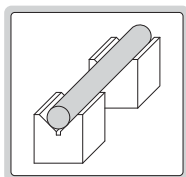


- Runout accuracy: 5µm
- Parallelism of bearings to bottom: 12µm
- Two V-blocks per set
- Workpieces don't get damaged due to bearings
- Suitable for heavy workpieces

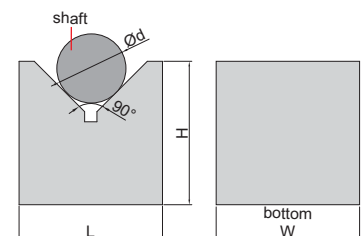
| Code   | Size (LxWxH)  | Code of bearings | Diameter of bearings (ØD) | Range of shafts (Ød) | Load capacity |
|--------|---------------|------------------|---------------------------|----------------------|---------------|
| 6888-1 | 150x60x100mm  | 16004 ZZ         | 42mm                      | 25-70mm              | 500kg         |
| 6888-2 | 150x80x100mm  | 6303 ZZ          | 47mm                      | 5-55mm               | 1000kg        |
| 6888-3 | 230x100x150mm | 6306 ZZ          | 72mm                      | 70-200mm             | 1000kg        |

| 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



6897-1



- Two V-blocks per set

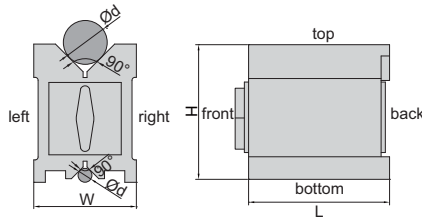
| Code   | Size (LxWxH) | Range of shafts (Ød) | Parallelism of V groove to bottom | Height difference of a matchet pair |
|--------|--------------|----------------------|-----------------------------------|-------------------------------------|
| 6897-1 | 70x50x70mm   | 6-75mm               | 4µm                               | 5µm                                 |
| 6897-2 | 100x50x70mm  | 6-99mm               | 4µm                               | 5µm                                 |

## MAGNETIC V-BLOCKS (ADVANCED TYPE)

HARDENED SURFACES

HIGH PRECISION

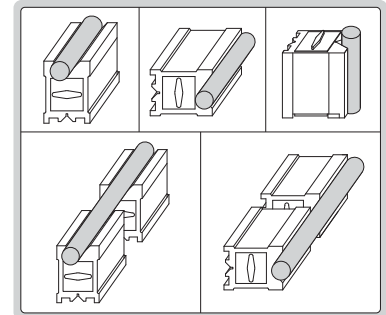
STRONG MAGNETIC FORCE



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 (LxWxH)  | 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 | 75x56x75mm    | 5-40mm               | 85kgf          | 5µm  | 5µm                                  |
| 6889-22 | 100x70x95mm   | 5-65mm               | 150kgf         | 5µm  | 5µm                                  |
| 6889-33 | 150x75x100mm  | 5-70mm               | 190kgf         | 6µm  | 6µm                                  |
| 6889-55 | 160x125x130mm | 5-140mm              | 220kgf         | 12µm   | 12µm                                 |
| 6889-44 | 200x125x150mm | 10-140mm             | 400kgf         | 12µm   | 12µm                                 |

### Matched pair

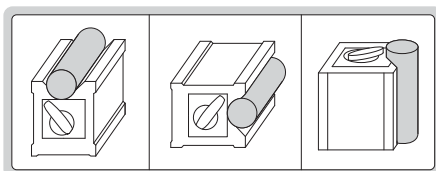
| Code   | Size (LxWxH)  | Range of shafts (Ød) | Magnetic force | Parallelism of V grooves to top, bottom, left, right sides | Squareness of V grooves to back side | Height difference of a matched pair |
|--------|---------------|----------------------|----------------|--|--------------------------------------|-------------------------------------|
| 6889-1 | 75x56x75mm    | 5-40mm               | 85kgf          | 5µm  | 5µm                                  | 5µm                                 |
| 6889-2 | 100x70x95mm   | 5-65mm               | 150kgf         | 5µm  | 5µm                                  | 5µm                                 |
| 6889-3 | 150x75x100mm  | 5-70mm               | 190kgf         | 6µm  | 6µm                                  | 6µm                                 |
| 6889-5 | 160x125x130mm | 5-140mm              | 220kgf         | 12µm   | 12µm                                 | 12µm                                |
| 6889-4 | 200x125x150mm | 10-140mm             | 400kgf         | 12µm   | 12µm                                 | 12µm                                |

## MAGNETIC V-BLOCK (ECONOMIC TYPE)

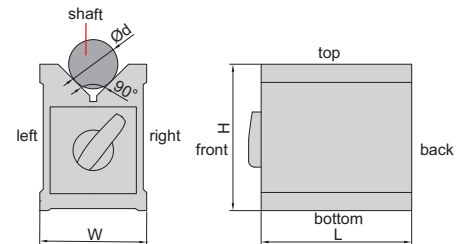
ATTENTION: NOT SUITABLE FOR STEEL OR IRON SURFACES, OTHERWISE THE MAGNETIC FORCE WILL BE REDUCED

ATTENTION: NOT HARDENED

- Hold cylindrical workpieces for inspection and machining
- Supplied in single piece
- Not hardened
- Not suitable for steel or iron surfaces, otherwise the magnetic force will be reduced



6890-702



| Code     | Size (LxWxH) | Range of shafts (Ød) | Magnetic force | Parallelism of V groove to top, bottom, left and right sides | Squareness of V groove to back side |
|----------|--------------|----------------------|----------------|--|-------------------------------------|
| 6890-702 | 70x60x73mm   | 6-44mm               | 56kgf          | 10µm   | 10µm                                |

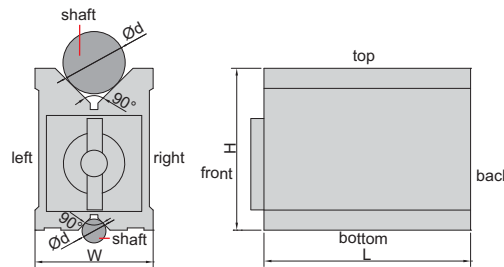
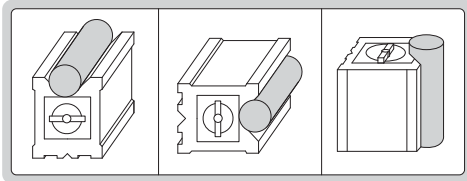


**ATTENTION: NOT SUITABLE FOR STEEL OR IRON SURFACES, OTHERWISE THE MAGNETIC FORCE WILL BE REDUCED**

**ATTENTION: NOT HARDENED**

## MAGNETIC V-BLOCKS (ECONOMIC TYPE)

- Hold cylindrical workpieces for inspection and machining
- Supplied in single piece
- Not hardened
- 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



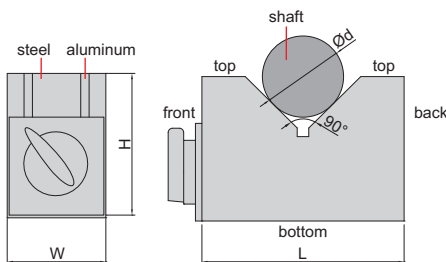
6801-1201

| Code      | Size (LxWxH) | Range of shafts ( $\varnothing d$ ) | Magnetic force | Parallelism of V grooves to top, bottom, left, right side | Squareness of V grooves to back side |
|-----------|--------------|-------------------------------------|----------------|---|--------------------------------------|
| 6801-1201 | 80x70x95mm   | 6-67mm                              | 64kgf          | 10 $\mu$ m  | 10 $\mu$ m                           |
| 6801-1202 | 100x70x95mm  | 6-67mm                              | 80kgf          | 10 $\mu$ m  | 10 $\mu$ m                           |
| 6801-1203 | 120x70x95mm  | 6-67mm                              | 96kgf          | 10 $\mu$ m  | 10 $\mu$ m                           |

## MAGNETIC V-BLOCK SETS

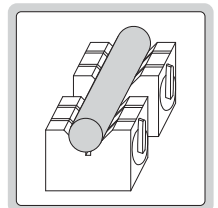
**ATTENTION: NOT HARDENED, DO NOT ROTATE WORKPIECES ON V-BLOCKS**

**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 (LxWxH) | Range of shafts ( $\varnothing d$ ) | Magnetic force | Parallelism of V groove to bottom and back sides | Height difference of a matched pair |
|--------|--------------|-------------------------------------|----------------|--|-------------------------------------|
| 6891-1 | 70x40x50mm   | 6-46mm                              | 8kgf           | 10 $\mu$ m                                       | 10 $\mu$ m                          |
| 6891-3 | 150x50x100mm | 6-125mm                             | 14kgf          | 10 $\mu$ m                                       | 10 $\mu$ m                          |

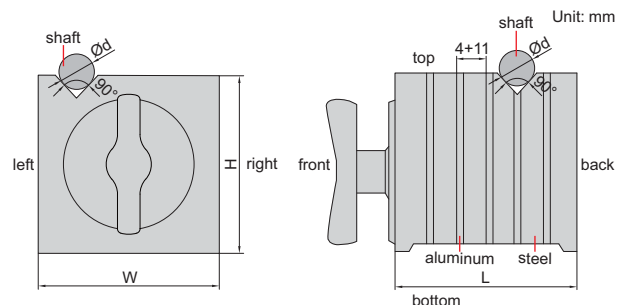
**ATTENTION: NOT HARDENED, DO NOT ROTATE WORKPIECES ON V-BLOCKS**

## MAGNETIC SQUARE WITH V GROOVE

- 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: 20 $\mu$ m
- Parallelism and squareness of V grooves to top, bottom, left, right and back: 20 $\mu$ m



6539-100



| Code     | Size (LxWxH)  | Magnetic force of V grooves |                    | Magnetic force of top, left and right sides |                    | Range of shafts ( $\varnothing d$ ) |
|----------|---------------|-----------------------------|--------------------|---|--------------------|-------------------------------------|
|          |               | On granite surface plate    | On cast iron plate | On granite surface plate                    | On cast iron plate |                                     |
| 6539-100 | 100x100x100mm | 30kgf                       | 25kgf              | 50kgf                                       | 30kgf              | 5-35mm                              |

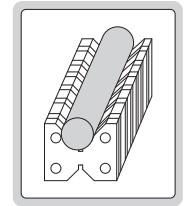
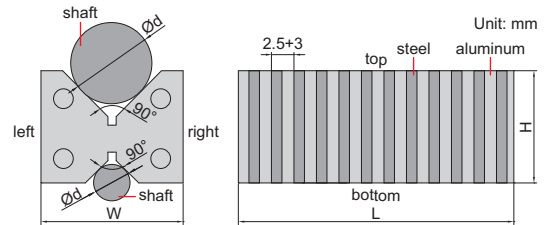
## MAGNETIC INDUCTION V-BLOCK

ATTENTION: NOT HARDENED, DO NOT ROTATE WORKPIECES ON V-BLOCKS

- Hold cylindrical workpieces for inspection and machining
- To be used on magnetic chucks
- Supplied in single piece
- V groove on the top for large shafts
- V groove on the bottom for small shafts
- Hardness HRB70



6892-1

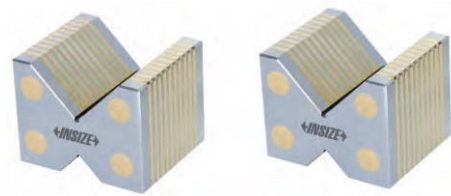


| Code   | Size (LxWxH) | Range of shafts ( $\varnothing d$ ) | Pole pitch | Parallelism of both V grooves to top and bottom sides |
|--------|--------------|-------------------------------------|------------|---|
| 6892-1 | 110x60x48mm  | 6-50mm                              | 2.5+3mm    | 10 $\mu$ m  |

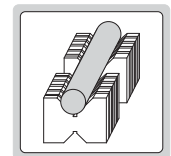
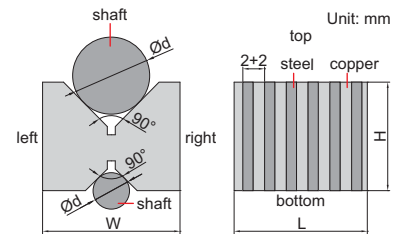
## MAGNETIC INDUCTION V-BLOCK SET

ATTENTION: NOT HARDENED, DO NOT ROTATE WORKPIECES ON V-BLOCKS

- 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
- Copper magnetic strips



6878-1



| Code   | Size (LxWxH) | Range of shafts ( $\varnothing d$ ) | Pole pitch | Parallelism of both V grooves to top and bottom sides | Height difference of a matched pair |
|--------|--------------|-------------------------------------|------------|---|-------------------------------------|
| 6878-1 | 49x58x46mm   | 5-56mm                              | 2+2mm      | 10 $\mu$ m  | 10 $\mu$ m                          |

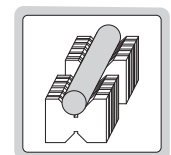
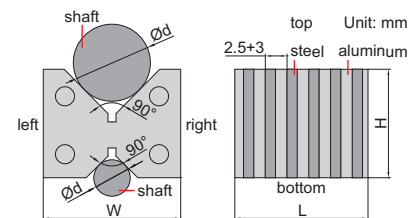
## MAGNETIC INDUCTION V-BLOCK SET (ECONOMIC TYPE)

ATTENTION: NOT HARDENED, DO NOT ROTATE WORKPIECES ON V-BLOCKS

- 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



6899-1



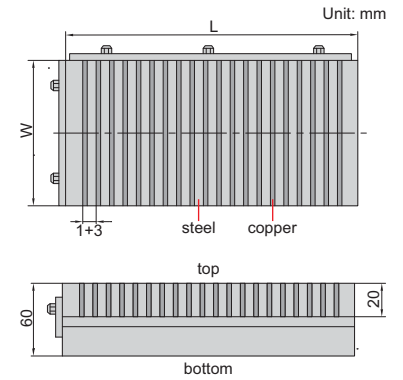
| Code   | Size (LxWxH) | Range of shafts ( $\varnothing d$ ) | Pole pitch | Parallelism of both V grooves to top and bottom sides | Height difference of a matched pair |
|--------|--------------|-------------------------------------|------------|---|-------------------------------------|
| 6899-1 | 55x60x48mm   | 6-50mm                              | 2.5+3mm    | 10 $\mu$ m  | 10 $\mu$ m                          |

**ATTENTION:  
NOT HARDENED**

## PERMANENT MAGNETIC CHUCK



**6537-400**



| Code            | Table size (L×W) | Magnetic force        | Pole pitch | Parallelism of top to bottom |
|-----------------|------------------|-----------------------|------------|------------------------------|
| <b>6537-400</b> | 400×200mm        | 16kgf/cm <sup>2</sup> | 1+3mm      | 0.005mm/100mm                |

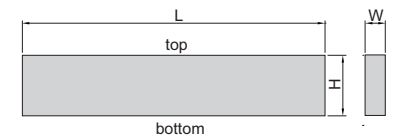
## PARALLEL SETS

12



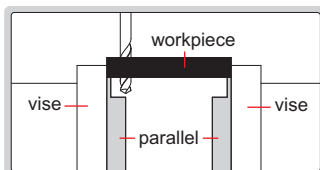
**6533-144**

- Parallelism between top and bottom: 5µm
- Height difference of a matched pair: 5µm
- Made of alloy tool steel
- Hardened to HRC55-60



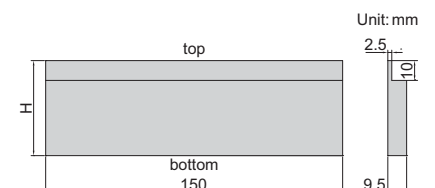
| Code            | Parallels per set | Length (L) | Thickness (W) | Height (H)   |
|-----------------|-------------------|------------|---------------|--|
| <b>6533-10</b>  | 10 pairs          | 150mm      | 3mm           | 13, 16, 19, 22, 25, 28, 31, 35, 38, 41mm                 |
| <b>6533-144</b> | 14 pairs          | 150mm      | 10mm          | 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 35, 40, 45, 50mm |
| <b>6533-6</b>   | 6 pairs           | 200mm      | 9.5mm         | 35, 40, 45, 50, 55, 58mm                                 |

## 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



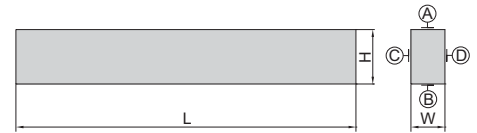
| Code          | Parallels per set | Height (H)               |
|---------------|-------------------|--------------------------|
| <b>6534-6</b> | 6 pairs           | 25, 30, 35, 40, 45, 48mm |

## GRANITE PARALLEL SET

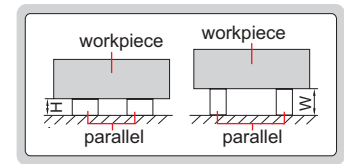
- Made of granite, hard and no rusty, no dimensional change over time or temperature change
- Two parallels per set



4143-250



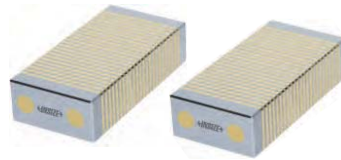
| Code     | Size (LxWxH) | Parallelism between A and B | Parallelism between C and D | Height difference of a matched pair |
|----------|--------------|-----------------------------|-----------------------------|-------------------------------------|
| 4143-250 | 250x25x40mm  | 3µm                         | 3µm                         | 3µm                                 |



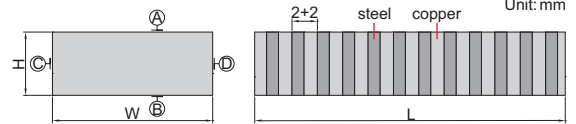
## MAGNETIC INDUCTION PARALLEL SET

ATTENTION:  
NOT HARDENED

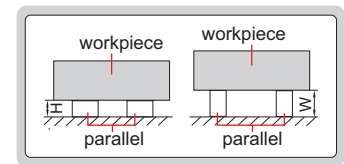
- To be used on magnetic chucks
- Two parallels per set
- Hardness HRB70
- Copper magnetic strips



6879-1

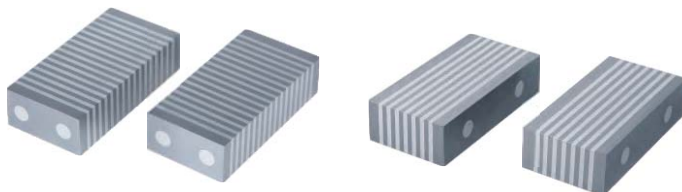


| Code   | Size (LxWxH) | Pole pitch | Parallelism between A and B | Parallelism between C and D | Height difference of a matched pair |
|--------|--------------|------------|-----------------------------|-----------------------------|-------------------------------------|
| 6879-1 | 100x50x25mm  | 2+2mm      | 10µm                        | 10µm                        | 10µm                                |



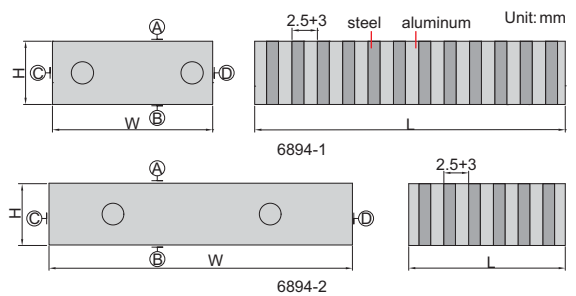
## MAGNETIC INDUCTION PARALLEL SETS (ECONOMIC TYPE)

ATTENTION:  
NOT HARDENED



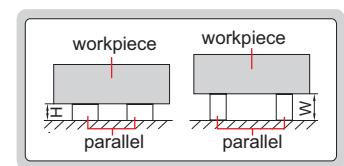
6894-1

6894-2



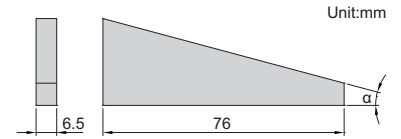
- To be used on magnetic chucks
- Two parallels per set
- Hardness HRB70

| Code   | Size (LxWxH) | Pole pitch | Parallelism between A and B | Parallelism between C and D | Height difference of a matched pair |
|--------|--------------|------------|-----------------------------|-----------------------------|-------------------------------------|
| 6894-1 | 100x50x25mm  | 2.5+3mm    | 10µm                        | 10µm                        | 10µm                                |
| 6894-2 | 50x100x25mm  | 2.5+3mm    | 10µm                        | 10µm                        | 10µm                                |



## ANGLE PLATE SETS

- For angle set-up in tooling, production and inspection
- Made of tool steel
- Hardness HRC55

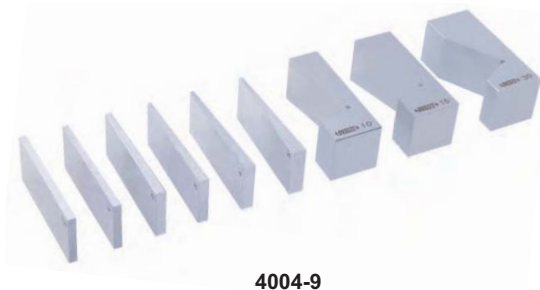


4003-12

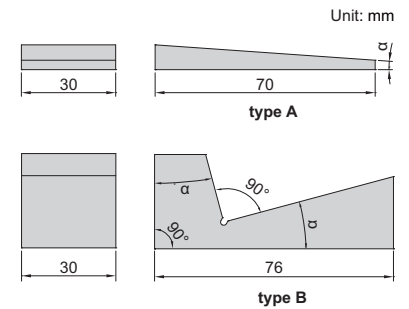
| Code    | Angle plates included | Angle $\alpha$  | Accuracy   |
|---------|-----------------------|---|------------|
| 4003-10 | 10 pcs                | 1°, 2°, 3°, 4°, 5°, 10°, 15°, 20°, 25°, 30°             | ±9 seconds |
| 4003-12 | 12 pcs                | 1/4°, 1/2°, 1°, 2°, 3°, 4°, 5°, 10°, 15°, 20°, 25°, 30° | ±9 seconds |

## ANGLE PLATE SET

- For angle set-up in tooling, production and inspection
- Made of tool steel
- Hardness HRC55



4004-9



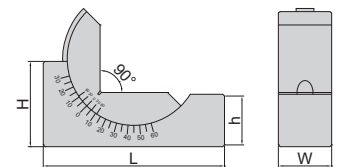
| Code   | Angle plates included | Angle $\alpha$           | Type   | Accuracy    |
|--------|-----------------------|--------------------------|--------|-------------|
| 4004-9 | 9 pcs                 | 1/2°, 1°, 2°, 3°, 4°, 5° | type A | ±30 seconds |
|        |                       | 10°, 15°, 30°            | type B | ±50 seconds |

## ADJUSTABLE ANGLE BLOCKS

- Made of hardened tool steel
- With locking screw
- Accuracy of angle: 10 minutes

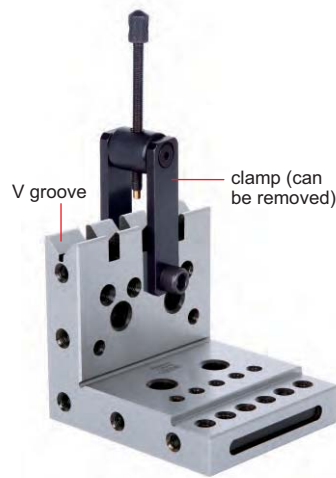


6535-30



| Code    | Size (LxWxH) | h    | Adjustable angle | Graduation of angle |
|---------|--------------|------|------------------|---------------------|
| 6535-25 | 75x25x36mm   | 25mm | 30°~0°~60°       | 10 minutes          |
| 6535-30 | 102x30x49mm  | 30mm | 30°~0°~60°       | 10 minutes          |

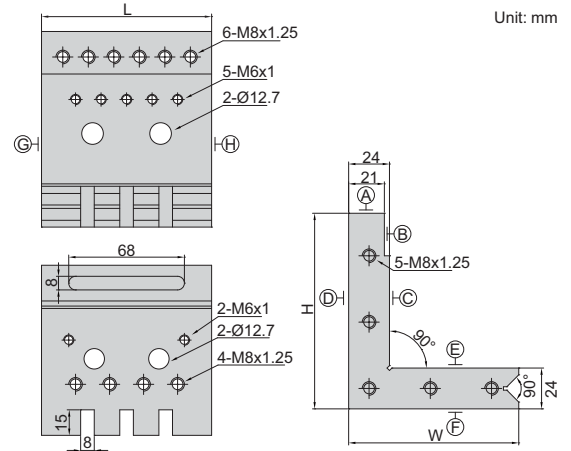
## RIGHT ANGLE PLATE



6547-1

- 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: 6µm
- Parallelism and squareness of V groove to A, B, C, D, E, F, G and H: 6µm

| Code   | Size (LxWxH)  |
|--------|---------------|
| 6547-1 | 100x100x115mm |



12

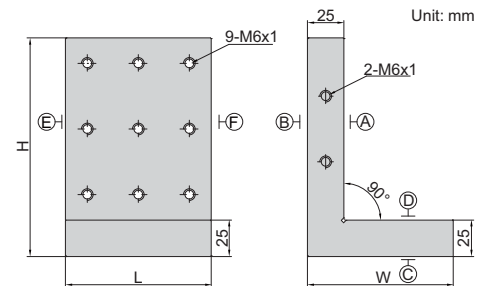
## RIGHT ANGLE PLATE



6548-1

- Made of tool steel
- Hardened to HRC60±2
- Squareness or parallelism between A, B, C, D, E and F: 5µm

| Code   | Size (LxWxH)  |
|--------|---------------|
| 6548-1 | 100x100x150mm |



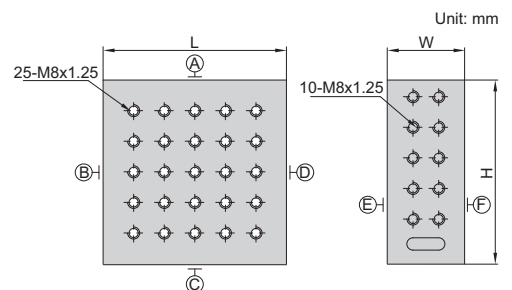
## RIGHT ANGLE PLATE



6549-1

- 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

| Code   | Size (LxWxH) |
|--------|--------------|
| 6549-1 | 150x63x150mm |

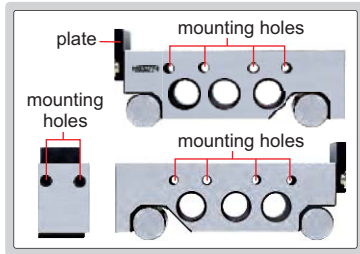


## SINE BARS

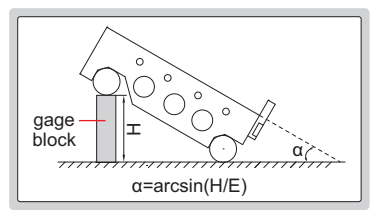
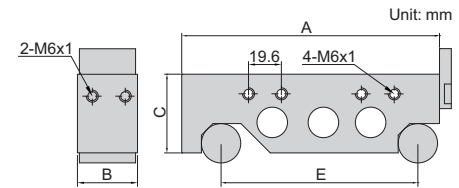
CAN BE CUSTOMIZED

HIGH PRECISION

The front and back ends and two sides have mounting holes to install plate



4155-100



- Made of alloy tool steel

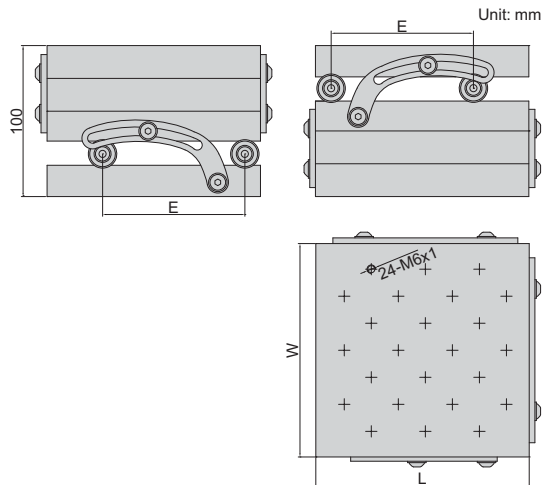
| Code     | Roller distance (E) | Table size (AxB) | C    | Accuracy of $\alpha$ at 30° |
|----------|---------------------|------------------|------|-----------------------------|
| 4155-100 | 100mm               | 130x30mm         | 40mm | $\pm 5$ seconds             |
| 4155-200 | 200mm               | 230x30mm         | 40mm | $\pm 5$ seconds             |
| 4155-300 | 300mm               | 345x40mm         | 50mm | $\pm 8$ seconds             |

## COMPOUND SINE TABLE



6536-100

- Accuracy of angle:  $\pm 15$  seconds
- Made of alloy tool steel
- Hardness HRC58-60



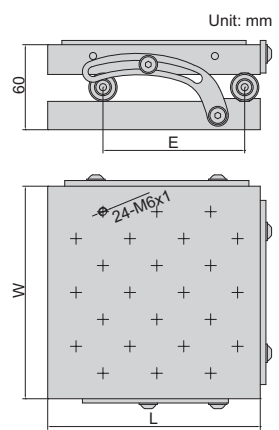
| Code     | Roller distance (E) | Table size (LxW) | Adjustable angle |
|----------|---------------------|------------------|------------------|
| 6536-100 | 100mm               | 150x150mm        | 0-60°            |

## SINE TABLE



6527-100

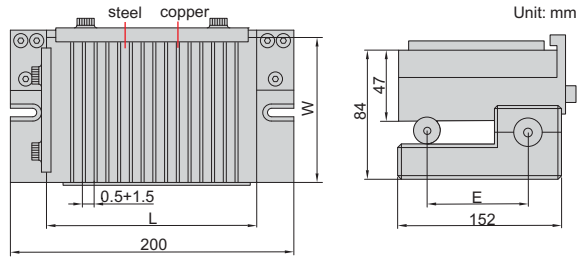
- Accuracy of angle:  $\pm 15$  seconds
- Made of alloy tool steel
- Hardness HRC58-60



| Code     | Roller distance (E) | Table size (LxW) | Adjustable angle |
|----------|---------------------|------------------|------------------|
| 6527-100 | 100mm               | 150x150mm        | 0-60°            |

## MAGNETIC SINE TABLE

**ATTENTION:  
NOT HARDENED**



6538-100

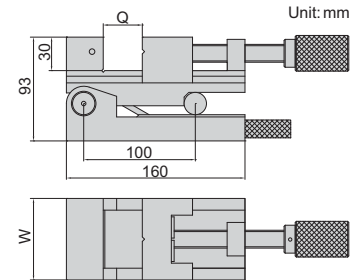
| Code     | Table size (L×W) | Roller distance (E) | Adjustable angle | Accuracy of angle |
|----------|------------------|---------------------|------------------|-------------------|
| 6538-100 | 150×150mm        | 100mm               | 0-60°            | ±15 seconds       |

## PRECISION SINE VISE



6522-80

There is a 1mm step (accuracy +/-0.002mm). Gage blocks smaller than 0.5mm are not available. If small gage blocks are needed (for example, 0.25mm), a gage block 1.25mm can be used in order to make 1.25mm - 1mm = 0.25mm.

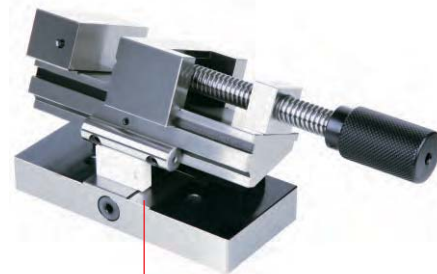


- Parallelism: 3μm/100mm
- Squareness: 5μm/100mm
- Accuracy of angle: ±15 seconds
- Made of SKS tool steel, subzero treatment
- Hardness HRC58-60

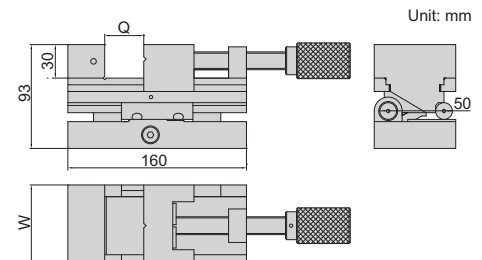
| Code    | Jaw opening (Q) | Jaw width (W) | Adjustable angle |
|---------|-----------------|---------------|------------------|
| 6522-80 | 0-80mm          | 73mm          | 0-46°            |

## PRECISION SINE VISE

There is a 1mm step (accuracy +/-0.002mm). Gage blocks smaller than 0.5mm are not available. If small gage blocks are needed (for example, 0.25mm), a gage block 1.25mm can be used in order to make 1.25mm - 1mm = 0.25mm.



6523-80

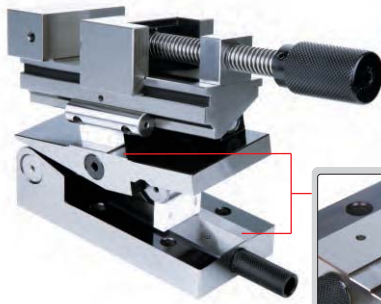


- Parallelism: 3μm/100mm
- Squareness: 5μm/100mm
- Accuracy of angle: ±15 seconds
- Made of SKS tool steel, subzero treatment
- Hardness HRC58-60

| Code    | Jaw opening (Q) | Jaw width (W) | Adjustable angle |
|---------|-----------------|---------------|------------------|
| 6523-80 | 0-80mm          | 73mm          | 0-46°            |

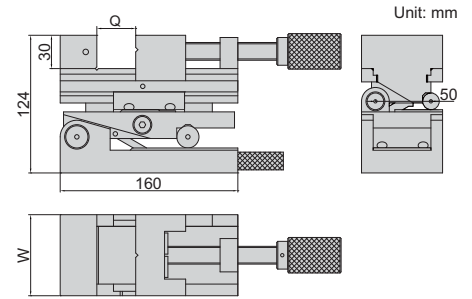


## PRECISION COMPOUND SINE VISE



6524-80

There is a 1mm step (accuracy +/-0.002mm). Gage blocks smaller than 0.5mm are not available. If small gage blocks are needed (for example, 0.25mm), a gage block 1.25mm can be used in order to make 1.25mm - 1mm = 0.25mm.

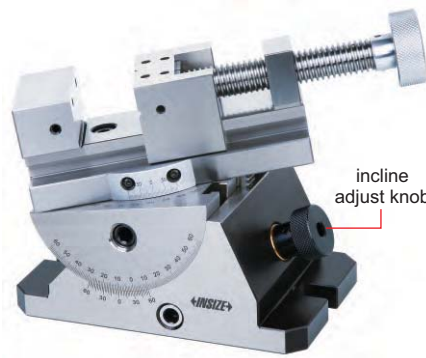


- Parallelism: 3µm/100mm
- Squareness: 5µm/100mm
- Accuracy of angle: ±15 seconds
- Made of SKS tool steel, subzero treatment
- Hardness HRC58-60

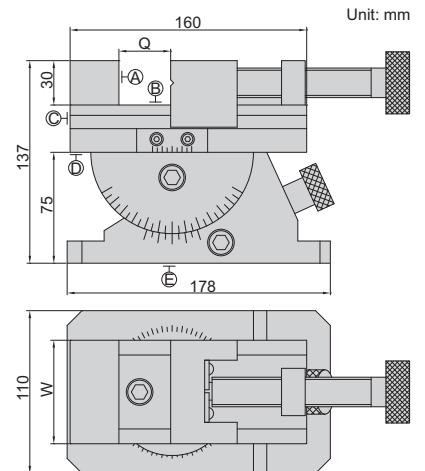
| Code    | Jaw opening (Q) | Jaw width (W) | Adjustable angle |
|---------|-----------------|---------------|------------------|
| 6524-80 | 0-80mm          | 73mm          | 0-46°            |

## PRECISION UNIVERSAL VISE

- 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



6521-80

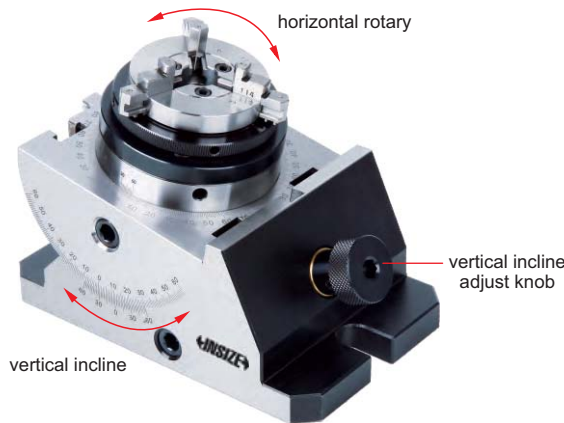


| Code    | Jaw opening (Q) | Jaw width (W) |
|---------|-----------------|---------------|
| 6521-80 | 0-80mm          | 70mm          |

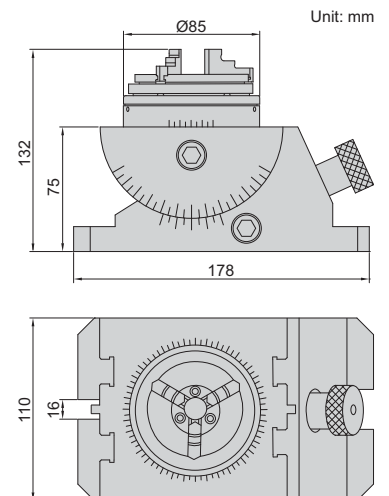
12

## PRECISION UNIVERSAL VISE WITH CHUCK

- 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



6528-85



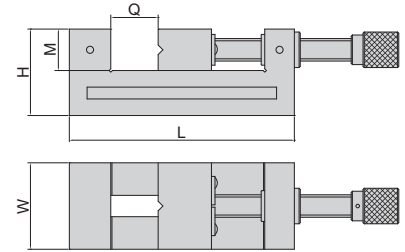
| Code    | Range of external clamping | Range of internal clamping |
|---------|----------------------------|----------------------------|
| 6528-85 | Ø0.8~Ø63mm                 | Ø23~Ø58mm                  |

## PRECISION VISES

- Parallelism: 8 $\mu$ m/100mm
- Squareness: 10 $\mu$ m/100mm
- Made of alloy steel
- Hardness HRC56-58



6520-73A



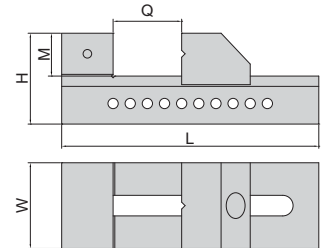
| Code      | Jaw opening (Q) | Jaw width (W) | L     | H    | M    |
|-----------|-----------------|---------------|-------|------|------|
| 6520-73A  | 0-73mm          | 63mm          | 176mm | 63mm | 30mm |
| 6520-76A  | 0-76mm          | 73mm          | 190mm | 73mm | 35mm |
| 6520-120A | 0-120mm         | 98mm          | 255mm | 82mm | 40mm |

## PRECISION VISES

- Parallelism: 3 $\mu$ m/100mm
- Squareness: 5 $\mu$ m/100mm
- Made of alloy steel
- Hardness HRC56-58

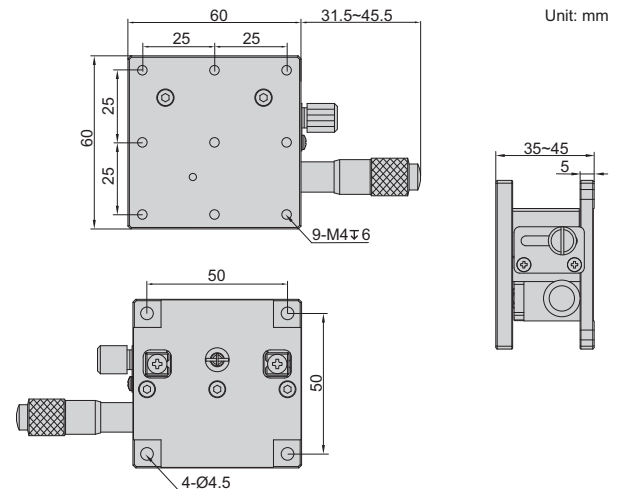


6526-80



| Code     | Jaw opening (Q) | Jaw width (W) | Overall length (L) | H    | M    |
|----------|-----------------|---------------|--------------------|------|------|
| 6526-80  | 0-80mm          | 50mm          | 150mm              | 53mm | 25mm |
| 6526-100 | 0-100mm         | 73mm          | 190mm              | 70mm | 35mm |

## Z-AXIS STAGE CODE 6586-60



- Cross roller guides, achieve high precision and smooth movement
- Stage made of aluminum alloy

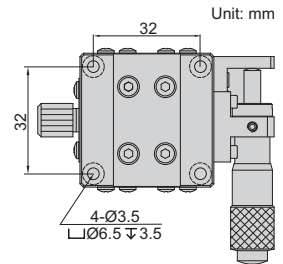
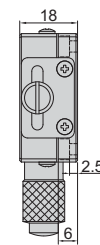
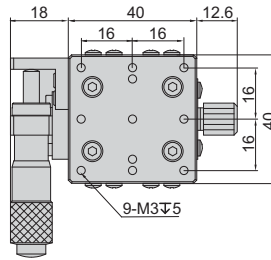
### SPECIFICATION

| 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 |

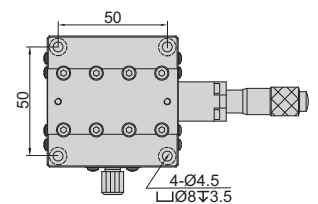
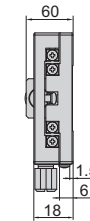
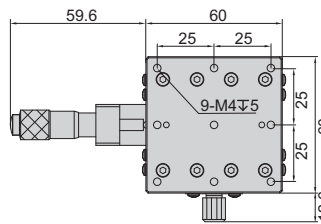
## X-AXIS STAGES



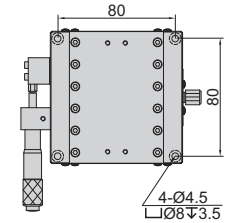
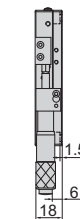
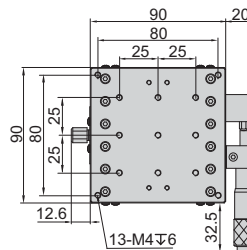
6582-401



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)

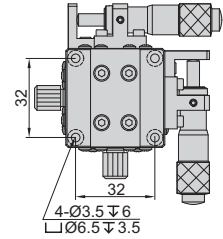
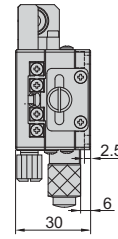
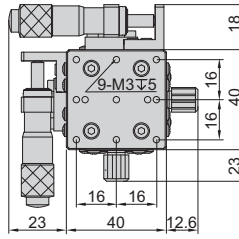
| Code      | X-axis displacement | Parallelism of top to bottom surface | Micrometer graduation | Micrometer accuracy | Maximum load   | Micrometer location | Stage size | Weight |
|-----------|---------------------|--------------------------------------|-----------------------|---------------------|----------------|---------------------|------------|--------|
| 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

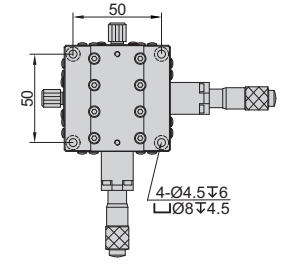
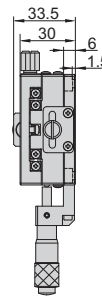
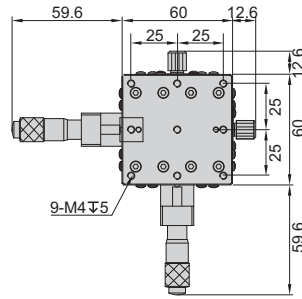
Unit: mm



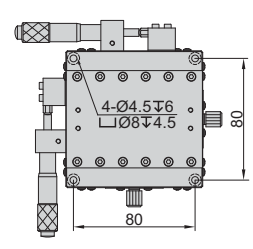
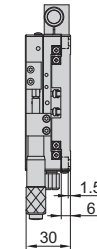
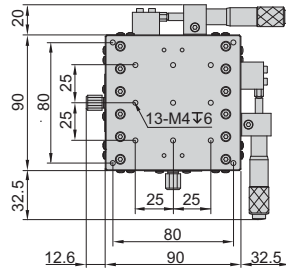
6584-401



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  |

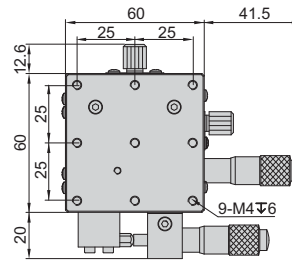
### SPECIFICATION (micrometer in the middle)

| 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  |

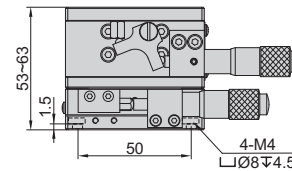
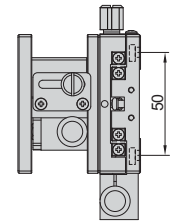
### SPECIFICATION (micrometer on the right)

| 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  |

## XZ-AXIS STAGE CODE 6587-60



Unit: mm



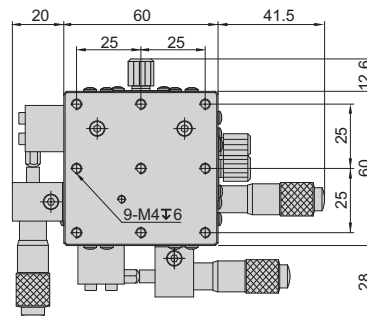
- Cross roller guides, achieve high precision and smooth movement
- Stage made of aluminum alloy

### SPECIFICATION

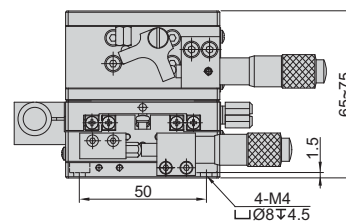
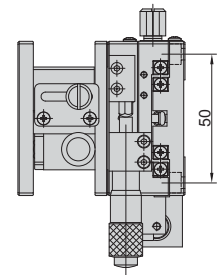
| Code    | X-axis displacement | Z-axis displacement | Micrometer graduation | Maximum load | Stage size | Weight |
|---------|---------------------|---------------------|-----------------------|--------------|------------|--------|
| 6587-60 | ±6.5mm              | 10mm                | 0.01mm                | 29.4N (3kgf) | 60x60mm    | 0.51kg |

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## XYZ-AXIS STAGE CODE 6585-60



Unit: mm



- Cross roller guides, achieve high precision and smooth movement
- Stage made of aluminum alloy

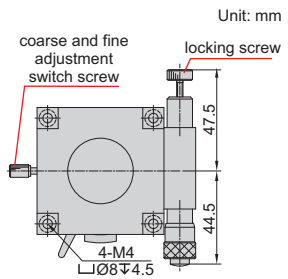
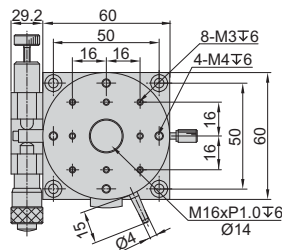
### SPECIFICATION

| 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 |

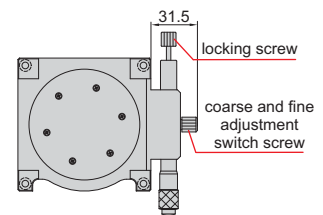
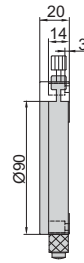
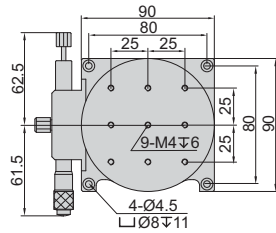
## ROTARY STAGES



6583-60H



6583-90



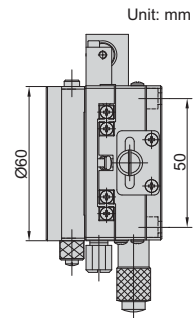
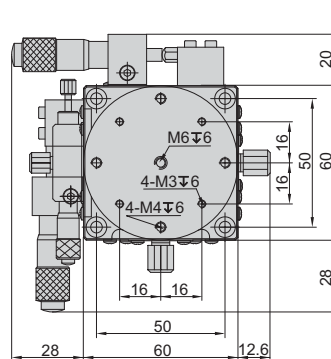
- Precise angle adjustment
- Coarse and fine adjustments
- Stages made of aluminum alloy

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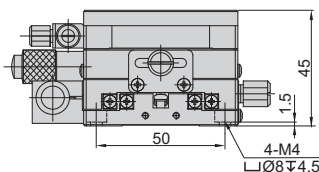
### SPECIFICATION

| 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'               | 29.4N (3kgf) | Ø60mm      | 0.30kg |
| 6583-90  | 360° coarse, ±5° fine | 0.04mm                               | 0.03mm        | 5'                | 29.4N (3kgf) | Ø90mm      | 0.50kg |

## 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



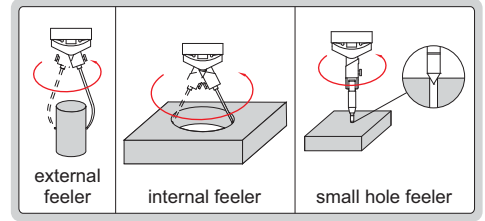
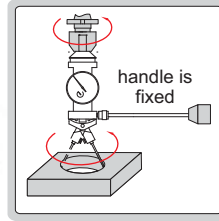
### SPECIFICATION

| 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'               | 29.4N (3kgf) | 60x60mm    | 0.64kg |

## CENTERING INDICATOR



2385-3

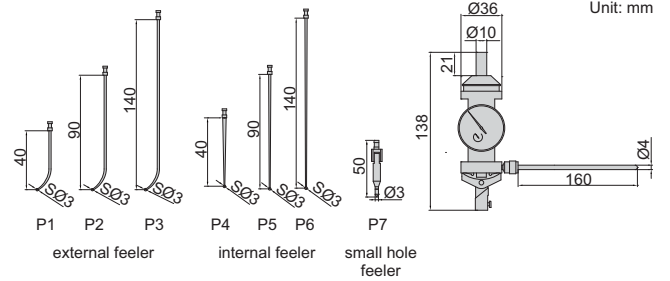


- Provides quick and accurate centering in boring and milling set-up

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  |



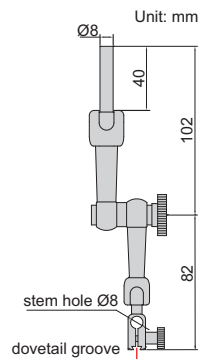
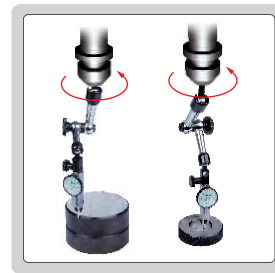
## DIAL TEST INDICATOR CENTERING HOLDER

- Center cylinders or holes on machine tools
- Can be used with dial test indicators

Code  
6295-1A



6295-1A



## INDICATOR CENTERING HOLDER

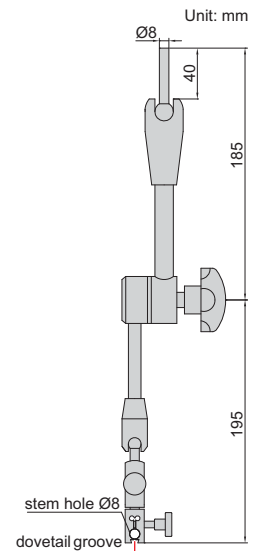


- Center cylinders or holes on machine tools
- Can be used with dial test indicators or dial indicators

Code  
6294-1A

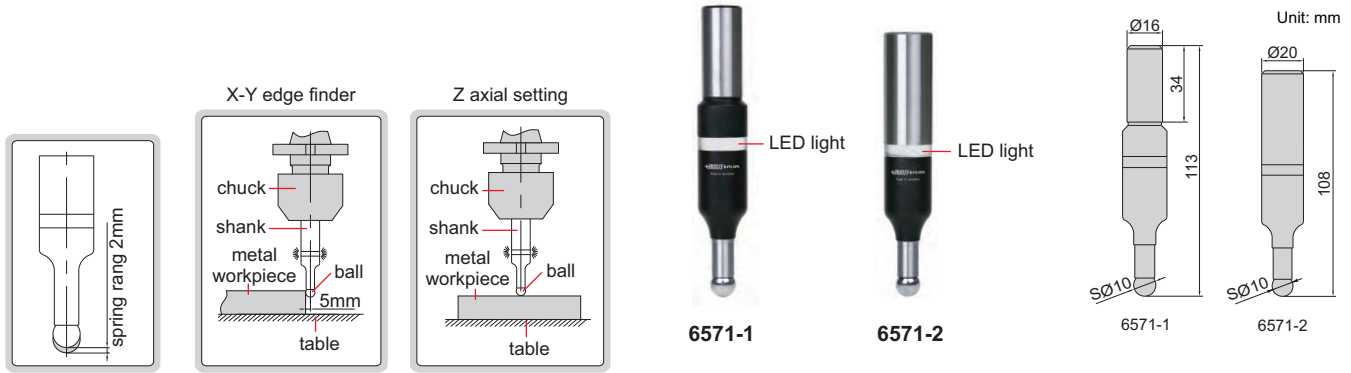


6294-1A



## 3D ELECTRONIC EDGE FINDERS

**INSIZE PLUS**  
MADE IN EUROPE



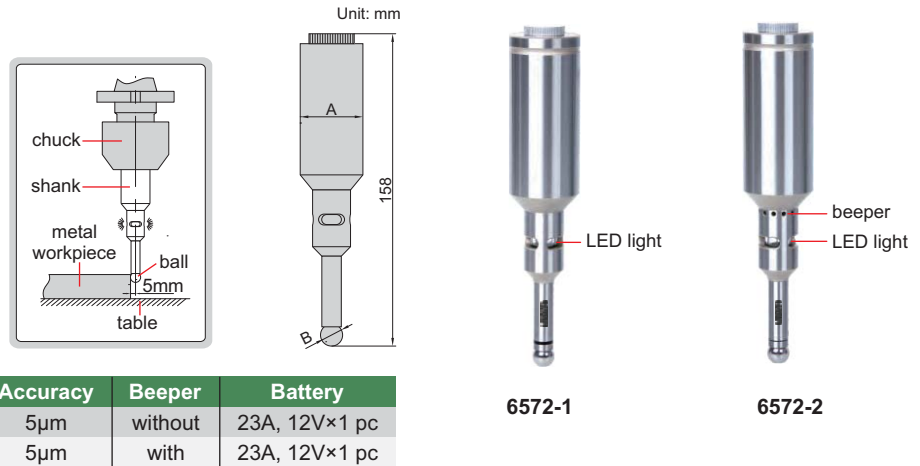
| Code   | Shank | Contact ball | Accuracy | Battery       |
|--------|-------|--------------|----------|---------------|
| 6571-1 | Ø16mm | SØ10mm       | 10µm     | 23A, 12Vx1 pc |
| 6571-2 | Ø20mm | SØ10mm       | 10µm     | 23A, 12Vx1 pc |

- 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

## LARGE SHANK ELECTRONIC EDGE FINDERS

12

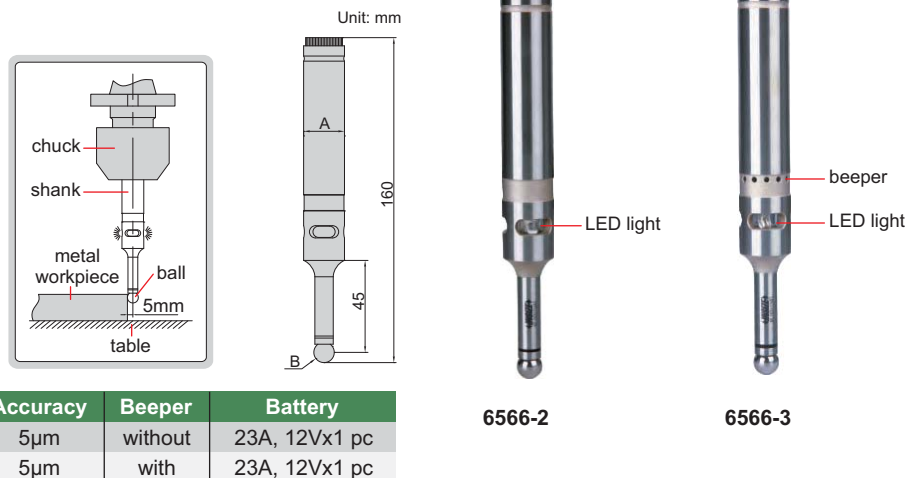
- The shank is electrically conducted to the metal workpiece through the chuck and table. The LED lights up and the beeper sounds (only for 6572-2), when the ball touches the workpiece
- Not suitable for rotary use
- Hardened shank and contact ball



| Code   | Shank (A) | Contact ball (B) | Accuracy | Beeper  | Battery       |
|--------|-----------|------------------|----------|---------|---------------|
| 6572-1 | Ø32mm     | SØ10mm           | 5µm      | without | 23A, 12Vx1 pc |
| 6572-2 | Ø32mm     | SØ10mm           | 5µm      | with    | 23A, 12Vx1 pc |

## ELECTRONIC EDGE FINDERS

- 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

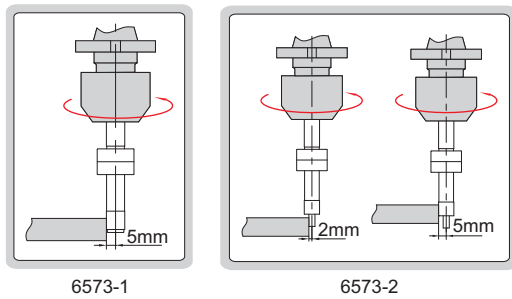


| Code   | Shank (A) | Contact ball (B) | Accuracy | Beeper  | Battery       |
|--------|-----------|------------------|----------|---------|---------------|
| 6566-2 | Ø20mm     | SØ10mm           | 5µm      | without | 23A, 12Vx1 pc |
| 6566-3 | Ø20mm     | SØ10mm           | 5µm      | with    | 23A, 12Vx1 pc |



## NON-MAGNETIC EDGE FINDERS

- TiAlN coating, non-magnetic, hardness HV2500, extremely wear resistance
- Suitable for machine speed 400~600rpm



6573-1

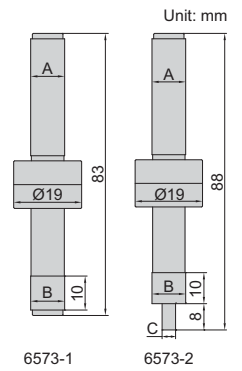
6573-2

| Code   | Shank (A) | Contact point (B) | Contact point (C) | Accuracy |
|--------|-----------|-------------------|-------------------|----------|
| 6573-1 | Ø10mm     | Ø10mm             | —                 | 5µm      |
| 6573-2 | Ø10mm     | Ø10mm             | Ø4mm              | 5µm      |



6573-1

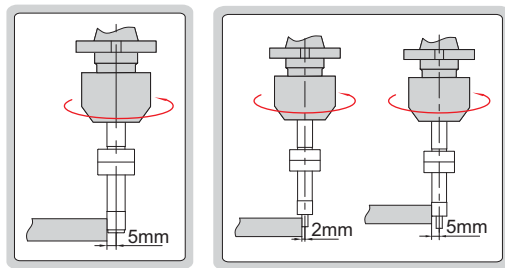
6573-2



6573-1

6573-2

- Hardened shank and contact point
- Suitable for machine speed 400~600rpm



6562-3

6562-4

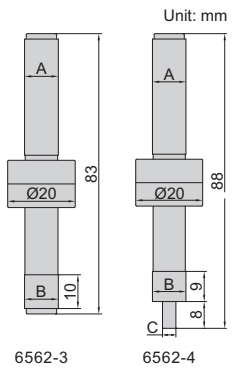
| Code   | Shank (A) | Contact point (B) | Contact point (C) | Accuracy |
|--------|-----------|-------------------|-------------------|----------|
| 6562-3 | Ø10mm     | Ø10mm             | —                 | 5µm      |
| 6562-4 | Ø10mm     | Ø10mm             | Ø4mm              | 5µm      |



6562-3

6562-4

## EDGE FINDERS

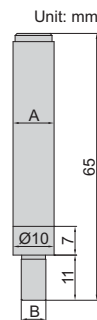


6562-3

6562-4

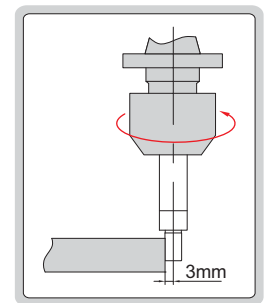
- Hardened shank and contact point
- Suitable for machine speed 400~600rpm

| Code   | Shank (A) | Contact point (B) | Accuracy |
|--------|-----------|-------------------|----------|
| 6567-1 | Ø10mm     | Ø6mm              | 8µm      |



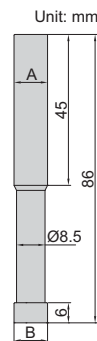
6567-1

## EDGE FINDER



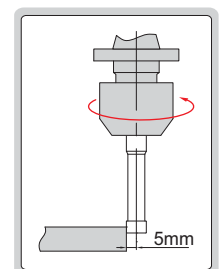
- Ceramic contact point, non magnetic
- Suitable for machine speed 400~600rpm

| Code   | Shank (A) | Contact point (B) | Accuracy |
|--------|-----------|-------------------|----------|
| 6568-1 | Ø10mm     | Ø10mm             | 8µm      |



6568-1

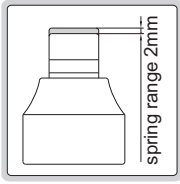
## CERAMIC EDGE FINDER



## ELECTRONIC ZERO SETTER

**INSIZE PLUS**  
MADE IN EUROPE

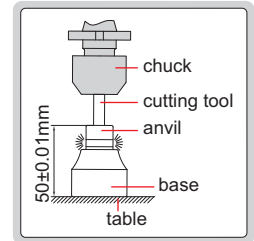
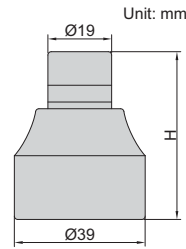
LOW TEST FORCE



- 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

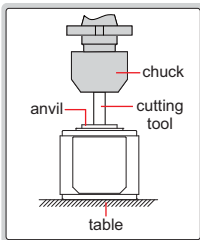


| Code    | Height (H) | Accuracy | Test force   |
|---------|------------|----------|--------------|
| 6553-50 | 50mm       | ±10µm    | 7N (at 49mm) |

## DIGITAL ZERO SETTER

IP65  
WATERPROOF

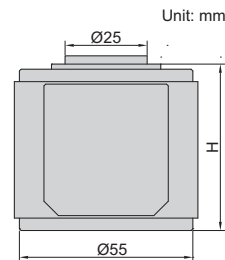
12



- 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



6557-50



automatic backlight at zero



set zero

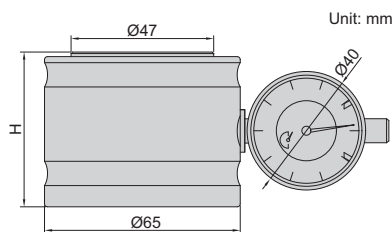


| Code    | Height (H) | Anvil stroke | Accuracy*     | Test force   | Repeatability |
|---------|------------|--------------|---------------|--------------|---------------|
| 6557-50 | 50mm       | 2.5mm        | ±10µm/0.0004" | 4N (at 50mm) | 2µm           |

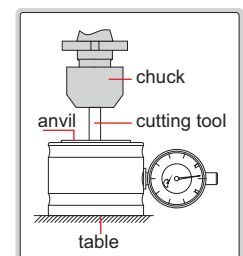
\*The accuracy is ensured within Ø10mm of the center

## ZERO SETTER

**INSIZE PLUS**  
MADE IN EUROPE

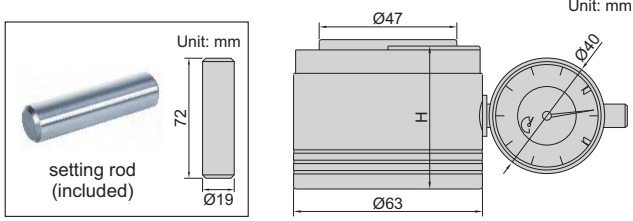


6554-50



| Code    | Height (H) | Accuracy | Test force   |
|---------|------------|----------|--------------|
| 6554-50 | 50mm       | ±10µm    | 9N (at 50mm) |

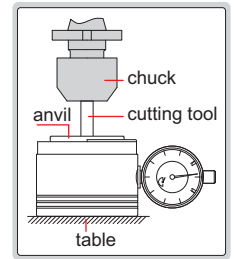
### ZERO SETTER



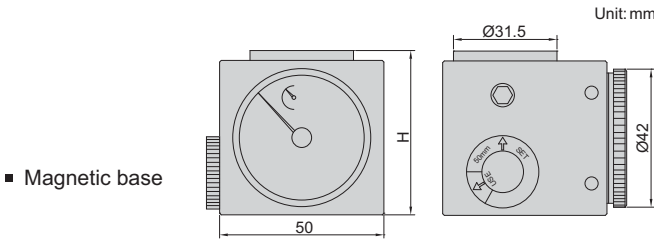
| Code    | Height (H) | Accuracy | Test force    |
|---------|------------|----------|---------------|
| 6556-50 | 50mm       | ±10µm    | 10N (at 50mm) |



6556-50



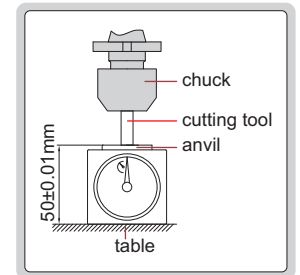
### ZERO SETTER



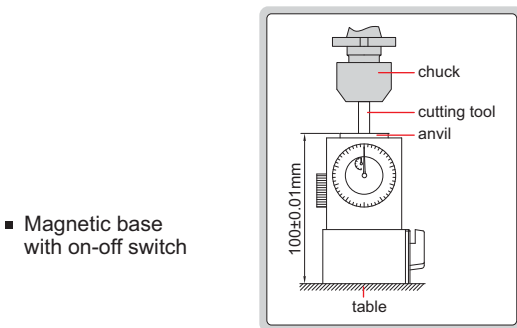
| Code      | Height (H) | Accuracy | Test force   |
|-----------|------------|----------|--------------|
| 2397-502A | 50mm       | ±10µm    | 9N (at 50mm) |



2397-502A



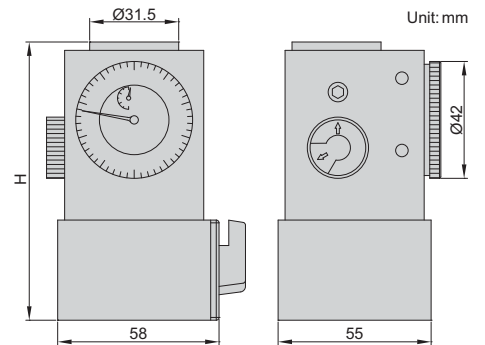
### ZERO SETTER



| Code      | Height (H) | Accuracy | Test force    |
|-----------|------------|----------|---------------|
| 2394-100A | 100mm      | ±10µm    | 9N (at 100mm) |

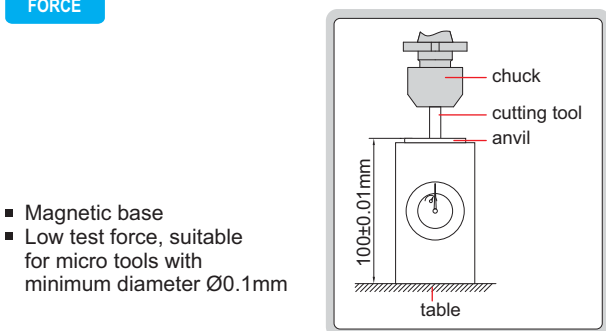


2394-100A



**LOW TEST FORCE**

### LOW TEST FORCE ZERO SETTER

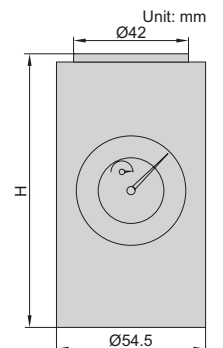


| Code      | Height (H) | Accuracy | Test force    |
|-----------|------------|----------|---------------|
| 6555-100B | 100mm      | ±10µm    | 1N (at 100mm) |



6555-100B

**INSIZE PLUS**  
MADE IN EUROPE



## DIGITAL HORIZONTAL SCALES

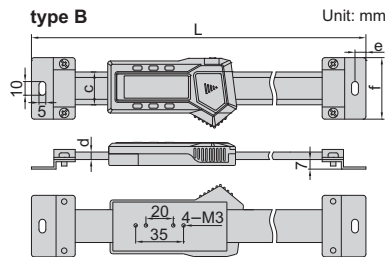
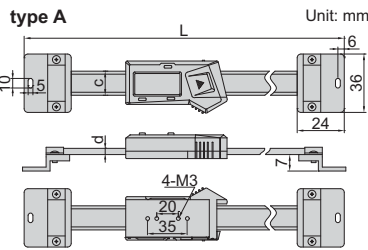
DATA OUTPUT



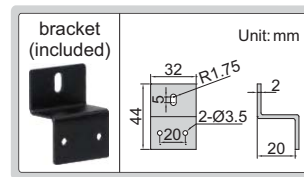
7101-300A



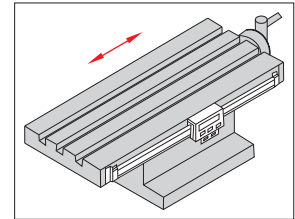
7101-400A



- 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 (data output cable code 7315-21, 7302-21, optional) (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 |

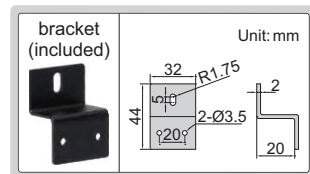
With data interface (data output cable code 7315-22, 7302-22, optional) (mm)

| 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 |

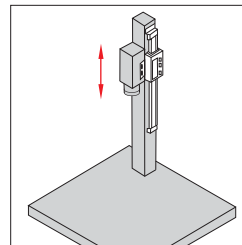
13

## DIGITAL VERTICAL SCALES

DATA OUTPUT



example of application



data output cable



7302-SPC7

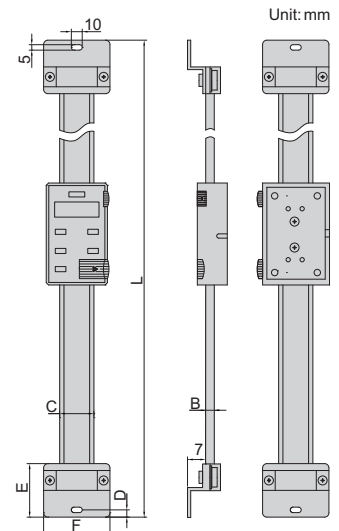
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, ABS/INC, data hold, TOL, set
- Battery LR44, data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back
- Optional accessory: data output cable (code 7302-SPC7, keyboard format)

| 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 | 25 | 40 | 60 | 1245 |

(mm)



7102-300

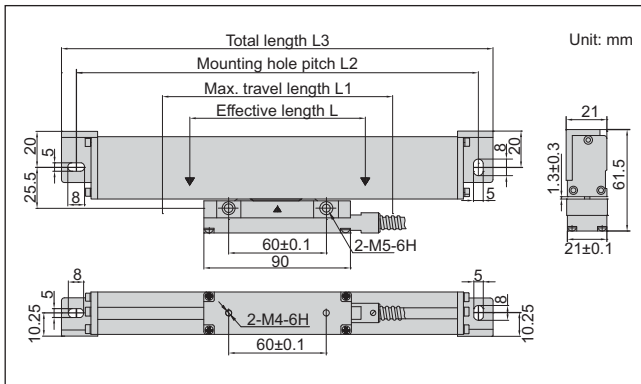


# LINEAR SCALES

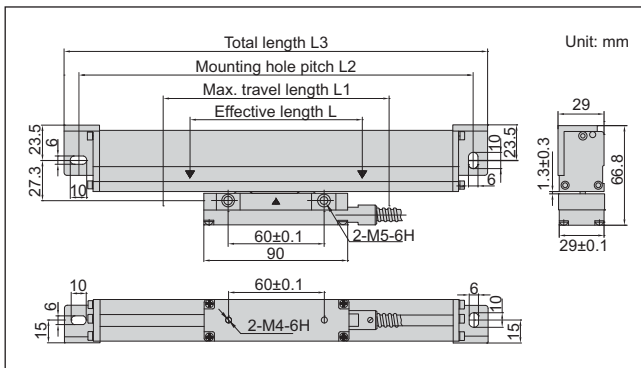


ISL-A1-300

**Series ISL-A1 and ISL-A5**



**Series ISL-B5**



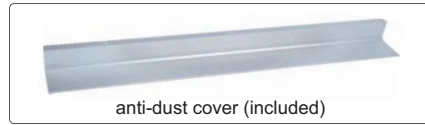
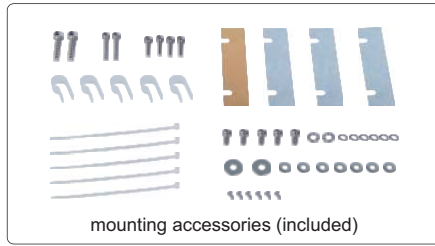
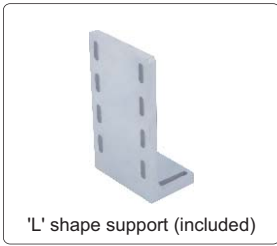
**STANDARD DELIVERY**

|                      |                     |
|----------------------|---------------------|
| 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           |

| Effective length (L) | Code          |               |               |
|----------------------|---------------|---------------|---------------|
|                      | 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-A5-1100   | 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   |

To be continued

Continued from previous page



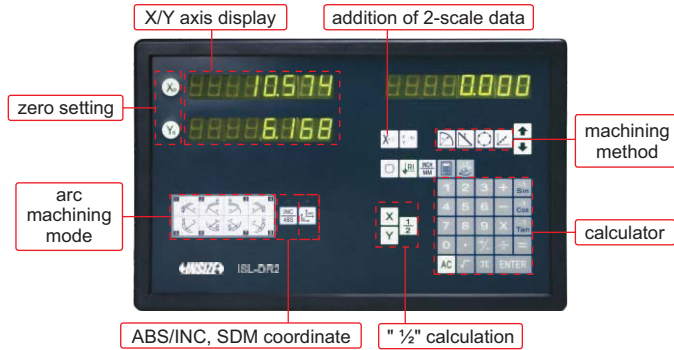
### SPECIFICATION

| Code                        | Series ISL-A1   |              | Series ISL-A5 |              | Series ISL-B5 |              |
|-----------------------------|---|--------------|---------------|--------------|---------------|--------------|
| L1 (mm)                     | L+30(L<950)   | L+50(L≥950)  | L+30(L<950)   | L+50(L≥950)  | L+30(L<950)   | L+50(L≥950)  |
| L2 (mm)                     | L+132(L<950)  | L+152(L≥950) | L+132(L<950)  | L+152(L≥950) | L+136(L<950)  | L+156(L≥950) |
| L3 (mm)                     | L+149(L<950)  | L+169(L≥950) | L+149(L<950)  | L+169(L≥950) | L+154(L<950)  | L+174(L≥50)  |
| 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) |              |               |              |               |              |

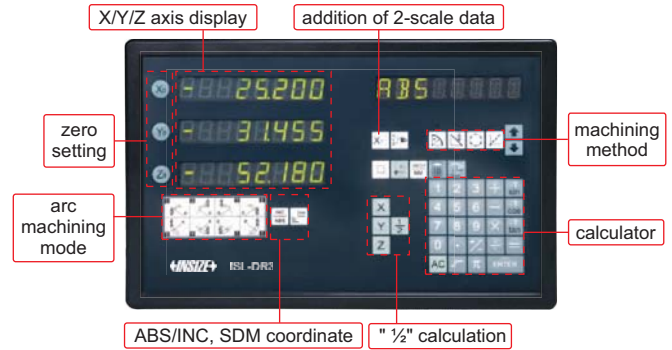
## DIGITAL READOUTS



13



ISL-DR2



ISL-DR3

### 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, "1/2" 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 CD for RS232C | 1 pc |



software CD (included)



mounting bracket (included)



Can be used in shop floor, with the following features:

- Temperature compensation system, suitable for wide temperature range
- Water and oil resistance
- Compact design, small size
- Three sides open, easy to load and unload workpieces
- Without compress air
- Easy installation

ATTENTION: MEASUREMENT ON THE LEFT SIDE OF WORKPIECES IS LIMITED

ATTENTION: ROTATION OF PROBE HEAD IS MANUAL

## MINI CNC CMM (SHOP FLOOR TYPE) CODE CMM-MN432

### FEATURES

- Integrated control system, safe, reliable and easy to operate
- High precision linear guide rail and ball screw for three axes
- 4 temperature sensors for X, Y, Z three axes and workpiece, suitable for wide temperature range

### CONTROL SYSTEM

- Double computer control systems
- Driven by DC servo motor
- The control system supports communication with machine tools
- The control system has 12 buttons for customize

### NET-DMIS SOFTWARE

- Can measure point, straight line, curve, circle, ellipse, plane, groove, cylinder, sphere, cone, ring, edge point, corner point, polygon, straightness, flatness, circularity, cylindricity, profile of a line, profile of a surface, perpendicularity, parallelism, angularity, coaxiality, concentricity, symmetry, position, composite position, circular runout and total runout
- Modular software structure, can support: temperature compensation, turning table, I/O interface
- Can program in offline mode and do virtual measurement based on CAD model, can extract the element features of CAD for programming
- Support dynamic point measurement and import DMO theoretical point coordinates for vector point measurement
- Can import and convert CAD model (SAT, IGES, STEP, STL)
- Can select multi language, metric and inch, polar and straight coordinate system
- Have multiple export ways: export measured data (SAT, IGES, STEP), report windows (PDF, HTML, MHT, RTF, EXCEL, CSV, txt, images, WORD, etc.), custom EXCEL template
- Support uploading the measuring result to server



CMM-MN432



VIDEO

### SPECIFICATION

|                                       |  |
|---------------------------------------|--|
| Code                                  | CMM-MN432 ***  |
| Measuring range (X*Y*Z)               | 400×200×300mm  |
| Resolution                            | 0.1μm  |
| Repeatability                         | 1μm  |
| Accuracy (L is measuring range in mm) | ±(4.5+L/200)μm (15°C~25°C, variation≤2°C/h)<br>±(5.5+L/200)μm (10°C~30°C, variation≤2°C/h) |
| Probe error                           | ±5μm   |
| Temperature                           | 10°C~30°C, variation≤2°C/h   |
| Humidity                              | 40~60%   |
| Power                                 | 220V±10%, 50Hz ***   |
| Max. load                             | 50kg   |
| Dimension (L*W*H)                     | 1270×1110×1630mm   |
| Weight                                | 280kg  |

\*\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### STYLUS (included) SPECIFICATION

| Code  | Material                         | Ball diameter | Length | Stem diameter | Effective working length | Quantity |
|-------|----------------------------------|---------------|--------|---------------|--------------------------|----------|
| PS2R  | ruby ball / stainless steel stem | SØ2mm         | 20mm   | Ø1.4mm        | 14mm                     | 1 pc     |
| PS17R |                                  | SØ4mm         |        | Ø1.5mm        | 20mm                     | 1 pc     |

### EXTENSION (included) SPECIFICATION

| Code | Material        | Stem diameter | Length | Quantity |
|------|-----------------|---------------|--------|----------|
| SE4  | stainless steel | Ø3mm          | 10mm   | 1 pc     |
| SE5  |                 |               | 20mm   | 1 pc     |

### STANDARD DELIVERY

|                                 |                      |       |
|---------------------------------|----------------------|-------|
| Main unit                       |                      | 1 pc  |
| Probe system                    | Probe head *         | 1 pc  |
|                                 | Probe *              | 1 pc  |
|                                 | Styli **             | 1 set |
| Calibration system              | Datum sphere (Ø25mm) | 1 pc  |
|                                 | Pivot pillar         | 1 pc  |
| Computer system                 | Computer             | 1 pc  |
|                                 | Printer              | 1 pc  |
| Temperature compensation system |                      | 1 pc  |
| Software                        |                      | 1 pc  |

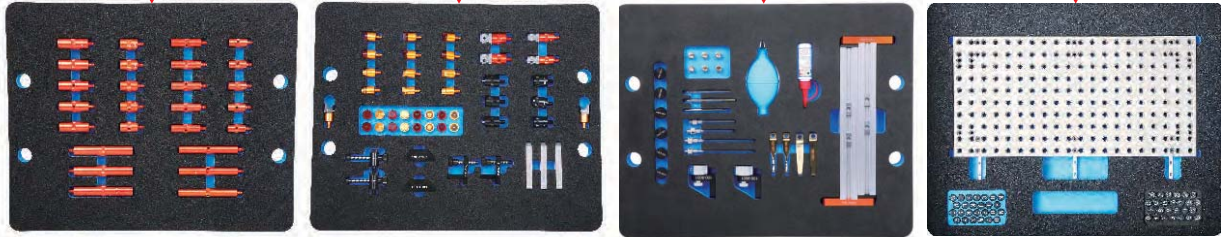
\* The probe head and probe are Renishaw brand

\*\* The styli system includes styli and extensions

### PROBE (included) SPECIFICATION

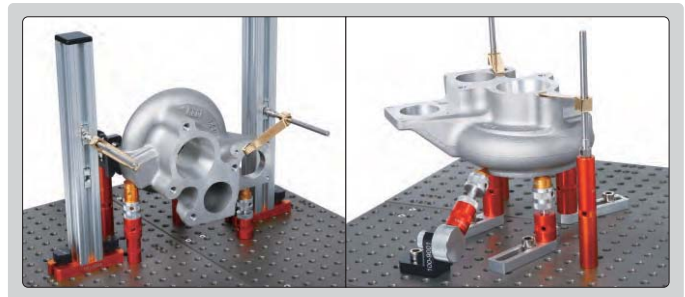
| Probe head | Angular movement with horizontal axis | 0°~90° in 15 steps |
|------------|---------------------------------------|--------------------|
|            | Angular movement with vertical axis   | ±180° in 15 steps  |
|            | Control mode                          | manual             |
|            | Number of positions                   | 168                |
|            | Probe mounting                        | M8                 |
| Probe      | Weight                                | 210g               |
|            | Detect direction                      | ±X, ±Y, +Z         |
|            | Styli mounting                        | M2                 |
|            | Rating life                           | >1000,000 times    |
|            | Weight                                | 22g                |

# JIG SET FOR CMM CODE ISY-100



ISY-100

application examples















| Product                    | Code         | Size (mm) | Quantity | Application                |
|----------------------------|--------------|-----------|----------|----------------------------|
|                            | ISY-100-1001 | Ø16×30    | 5        |                            |
|                            | ISY-100-1002 | Ø16×50    | 5        |                            |
|                            | ISY-100-1003 | Ø16×100   | 3        |                            |
|                            | 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











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| Product  | Code           | Size (mm)  | Quantity | Application   |
|--|----------------|------------|----------|---|
| clip<br>                    | ISY-100-1201   | —          | 2        |    |
| clip<br>                    | ISY-100-1301   | —          | 2        |    |
| clip stand<br>              | ISY-100-1401   | Ø6×60      | 2        |   |
|  | ISY-100-1402   | Ø6×100     | 2        |   |
| vertical square column<br>  | ISY-100-3003   | 30×30×250  | 2        |    |
| sliding support plate<br> | ISY-100-1801   | 78×20×10   | 3        |   |
| clamping screw<br>        | ISY-100-2301   | Ø8×20      | 6        |  |
| screw<br>                 | ISY-100-2302   | Ø8×20      | 6        |  |
| base plate<br>            | ISY-600-400200 | 400×400×12 | 2 pieces | —   |
| wrench<br>                | ISY-100-3701   | Ø3.8×70    | 1        | —   |
| wrench<br>                | ISY-100-3801   | M2.5       | 1        | —   |
|  | ISY-100-3802   | M5         | 1        | —   |
|  | ISY-100-3803   | M6         | 1        | —   |
| 45° stand<br>             | ISY-100-9001   | —          | 2        |  |
| V shaped support<br>      | ISY-100-1901   | —          | 2        |  |

| Product   | Code          | Quantity | Application   |
|---|---------------|----------|---|
| V shaped support<br> | ISY-100-1902  | 2        |  |
| marker<br>           | ISY-6100-1501 | 52*      |  |
| dust cleaner<br>     | ISY-100-3501  | 1        | —   |
| lubricating oil<br> | ISY-100-3601  | 1        | —   |

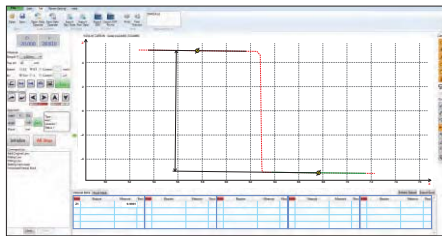
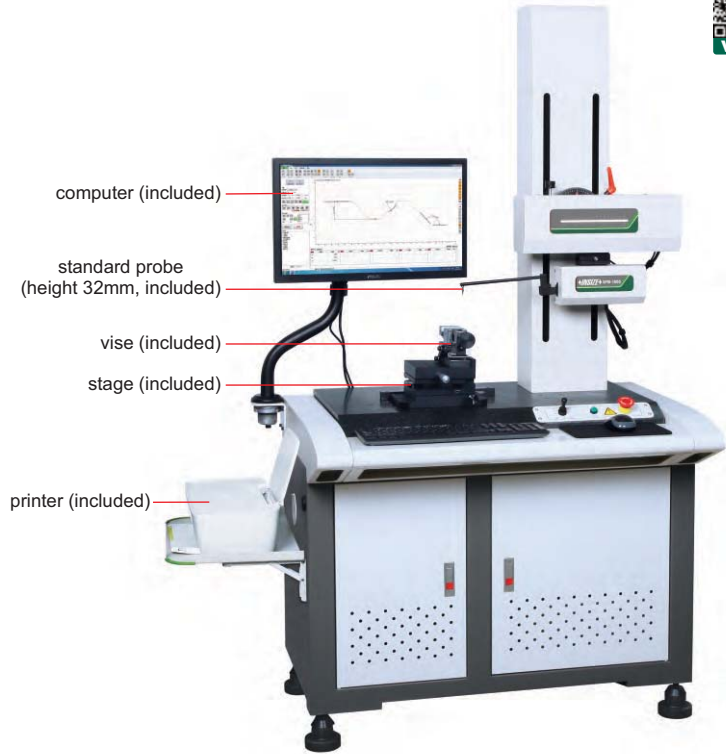
\*Letter A~Z, number 0~25

| Product   | Code          | Quantity | Material | Application   |
|---|---------------|----------|----------|---|
| support head<br> | ISY-100-27016 | 2        | aluminum |  |
|   | ISY-100-27018 | 2        | nylon    |   |
| support head<br> | ISY-100-27026 | 2        | aluminum |   |
|   | ISY-100-27028 | 2        | nylon    |   |
| support head<br> | ISY-100-27036 | 2        | aluminum |   |
|   | ISY-100-27038 | 2        | nylon    |   |
| support head<br> | ISY-100-27046 | 2        | aluminum |   |
|   | ISY-100-27048 | 2        | nylon    |   |
| support head<br> | ISY-100-27056 | 2        | aluminum |   |
|   | ISY-100-27058 | 2        | nylon    |   |
| support head<br> | ISY-100-27066 | 2        | aluminum |   |
|   | ISY-100-27068 | 2        | nylon    |   |
| support head<br> | ISY-100-27076 | 2        | aluminum |   |
|   | ISY-100-27078 | 2        | nylon    |   |

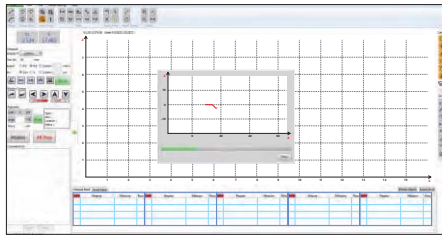
# SURFACE PROFILE MEASURING MACHINE CODE SPM-1000



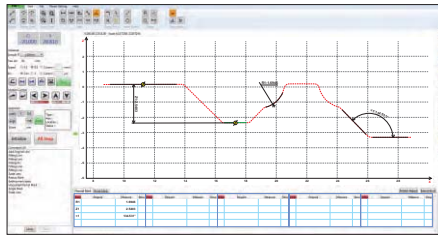
- Software is included, for surface profile measurement and data output
- Probe compensation
- Output as format txt, csv, etc.
- Large range design, the leverage ratio is 1:2.2, maintain the original accuracy of the sensor
- The overall structure of the Z-axis sensor does not have any elastic components, ensuring the measuring force is constant regardless the position of probe



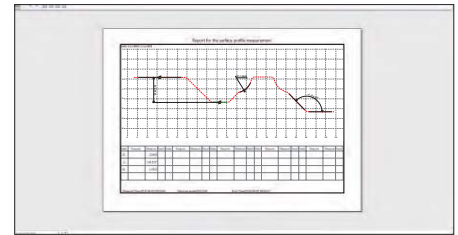
calibration



contour scanning



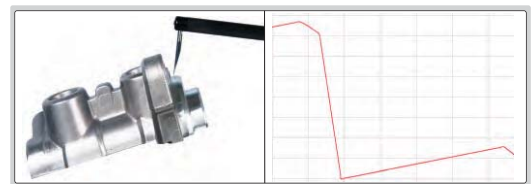
dimension measurement



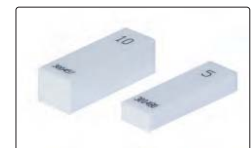
data output

## SPECIFICATION

|                            |   |
|----------------------------|---|
| X axis measuring range     | 140mm   |
| X axis resolution          | 0.2 $\mu$ m   |
| X axis straightness        | 0.8 $\mu$ m/100mm                                   |
| X axis traverse speed      | 0.1~10mm/s  |
| Z axis measuring range     | $\pm$ 20mm  |
| Z axis resolution          | 0.05 $\mu$ m  |
| Z axis traverse speed      | 0.5~10mm/s  |
| Linear accuracy            | $\pm(1.5+ 0.2H )\mu$ m, H is measuring height in mm |
| Angular measuring accuracy | $\pm 2'$  |
| Arc measuring accuracy     | $\pm(2+R/8)\mu$ m, R is 2~10mm standard ball        |
| Radius of probe tip        | 25 $\mu$ m  |
| Traverse 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 $\pm$ 5%V, 50Hz                                 |
| Weight                     | 320kg   |



standard balls (included)



standard blocks (included)



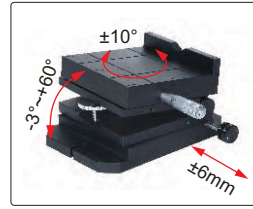
standard shaft (included)

To be continued

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 and arm | see details |
|---------------|-------------|

**SPECIFICATION OF PROBES AND ARMS**

Unit: mm

|  |  |  |
|--|--|--|
| <p><b>chisel probes</b></p> <p>code <b>SPM-1000-T01</b> (H=32mm, included)<br/> code <b>SPM-1000-T02</b> (H=48mm, optional)<br/> code <b>SPM-1000-T03</b> (H=68mm, optional)</p> | <p><b>cone probes</b></p> <p>code <b>SPM-1000-Z01</b> (H=32mm, optional)<br/> code <b>SPM-1000-Z02</b> (H=48mm, optional)<br/> code <b>SPM-1000-Z03</b> (H=68mm, optional)</p> | <p><b>ball probes</b></p> <p>code <b>SPM-1000-R01</b> (H=32mm, optional)<br/> code <b>SPM-1000-R02</b> (H=48mm, optional)<br/> code <b>SPM-1000-R03</b> (H=68mm, optional)</p> |
| <p><b>standard arm, code SPM-1000-SP (included), probe is not included</b></p>   |  | <p><b>arm for small holes, code SPM-1000-SBP (optional), probe is included</b></p> <p>measure the contour of holes with diameter &gt; Ø8mm</p>                                 |
| <p><b>transverse arm, code SPM-1000-LP (optional), probe is not included</b></p> <p>measure the contour of holes in radial direction</p>   |  |  |

## LASER SCAN MICROMETERS



calibration gage (optional)



reading  
upper tolerance  
standard value  
lower tolerance  
mode



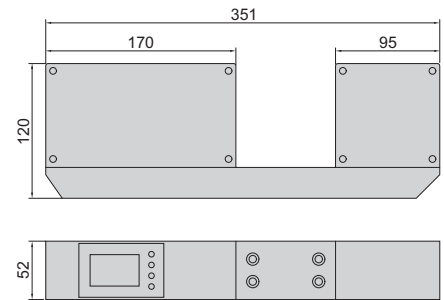
V-block (included)

LDM-030



- Measure external 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 and PLC

Unit: mm



15

### SPECIFICATION

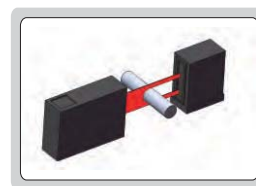
| Code                | LDM-030                                    | LDM-065      |
|---------------------|--|--------------|
| Measuring range     | 0.1~30mm                                   | 0.5~65mm     |
| Resolution          | 0.01/0.1/1/10/100μm selectable             |              |
| 25°C accuracy       | ±(0.5+5%D)μm D is measuring diameter in mm |              |
| Repeatability       | 0.2μm                                      | 0.4μm        |
| Laser wave length   | 650nm                                      |              |
| Measuring speed     | 800~3200times/s (adjustable)               |              |
| Working temperature | 0~50°C                                     |              |
| Working humidity    | 35~85RH without condensation               |              |
| Output              | dual channel RS485                         |              |
| Alarm output        | 24V, 1A                                    |              |
| Power supply        | DC24V, 2A                                  |              |
| Dimension (L×W×H)   | 351×52×120mm                               | 469×52×156mm |
| Weight              | 5kg  | 8kg          |

### STANDARD DELIVERY

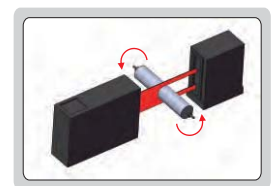
|               |      |
|---------------|------|
| Main unit     | 1 pc |
| V-block       | 1 pc |
| AC/DC adapter | 1 pc |
| RS485 cable   | 1 pc |

### OPTIONAL ACCESSORY

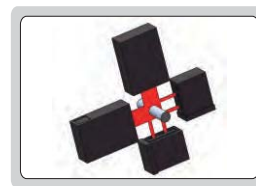
|                  |             |
|------------------|-------------|
| Calibration gage | custom made |
|------------------|-------------|



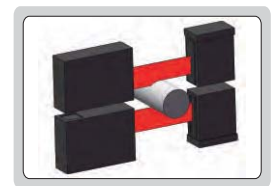
measure external diameter



measure ellipticity and run-out

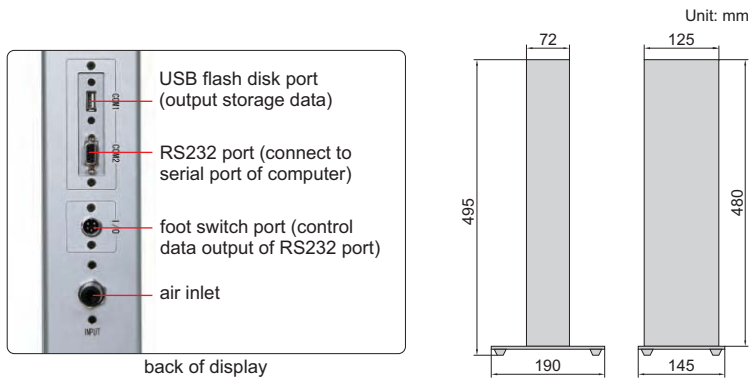


two-axis measurement



large size measurement

## AIR GAGE DISPLAY CODE 9404-121



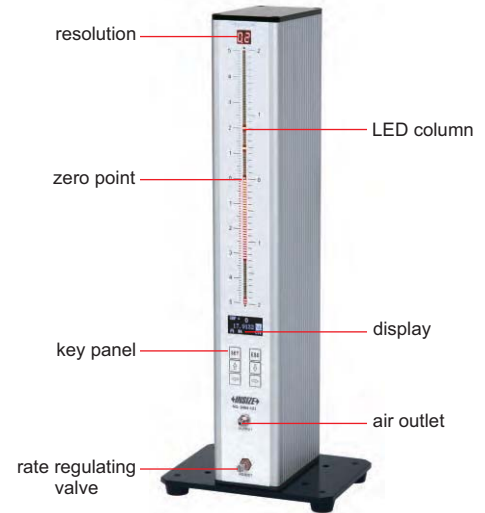
- Can store 10 measuring programs, and the program can be switched quickly
- Data storage function, support manual and automatic storing, 3000 groups data can be stored
- Insert USB flash disk to output storage data
- Automatically detect internal or external dimension measurement
- With foot switch for data transmission
- Automatic grouping function for workpiece sorting

### SPECIFICATION

|  |  |            |          |
|--|--|------------|----------|
| <b>LED quantity</b>                              | 101 pcs  |            |          |
| <b>LED color</b>                                 | red, orange, green   |            |          |
| <b>LED height</b>                                | 254mm  |            |          |
| <b>Indication range, resolution and accuracy</b> | indication range   | resolution | accuracy |
|  | ±5μm   | 0.1μm      | 0.2μm    |
|  | ±10μm  | 0.2μm      | 0.4μm    |
|  | ±25μm  | 0.5μm      | 1μm      |
|  | ±50μm  | 1μm        | 2μm      |
| <b>Unit</b>                                      | mm, μm   |            |          |
| <b>Measuring mode</b>                            | dynamic measurement, Max, Min, Max-Min, (Max+Min)/2, (Max-Min)/2 |            |          |
| <b>Air supply</b>                                | dry and clean, 0.4~0.8MPa  |            |          |
| <b>Data interface</b>                            | RS232/USB flash disk   |            |          |
| <b>Operation temperature</b>                     | 0~45°C   |            |          |
| <b>Power supply</b>                              | 220V, 50/60Hz  |            |          |
| <b>Dimension (L×W×H)</b>                         | 190×145×495mm  |            |          |
| <b>Weight</b>                                    | 4.25kg   |            |          |

### STANDARD DELIVERY

|                  |      |
|------------------|------|
| <b>Main unit</b> | 1 pc |
|------------------|------|



air filter (optional)



pressure regulating valve (optional)



RS232 cable (optional)



foot switch (optional)

### OPTIONAL ACCESSARY

|                                  |             |
|----------------------------------|-------------|
| <b>Air filter</b>                | 9401-FILTER |
| <b>Pressure regulating valve</b> | 9404-PRV    |
| <b>RS232 cable</b>               | 9404-CABLE  |
| <b>Foot switch</b>               | 9404-FS     |

### CUSTOM-MADE

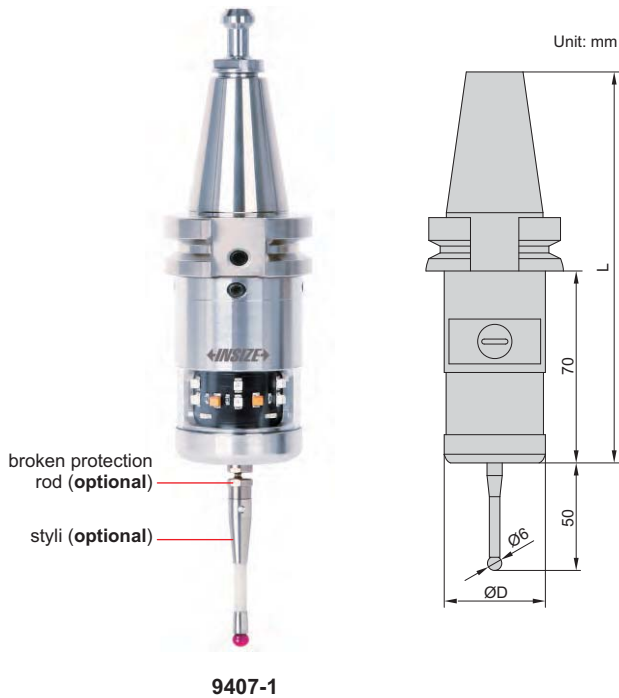
## AIR GAGES CODE 9401-PB

|  |  |   |  |
|--|--|---|--|
| <p>air plug gage and standard rings</p> <p>measure diameter of hole, range: Ø4~230mm</p> | <p>air ring gage and standard plain plug gages</p> <p>measure diameter of shaft, range: Ø4~160mm</p> | <p>air snap gage and standard column gages</p> <p>measure diameter of shaft, range: Ø15~160mm</p> | <p>air taper gage and standard gages</p> |
|--|--|---|--|

# OPTICAL TRANSMISSION PROBES FOR CNC MACHINE TOOLS



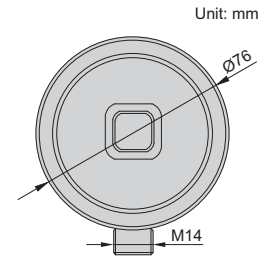
**IP68**  
WATERPROOF



9407-1



9407-1A



Unit: mm

15

- On-machine measurement
- Multi-channel transmission between probes and receivers, for anti-interference
- Transmit three kinds of signals: trigger, contact and low battery voltage
- With spindle protection function
- Optical transmission range: 1m, 3m, 5m
- Automatic power off in 3 seconds, move styli to power on

## OPTICAL PROBE SPECIFICATION

| Code   | 9407-1  | 9407-2    |
|--|---|-----------|
| Probe length (L)                                       | 140mm   | 180mm     |
| Probe diameter (ØD)                                    | 40mm  | 46.5mm    |
| 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: 0.9N, Z axis: 6N                  |           |
| Applicable spindle                                     | below BT40                                      | over BT50 |
| Dust/waterproof  | IP68  |           |
| Power supply   | 2×LS14250 lithium battery                       |           |

## RECEIVER SPECIFICATION

| Code                | 9407-1A     | 9407-2A   |
|---------------------|-------------|---|
| Protection function | no          | low battery voltage or probe transmitting signal all the time * |
| Applicable probe    | code 9407-1 | code 9407-2   |
| Cable length        | 5m          |   |
| Dust/waterproof     | IP68        |   |

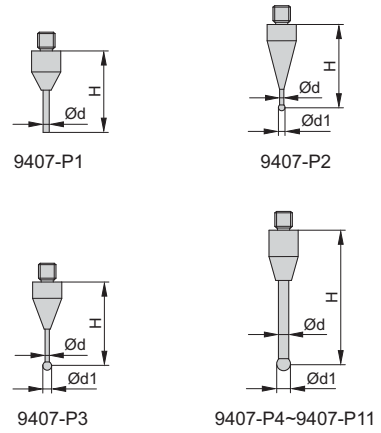
\* When the battery voltage is low or the probe transmits signal all the time, the receiver will send a signal to the machine tool to stop working.

To be continued

Continued from previous page

**STYLI (OPTIONAL) (mm)**

| Code     | H    | Ød  | Ød1 | Material of measuring face |
|----------|------|-----|-----|----------------------------|
| 9407-P1  | 20   | 1   | —   | carbide                    |
| 9407-P2  | 19.5 | 0.7 | 1   | ruby                       |
| 9407-P3  | 19   | 1.4 | 2   | ruby                       |
| 9407-P4  | 20   | 0.7 | 1   | ruby                       |
| 9407-P5  | 20   | 1.5 | 2   | ruby                       |
| 9407-P6  | 20   | 2   | 3   | ruby                       |
| 9407-P7  | 20   | 2   | 4   | ruby                       |
| 9407-P8  | 50   | 3   | 4   | ruby                       |
| 9407-P9  | 50   | 3.8 | 5   | ruby                       |
| 9407-P10 | 50   | 4.5 | 6   | ruby                       |
| 9407-P11 | 75   | 3.8 | 5   | ruby                       |

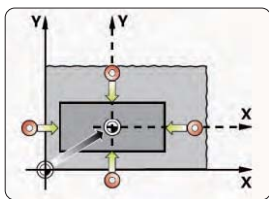
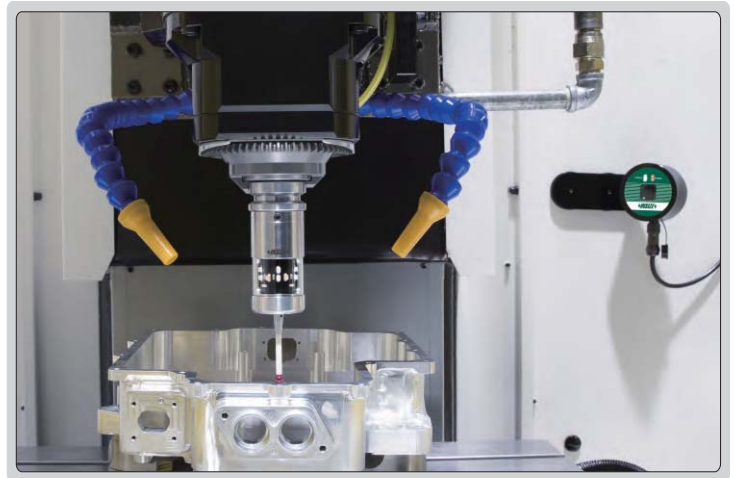


**BROKEN PROTECTION ROD (OPTIONAL)**

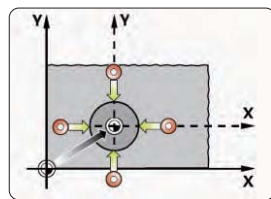
| Code    | H    |
|---------|------|
| 9407-R1 | 12mm |
| 9407-R2 | 22mm |



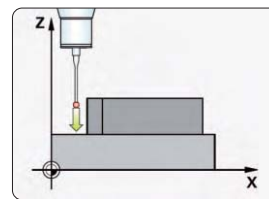
application



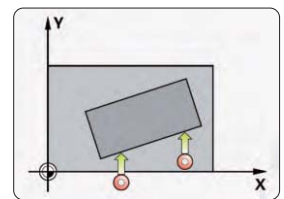
find center of rectangular boss



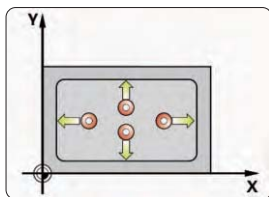
find center of the round boss



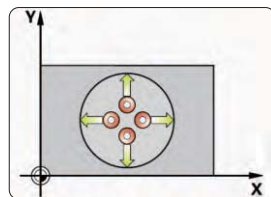
measure position of point on any axis



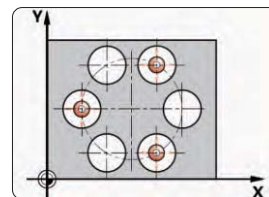
measure inclination of line



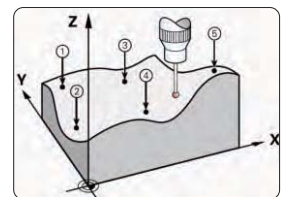
measure rectangular cavity



measure round cavity



measure center of holes



measure freeform surfaces

**PROFILE PROJECTORS**



ISP-Z3015



edge detector

ISP-A1000E

digital readout of ISP-A1000E

- touch buttons
- USB data output to Excel and CAD
- show diagram

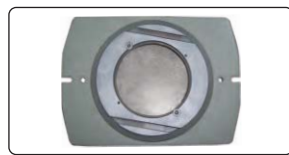


software CD (included, only for ISP-A1000E)

**OPTIONAL ACCESSORY**



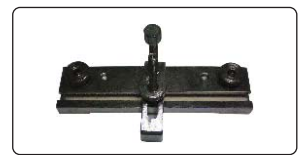
lens



rotary table (glass plate diameter 100mm)



overlay chart (protractor with 1° graduation, radius with 1mm increment)



holder with clamp



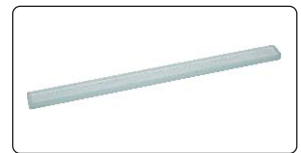
swivel center support



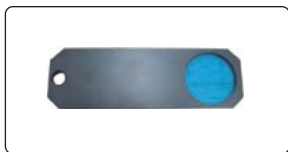
V-block with clamp



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   |  |                 |
|   | Z (focus) travel range | accuracy: (4+L/25)µm    L is the measuring length in mm   |  |                 |
| max. load capacity  | 90mm                   |   |  |                 |
| 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   | measure coordinate of point                |                 |
|   |                        | measure coordinate of line  | measure coordinate of line                 |                 |
| measure center coordinate, radius of circle with three points |                        | measure center coordinate, radius of circle with three points                                   |  |                 |
| measure distance between two objects                          |                        | measure distance between two objects  |  |                 |
| measure angle with four points or two lines                   |                        | measure angle with four points or two lines   |  |                 |
| set origin of coordinate                                      |                        | coordinate transform  |  |                 |
| coordinate transform  |                        | coordinate transform  |  |                 |
| set midpoint of coordinate                                    |                        | 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 |

# PROFILE PROJECTORS

THE STAGE DOESN'T  
MOVE UP AND DOWN



ISP-AZ3020



ISP-A5000E



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digital readout of ISP-A5000E

- Adjust the focus by ascending and descending the projector head, the stage doesn't move up and down
- Maximum workpiece weight 50kg

- touch buttons
- USB data output to Excel and CAD
- show diagram



software CD  
(included, only for  
ISP-A5000E)

### OPTIONAL ACCESSORY



lens



overlay chart (protractor with 1°  
graduation, radius with 1mm increment)



50mm reading scale  
(check magnification accuracy)



300mm calibration scale (check  
magnification accuracy together  
with 50mm reading scale or  
calibrate measuring accuracy)



demo sample



printer (only for ISP-A5000E)

To be continued



Continued from previous page

**SPECIFICATION**

| Code                   |                        | ISP-AZ3020  |                                    | ISP-A5000E   |                 |
|------------------------|------------------------|---|------------------------------------|--|-----------------|
| 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  |                        | 100mm   | 100mm                              | 100mm  | 100mm           |
| 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       | 404×228mm   |                                    |  |                 |
|                        | glass stage size       | 260×160mm   |                                    |  |                 |
|                        | X-Y stage travel       | range: 200×100mm  |                                    |  |                 |
|                        |                        | resolution: 0.5µm   |                                    |  |                 |
|                        | Z (focus) travel range | accuracy: (3+L/75)µm L is the measuring length in mm  |                                    |  |                 |
| max. load capacity     | 100mm                  |   |                                    |  |                 |
| Illumination           |                        | contour illumination: 24V/150W halogen lamp, brightness is adjustable   |                                    |  |                 |
|                        |                        | surface illumination: 24V/150W halogen lamp, brightness is adjustable   |                                    |  |                 |
| 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)      |                        | 780×780×1100mm  |                                    |  |                 |
| Weight                 |                        | 160kg   |                                    |  |                 |

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**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-A5000E) and USB cable                        | 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 |
| Overlay chart   | ISP-A5000-CHART    |

|                               |                   |
|-------------------------------|-------------------|
| 50mm reading scale            | ISP-A5000-SCALE50 |
| 300mm calibration scale       | ISP-A5000-RULE    |
| Demo sample                   | ISP-A5000-DEMO    |
| Printer (only for ISP-A5000E) | ISP-A5000-PRINTER |

# HORIZONTAL PROFILE PROJECTORS



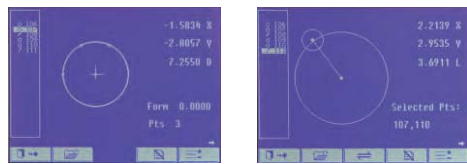
ISP-W3020

ISP-A3000E



digital readout of ISP-A3000E

- touch buttons
- USB data output to Excel and CAD
- show diagram



software CD (included, only for ISP-A3000E)

## OPTIONAL ACCESSORY



lens



overlay chart (protractor with 1° graduation, radius with 1mm increment)



50mm reading scale (check magnification accuracy)



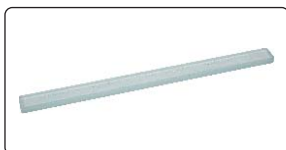
demo sample



V-block with clamp



rotary table



300mm calibration scale (check magnification accuracy together with 50mm reading scale or calibrate measuring accuracy)



vise



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   |  |   |                             |
|                        | Y (focus) travel range | accuracy: (4+L/25)µm    L is the measuring length in mm                             |  |   |                             |
| max. load capacity     | 75mm                   |   |  |   |                             |
| 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                |   | measure coordinate of point |
|                        |                        |   | measure coordinate of line                 |   | measure coordinate of line  |
|                        |                        | measure center coordinate, radius of circle with three points                       |  | measure center coordinate, radius of circle with three points                                   |                             |
|                        |                        | measure distance between two objects  |  | measure distance between two objects  |                             |
|                        |                        | measure angle with four points or two lines   |  | measure angle with four points or two lines   |                             |
|                        |                        | set origin of coordinate  |  | coordinate transform  |                             |
|                        |                        | coordinate transform  |  | choose measurement object automatically according to the selective point and display the result |                             |
|                        |                        | set midpoint of coordinate  |  |   |                             |
| advanced function      | —                      | programming for batch measurements  |  |   |                             |
| Power supply           |                        | 110/220V, 50/60Hz   |  |   |                             |
| Dimension (L×W×H)      |                        | 1090×830×1010mm   |  |   |                             |
| 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-A1000-VBLOCK  |
| Rotary table                  | ISP-A3000-RTABLE  |
| Vice                          | ISP-A3000-VICE    |
| Printer (only for ISP-A3000E) | ISP-A3000-PRINTER |

# HORIZONTAL PROFILE PROJECTORS



ISP-W4025



ISP-A7000E



digital readout of ISP-A7000E

- touch buttons
- USB data output to Excel and CAD
- show diagram






software CD  
(included, only for  
ISP-A7000E)

## OPTIONAL ACCESSORY



lens



V-block with clamp



rotary table



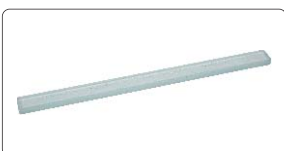
demo sample (need rotary table)



vise



printer (only for ISP-A7000E)



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)



50mm reading scale (check magnification accuracy)

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   |   |                                    |  |   |   |
|                        | Y (focus) travel range     | accuracy: (4+L/25)µm L is the measuring length in mm                                |   |                                    |  |   |   |
| max. load capacity     | 100mm                      |   |   |                                    |  |   |   |
| 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                                   |                                    |  |   | measure coordinate of point                                   |
|                        |                            |   | measure coordinate of line                                    |                                    |  |   | measure coordinate of line                                    |
|                        |                            |   | measure center coordinate, radius of circle with three points |                                    |  |   | measure center coordinate, radius of circle with three points |
|                        |                            | measure distance between two objects  |   |                                    |  | measure distance between two objects  |   |
|                        |                            | measure angle with four points or two lines   |   |                                    |  | measure angle with four points or two lines   |   |
|                        |                            | set origin of coordinate  |   |                                    |  | coordinate transform  |   |
|                        |                            | coordinate transform  |   |                                    |  | choose measurement object automatically according to the selective point and display the result |   |
|                        | set midpoint of coordinate |   |   |                                    |  |   |   |
| advanced function      | —                          |   |   | programming for batch measurements |  |   |   |
| Power supply           |                            | 110/220V, 50/60Hz   |   |                                    |  |   |   |
| Dimension (L×W×H)      |                            | 1215×646×1210mm   |   |                                    |  |   |   |
| 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-A1000-VBLOCK  |
| Rotary table                  | ISP-A3000-RTABLE  |
| Vice                          | ISP-A3000-VISE    |
| Printer (only for ISP-A7000E) | ISP-A3000-PRINTER |

# PROFILE PROJECTORS



edge detector (for ISP-A6000E)

### digital readout

- touch buttons
- USB data output to Excel and CAD
- show diagram



software CD (included)

ISP-A6000 (without edge detector)

### OPTIONAL ACCESSORY



lens



rotary table  
(glass plate diameter 100mm)



holder with clamp



swivel center support



300mm calibration scale (check magnification accuracy together with 50mm reading scale or calibrate measuring accuracy)



50mm reading scale  
(check magnification accuracy)



demo sample









printer

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  | 207×170mm   |                             |                |                |                 |
|   | X-Y stage travel  | range: 200×100mm  |                             |                |                |                 |
|   |   | resolution: 0.5µm   |                             |                |                |                 |
|   | 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 |                |                |                 |
|   |   |   | measure coordinate of line  |                |                |                 |
|  |   | measure center coordinate, radius of circle with three points                       |                             |                |                |                 |
|  |   | measure distance between two objects  |                             |                |                |                 |
|  |   | measure angle with four points or two lines   |                             |                |                |                 |
|  |   | coordinate transform  |                             |                |                |                 |
|  | 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 (only for ISP-A6000E) 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   |
| Swivel center support | ISP-A6000-SUPPORT  |

|                         |                   |
|-------------------------|-------------------|
| 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 |

# TOOL PRESETTER (PROJECTOR TYPE) CODE TLP-P340\*\*

projection screen Ø120mm with scale  
(protractor with 1° graduation, radius with 0.2,  
0.4, 0.8, 1.2, 1.5, 2, 2.5, 3mm graduation)



16

■ 99 data can be saved and printed



standard rod (included)



BT50/BT40 converter (optional)



BT50/BT30 converter (optional)

## SPECIFICATION

|                                 |               |                  |
|---------------------------------|---------------|------------------|
| Maximum tool diameter (X axis)  |               | Ø300mm           |
| Height measuring range (Z axis) |               | 30~400mm         |
| Accuracy                        | X axis        | ±6µm             |
|                                 | Z axis        | ±13µm            |
| Resolution                      |               | 0.5µm            |
| Diameter of projection screen   |               | Ø120mm           |
| Lens                            | magnification | 20X              |
|                                 | view filed    | Ø6mm             |
| Illumination                    |               | 24V/20W          |
| Spindle holder                  |               | BT50             |
| Power supply                    |               | 220V, 50/60HZ ** |
| Dimension (L×W×H)               |               | 940×520×870mm    |
| Weight                          |               | 90kg             |

## STANDARD DELIVERY

|                     |      |
|---------------------|------|
| Main unit           | 1 pc |
| BT50 spindle holder | 1 pc |
| Standard rod        | 1 pc |
| Foot-switch         | 1 pc |
| Anti-dust cover     | 1 pc |

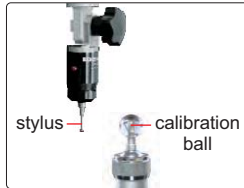
## OPTIONAL ACCESSORY

|                     |             |
|---------------------|-------------|
| BT50/BT30 converter | TLP-P340-C1 |
| BT50/BT40 converter | TLP-P340-C2 |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz



lens with coaxial light (optional, must be installed in factory)



probe (optional), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10µm



ISD-V250A

computer is included

## SPECIFICATION

| Code                      | ISD-V150A  | ISD-V250A     | ISD-V300A     | ISD-V400A     |
|---------------------------|--|---------------|---------------|---------------|
| Measuring range (X×Y×Z)   | 150×100×200mm                                    | 250×150×200mm | 300×200×200mm | 400×300×200mm |
| Stage size                | 354×228mm  | 450×280mm     | 500×330mm     | 606×466mm     |
| Stage glass size          | 210×160mm  | 306×196mm     | 350×250mm     | 450×350mm     |
| 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 of X/Y axis | 2µm  |               |               |               |
| Objective                 | 0.7X~4.5X (zoom)                                 |               |               |               |
| Working distance          | 92mm   |               |               |               |
| Magnification             | 33X~195X (on 19" monitor)                        |               |               |               |
| Camera                    | 1/3" color CCD, 0.3M pixel                       |               |               |               |
| Illumination              | surface and contour with adjustable LED          |               |               |               |
| Max. height of workpiece  | 160mm  |               |               |               |
| 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         |

## 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

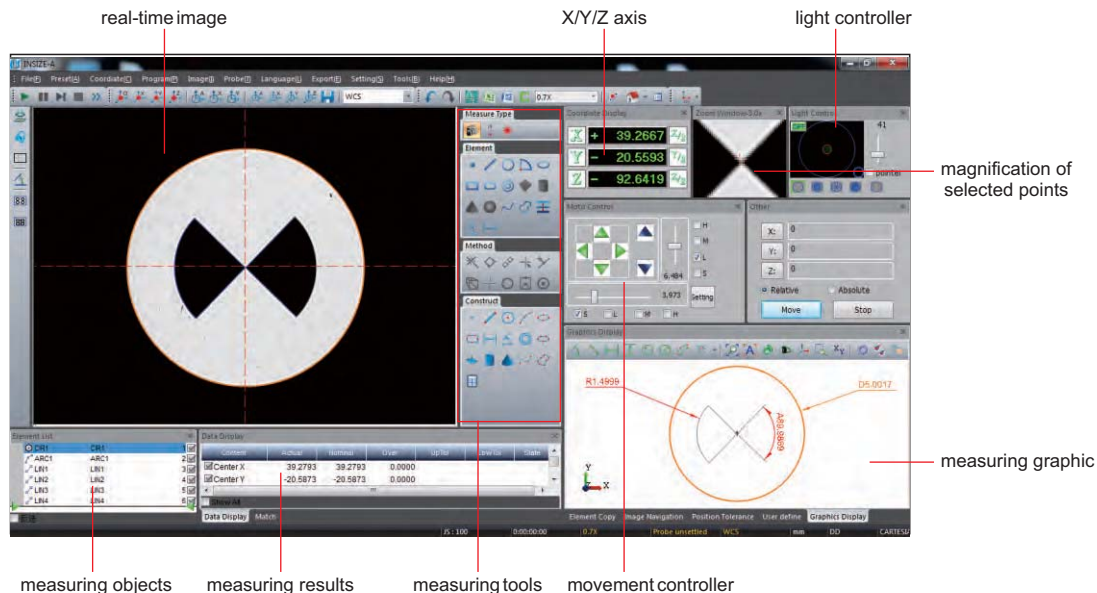
|   |  |
|---|--|
| 0.5X auxiliary objective  | Code: ISD-V-OB05X<br>Working distance: 175mm<br>Magnification: 16.5~97.5X (on 19" monitor) |
| 2X auxiliary objective  | Code: ISD-V-OB2X<br>Working distance: 36mm<br>Magnification: 66~390X (on 19" monitor)      |
| Probe   | Code: ISD-V-PROBE<br>Includes 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  |

To be continued

Continued from previous page

## SOFTWARE (INCLUDED)

- Refer to page 327~328 for details



## CNC VISION MEASURING SYSTEMS



MOTORIZED ZOOM LENS IS OPTIONAL

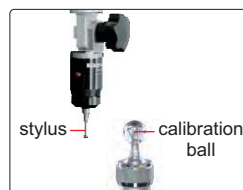
16



software CD (included)



- 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 327~328)



probe (optional), includes Ø2mm and Ø3mm styli, Ø25mm calibration ball, measuring accuracy is 10µm

### STANDARD DELIVERY

|                         |      |
|-------------------------|------|
| Main unit               | 1 pc |
| Video card with dongle  | 1 pc |
| Software disc           | 1 pc |
| Computer                | 1 pc |
| 19.5" 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 |

To be continued

Continued from previous page

**SPECIFICATION**

|                                     |   |  |   |
|-------------------------------------|---|--|---|
| <b>Code</b>                         | <b>ISD-V220CNCA**</b>                               | <b>ISD-V270CNCA**</b>                            | <b>ISD-V370CNCA**</b>                               |
| <b>Measuring range (X×Y×Z)</b>      | 220×120×150mm                                       | 270×170×150mm                                    | 370×270×150mm                                       |
| <b>Stage size</b>                   | 450×280mm   | 500×330mm  | 606×466mm   |
| <b>Glass stage size</b>             | 306×196mm   | 350×250mm  | 450×350mm   |
| <b>Resolution of X/Y/Z axis</b>     | 0.5μm   |  |   |
| <b>Accuracy of X/Y axis</b>         | ≤(2.5+L/100)μm<br>(L is the measuring length in mm) |  | ≤(3.5+L/100)μm<br>(L is the measuring length in mm) |
| <b>Repeatability of X/Y axis</b>    | 2μm   |  |   |
| <b>Objective</b>                    | 0.7X~4.5X (zoom)                                    |  |   |
| <b>Working distance</b>             | 92mm  |  |   |
| <b>Magnification</b>                | 20X~128X (on 19.5" monitor)                         |  |   |
| <b>Camera</b>                       | 1/2" color CCD, 0.4M pixel                          |  |   |
| <b>Illumination</b>                 | <b>surface</b>                                      | coaxial light, programmable segmented ring light |   |
|                                     | <b>contour</b>                                      | adjustable LED light                             |   |
| <b>View field (diagonal length)</b> | 1.7~11.1mm  |  |   |
| <b>Max. height of workpiece</b>     | 160mm   |  |   |
| <b>Max. weight of workpiece</b>     | 30kg  |  |   |
| <b>Operation system</b>             | Windows 7/8/10                                      |  |   |
| <b>Drive method</b>                 | Automatic   |  |   |
| <b>Power supply</b>                 | 220V, 50/60Hz**                                     |  |   |
| <b>Dimension (L×W×H)</b>            | 760×600×900mm                                       | 760×600×900mm                                    | 970×670×940mm                                       |
| <b>Weight</b>                       | 146kg   | 168kg  | 266kg   |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

**OPTIONAL ACCESSORY**

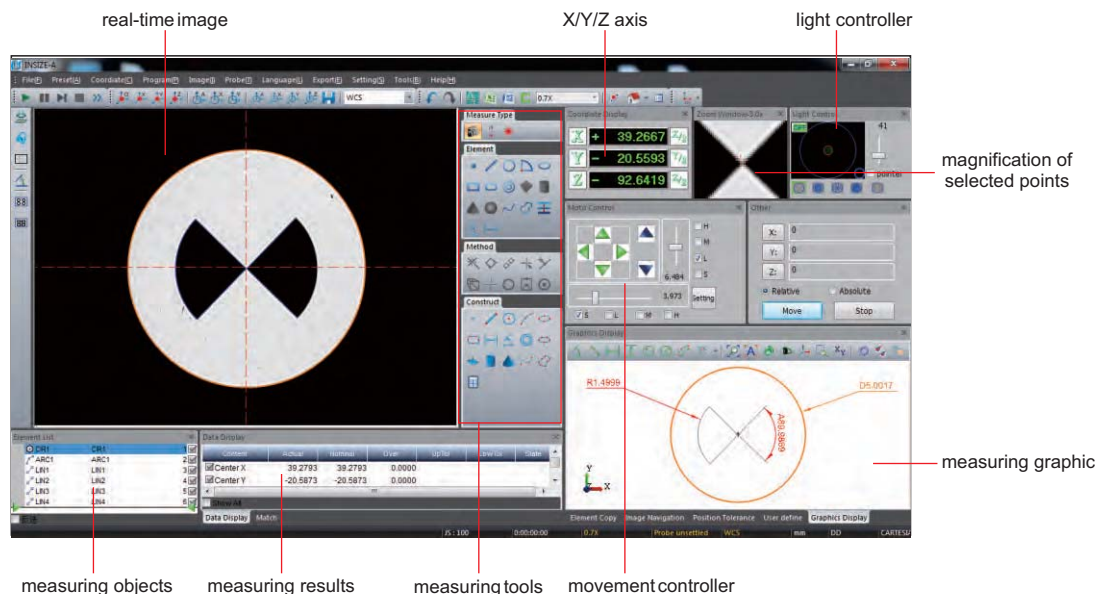
|                                 |   |
|---------------------------------|---|
| <b>0.5X auxiliary objective</b> | Code: <b>ISD-V-OB05X</b><br>Working distance: 175mm<br>Magnification: 10~64X (on 19.5" monitor) |
| <b>2X auxiliary objective</b>   | Code: <b>ISD-V-OB2X</b><br>Working distance: 36mm<br>Magnification: 40~256X (on 19.5" monitor)  |
| <b>Probe</b>                    | Code: <b>ISD-V-PROBE</b><br>Includes Ø2mm and Ø3mm styli, Ø25mm calibration ball                |
| <b>Office software</b>          | Code: <b>7313-OFFICE</b>  |
| <b>Desk</b>                     | Code: <b>ISD-V-DESK</b>   |

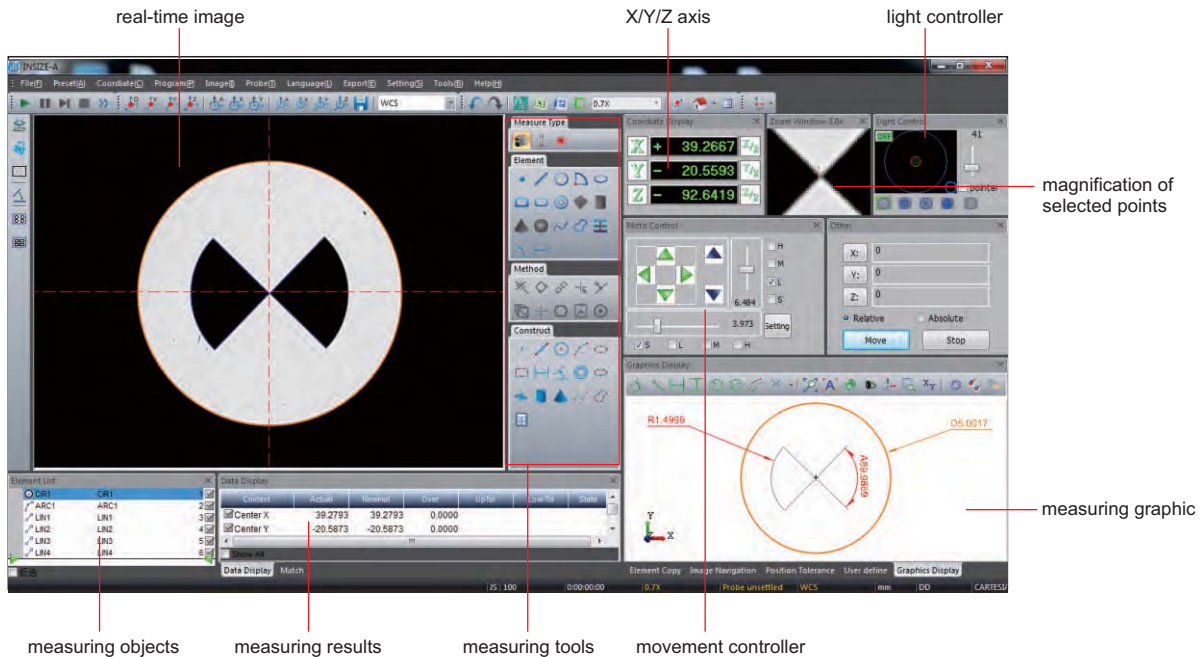
desk (optional)



**SOFTWARE (INCLUDED)**

- Refer to page 327~328 for details

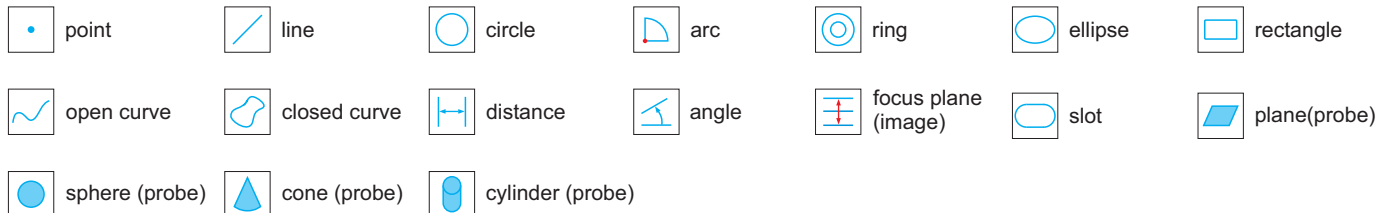




## 16

- 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 export to Excel, Word, SPC, measuring elements can export to dxf

### ▪ Dimension measuring tools:



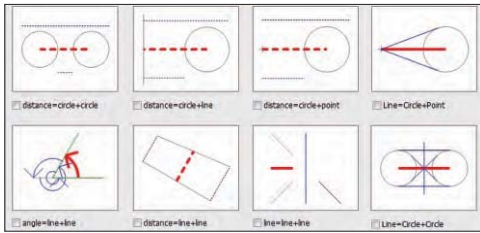
### ▪ Geometric measuring tools:



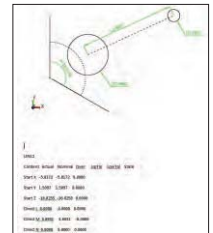
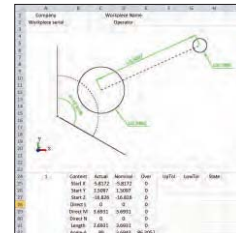
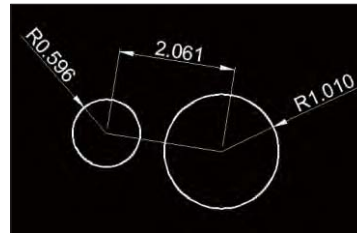
To be continued

Continued from previous page

Measuring and element construct methods:



Export to CAD, EXCEL, WORD



CAD

EXCEL

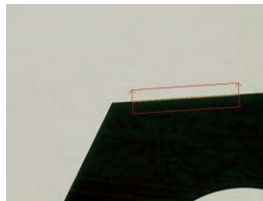
WORD

Edge-detection:

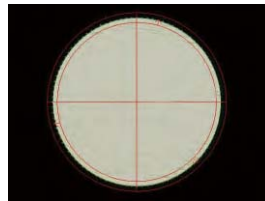
point tool



box tool



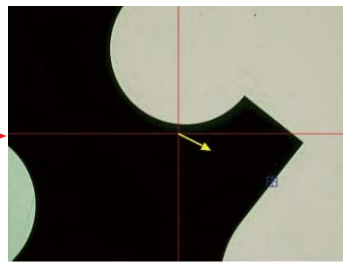
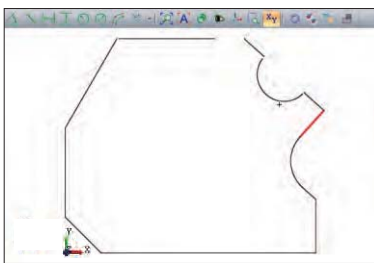
circle tool



Profile scanning:

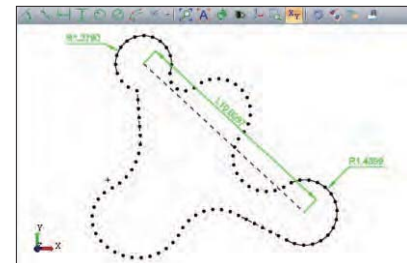


CAD measuring:

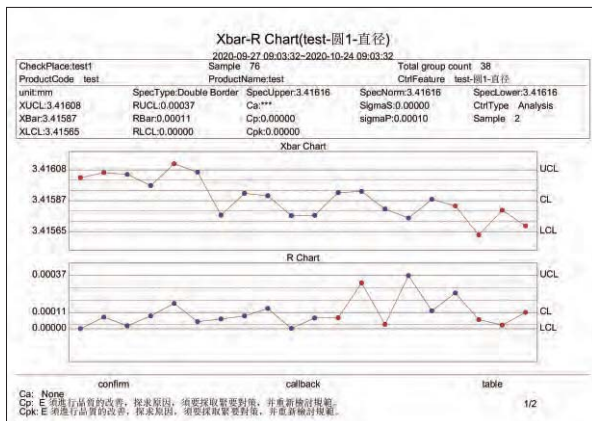


import CAD drawing, set the datum, establish coordinate system, then the software will automatically measure

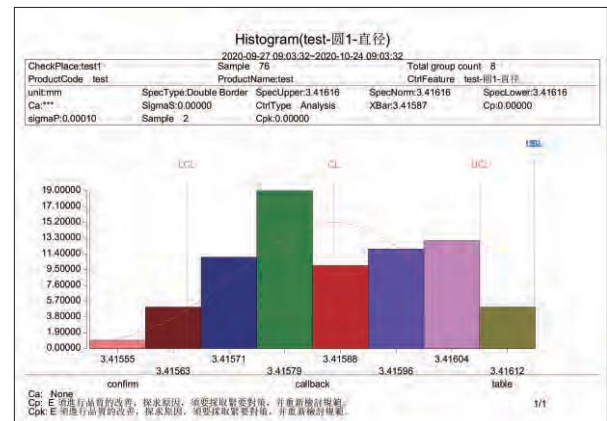
Contour scanning:



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 process advice analyse chart



Xbar-R chart

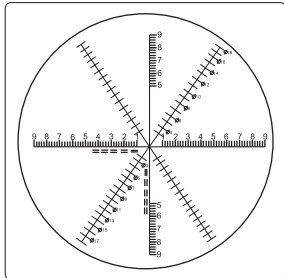


Histogram

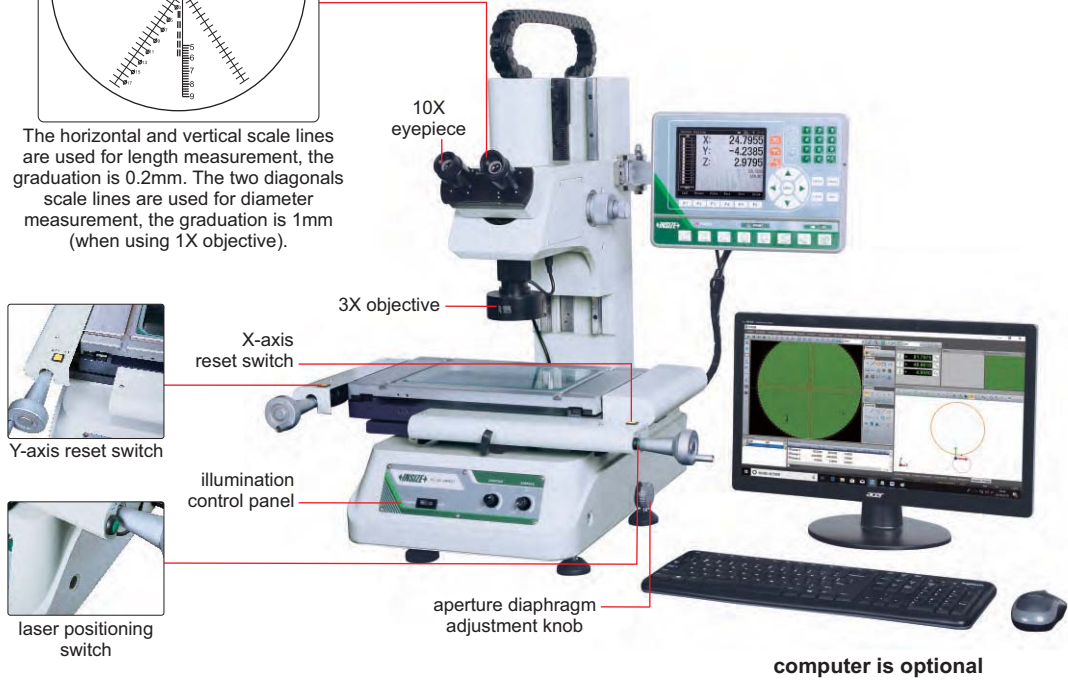
## TOOLMAKER MICROSCOPES



10X dividing eyepiece



The horizontal and vertical scale lines are used for length measurement, the graduation is 0.2mm. The two diagonals scale lines are used for diameter measurement, the graduation is 1mm (when using 1X objective).



computer is optional

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                               |               |               |               |
| Operating 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

|                 |  |
|-----------------|--|
| <b>Output</b>   | RS232  |
| <b>Function</b> | Simple measuring tools   |
|                 | Measure coordinate of points   |
|                 | Measure lines  |
|                 | Measure center coordinate, radius of circle with three points                |
|                 | Measure distances between two objects  |
|                 | Measure angles   |
|                 | Set origin of coordinate   |
|                 | Skew and calibrate the workpiece   |
|                 | Measure rectangle (including length, width, perimeter and center coordinate) |
|                 | Measure thread (including thread diameter, screw pitch, screw angle)         |
|                 | Measure slot (including center coordinate, length, width)                    |

### STANDARD DELIVERY

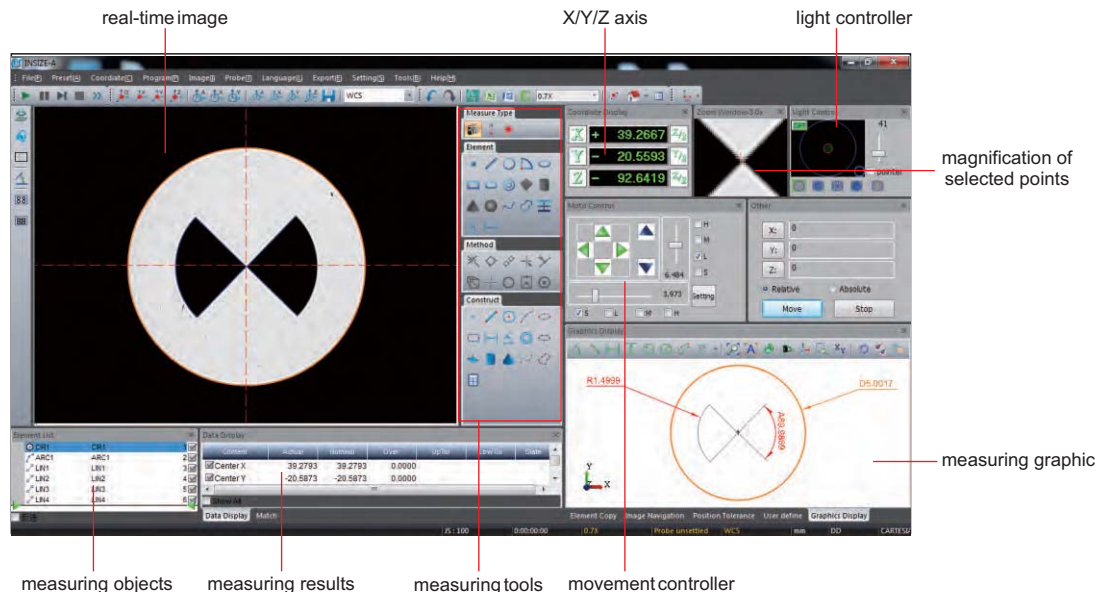
|                                |      |
|--------------------------------|------|
| <b>Main unit</b>               | 1 pc |
| <b>Video card with dongle</b>  | 1 pc |
| <b>Software disc</b>           | 1 pc |
| <b>Calibration glass chart</b> | 1 pc |
| <b>Demo sample</b>             | 1 pc |
| <b>Foot switch</b>             | 1 pc |
| <b>3X objective</b>            | 1 pc |

### OPTIONAL ACCESSORY

|  |  |
|--|--|
| <b>1X objective</b>                          | ISD-VMM-LENS1X   |
| <b>5X objective</b>                          | ISD-VMM-LENS5X   |
| <b>10X objective</b>                         | ISD-VMM-LENS10X  |
| <b>Printer</b>                               | ISD-VMM-PRINTER  |
| <b>Toolmaker microscopes (with computer)</b> | Code: ISD-VMM205A (binocular)<br>ISD-VMM215A (binocular)<br>ISD-VMM225A (binocular)<br>ISD-VMM235A (binocular)     |
|  | Code: ISD-VMM205DA (monocular)<br>ISD-VMM215DA (monocular)<br>ISD-VMM225DA (monocular)<br>ISD-VMM235DA (monocular) |

### SOFTWARE (INCLUDED)

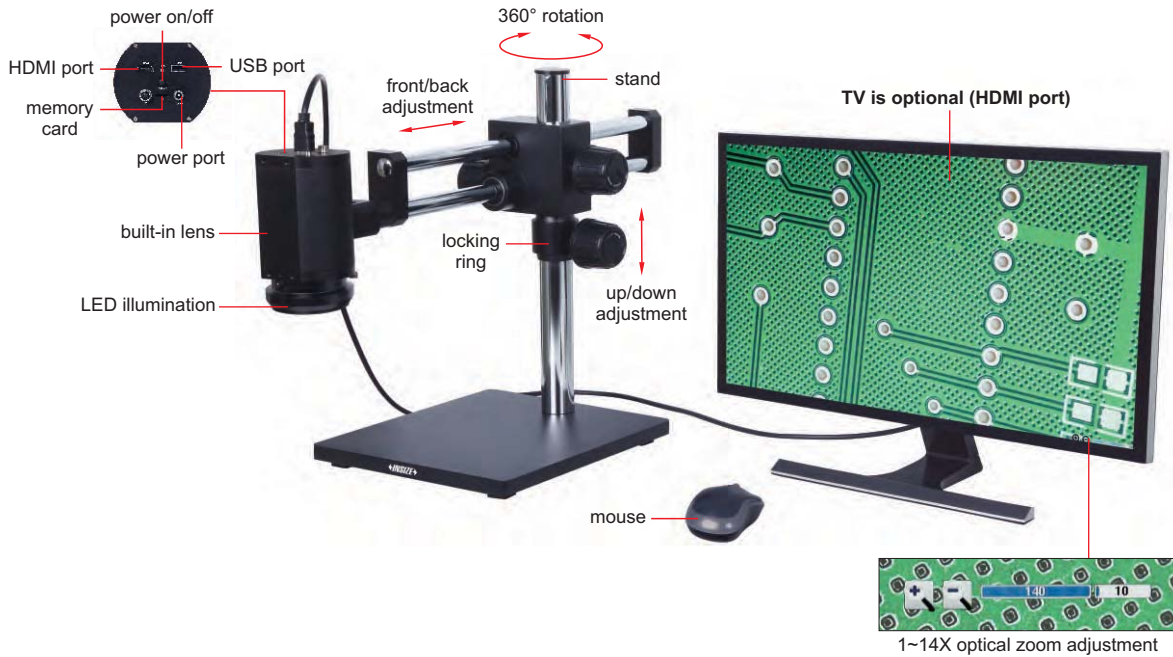
- Refer to page 327~328 for details



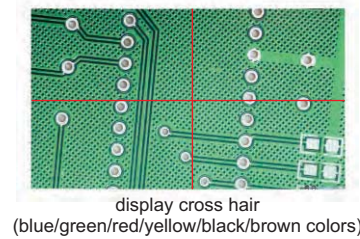
# AUTO FOCUS DIGITAL MICROSCOPE CODE 5302-AF105

AUTO FOCUS

TAKE PICTURES  
AND VIDEOS



- 1080P high-definition image
- Auto focus camera
- Take pictures and videos, saved to memory card
- Connected to TV by HDMI port
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red/yellow/black/brown colors)



## SPECIFICATION

|                     |                        |
|---------------------|------------------------|
| Magnification       | 1.8X~27.5X (on 28" TV) |
| Sensor              | 1/2.8" CMOS            |
| Pixel               | 2M                     |
| Resolution          | 1920×1080              |
| Frame rate          | 60fps                  |
| Auto focus distance | 100mm~∞                |
| Output              | HDMI                   |
| Power supply        | power adapter          |
| Dimension (L×W×H)   | 500×280×410mm          |
| Weight              | 17kg                   |

## STANDARD DELIVERY

|                           |       |
|---------------------------|-------|
| Main unit (with stand)    | 1 pc  |
| LED illumination          | 1 pc  |
| 8G memory card and holder | 1 pc  |
| Mouse                     | 1 pc  |
| HDMI cable (for TV)       | 1 pc  |
| Power adapter             | 2 pcs |

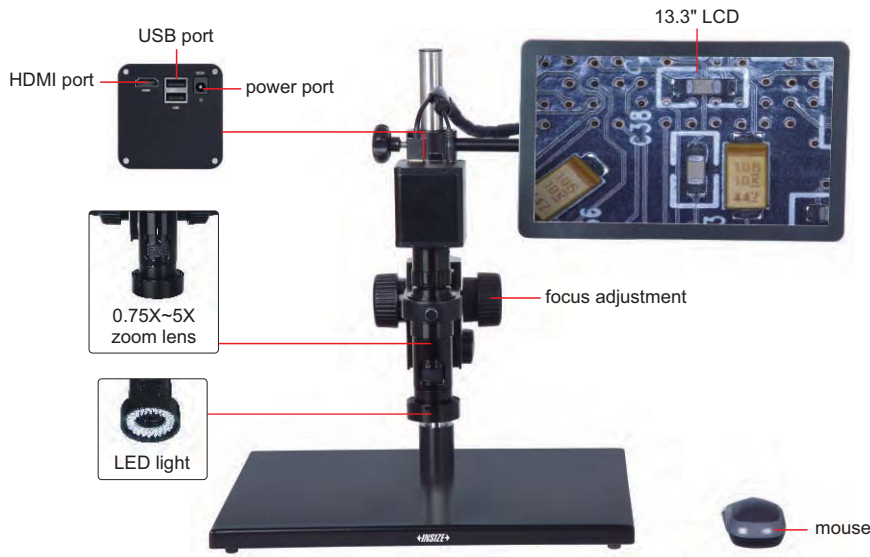
## FOCUS DISTANCE, MAGNIFICATION AND VIEW FIELD (MANUAL FOCUS MODE)

| Focus distance | Adjustable magnification (on 28" TV) | View field      |
|----------------|--------------------------------------|-----------------|
| 100mm          | 4.5~27.5X                            | 24×14~161×90mm  |
| 150mm          | 3~21X                                | 30×17~240×128mm |
| 200mm          | 2.3~17.5X                            | 38×20~305×176mm |
| 250mm          | 2~15X                                | 42×24~320×210mm |
| 270mm          | 1.8~14.4X                            | 43×25~378×240mm |

AUTO FOCUS

TAKE PICTURES AND VIDEOS

# AUTO FOCUS DIGITAL MICROSCOPE (WITH DISPLAY) CODE 5303-AF103



0.5X camera adapter (included)



1X auxiliary objective (included)



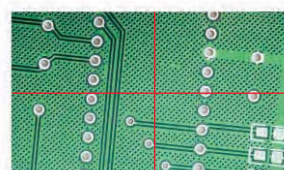
16G USB flash disk (included)



2X auxiliary objective (optional)



1X camera adapter (optional)



display cross hair (blue/green/red/yellow/black/brown colors)



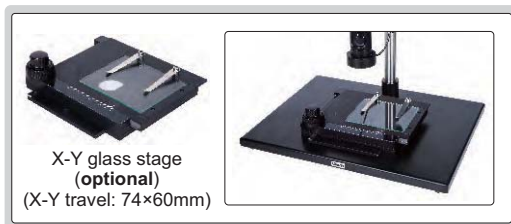
0.75X~5X zoom lens



LED light



- 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)



X-Y glass stage (optional)  
(X-Y travel: 74×60mm)

## 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  |
| 16G USB flash disk     | 1 pc  |
| White/black plate      | 1 pc  |
| Mouse                  | 1 pc  |
| HDMI cable             | 1 pc  |
| Power adpter           | 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 |
| 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 |

## 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 |

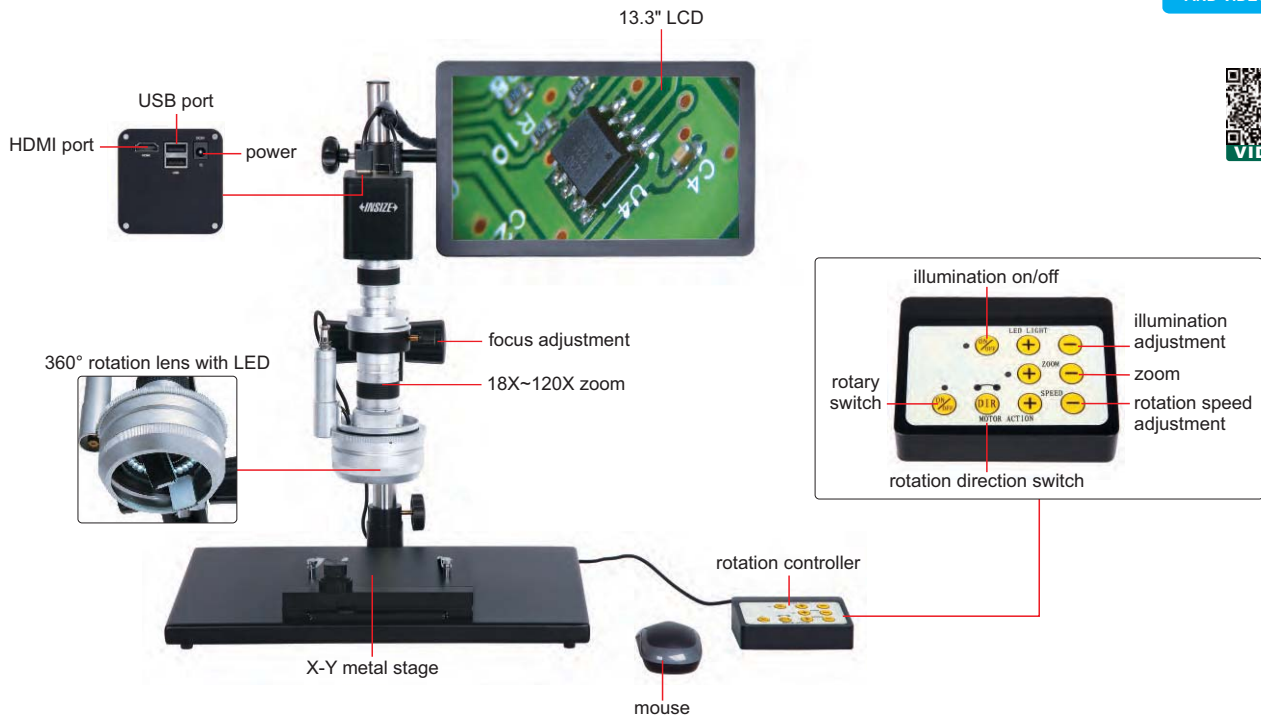
## OPTIONAL ACCESSORY

|                                   |               |
|-----------------------------------|---------------|
| 1X camera adapter                 | ISM-DL-CA1X   |
| 2X auxiliary objective            | ISM-DL-OB2X   |
| X-Y glass stage (travel: 74×60mm) | ISM-DL-STAGE  |
| X-Y metal stage                   | ISM-DL-STAGE1 |
| LED light                         | page 345~346  |
| Auxiliary objective               | page 347      |

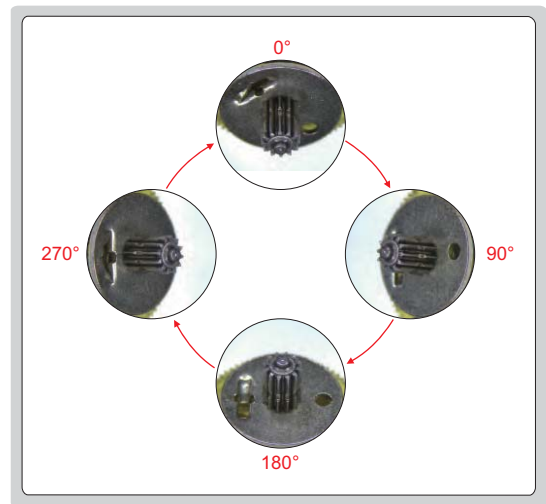
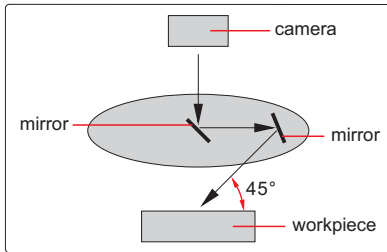
# 3D MOTORIZED ROTATION MICROSCOPE (WITH DISPLAY) CODE 5301-D400

SUITABLE TO CHECK CONVEX OBJECTS AND WALL OF HOLE

TAKE PICTURES AND VIDEOS



working principle



360° rotation observation

- 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

### 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              |
| Rotation speed    | 2~5RPM            |
| Power supply      | 110/220V, 50/60Hz |
| Dimension (L×W×H) | 570×300×430mm     |
| Weight            | 10kg              |

### 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 |

ATTENTION: PLEASE MAKE CONFOCAL ADJUSTMENT AFTER CHANGING CAMERA ADAPTERS OR AUXILIARY OBJECTIVES

BUILT-IN SOFTWARE WITHOUT COMPUTER

MEASUREMENT

TAKE PICTURES



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)

- 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

## DIGITAL MEASURING MICROSCOPES (WITH DISPLAY)



### 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

Continued from previous page

**STANDARD DELIVERY**

| Code                   | ISM-DL300 | ISM-DL301 |
|------------------------|-----------|-----------|
| Main unit              | 1 pc      | 1 pc      |
| 0.5X camera adapter    | 1 pc      | 1 pc      |
| 1X auxiliary objective | 1 pc      | 1 pc      |
| Calibration plate      | 1 pc      | 1 pc      |
| 16G USB flash disk     | 1 pc      | 1 pc      |
| White/black plate      | 1 pc      | 1 pc      |
| Mouse                  | 1 pc      | 1 pc      |
| HDMI cable             | 1 pc      | 1 pc      |
| Power adapter          | 2 pcs     | 3 pcs     |

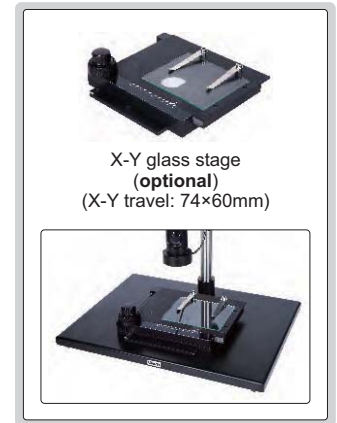
**OPTIONAL ACCESSORY**

|                                   |               |
|-----------------------------------|---------------|
| 1X camera adapter                 | ISM-DL-CA1X   |
| 2X auxiliary objective            | ISM-DL-OB2X   |
| X-Y glass stage (travel: 74×60mm) | ISM-DL-STAGE  |
| X-Y metal stage                   | ISM-DL-STAGE1 |
| LED light                         | page 345~346  |
| Auxiliary objective               | page 347      |

**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.

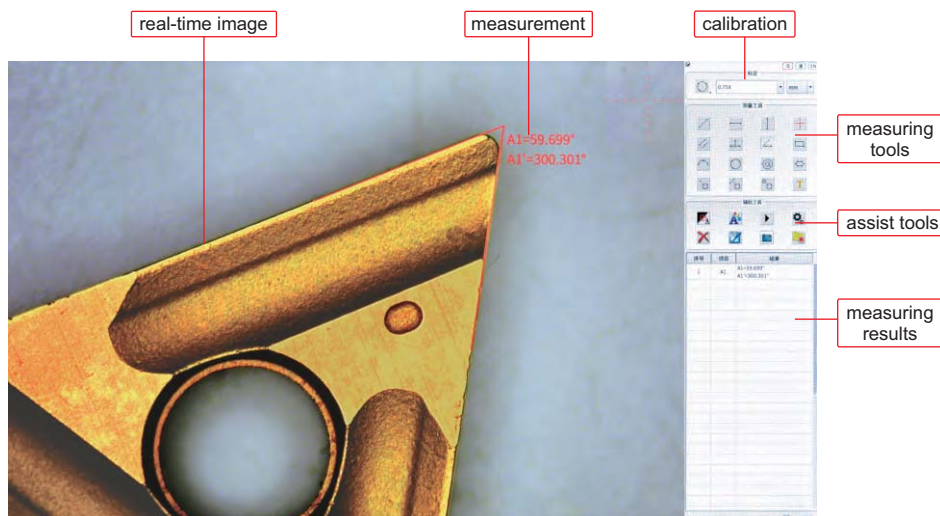


**MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD**

| 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)**

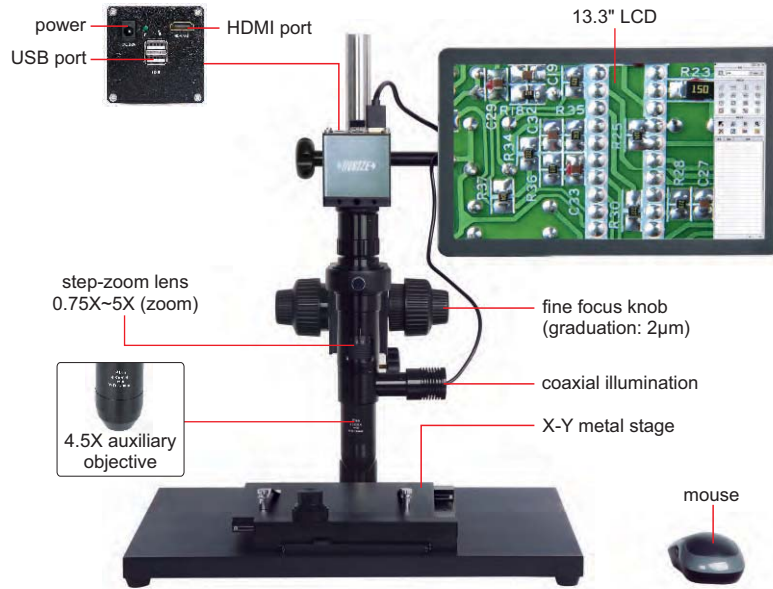
■ Refer to page 342 for details



SOFTWARE IS INCLUDED,  
REFER TO PAGE 342 FOR DETAILS

## HIGH MAGNIFICATION MEASURING MICROSCOPE (WITH DISPLAY) CODE ISM-DL302

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 342 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 345~346 |

### 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               |

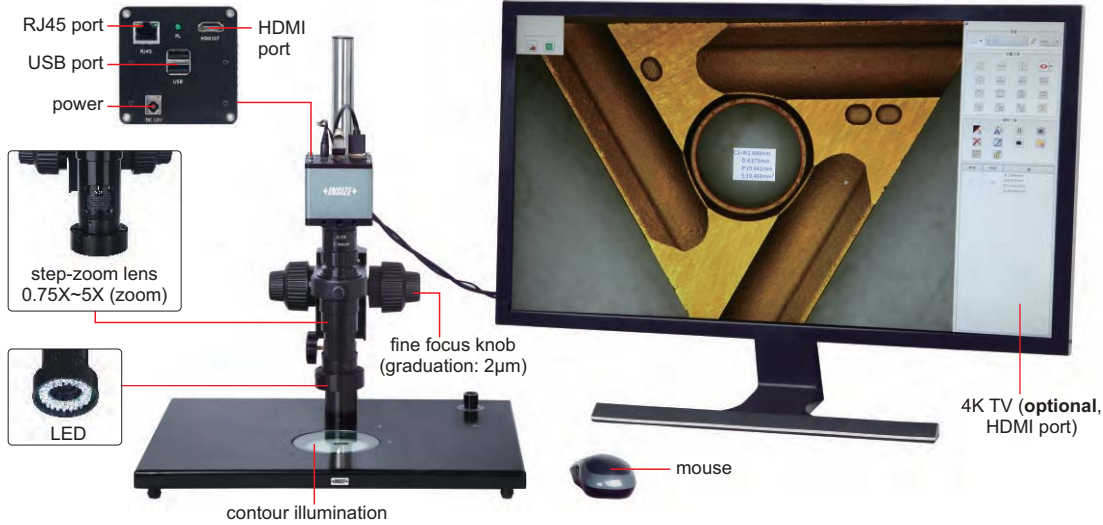
### MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

|                |                   |                   |
|----------------|-------------------|-------------------|
| 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 |

## HIGH-DEFINITION MEASURING MICROSCOPE CODE ISM-DL500

ATTENTION: PLEASE MAKE CONFOCAL ADJUSTMENT AFTER CHANGING CAMERA ADAPTERS OR AUXILIARY OBJECTIVES

BUILT-IN SOFTWARE  
WITHOUT COMPUTER



- 5 megapixel 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
- Send photos and measurement data via ethernet (TCP/IP)
- Name photos and measurement data files with serial number of workpieces read by scanner

17



0.5X camera adapter (included)



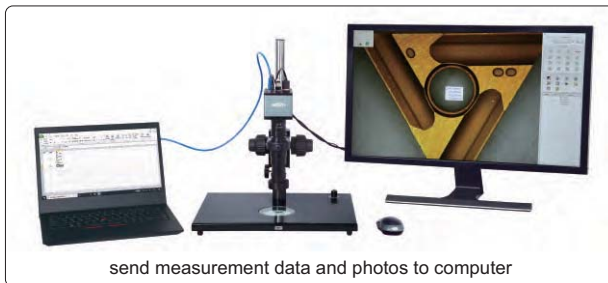
1X camera adapter (optional)



1X auxiliary objective (included)



2X auxiliary objective (optional)



### SPECIFICATION

|                           |               |
|---------------------------|---------------|
| Magnification (on 28" TV) | 30X~200X      |
| Sensor                    | 1/1.8" CMOS   |
| Pixel                     | 5M            |
| Resolution                | 3072×1728     |
| Frame rate                | 60fps         |
| Output                    | HDMI          |
| Power supply              | power adapter |
| Dimension (L×W×H)         | 570×300×430mm |

To be continued



Continued from previous page

**STANDARD DELIVERY**

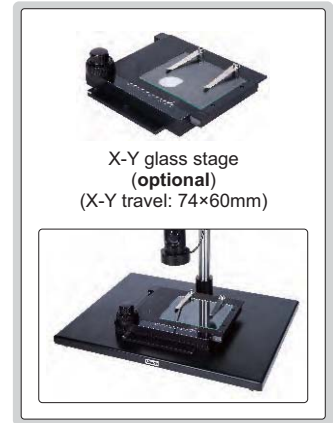
|                        |       |
|------------------------|-------|
| Main unit              | 1 pc  |
| 0.5X camera adapter    | 1 pc  |
| 1X auxiliary objective | 1 pc  |
| Calibration plate      | 1 pc  |
| 16G USB flash disk     | 1 pc  |
| White/black plate      | 1 pc  |
| Mouse                  | 1 pc  |
| Power adapter          | 2 pcs |

**OPTIONAL ACCESSORY**

|                                   |              |
|-----------------------------------|--------------|
| 1X camera adapter                 | ISM-DL-CA1X  |
| 2X auxiliary objective            | ISM-DL-OB2X  |
| X-Y glass stage (travel: 74×60mm) | ISM-DL-STAGE |
| 28" 4K TV                         | 7313-TV28    |
| Scanner and hub                   | 7316-SCAN1   |
| LED light                         | page 345~346 |
| Auxiliary objective               | page 347     |

**MAGNIFICATION AND MEASURING ACCURACY**

| Objective magnification | Image magnification (on 28" TV) | Measuring accuracy |
|-------------------------|---------------------------------|--------------------|
| 0.75X                   | 30X                             | ±6μm               |
| 1X                      | 40X                             | ±6μm               |
| 1.5X                    | 60X                             | ±5μm               |
| 2X                      | 80X                             | ±5μm               |
| 2.5X                    | 100X                            | ±5μm               |
| 3X                      | 120X                            | ±4μm               |
| 3.5X                    | 140X                            | ±4μm               |
| 4X                      | 160X                            | ±3μm               |
| 4.5X                    | 180X                            | ±3μm               |
| 5X                      | 200X                            | ±3μm               |

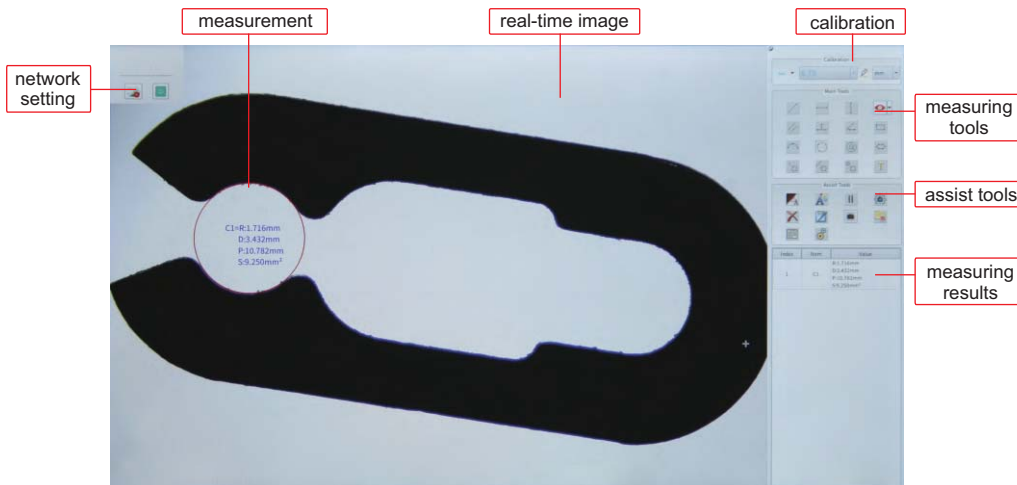


**MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (ON 28" TV)**

| Auxiliary objective | Specification  | Camera adapter      |                   |
|---------------------|----------------|---------------------|-------------------|
|                     |                | 0.5X (included)     | 1X (optional)     |
| 1X (included)       | Magnification  | 30~200X             | 60~400X           |
|                     | Focus distance | 70±2mm              | 70±2mm            |
|                     | View filed     | 16.5×11.5~2.5×1.7mm | 8.2×5.7~1.3×0.9mm |
| 2X (optional)       | Magnification  | 60~400X             | 120~800X          |
|                     | Focus distance | 29±2mm              | 29±2mm            |
|                     | View filed     | 8.2×5.7~1.3×0.9mm   | 4.1×2.8~0.6×0.4mm |

**SOFTWARE (INCLUDED)**

- Refer to page 342 for details

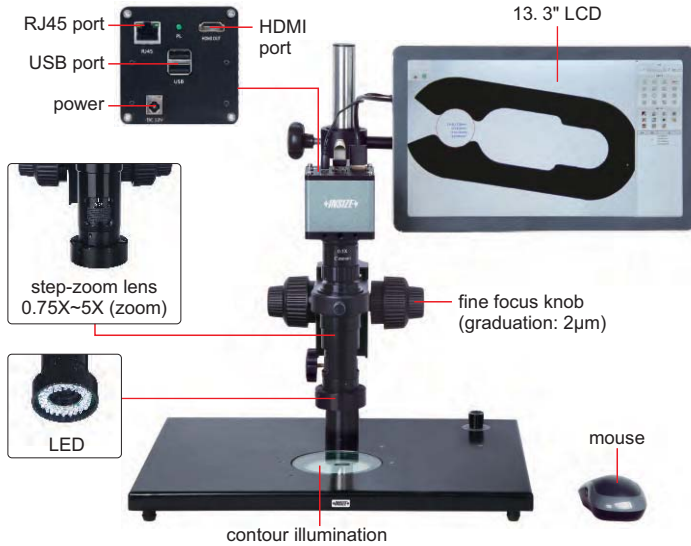


# FOCUS STACKING MEASURING MICROSCOPE (WITH DISPLAY) CODE ISM-DL510

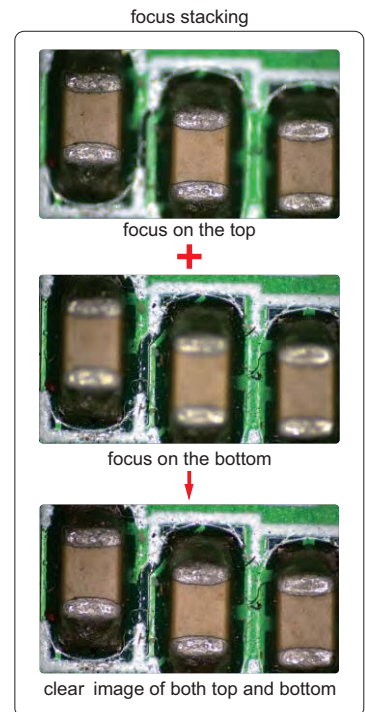
BUILT-IN SOFTWARE  
WITHOUT COMPUTER

FOCUS  
STACKING

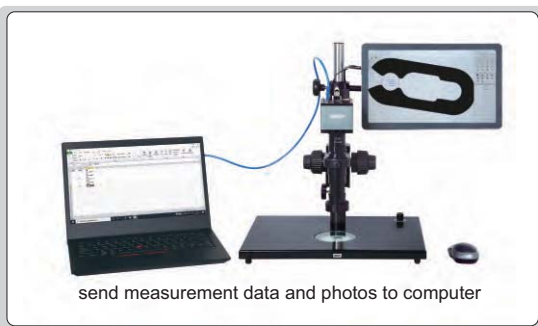
ATTENTION: PLEASE MAKE CONFOCAL ADJUSTMENT AFTER  
CHANGING CAMERA ADAPTERS OR AUXILIARY OBJECTIVES



- 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



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### 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 |



To be continued

Continued from previous page

**STANDARD DELIVERY**

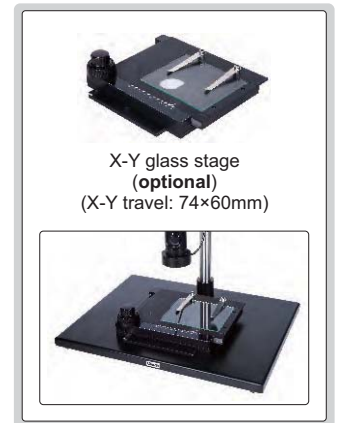
|                        |       |
|------------------------|-------|
| Main unit              | 1 pc  |
| 0.5X camera adapter    | 1 pc  |
| 1X auxiliary objective | 1 pc  |
| Calibration plate      | 1 pc  |
| 16G USB flash disk     | 1 pc  |
| White/black plate      | 1 pc  |
| Mouse                  | 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: 74×60mm) | ISM-DL-STAGE |
| Scanner and hub                   | 7316-SCAN1   |
| LED light                         | page 345~346 |
| Auxiliary objective               | page 347     |

**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               |

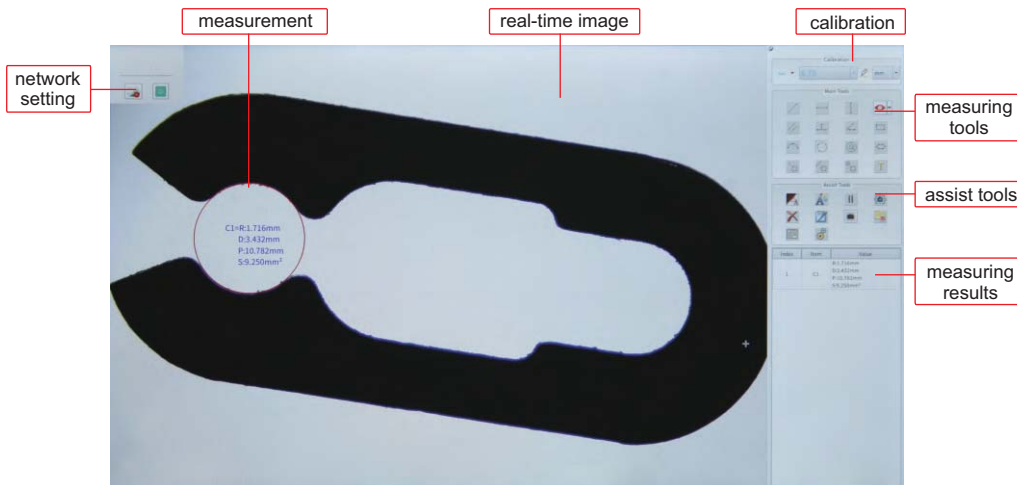


**MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD**

| 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 342 for details



## DIGITAL MEASURING MICROSCOPE CODE 5307-ID100A

ELECTRONIC MAGNIFICATION  
FEEDBACK LENS

BUILT-IN SOFTWARE  
WITHOUT COMPUTER



- 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

adjustable display angle



### SPECIFICATION

|                      |                     |
|----------------------|---------------------|
| Sensor               | 1/2" CMOS           |
| Pixel                | 2M                  |
| Resolution           | 1920×1080           |
| Magnification        | 12~77X              |
| Focus distance       | 100mm               |
| View field           | 2.7×1.9~17.5×11.9mm |
| Max workpiece height | 60mm                |
| Frame rate           | 60fps               |
| Output               | USB/HDMI            |
| Power supply         | power adapter       |
| Dimension (L×W×H)    | 610×610×660mm       |
| Weight               | 4.5kg               |

### STANDARD DELIVERY

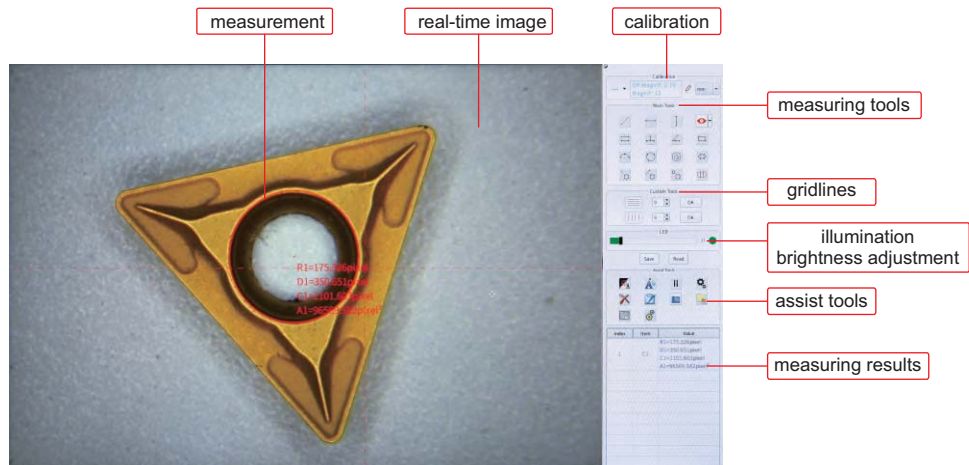
|                    |      |
|--------------------|------|
| Main unit          | 1 pc |
| Calibration plate  | 1 pc |
| Power adapter      | 1 pc |
| Mouse              | 1 pc |
| 16G USB flash disk | 1 pc |

### 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               |

### SOFTWARE (INCLUDED)

- Refer to page 342 for details

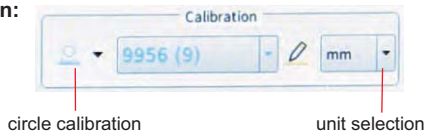


SOFTWARE CAN BE CUSTOMIZED

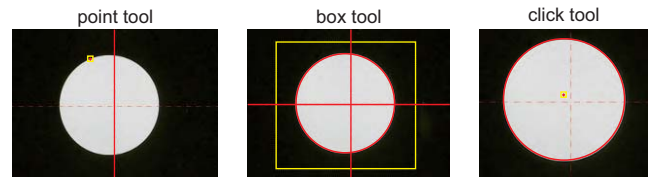
## MEASURING SOFTWARE OF DIGITAL MICROSCOPES



- **Included in digital microscopes (ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL500, ISM-DL510, 5307-ID100A)**
- **Language:** Simplified Chinese, Traditional Chinese, English, Korean
- **Calibration:**



### ▪ Edge-detection:



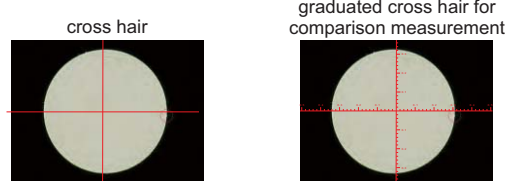
### ▪ Measurement tools:

- |  |   |   |
|--|---|---|
| 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:



### ▪ Grid comparison measurement:



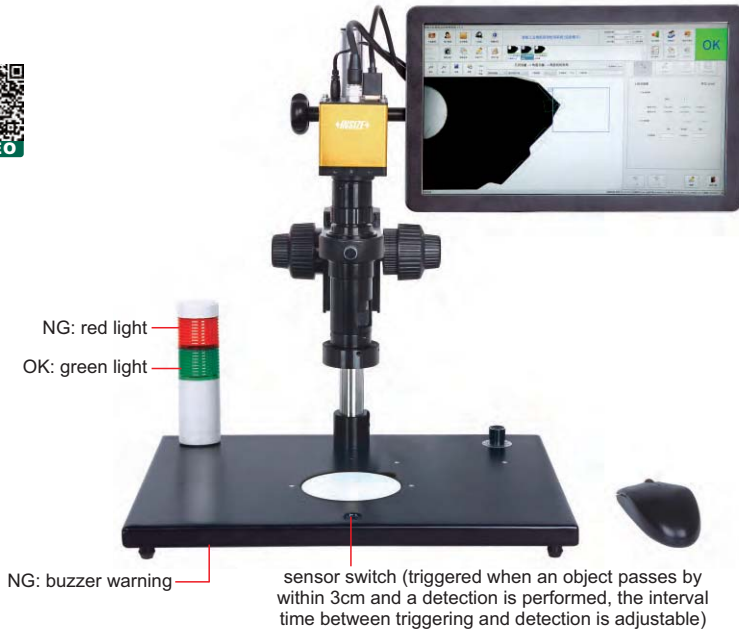
### ▪ Output to Excel:

|   |    |                           |
|---|----|---------------------------|
| 1 | A1 | A1=59.699°<br>A1=300.301° |
|   |    |                           |
|   |    |                           |
|   |    |                           |

## SMART MICROSCOPE CODE ISM-DL400

**AUTOMATICALLY LOCATE WORKPIECES  
REGARDLESS OF POSITION AND DIRECTION**

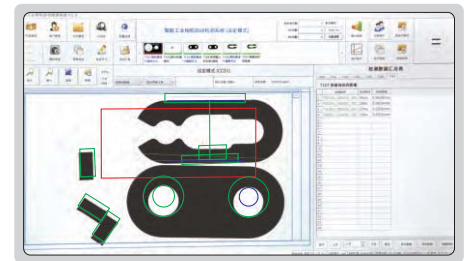
**BUILT-IN SOFTWARE  
WITHOUT COMPUTER**



### 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 export to Excel

| Tool | Performance  | OK Count | NG Count | OK Rate | Defective rate |
|------|--------------|----------|----------|---------|----------------|
| T101 | Profilometer | 400      | 200      | 200     | 49.99%         |
| T102 | Caliper      | 50       | 50       | 25      | 50.00%         |
| T103 | Caliper      | 400      | 200      | 200     | 49.99%         |

report showing the perform times of each tool, quantity of OK and NG, the report can be saved

| Tool             | Tool             | Tool            |                  |               |          |
|------------------|------------------|-----------------|------------------|---------------|----------|
| T102 Cluster     |                  |                 |                  |               |          |
| Detection number | Detection time   | Detection color | Number of layers | Maximum value |          |
| 1                | T00101_00041_001 | 31ms            | 白色               | 0             | 0.0000mm |
| 2                | T00101_00153_001 | 31ms            | 白色               | 0             | 0.0000mm |
| 3                | T00101_00102_001 | 31ms            | 白色               | 0             | 0.0000mm |

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      |
| Operating 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

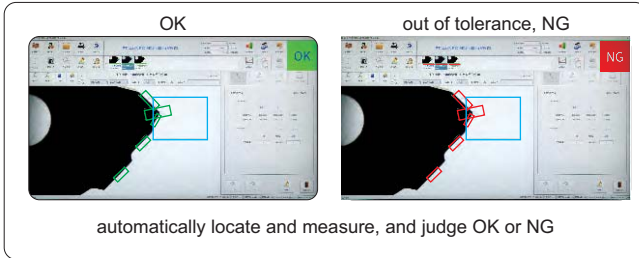
|                        |              |
|------------------------|--------------|
| 1X camera adapter      | ISM-DL-CA1X  |
| 2X auxiliary objective | ISM-DL-OB2X  |
| LED light              | page 345~346 |
| Auxiliary objective    | page 347     |

To be continued

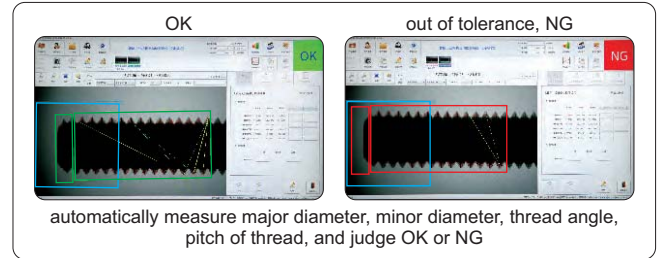
Continued from previous page

■ APPLICATION EXAMPLES:

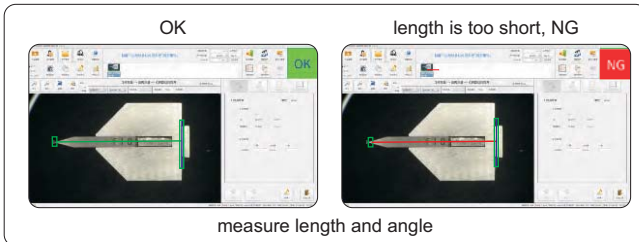
dimension measurement



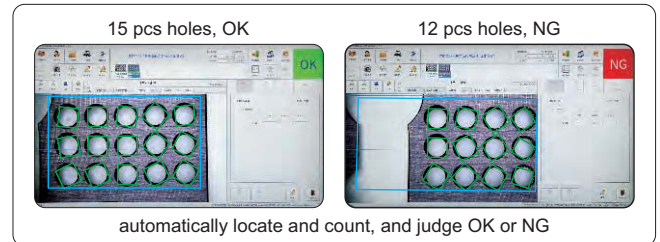
thread measurement



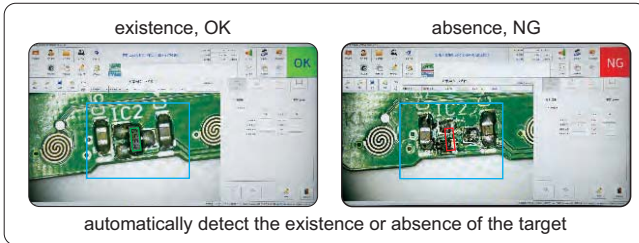
cutting tools measurement



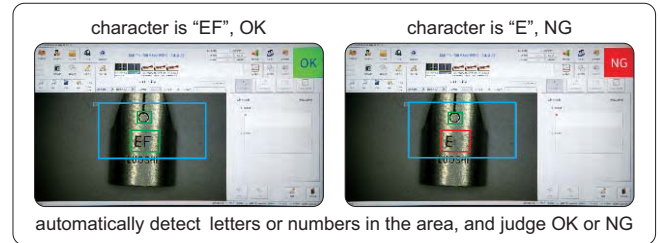
counting



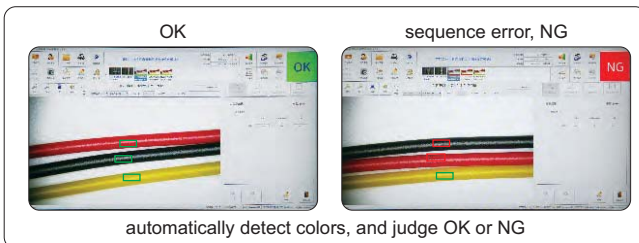
existence or absence



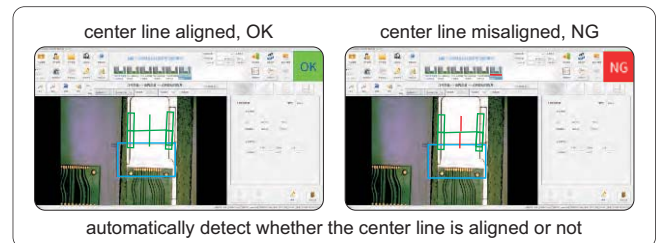
character recognition



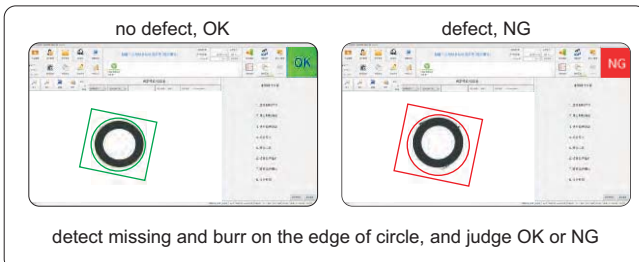
color detection



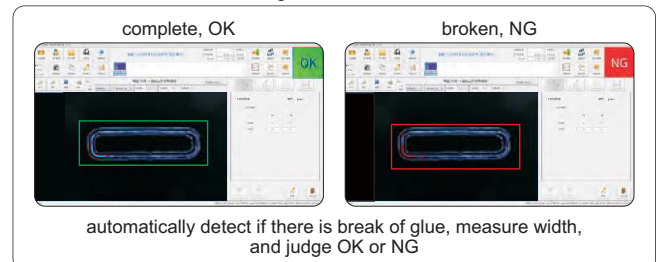
location detection



surface defect detection



glue detection



## X-Y METAL STAGE CODE ISM-DL-STAGE1

- Suitable for digital microscopes **ISM-DL300**, **ISM-DL301**, **5303-AF103**, **ISM-DL500**, **ISM-DL510**

### SPECIFICATION

|                   |              |
|-------------------|--------------|
| X-Y travel range  | 100×86mm     |
| Dimension (L×W×H) | 180×180×50mm |
| Weight            | 2.3kg        |



## LED RING LIGHT CODE ISM-LED-9245R

- Diffuser plate is included to reduce the reflective effect on workpieces
- Suitable for digital microscopes **ISM-DL400**, **ISM-DL300**, **ISM-DL301**, **5303-AF103**, **ISM-DL500**, **ISM-DL510**

### 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

ATTENTION: MUST BE USED WITH LIGHT BRACKET AND LIGHT CONTROLLER

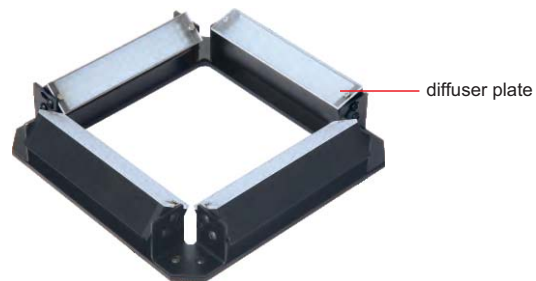


## LED SQUARE LIGHT CODE ISM-LED-100L4

- Diffuser plate is included to reduce the reflective effect on workpieces
- Angle and brightness can be adjusted independently
- Suitable for digital microscopes **ISM-DL400**, **ISM-DL300**, **ISM-DL301**, **5303-AF103**, **ISM-DL500**, **ISM-DL510**

RED, GREEN, BLUE, INFRARED AND UV LIGHT CAN BE CUSTOMIZED

ATTENTION: MUST BE USED WITH LIGHT BRACKET AND LIGHT CONTROLLER



17

### SPECIFICATION

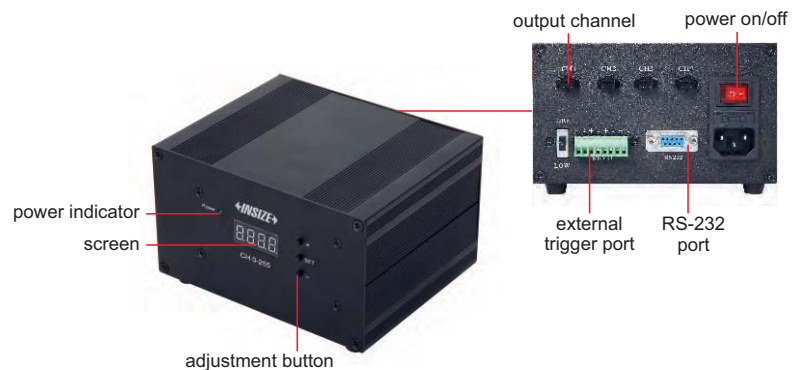
|                   |              |
|-------------------|--------------|
| Light color       | white        |
| Power supply      | 24V          |
| Power             | 10.36W       |
| Angle             | 0~90°        |
| Dimension (L×W×H) | 154×154×30mm |

## 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



L-shape metal

- 4 pcs L-shape bars are included, multiple combinations can be realized
- Suitable for ISM-LED-100L4, ISM-LED-9245R

application



### 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

### SPECIFICATION

|              |          |
|--------------|----------|
| Power        | 3W       |
| Power supply | 100~240V |
| Working      | 10000h   |
| Illumination | 10000lux |



application



## LED AUXILIARY LIGHT CODE ISM-DL-LED

- Suitable for digital microscopes  
ISM-DL300, ISM-DL301, ISM-DL302,  
ISM-DL400, 5303-AF103, ISM-DL500,  
ISM-DL510

### SPECIFICATION

|                           |                 |
|---------------------------|-----------------|
| Power                     | 8W              |
| Diameter of mounting hole | Ø25mm           |
| Power supply              | 10~12V, 0~300mA |



illumination direction and brightness are adjustable

## COAXIAL LIGHT LIGHT CODE ISM-DL-COAXIAL

- Suitable for digital microscopes  
5303-AF103, ISM-DL300, ISM-DL301,  
ISM-DL400, ISM-DL500, ISM-DL510

### SPECIFICATION

|              |                 |
|--------------|-----------------|
| Power        | 1W              |
| Power supply | 0~3.4V, 0~400mA |



for smooth surfaces and small holes, brightness is adjustable

## AUXILIARY OBJECTIVES

ATTENTION: PLEASE MAKE CONFOCAL ADJUSTMENT AFTER CHANGING CAMERA ADAPTERS OR 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, ISM-DL300, ISM-DL301, ISM-DL400, ISM-DL500, ISM-DL510

### MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (5303-AF103)

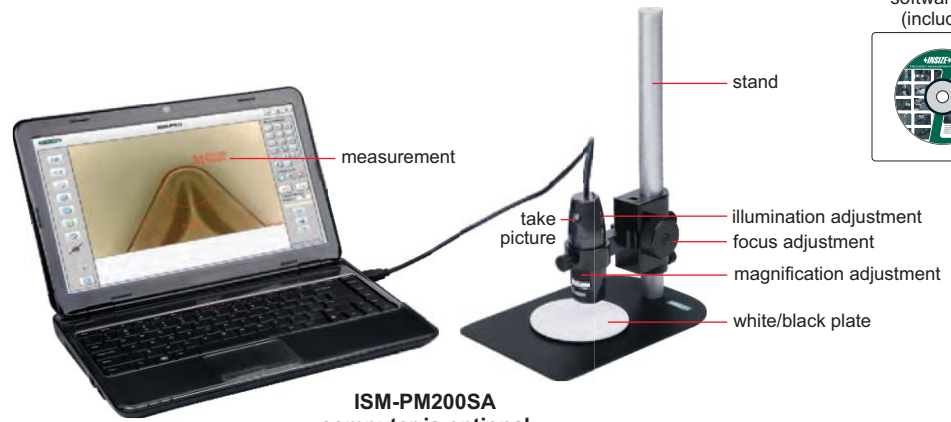
| Auxiliary objective | Specification  | Camera adapter  |                 |
|---------------------|----------------|-----------------|-----------------|
|                     |                | 0.5X (included) | 1X (optional)   |
| 0.3X (optional)     | Magnification  | 6~37X           | 12~74X          |
|                     | 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-DL500, 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-DL500, ISM-DL510 or LED light

# DIGITAL MEASURING MICROSCOPES



software CD (included)



- Can take pictures and videos
- Supplied with software
- Calibration rules (graduation 0.1 and 1mm) are included

**ISM-PM200SA**  
computer is optional

## SPECIFICATION

| Code          | ISM-PM200SA                              | ISM-PM200SB |
|---------------|--|-------------|
| Magnification | 10X~200X                                 | 10X~200X    |
| Stand         | standard                                 | universal   |
| Pixel         | 2M (resolution: 1600×1200)               |             |
| Illumination  | built-in adjustable LED                  |             |
| Power supply  | USB 2.0 cable (voltage required: 5±0.1V) |             |

## OPTIONAL ACCESSORY

|               |               |
|---------------|---------------|
| Green filter  | ISM-PM-GREEN  |
| Yellow filter | ISM-PM-YELLOW |
| Blue filter   | ISM-PM-BLUE   |

universal stand (included in ISM-PM200SB)



filter (optional)



## 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      |

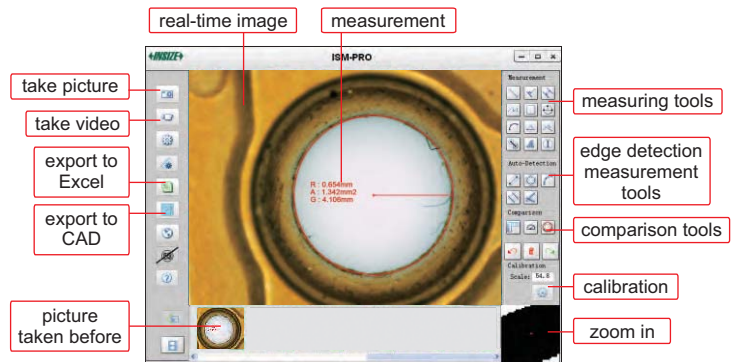
## SOFTWARE

- Language:** English, Japanese, Korean, German, Turkey, Portuguese, Chinese
- Operation system:** Windows 7/8/XP/Vista
- Measuring tools:**

- |  |   |  |  |
|--|---|--|--|
|  | measure length of line or distance between two points |  | measure radius, length and angle of arc  |
|  | measure area of rectangle                             |  | add number with circle                   |
|  | measure distance between two circles                  |  | measure length of continuous line        |
|  | measure distance between two parallel lines           |  | measure angle with three points          |
|  | measure angle with two lines                          |  | measure radius, girth and area of circle |
|  | measure distance between point and line               |  | add text                                 |

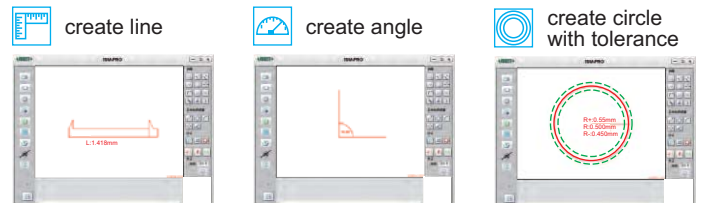
### Edge detection measurement tools:

- detect two parallel lines automatically and calculate distance
- detect circle automatically, and calculate radius, girth and area
- detect arc automatically, and calculate radius, angle and arc length
- detect two lines automatically, and calculate angle
- detect line automatically, and calculate length

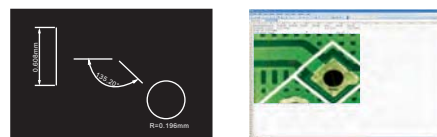


### Comparison tools:

Create line, angle or circle with desired size, to compare with workpieces



### Data export to CAD or Excel:



# WiFi DIGITAL MEASURING MICROSCOPE CODE ISM-WF200



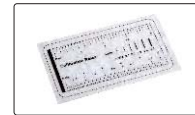
- Maximum working distance is 5m under WiFi mode
- Can be connected to multiple iPads, Android devices or computers together under WiFi mode
- Take pictures and videos
- Supplied with software



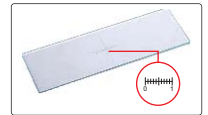
software CD (included)



stand (code ISM-PM-STAND, optional)



plastic calibration rule (graduation 1mm, included)



glass calibration rule (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 |



## STANDARD DELIVERY

|   |      |
|---|------|
| Microscope                                | 1 pc |
| Focus support ring for 80X/150X           | 1 pc |
| Focus support ring for 60X/200X           | 1 pc |
| Glass calibration rule (graduation 0.1mm) | 1 pc |
| Plastic calibration rule (graduation 1mm) | 1 pc |
| Software and USB cable                    | 1 pc |
| AC/DC adapter                             | 1 pc |



## OPTIONAL ACCESSORY

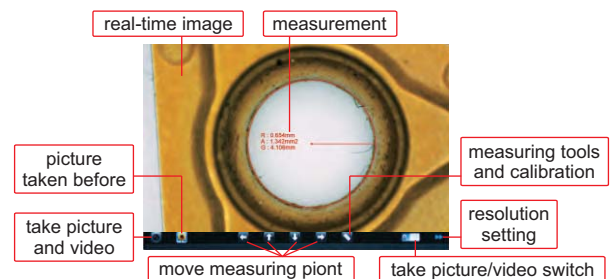
|               |               |
|---------------|---------------|
| Stand         | ISM-PM-STAND  |
| Green filter  | ISM-PM-GREEN  |
| Yellow filter | ISM-PM-YELLOW |
| Blue filter   | ISM-PM-BLUE   |

## 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      |

### 1 Software ISM-PAD (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

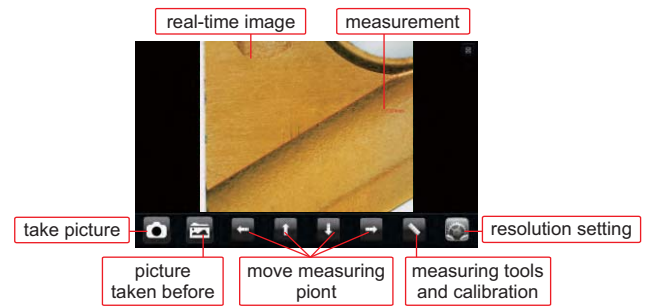


To be continued

Continued from previous page

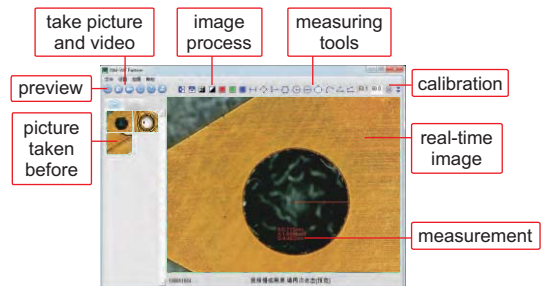
## 2 Software ISM-APK (for Android devices by WiFi)

- measure length of line or distance between two points
- measure radius, girth and area of circle with three points
- measure angle



## 3 Software ISM-WF Partner (for computer by WiFi)

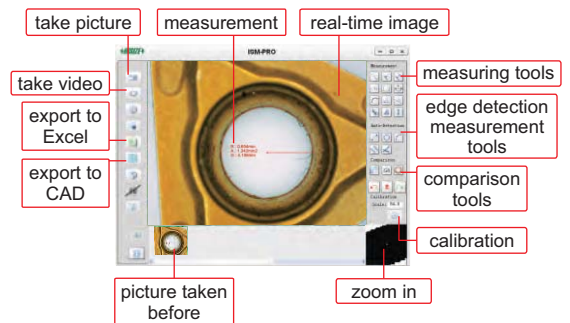
- |  |  |
|--|--|
| measure length of line or distance between two points      | measure angle with two lines                             |
| measure area of polygon                                    | measure radius, girth and area of circle with two points |
| measure angle with three points                            | measure distance between point and line                  |
| measure radius, girth and area of circle with center point | measure radius, length and angle of arc                  |
| measure length of continuous line                          | measure area of rectangle                                |
| measure radius, girth and area of circle with three points |  |



## 4 Software ISM-PRO (for computer by USB cable)

### Measuring tools:

- |   |   |
|---|---|
| measure length of line or distance between two points | measure distance between point and line |
| measure length of continuous line                     | measure area of rectangle               |
| measure radius, length and angle of arc               | measure angle with two lines            |
| measure distance between two circles                  | add number with circle                  |
| measure distance between two parallel lines           | measure angle with three points         |
| measure radius, girth and area of circle              | add text                                |



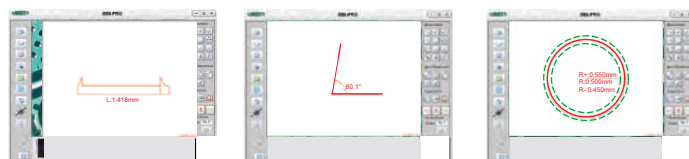
### Edge detection measurement tools:

- |  |  |
|--|--|
| detect line automatically, and calculate length                      | detect two lines automatically, and calculate angle            |
| detect arc automatically, and calculate radius, angle and arc length | detect two parallel lines automatically and calculate distance |
| detect circle automatically, and calculate radius, girth and area    |  |

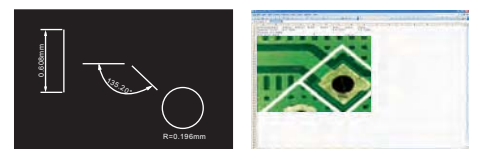
### Comparison tools:

Create line, angle or circle with desired size, to compare with workpieces

- create line
- create angle
- create circle with tolerance



### Data export to CAD or Excel:



# INDUSTRIAL MICROSCOPES



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: 35×30mm                               |        |        |        |  |        |        |        |
| Pupil distance                       | 53~75mm                                       |        |        |        |  |        |        |        |
| Diopter adjustment                   | ±5 diopter (one eyepiece)                     |        |        |        |  |        |        |        |
| Power supply                         | 220V, 50/60Hz **                              |        |        |        |  |        |        |        |
| Dimension (L×W×H)                    | 415×345×380mm                                 |        |        |        |  |        |        |        |
| Weight                               | 14kg  |        |        |        |  |        |        |        |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### 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



## 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   |      |       |       |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### STANDARD DELIVERY

|                  |      |
|------------------|------|
| Main unit        | 1 pc |
| Camera connector | 1 pc |
| Anti-dust cover  | 1 pc |

### OPTIONAL ACCESSORY

|                        |   |                                |
|------------------------|---|--------------------------------|
| Bright field objective | 2.5X plan achromatic objective (focus distance: 11.7mm) | 5104-M700-OB2.5X               |
|                        | 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                |

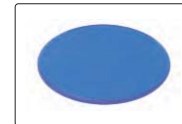
\* Digital camera must be used with camera adapter

## METALLURGICAL MICROSCOPES



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: 75×50mm                       |        |                    |        |  |        |                     |        |
| Pupil distance                       | 53~75mm                               |        |                    |        |  |        |                     |        |
| Diopter adjustment                   | ±5 diopter (one eyepiece)             |        |                    |        |  |        |                     |        |
| Power supply                         | 220V, 50/60Hz**                       |        |                    |        |  |        |                     |        |
| Dimension (L×W×H)                    | 456×260×498mm                         |        |                    |        |  |        |                     |        |
| Weight                               | 11kg                                  |        |                    |        |  |        |                     |        |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### 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



## METALLURGICAL MICROSCOPES



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  |        |        |        |   |        |        |        |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### 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

# PARALLEL LIGHT STEREO MICROSCOPE CODE ISM-ZS200

PARALLEL LIGHT PATH: REDUCE FATIGUE,  
ACCESSORIES CAN BE ADDED INTO LIGHT PATH



coaxial illumination (optional)



optical path splitter (optional)



iris diaphragm (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

## 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-ZS30-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 achromatic objective must be used with sleeve ISM-ZS30-ADAPTER

\*\* Digital camera must be used with optical path splitter

LARGE ZOOM RATIO

## ZOOM STEREO MICROSCOPES (ADVANCED TYPE)

application  
(code: **ISM-ZS100T**)

connect to  
digital camera



LED ring light (optional)



**ISM-ZS100T**

### 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  |
| Digital camera adapter 0.55X 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-ZS30-ADAPTER               |
| LED ring light                           |                              | ISM-ZS-RL                      |
| Digital camera adapter 1X for ISM-ZS100T |                              | ISM-ZS100-DA                   |
| Digital camera for ISM-ZS100T            |                              | ISM-CM20, ISM-CM63, ISM-ZS70-S |

\* 0.5X auxiliary objective must be used with sleeve ISM-ZS30-ADAPTER

## ZOOM STEREO MICROSCOPES (STANDARD TYPE)



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         | 215mm  |            |
| 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  |

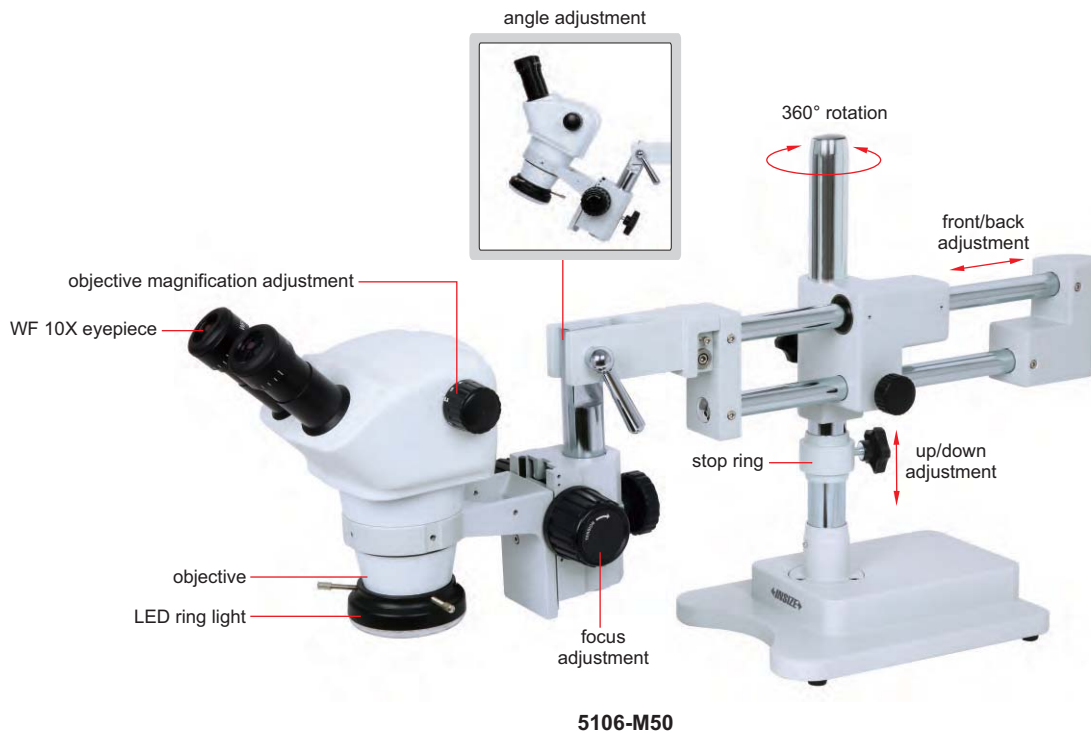
### OPTIONAL ACCESSORY

|                                      |   |                                |
|--------------------------------------|---|--------------------------------|
| 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-ZS30-ADAPTER               |
| Digital camera for ISM-ZS50T         |   | ISM-CM20, ISM-CM63, ISM-ZS70-S |
| Camera adapter 0.5X for ISM-ZS50T ** |   | ISM-MAS-ADAPTER                |

\* 0.5X auxiliary objective must be used with ISM-ZS30-ADAPTER

\*\* Digital camera must be used with camera adapter 0.5X

## ZOOM STEREO MICROSCOPES (WITH UNIVERSAL STAND)



## SPECIFICATION

| Code                          | 5106-M50                            | 5106-M50T  |
|-------------------------------|-------------------------------------|------------|
| 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                             |            |
| 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)             | 790×230×430mm                       |            |
| Weight                        | 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                 |
| Sleeve for auxiliary objective       |                                    | ISM-ZS30-ADAPTER               |
| Digital camera for 5106-M50T         |                                    | ISM-CM20, ISM-CM63, ISM-ZS70-S |
| Camera adapter 0.5X for 5106-M50T ** |                                    | ISM-MAS-ADAPTER                |

\* 0.5X auxiliary objective must be used with ISM-ZS30-ADAPTER

\*\* Digital camera must be used with camera adapter 0.5X

## 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         | 147mm  |
| 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 MICROSCOPE (LOW MAGNIFICATION) CODE 5305-ZS80



### SPECIFICATION

|                               |                           |
|-------------------------------|---------------------------|
| 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                     |
| Dimension (L×W×H)             | 280×160×370mm             |
| Weight                        | 3.7kg                     |

### 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       |



LED ring light (optional)

## POLARIZING MICROSCOPE CODE ISM-POL1000



- Widely used in geology, mineralogy, fossil fuel exploration
- Single polarization, orthogonal 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      |

## DIGITAL CAMERA FOR MICROSCOPES CODE ISM-CM63

ATTENTION: ADAPTERS ARE NEEDED  
ACCORDING TO MICROSCOPES



- 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

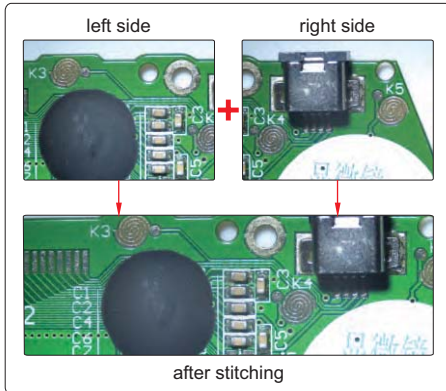
adapter 0.75X  
(optional)



application



automatic image stitching (expand field of view)



software (included)

**selectable resolution**

**histogram (quantify the distribution of color and brightness)**

**measurement items**

**real time gray calibration**

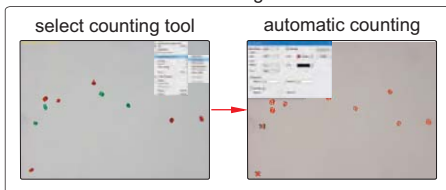
**black balance (reduce color difference)**

**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.

counting



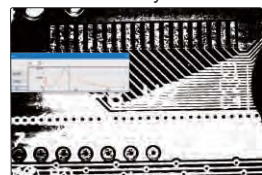
focus stacking



### Measuring tools:

- |  |   |  |  |
|--|---|--|--|
|  | measure length of line or distance between two points |  | measure rectangle                                |
|  | measure distance between two parallel lines           |  | measure width and diameter of ring               |
|  | measure angle   |  | measure diameter, length, perimeter angle of arc |
|  | measure radius, girth and area of circle              |  | measure area of polygon                          |
|  | measure axis lengths, girth and area of ellipse       |  | measure center distance between two circles      |
|  | calibration   |  | 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                                 |

**STANDAER DELIVERY**

|                             |      |
|-----------------------------|------|
| Camera (USB cable included) | 1 pc |
| Software                    | 1 pc |

**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                 |

**OPTIONAL ACCESSORY**

|               |             |
|---------------|-------------|
| Adapter 0.75X | ISM-AD-0D75 |
|---------------|-------------|

**SMART CAMERA  
CODE ISM-MV10**



- Built-in software, operated by mouse.
- Automatically calculate, store the test results and export 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  |
| Opreating 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.) |
| Working 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   |

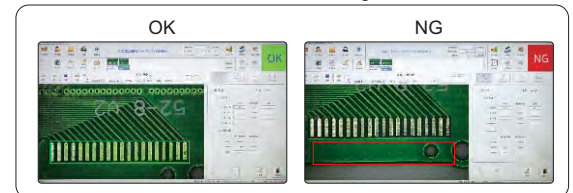
**SOFTWARE**

presence or absence of objects



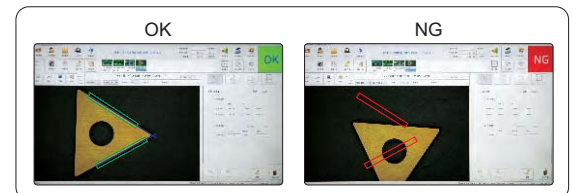
select the area and specify the target, the camera will automatically detect the presence or absence of the target.

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**

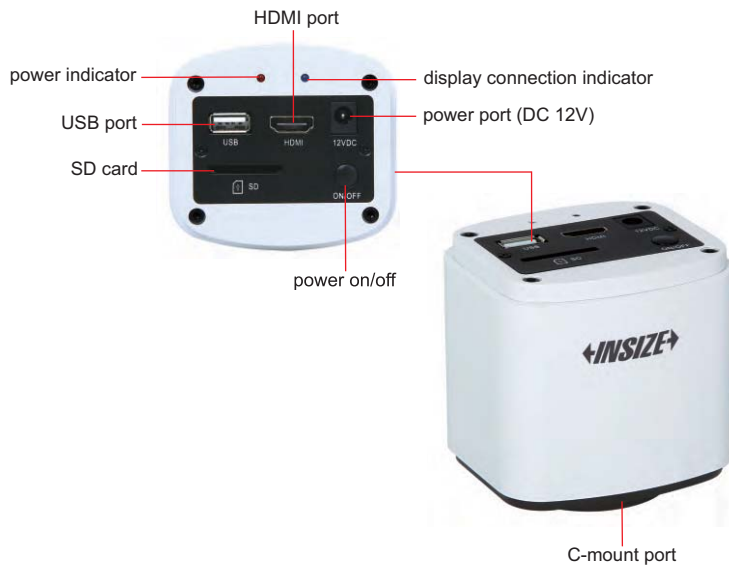
|                          |      |
|--------------------------|------|
| Camera (with HDMI cable) | 1 pc |
| Software                 | 1 pc |

## DIGITAL CAMERA FOR MICROSCOPES CODE ISM-CM20

ATTENTION: ADAPTERS ARE NEEDED  
ACCORDING TO MICROSCOPES

FOCUS  
STACKING

AUTOMATIC IMAGE  
STITCHING



adapter 0.5X (optional)



application

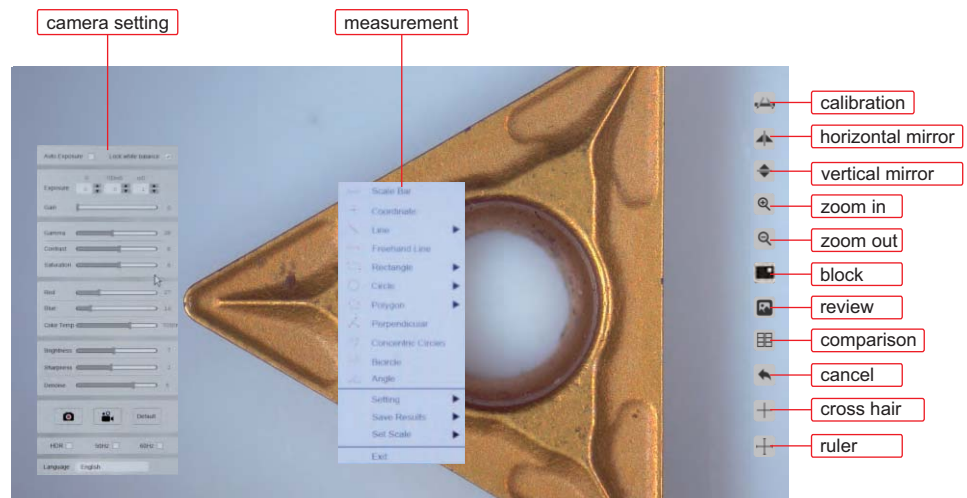


- 1080P high-definition image
- Can be connected with displays or computers
- Built-in simple measuring software for displays, without computer
- Professional measuring software for computers is included
- For bright field, dark field or fluorescent field
- Automatic exposure, white balance, gain adjustment, gamma correction, brightness contrast adjustment, saturation adjustment, chroma sharpness adjustment
- Focus stacking, automatic image stitching

### 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

continued from previous page

**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 |
| Mouse                      | 1 pc |
| HDMI cable                 | 1 pc |
| USB cable                  | 1 pc |
| Power supply               | 1 pc |

**OPTIONAL ACCESSORY**

|              |                 |
|--------------|-----------------|
| Adapter 0.5X | ISM-MAS-ADAPTER |
|--------------|-----------------|

# METALLURGICAL ANALYSIS SOFTWARE AND CAMERA CODE ISM-MAS100

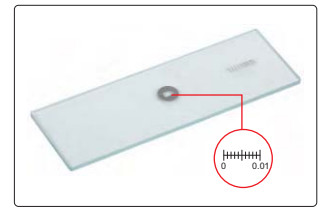
- More than 100 standards (ISO, ASTM, JIS, etc.)
- For metallurgical microscopes
- The camera can be inserted into the eyepiece tube or camera connector of microscopes
- Metallurgical analysis software is included, which can make comparative analysis, measurement and evaluation of various materials



application



software CD (included)



glass calibration rule (included, graduation 0.01mm)

metallurgical analysis software (included)

tool bar

gallery

This software can be used with variety of metallurgical microscopes for acquisition, processing, analysis, report generation of metallurgical images

metallurgical module list

Select autoAnalysis Item

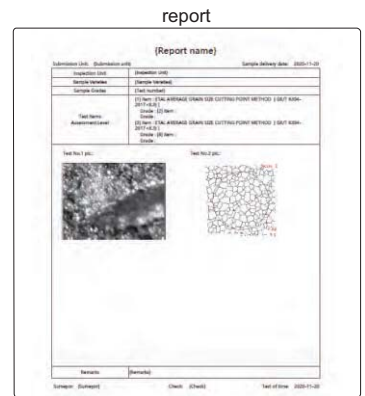
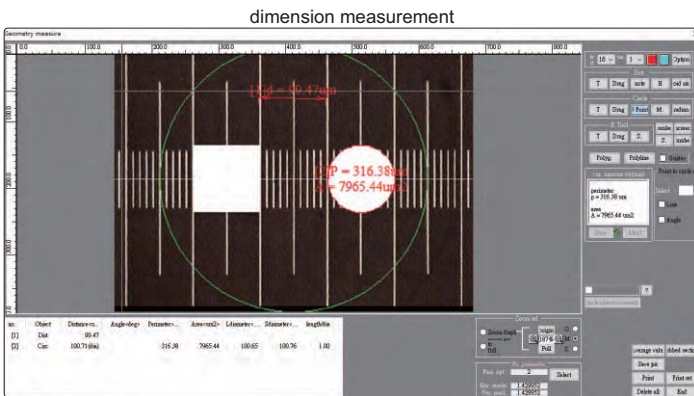
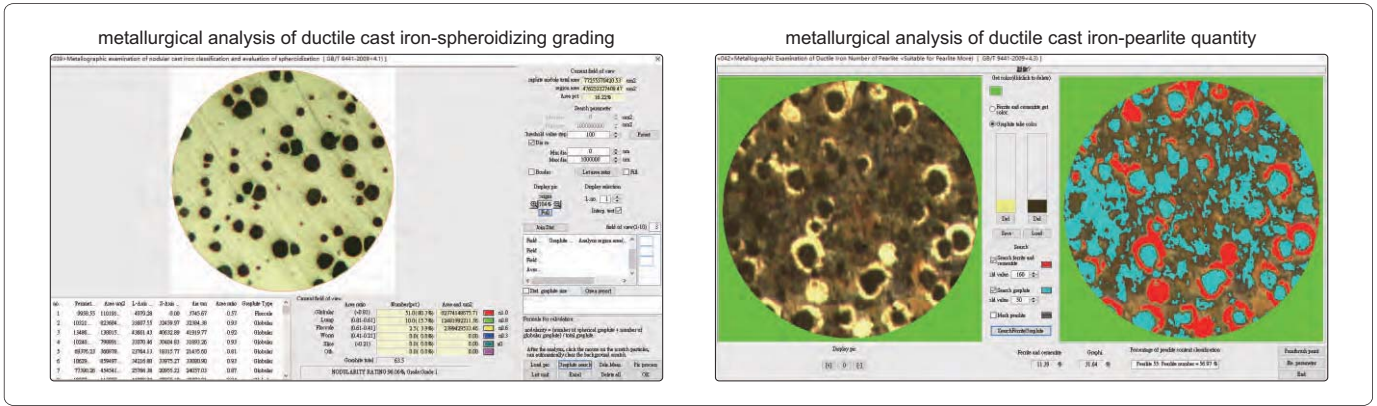
- [001] METHOD OF AVERAGE GRAIN SIZE AREA OF METAL
- [003] METHOD OF AVERAGE GRAIN SIZE AREA OF METAL
- [002] METAL AVERAGE GRAIN SIZE CUTTING POINT METHOD
- [002] METAL AVERAGE GRAIN SIZE COMPARISON METHOD
- [004] Details of Average Grain Size Testing for Other Metals and Alloys
- [005] Standard for Dual Grain Size Characterization Test Method Area Fraction Evaluation Comparison Chart
- [006] Standard for Dual Grain Size Characterization Test Method\_M1\_Micrographs of Dual Grain Size Types
- [007] Standard for Dual Grain Size Characterization Test Method\_M1\_Micrographs of Dual Grain Size Types
- [008] Standard for Dual Grain Size Characterization Test Method\_M2\_Application of Statistical Program for Determining Grain Size Distribution
- [009] steel apparent grain size of micrographic estimating(automated) EN
- [010] steel apparent grain size of micrographic estimating(transversal method) EN
- [011] Determination of nonmetallic inclusion content in steel by standard grading diagram
- [012] Evaluation Method of Inclusion Content in Steel\_method (short field of view method)
- [013] Evaluation Method of Inclusion Content in Steel\_method (Low Inclusion Content Method)
- [014] Evaluation Method of Inclusion Content in Steel\_method
- [015] Metallurgical examination method. Microscopic examination of non-metallic inclusions in high quality steel by metallographic diagram
- [016] Metallurgical examination of precious metal cuprous oxide
- [017] Determination of decarburization depth of steel
- [018] DETERMINATION OF FERRITIC GRAIN SIZE OF LOW CARBON STEEL COIL ROLLED SHEET GRAIN ELONGATION
- [019] Determination of Phase Area Content of Stainless Steel
- [020] Metallurgical Examination of Gray Cast Iron Graphite Distribution Shape
- [021] Metallurgical Examination of Gray Cast Iron Graphite Length (Manual Analysis)
- [022] Metallurgical Examination of Gray Cast Iron Graphite Length (Automatic Analysis)
- [023] Metallurgical Examination of Gray Cast Iron Number of Pearlite
- [024] Metallurgical Examination of Gray Cast Iron Number of Carbides
- [025] Metallurgical Examination of Gray Cast Iron Number of Phosphorus Eutectic
- [026] Metallurgical Examination of Gray Cast Iron Determination of the Number of Eutectic Groups of Cast Iron
- [027] Metallurgical examination of gray cast iron Phosphorus eutectic type etc.
- [028] Quantitative metallurgical determination
- [029] Free cementite
- [030] Pearlite in Low Carbon Deformed Steel
- [031] Pearl tissue
- [032] Microstructure Assessment of Steel Calculation of Transite Content
- [033] Microstructure Assessment of Steel Calculation of Transite Content
- [034] Metallurgical Retained Austenite Needle Length Rating of Carburized Gear For Automobile
- [035] Metallurgical Retained Austenite Rating of Carburized Gears For Automobile
- [036] Metallurgical Retained Austenite Rating of Carburized Gears For Automobile

Multi-module grad [F5] OK Cancel

To be continued

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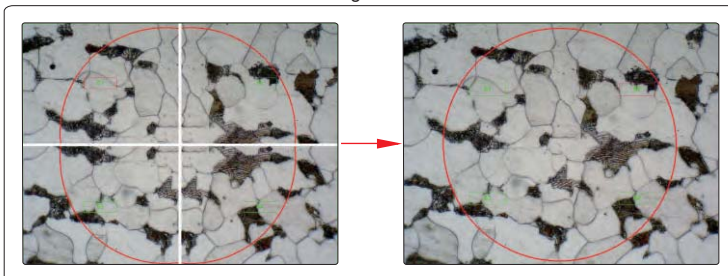
examples of metallurgical analysis



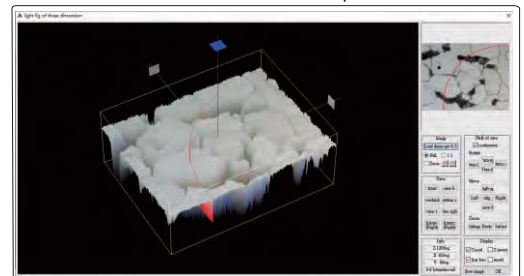
focus stacking



image stitch



three dimension map



SPECIFICATION

|              |   |
|--------------|---|
| Sensor       | 1/2" CMOS                                     |
| Pixel        | 3M  |
| Resolution   | 2048x1536                                     |
| Frame rate   | 6fps  |
| Exposure     | manual or automatic, adjustable exposure time |
| Power supply | USB port                                      |
| Weight       | 400g  |

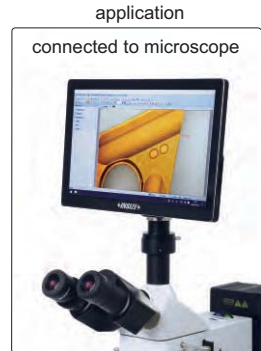
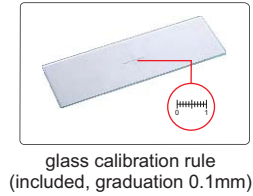
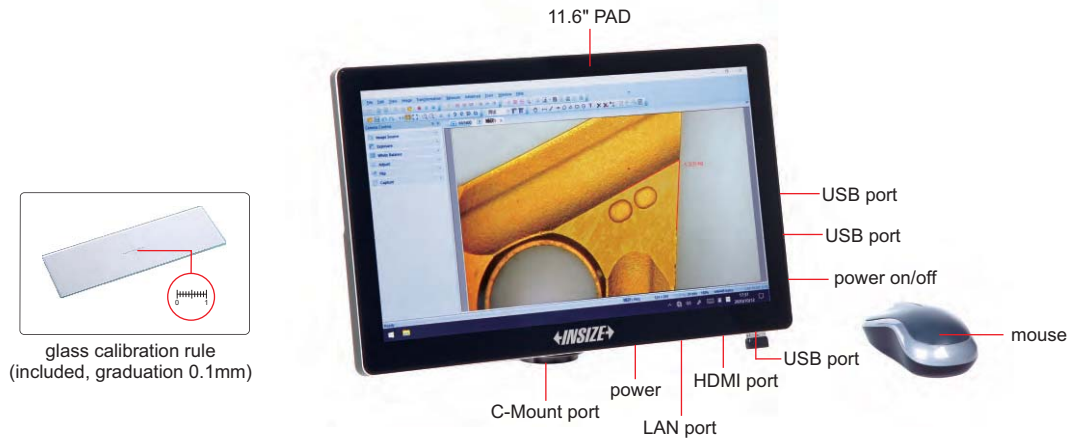
STANDAER DELIVERY IS

|  |      |
|--|------|
| Camera (USB cable included)                | 1 pc |
| Software                                   | 1 pc |
| Glass calibration rule (graduation 0.01mm) | 1 pc |

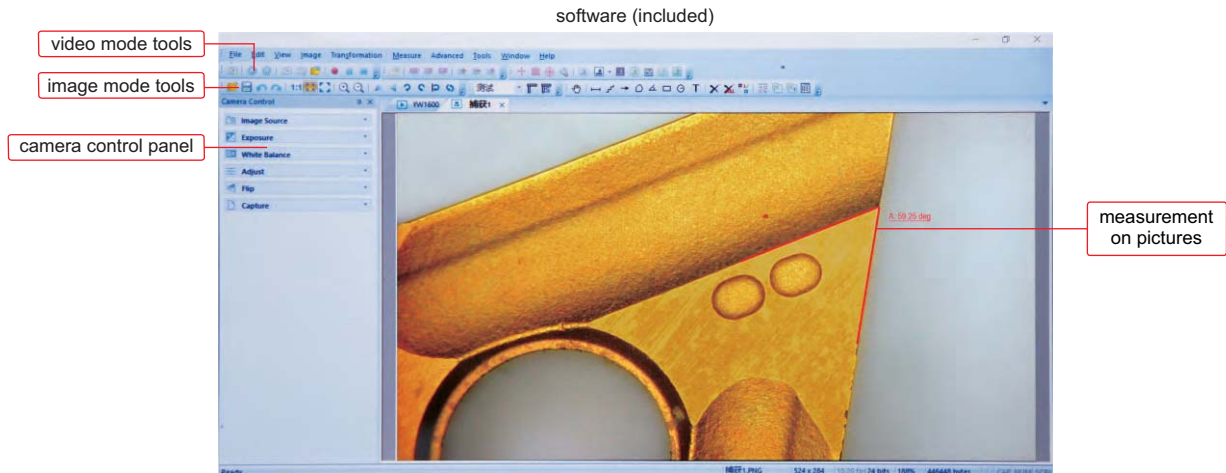
# DIGITAL CAMERA FOR MICROSCOPES (WITH PAD) CODE ISM-ZS70-S

ATTENTION: CAMERA CONNECTOR AND ADAPTER ARE NEEDED ACCORDING TO MICROSCOPES

MEASUREMENT, TAKE PICTURES AND VIDEOS



- 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



### Measuring tools

- measure line
- measure meander line
- arrow mark
- measure polygon
- calibration
- measure angle
- measure rectangle
- measure circle
- text mark
- show/hide scale

### SPECIFICATION

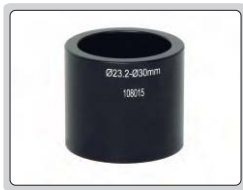
|                   |   |
|-------------------|---|
| Sensor            | 1/2.3" CMOS   |
| Pixel             | 16M   |
| Resolution        | 800×600, 1600×1200, 1920×1080, 2048×1536, 2304×1728, 2592×1944, 4608×3456 |
| Frame rate        | 30fps (1920×1080)   |
| Output            | HDMI, USB 3.0   |
| 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 rule (graduation 0.1mm) | 1 pc |
| AC/DC adapter                             | 1 pc |

## CAMERA ADAPTERS

- Ø23.2/30mm eyepiece adapter is included
- Suitable for digital cameras ISM-CM20, ISM-CM63, ISM-ZS70-S



Ø23.2/30mm eyepiece adapter (included)



**0.5X camera adapter (fixed focus distance) ISM-AD-0D5**



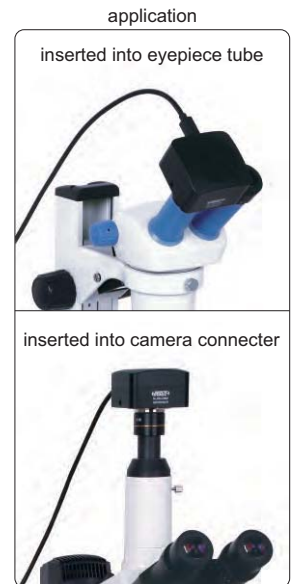
**0.75X camera adapter (fixed focus distance) ISM-AD-0D75**



**0.5X camera adapter (adjustable focus distance) ISM-AD-A0D5**



**0.75X camera adapter (adjustable focus distance) ISM-AD-A0D75**



### 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

### 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                          |                              |                               |                                |



ISM-PM100

### STANDARD DELIVERY

|               |       |
|---------------|-------|
| Main unit     | 1 pc  |
| Pen light     | 1 pc  |
| Battery (AAA) | 2 pcs |

## TABLE MAGNIFIER WITH ILLUMINATION CODE 7517-3D

- Four steps brightness adjustment
- LED illumination, working life 20000h
- Resin lens

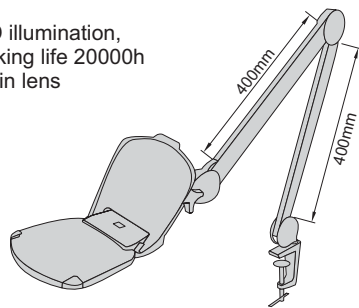
### SPECIFICATION

|                      |                                |
|----------------------|--------------------------------|
| <b>Magnification</b> | 1.75X                          |
| <b>Diopter</b>       | 3D                             |
| <b>Lens diameter</b> | Ø125mm                         |
| <b>Illumination</b>  | power: 3W, illumination: 260lm |
| <b>Power supply</b>  | power adapter 12V, 1A          |

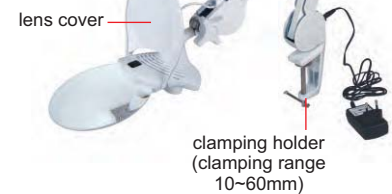


## TABLE MAGNIFIERS WITH ILLUMINATION

- LED illumination, working life 20000h
- Resin lens



7520-320D



7521-3D

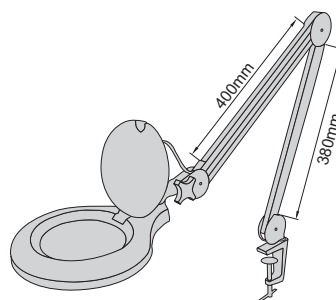
### SPECIFICATION

| Code                  | 7520-320D                      | 7521-3D |
|-----------------------|--------------------------------|---------|
| <b>Magnification</b>  | two magnifications 1.75X/6X    | 1.75X   |
| <b>Diopter</b>        | 3D/20D                         | 3D      |
| <b>Lens dimension</b> | 160×127mm                      | Ø126mm  |
| <b>Illumination</b>   | power: 6W, illumination: 550lm |         |
| <b>Power supply</b>   | power adapter 12V, 1A          |         |

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## TABLE MAGNIFIER WITH ILLUMINATION CODE 7516-5D

- LED illumination, working life 20000h



7516-5D

### SPECIFICATION

|                      |                                |
|----------------------|--------------------------------|
| <b>Magnification</b> | 2.25X                          |
| <b>Diopter</b>       | 5D                             |
| <b>Lens diameter</b> | Ø122mm                         |
| <b>Illumination</b>  | power: 7W, illumination: 420lm |
| <b>Power supply</b>  | 100~240V, 50~60Hz              |



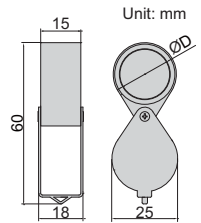
## FOLDING MAGNIFIER

- Glass lens

| Code   | Magnification | Lens diameter (ØD) |
|--------|---------------|--------------------|
| 7511-8 | 10X           | Ø21mm              |



7511-8



## FOLDING MAGNIFIER WITH ILLUMINATION

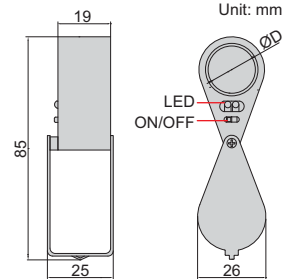


- Resin lens
- Powered by 3xLR927 batteries (included)

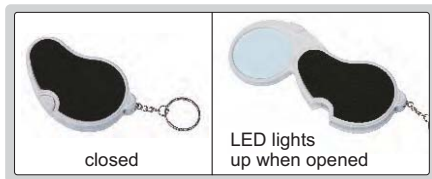
| Code    | Magnification | Lens diameter (ØD) |
|---------|---------------|--------------------|
| 7515-10 | 10X           | Ø21mm              |



7515-10



## FOLDING MAGNIFIER WITH ILLUMINATION

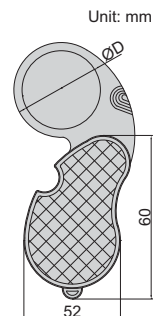


- Resin lens
- Powered by 2xCR1620 batteries (included)
- LED lights up automatically when opened

| Code   | Magnification | Lens diameter (ØD) |
|--------|---------------|--------------------|
| 7514-1 | 2.5X          | Ø45mm              |

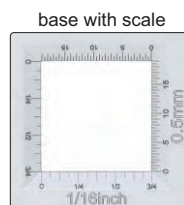


7514-1

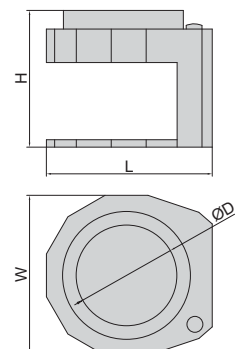


## MAGNIFIER WITH ILLUMINATION

- 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 |

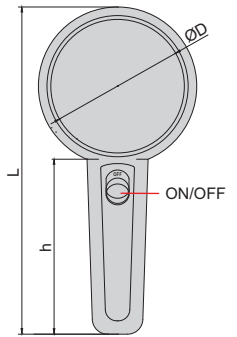
## MAGNIFIERS WITH ILLUMINATION

- 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 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               |

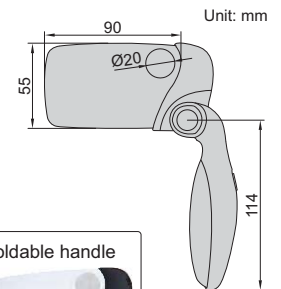
## MAGNIFIER WITH ILLUMINATION

18

- Two magnifications
- LED illumination
- Powered by 2 pcs AAA batteries (included)
- Resin lens



7518-26



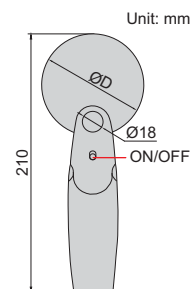
| Code    | Magnification | Lens size |
|---------|---------------|-----------|
| 7518-26 | 2X/6X         | 90x55mm   |

## MAGNIFIER WITH ILLUMINATION

- Handheld and desk-type use
- Two magnifications
- LED illumination
- Powered by 2xAA batteries (included)
- Resin lens



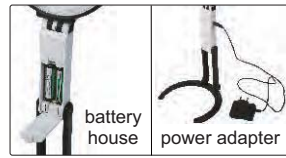
7519-26



| Code    | Magnification | Lens diameter (ØD) |
|---------|---------------|--------------------|
| 7519-26 | 2X/6X         | 90mm               |

## THREE WAYS MAGNIFIER WITH ILLUMINATION

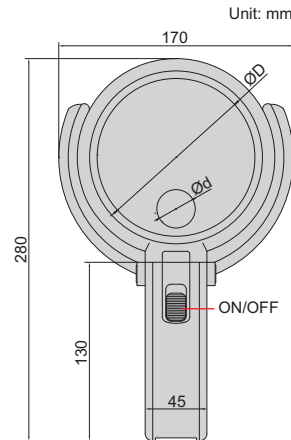
- Resin lens
- Powered by 2xAA batteries (included) or power adapter (110~240V, 50~60Hz)



three ways use



| Code   | Magnification | Lens diameter (ØD) | Lens diameter (Ød) |
|--------|---------------|--------------------|--------------------|
| 7512-1 | 2X/4X         | Ø120mm             | Ø28mm              |



7512-1

## MAGNIFICATION GLASSES

interchangeable lenses



head band (included)



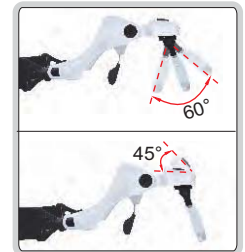
- Resin lens
- Interchangeable lenses
- Powered by 3 pcs AAA batteries (included)

| Code     | Lens number | Magnification |
|----------|-------------|---------------|
| 7523-3D5 | 5 pcs       | 1X            |
|          |             | 1.5X          |
|          |             | 2X            |
|          |             | 2.5X          |
|          |             | 3.5X          |



7523-3D5

adjustable lens and LED angle



adjustable holder angle



moveable lens for focus

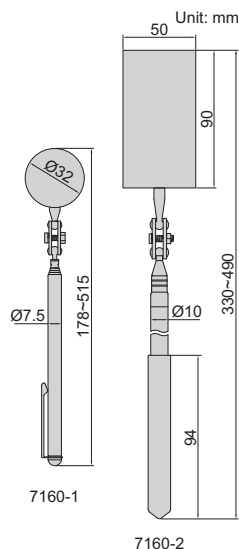


2 pcs LED

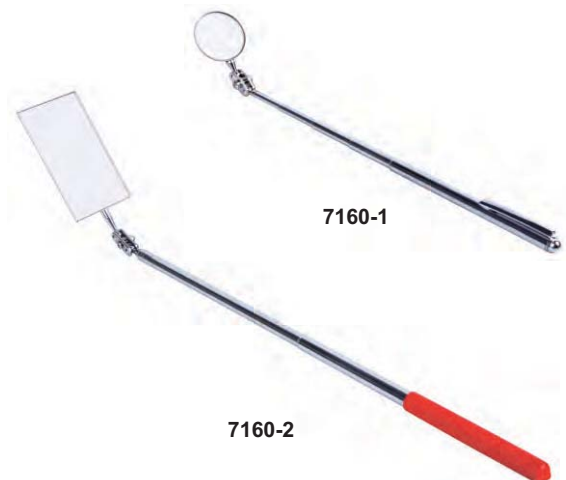


## TELESCOPING INSPECTION MIRRORS

- Inspect hidden areas
- Rotation of the mirror: 360°
- Length of handle is adjustable, handle is made of stainless steel



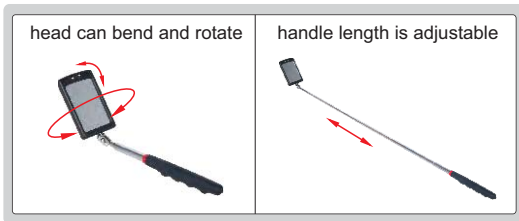
| Code   | Size of mirror | Length    |
|--------|----------------|-----------|
| 7160-1 | Ø32mm          | 178~515mm |
| 7160-2 | 50x90mm        | 330~490mm |



7160-1

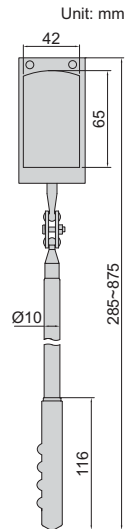
7160-2

## TELESCOPING INSPECTION MIRROR (WITH ILLUMINATION)



- Inspect hidden areas
- Head can bend and rotate
- Telescoping handle, made of stainless steel
- With two CR2032 batteries

| Code   | Size of mirror | Length    |
|--------|----------------|-----------|
| 7162-1 | 65x42mm        | 285~875mm |

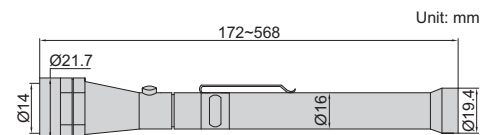


## TELESCOPING MAGNETIC PICK-UP AND FLASHLIGHT

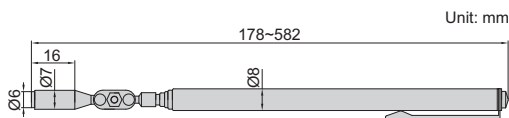


- For illumination and pick up steel parts in hidden areas
- Head can bend
- Telescoping handle, made of stainless steel
- Magnetic head and end
- With four LR44 batteries

| 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

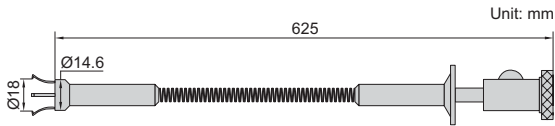


- Pick up steel parts from hidden areas
- Rotation of magnetic head: 360°
- Length of handle is adjustable, handle is made of stainless steel

| Code   | Size of magnetic tip | Magnetic force | Length    |
|--------|----------------------|----------------|-----------|
| 7161-1 | Ø6mm                 | 0.45kgf        | 178~582mm |

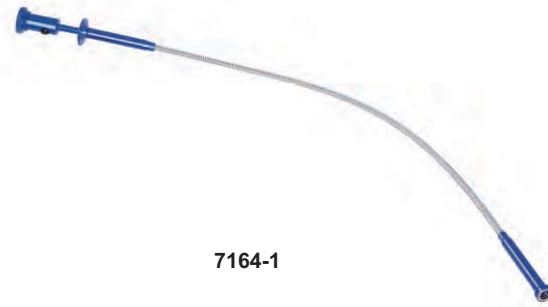


## FLEXIBLE PICK-UP AND FLASHLIGHT

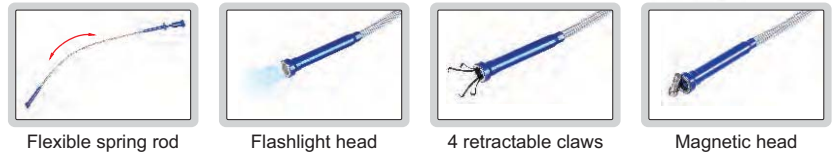


- To illumination, to pick up parts from hidden areas, or to pick up steel parts
- Flexible spring rod, made of stainless steel
- Three LR44 batteries

| Code   | Magnetic force | Flashlight range | Battery life |
|--------|----------------|------------------|--------------|
| 7164-1 | 0.9kgf         | 1m               | 24h          |



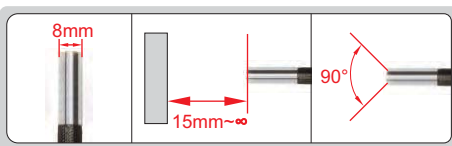
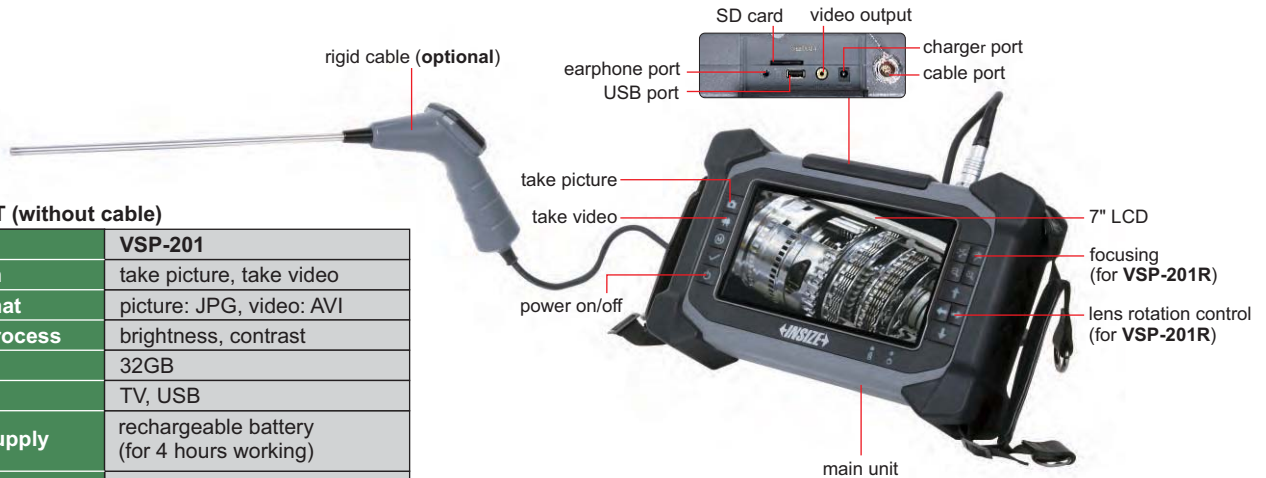
7164-1



## MULTIPURPOSE VIDEOSCOPE

### MAIN UNIT (without cable)

|               |  |
|---------------|--|
| Code          | VSP-201                                    |
| Function      | take picture, take video                   |
| File format   | picture: JPG, video: AVI                   |
| Image process | brightness, contrast                       |
| Memory        | 32GB                                       |
| Output        | TV, USB                                    |
| Power supply  | rechargeable battery (for 4 hours working) |
| Dimension     | 260×170×65mm                               |
| Weight        | 1.2kg                                      |



diameter (D) focus distance (F) angle of view (θ)

### FOUR-DIRECTION CABLE (FRONT VIEW)

|                 |                    |                            |
|-----------------|--------------------|----------------------------|
| Code            | VSP-201D           |                            |
| Cable           | length             | 3m                         |
|                 | type               | tungsten wire weaved cable |
| Lens            | diameter (D)       | 8mm                        |
|                 | focus distance (F) | 15mm~∞                     |
|                 | angle of view (θ)  | 90°                        |
|                 | illumination       | 6 pcs LED                  |
|                 | pixel              | 1M                         |
|                 | resolution         | 1280×720                   |
| dust/waterproof |                    | IP67                       |

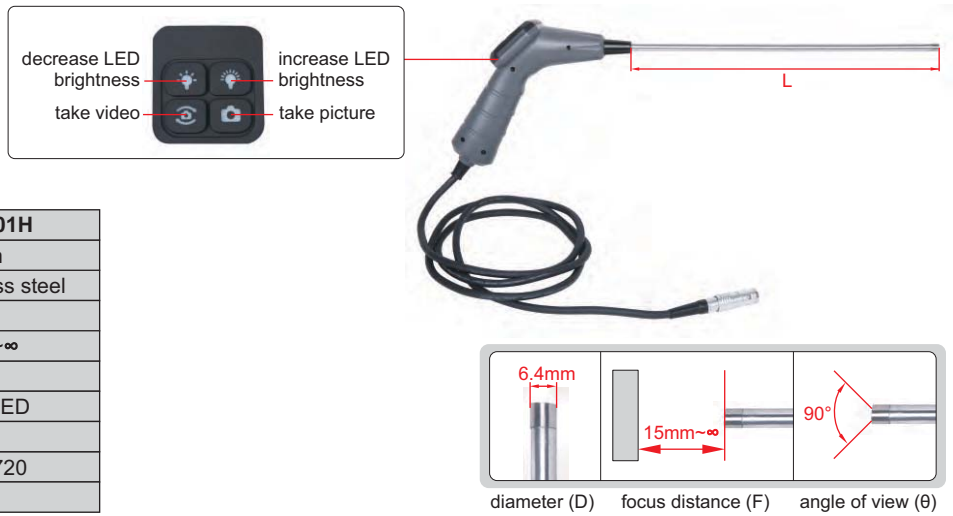


bend in any direction 360° swivel in clockwise and counter-clockwise bend within 120°



To be continued

Continued from previous page

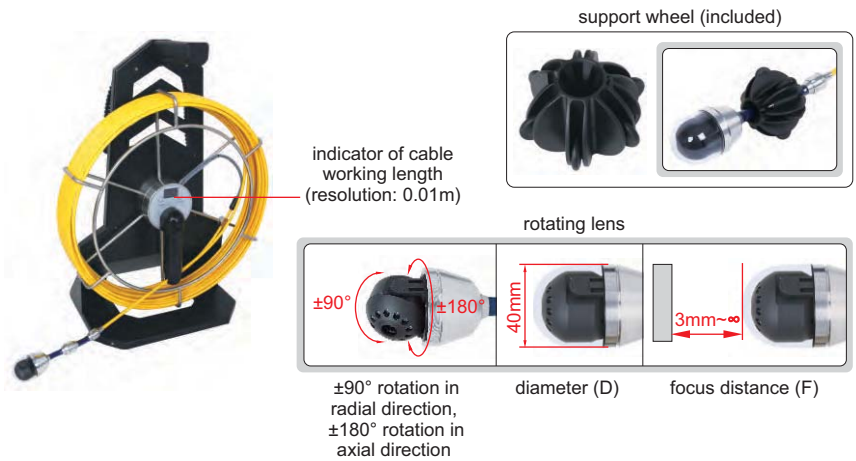


### RIGID CABLE

|              |                    |                 |
|--------------|--------------------|-----------------|
| <b>Code</b>  |                    | <b>VSP-201H</b> |
| <b>Cable</b> | length             | 250mm           |
|              | type               | stainless steel |
| <b>Lens</b>  | diameter (D)       | 6.4mm           |
|              | focus distance (F) | 15mm~∞          |
|              | angle of view (θ)  | 90°             |
|              | illumination       | 6 pcs LED       |
|              | pixel              | 1M              |
|              | resolution         | 1280×720        |
|              | dust/waterproof    | IP64            |

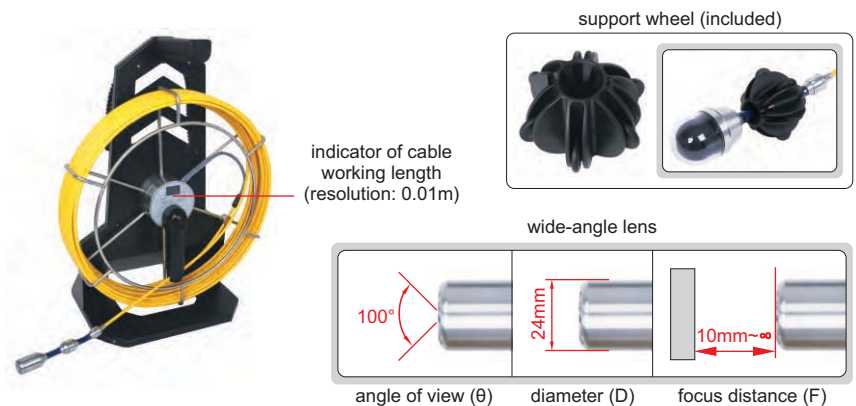
### ROTATING LENS CABLE

|              |                    |                           |
|--------------|--------------------|---------------------------|
| <b>Code</b>  |                    | <b>VSP-201R</b>           |
| <b>Cable</b> | length             | 30m                       |
|              | type               | high strength glass fibre |
| <b>Lens</b>  | diameter (D)       | 40mm                      |
|              | focus distance (F) | 3mm~∞                     |
|              | angle of view (θ)  | 100°                      |
|              | illumination       | 12 pcs LED                |
|              | pixel              | 0.3M                      |
|              | resolution         | 800×480                   |
|              | dust/waterproof    | IP67                      |
| lens control | motorized          |                           |



### WIDE-ANGLE LENS CABLE

|              |                    |                           |
|--------------|--------------------|---------------------------|
| <b>Code</b>  |                    | <b>VSP-201W</b>           |
| <b>Cable</b> | length             | 30m                       |
|              | type               | high strength glass fibre |
| <b>Lens</b>  | diameter (D)       | 24mm                      |
|              | focus distance (F) | 10mm~∞                    |
|              | angle of view (θ)  | 100°                      |
|              | illumination       | 12 pcs LED                |
|              | pixel              | 0.3M                      |
|              | resolution         | 800×480                   |
|              | dust/waterproof    | IP67                      |



### ADJUSTABLE SUPPORT

| Code         | Working diameter (D) | Remark                   |
|--------------|----------------------|--------------------------|
| VSP-201-R200 | 60~200mm             | for VSP-201R or VSP-201W |



ATTENTION: RESISTANCE TO ACID AND ALKALI LIQUID (CONSULT IS NEEDED)

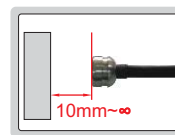
## PIPE VIDEOSCOPE CODE ISV-VP280

**IP68**  
WATERPROOF

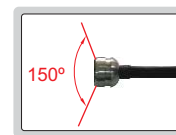


### SPECIFICATION

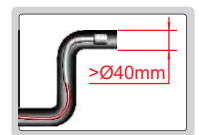
|           |                 |                                 |
|-----------|-----------------|---------------------------------|
| Lens      | diameter        | 28mm                            |
|           | dust/waterproof | IP68                            |
|           | pixel           | 0.3M                            |
|           | resolution      | 640×480                         |
|           | frame           | 30fps                           |
| Cable     | length          | 30m                             |
|           | dust/waterproof | IP68                            |
|           | type            | semi-rigid                      |
| Main unit | function        | take picture and video          |
|           | file format     | picture: JPG, video: ASF        |
|           | image process   | mirror, rotate, zoom (1.5X, 2X) |
|           | memory          | 4G SD card                      |
|           | output          | TV, USB                         |
|           | power supply    | 4×AA batteries                  |
| Weight    |                 | 5kg                             |



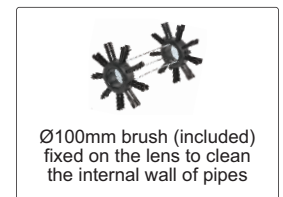
focus distance



angle of view



can turn at least two times in the pipe (>∅40mm)



### STANDARD DELIVERY

|                                   |       |
|-----------------------------------|-------|
| Main unit                         | 1 pc  |
| Cable with lens                   | 1 pc  |
| Stand                             | 1 pc  |
| Indicator of cable working length | 1 pc  |
| 4G SD card                        | 1 pc  |
| ∅100mm brush                      | 1 pc  |
| AA battery                        | 4 pcs |
| AAA battery                       | 2 pcs |
| Video output cable                | 1 pc  |
| USB cable                         | 1 pc  |

### OPTIONAL ACCESSORY

|                      |                |
|----------------------|----------------|
| ∅50mm centering ring | ISV-VP280-R50  |
| ∅150mm brush         | ISV-VP280-B150 |

## SIDE VIEW VIDEOSCOPE (RIGID) CODE ISV-RV



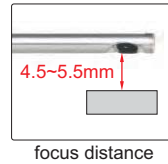
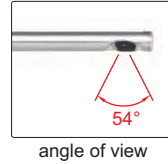
**IP57**  
WATERPROOF

to observe internal wall of holes  
(minimum diameter  $\varnothing 10\text{mm}$ )



### SPECIFICATION

|                       |  |
|-----------------------|--|
| Diameter (D)          | 5.5mm                                      |
| Length (L)            | 350mm                                      |
| Dust/waterproof probe | IP57                                       |
| Pixel                 | 0.3M                                       |
| Resolution            | 640x480                                    |
| Frame rate            | 30fps                                      |
| Function              | take picture, take video                   |
| File format           | picture: JPG, video: AVI                   |
| Memory                | 2G SD card                                 |
| Output                | TV, USB                                    |
| Power supply          | rechargeable battery (for 3 hours working) |
| Weight                | 570g                                       |



### STANDARD DELIVERY

|                    |      |
|--------------------|------|
| Main unit          | 1 pc |
| 2G SD card         | 1 pc |
| AC/DC adapter      | 1 pc |
| Video output cable | 1 pc |
| USB cable          | 1 pc |

## VIDEOSCOPE CODE ISV-E10



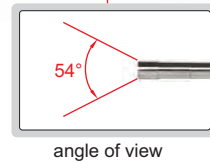
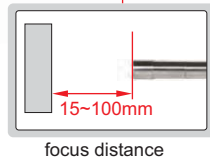
**ATTENTION: THE CABLE CAN BE BENT BUT CAN'T BE SET AT A FIXED SHAPE**

**OPTIONAL CABLE LENGTH 3M, 5M AND 10M**

**IP65**  
WATERPROOF

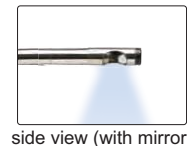
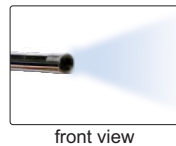
### SPECIFICATION

|              |  |  |
|--------------|--|--|
| Lens         | diameter                                   | 5.5mm                                  |
|              | pixel                                      | 0.3M                                   |
|              | resolution                                 | 640x480                                |
|              | frame rate                                 | 30fps                                  |
| Cable        | length                                     | 1m                                     |
|              | type                                       | steel wire weaved cable                |
| Main unit    | function                                   | take picture, take video               |
|              | file format                                | picture: JPG, video: AVI               |
|              | image process                              | brightness, contrast, color saturation |
|              | memory                                     | 2G SD card                             |
|              | output                                     | TV, USB                                |
| power supply | rechargeable battery (for 3 hours working) |  |
| Weight       | 450g                                       |  |



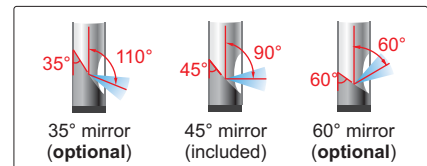
### STANDARD DELIVERY

|                    |      |
|--------------------|------|
| Main unit          | 1 pc |
| Cable with lens    | 1 pc |
| 2G SD card         | 1 pc |
| 45° mirror         | 1 pc |
| AC/DC adapter      | 1 pc |
| Video output cable | 1 pc |
| USB cable          | 1 pc |
| Lens cleaning kit  | 1 pc |



### OPTIONAL ACCESSORY

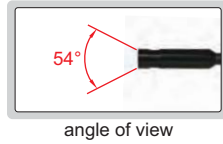
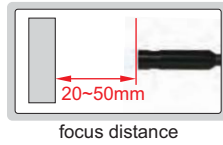
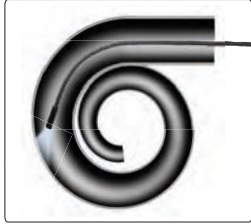
|            |             |
|------------|-------------|
| 35° mirror | ISV-E55-M35 |
| 60° mirror | ISV-E55-M60 |





**IP57**  
WATERPROOF

the cable has high illumination and can be set at any shape. it is suitable to observe large internal space like turbocharger.



memory cable length: 1m



## VIDEOSCOPE CODE ISV-E20

### SPECIFICATION

|           |               |  |
|-----------|---------------|--|
| Lens      | diameter (D)  | 12mm                                       |
|           | pixel         | 0.4M                                       |
|           | resolution    | 720×682                                    |
|           | frame rate    | 30fps                                      |
| Cable     | length        | 1m   |
|           | type          | memory (can be set at any shape)           |
| Main unit | function      | take picture, take video                   |
|           | file format   | picture: JPG, video: AVI                   |
|           | image process | brightness, contrast, color saturation     |
|           | memory        | 2G SD card                                 |
|           | output        | TV, USB                                    |
| Weight    | power supply  | rechargeable battery (for 3 hours working) |
|           |               | 600g                                       |



### STANDARD DELIVERY

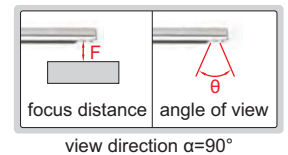
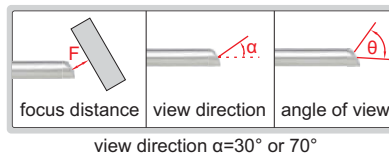
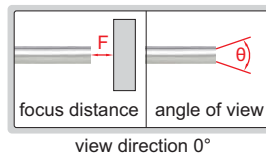
|                    |      |
|--------------------|------|
| Main unit          | 1 pc |
| Cable with lens    | 1 pc |
| 2G SD card         | 1 pc |
| AC/DC adapter      | 1 pc |
| Video output cable | 1 pc |
| USB cable          | 1 pc |
| Lens cleaning kit  | 1 pc |

### OPTIONAL ACCESSORY

|                |                |
|----------------|----------------|
| 45° mirror     | ISV-E20-MIRROR |
| Hook           | ISV-E20-HOOK   |
| Magnet pick up | ISV-E20-MAGNET |



- Focus distance: 2mm, depth of view: 5~100mm
- Dust/waterproof level: IP67
- Can be used in liquid with temperature -10°C~85°C



### SPECIFICATION

| Code       | Length (L) | View direction ( $\alpha$ ) | Diameter (D) | Angle of view ( $\theta$ ) |
|------------|------------|-----------------------------|--------------|----------------------------|
| 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°                         |              |                            |
| ISV-1H4309 | 297mm      | 90°                         |              |                            |

| Code       | Length (L) | View direction ( $\alpha$ ) | Diameter (D) | Angle of view ( $\theta$ ) |
|------------|------------|-----------------------------|--------------|----------------------------|
| ISV-1H6200 | 209mm      | 0°                          | 6mm          | ≥70°                       |
| ISV-1H6203 | 209mm      | 30°                         |              |                            |
| ISV-1H6207 | 209mm      | 70°                         |              |                            |
| ISV-1H6209 | 166mm      | 90°                         |              |                            |
| ISV-1H6320 | 328mm      | 0°                          |              |                            |
| ISV-1H6323 | 328mm      | 30°                         |              |                            |
| ISV-1H6327 | 328mm      | 70°                         |              |                            |
| ISV-1H6329 | 330mm      | 90°                         |              |                            |

### OPTIONAL ACCESSORY

|                             |           |
|-----------------------------|-----------|
| LED light handle            | ISV-1HLED |
| Adjustable LED light source | ISV-1LED1 |
| Camera and display          | ISV-2CAM  |



## RIGID BORESCOPIES

**IP67**  
WATERPROOF

## LED LIGHT HANDLE CODE ISV-1HLED

- For rigid borescopes



battery (included)



charger (included)



### 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 |

## 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             | AC110~220V, 50/60Hz |
| Dimension         | 400×300×112mm       |
| Weight            | 7kg                 |

### STANDARD DELIVERY

|                          |      |
|--------------------------|------|
| Main unit                | 1 pc |
| 1.8m optical fiber cable | 1 pc |

## CAMERA (WITH DISPLAY) CODE ISV-2CAM



TAKE PICTURES  
AND VIDEOS

AUTO FOCUS



- 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)



DATA OUTPUT

CAN BE CONTROLLED BY COMPUTER



# ROUGHNESS TESTER CODE ISR-C002

- 21 roughness parameters
- Display roughness value, profile and curve
- Memory of maximum 100 results
- Automatic power off



printer (optional)



data transmission cable (optional)



software CD (included)



software (included)

control the roughness tester by computer, display roughness value, profile and curve

adjustable stand (included)



probe cover (included)



screen display

measurement result

Rmr analysis

roughness profile

To be continued

Continued from previous page

Unit: mm

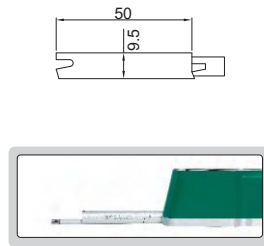
light duty test stand (optional)



heavy duty test stand (optional)



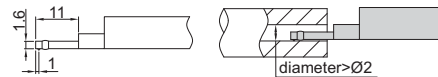
extension rod (optional),  
code ISR-C002-ER



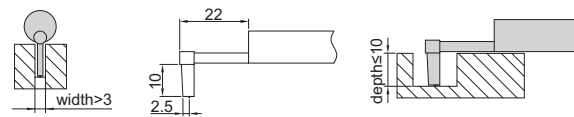
transverse rod (optional),  
code ISR-C002-TR



small hole probe (optional),  
code ISR-C002-SBP



deep groove probe (optional),  
code ISR-C002-DGP



## 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             |                     | 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   |
| Traverse speed    |                     | 0.5mm/s, 1mm/s   |
| Memory            |                     | 100 measurement results  |
| Output            |                     | USB  |
| Power             |                     | 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                      | 1 pc         |
| AC/DC adapter                 | 1 pc         |

## OPTIONAL ACCESSORY

|                         |                  |
|-------------------------|------------------|
| Extension rod           | ISR-C002-ER      |
| Transverse rod          | ISR-C002-TR      |
| Deep groove probe       | ISR-C002-DGP     |
| Small hole probe        | ISR-C002-SBP     |
| Light duty test stand   | ISR-C002-STAND1  |
| Heavy duty test stand   | ISR-C002-STAND   |
| Printer                 | ISR-C002-PRINTER |
| Data transmission cable | ISR-C002-SPC     |



BLUETOOTH TOUCH SCREEN CAN BE OPERATED BY COMPUTERS OR MOBILE PHONES

# ROUGHNESS TESTER (SEPARABLE TYPE) CODE ISR-C300

DATA OUTPUT

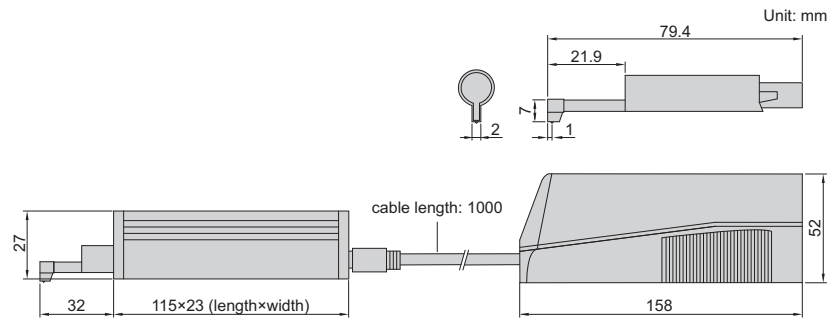


- Roughness tester can be operated by mobile phones (only Android system) or computers
- Data can be sent to Excel by connecting with computers via bluetooth or USB cable
- Support bluetooth printer
- 22 roughness parameters
- Meet ISO, DIN, ANSI, JIS standards
- Display roughness values, profile and curve
- Memory of maximum 100 data and waveform
- Built-in lithium battery, working time more than 50 hours
- Touch screen
- Automatic power off



software CD (included)

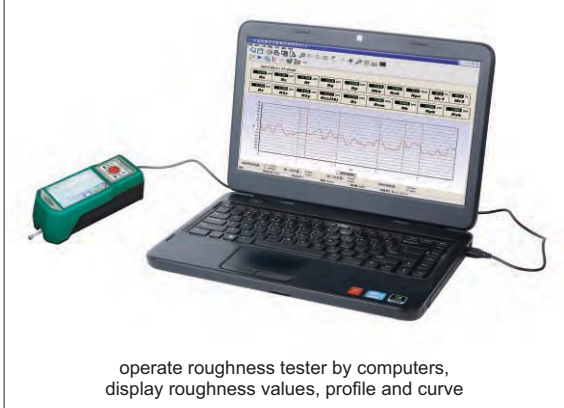
probe and main unit can be combined together



connect to mobile phones via bluetooth (only Android system)



connect to computers via USB cable (software is included)



roughness tester screen display

measurement result

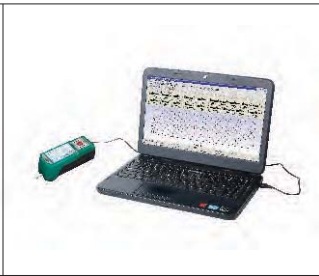
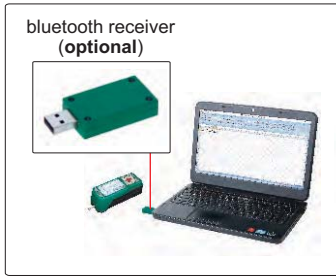
|              |              |
|--------------|--------------|
| Ra= 0.001 μm | Rz= 0.023 μm |
| Rq= 0.004 μm | Rt= 0.023 μm |
| Rp= 0.000 μm | Rv= 0.023 μm |
| R3z= 0.00 μm | R3y= 0.00 μm |

roughness profile

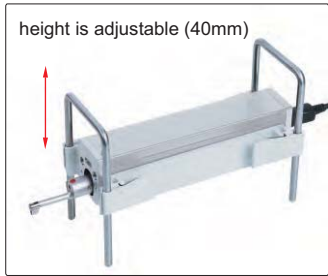
Rmr analysis

| C (Rt) | Rmr   | 0 | 100 |
|--------|-------|---|-----|
| 5%     | 96.7% |   |     |
| 10%    | 96.7% |   |     |
| 15%    | 96.7% |   |     |
| 20%    | 96.7% |   |     |

data can be sent to Excel by connecting to computer via bluetooth or USB cable



adjustable stand (included)



To be continued

Continued from previous page

bluetooth printer (optional)



magnetic stand adapter (included)



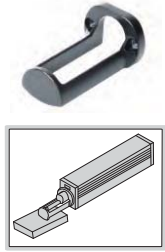
height gage adapter (optional)



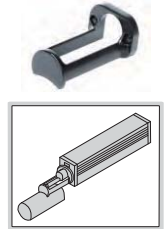
**NOTE:** Please check whether the adapter can fit your height gages. When using **INSIZE** height gages, please use the dial test indicator holder of height gages

probe support (optional)

support for flat surface



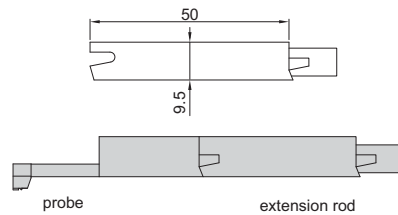
support for cylindrical surface



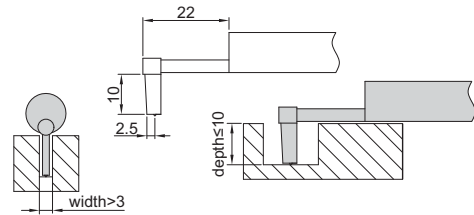
optional probes

Unit: mm

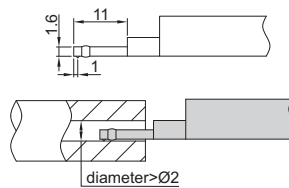
extension rod (optional), code **ISR-C002-ER**



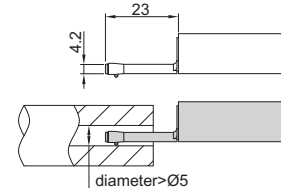
deep groove probe (optional), code **ISR-C002-DGP**



tiny hole probe (optional), code **ISR-C002-SBP**



small hole probe (optional), code **ISR-C002-PROBE**



## 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              | 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-offs |                     | 1~5  |
| Traverse speed     |                     | 0.135mm/s, 0.5mm/s, 1mm/s  |
| Memory             |                     | 100 measurement results  |
| Output             |                     | USB and bluetooth  |
| Power              |                     | built-in rechargeable battery  |
| Dimension (L×W×H)  |                     | 158×64×52mm  |
| Weight             |                     | 400g   |

## STANDARD DELIVERY

|                                   |              |
|-----------------------------------|--------------|
| Main unit                         | 1 pc         |
| Standard probe                    | 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      |
| Bluetooth printer               | ISR-C002-PRINTER  |
| Height gage adapter             | ISR-C300-LB1      |
| Bluetooth receiver              | ISR-C300-RECEIVER |
| Support for flat surface        | ISR-C300-COVER1   |
| Support for cylindrical surface | ISR-C300-COVER2   |

## ROUGHNESS TESTER CODE ISR-C003

fixture for small shafts  
(optional)



calibration block (included)

- Unit:  $\mu\text{m}$ ,  $\mu\text{in}$
- Automatic power off

### STANDARD DELIVERY

|                   |      |
|-------------------|------|
| Main unit         | 1 pc |
| Calibration block | 1 pc |
| AC/DC adapter     | 1 pc |

### SPECIFICATION

|                   |   |                           |
|-------------------|---|---------------------------|
| Parameters        | Ra, Rz, Rq, Rt  |                           |
| Range             | Ra, Rq: 0.05~15 $\mu\text{m}$<br>Rz, Rt: 0.1~50 $\mu\text{m}$               |                           |
| Accuracy          | $\pm 10\%$  |                           |
| Resolution (Ra)   | 0.01 $\mu\text{m}$  |                           |
| Probe             | type  | piezoelectric             |
|                   | stylus radius/angle   | 10 $\mu\text{m}/90^\circ$ |
|                   | stylus material   | diamond                   |
| Measuring force   | 5mN   |                           |
| Measuring unit    | $\mu\text{m}/\mu\text{in}$  |                           |
| 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 |                           |
| Traverse speed    | 0.75mm/s  |                           |
| Power             | built-in rechargeable battery   |                           |
| Dimension (L×W×H) | 106×70×24mm   |                           |
| Weight            | 200g  |                           |

### OPTIONAL ACCESSORY

|                          |                  |
|--------------------------|------------------|
| Fixture for small shafts | ISR-C003-FIXTURE |
|--------------------------|------------------|

## 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, 3.2 $\mu\text{m}$ | 0.29, 0.55, 0.91, 1.74, 2.6, 4.65, 7.87, 15.6 $\mu\text{m}$ | 8 pcs                               |
| ISR-CS316 | Cylindrical grinding     | 0.025, 0.05, 0.1, 0.2, 0.4, 0.8, 1.6, 3.2 $\mu\text{m}$ | 0.3, 0.53, 0.88, 1.56, 2.64, 4.4, 7.71, 15.3 $\mu\text{m}$  | 8 pcs                               |
| ISR-CS317 | Flat lapping             | Criss-cross   | 0.025, 0.05, 0.1, 0.2 $\mu\text{m}$                         | 0.4, 0.6, 0.74, 1.26 $\mu\text{m}$  |
|           |                          | Parallel  | 0.025, 0.05, 0.1, 0.2 $\mu\text{m}$                         | 0.34, 0.56, 1.12, 1.5 $\mu\text{m}$ |
| ISR-CS318 | Cylindrical lapping      | 0.025, 0.05, 0.1, 0.2 $\mu\text{m}$                     | 0.46, 0.54, 0.63, 1.23 $\mu\text{m}$                        | 4 pcs                               |
|           | Superfinishing           | 0.025, 0.05, 0.1, 0.2 $\mu\text{m}$                     | 0.36, 0.7, 1, 1.4 $\mu\text{m}$                             | 4 pcs                               |
| ISR-CS319 | Face turning             | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50 $\mu\text{m}$     | 1.92, 3.2, 6.15, 12.5, 23.7, 48.7, 102, 185 $\mu\text{m}$   | 8 pcs                               |
| ISR-CS320 | Cylindrical turning      | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50 $\mu\text{m}$     | 1.7, 3.2, 6.1, 12.2, 23.7, 47.5, 95, 190 $\mu\text{m}$      | 8 pcs                               |
| ISR-CS321 | End milling              | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50 $\mu\text{m}$     | 1.92, 3.82, 6.45, 12.2, 25.2, 49.8, 92.6, 191 $\mu\text{m}$ | 8 pcs                               |
| ISR-CS322 | Reaming                  | 0.4, 0.8, 1.6, 3.2 $\mu\text{m}$                        | 1.7, 3.2, 6.4, 12.8 $\mu\text{m}$                           | 4 pcs                               |
|           | Drilling                 | 1.6, 3.2, 6.3, 12.5 $\mu\text{m}$                       | 7.5, 15.5, 31, 60 $\mu\text{m}$                             | 4 pcs                               |
| ISR-CS323 | Horizontal milling       | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50 $\mu\text{m}$     | 1.8, 3.68, 6.63, 12.8, 25.6, 53, 97.5, 197 $\mu\text{m}$    | 8 pcs                               |
| ISR-CS325 | Shaping (planing)        | 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50, 100 $\mu\text{m}$     | 3.84, 6.7, 12.2, 25.2, 48.7, 99.9, 190, 361 $\mu\text{m}$   | 8 pcs                               |
| ISR-CS326 | Linishing (belt sanding) | 0.1, 0.2, 0.4, 0.8, 1.6, 3.2 $\mu\text{m}$              | 0.9, 1.55, 3.37, 7.42, 18.5, 31 $\mu\text{m}$               | 6 pcs                               |
| ISR-CS328 | Vertical grinding        | 0.2, 0.4, 0.8, 1.6, 3.2, 6.3 $\mu\text{m}$              | 1.1, 3.5, 6.15, 8.78, 22.19, 40.8 $\mu\text{m}$             | 6 pcs                               |
| ISR-CS329 | Grit blasting            | 3.2, 10.5, 18, 25 $\mu\text{m}$                         | 19.2, 63, 108, 150 $\mu\text{m}$                            | 4 pcs                               |
|           | Shot blasting            | 3.2, 8, 13, 18 $\mu\text{m}$                            | 19.2, 48, 78, 108 $\mu\text{m}$                             | 4 pcs                               |
| ISR-CS331 | Spark erosion (EDM)      | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50 $\mu\text{m}$     | 2.5, 4.5, 7.2, 14.2, 24.7, 51.2, 105, 196 $\mu\text{m}$     | 8 pcs                               |
| ISR-CS333 | Hand filing              | 0.4, 0.8, 1.6, 3.2, 6.3 $\mu\text{m}$                   | 3, 5.6, 12.4, 22.5, 61 $\mu\text{m}$                        | 5 pcs                               |
| ISR-CS334 | Castings                 | 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50 $\mu\text{m}$          | 3.2, 8, 16, 32, 56, 112, 225 $\mu\text{m}$                  | 7 pcs                               |
| ISR-CS335 | Honing                   | 0.05, 0.1, 0.2, 0.4, 0.8, 1.6 $\mu\text{m}$             | 0.31, 0.56, 1, 2, 4.2, 9 $\mu\text{m}$                      | 6 pcs                               |
| ISR-CS336 | Polishing                | 0.0125, 0.025, 0.05, 0.1, 0.2 $\mu\text{m}$             | 0.29, 0.35, 0.67, 0.72, 1.52 $\mu\text{m}$                  | 5 pcs                               |

## 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                | 0.55, 1, 1.6µm           | 3 pcs    |
|                    | 2, 4, 8µin                      |                          |          |
| Reaming            | 0.4, 0.8, 1.6µm                 | 3, 6, 10µm               | 3 pcs    |
|                    | 16, 32, 63µin                   |                          |          |
| Plain grinding     | 0.05, 0.1, 0.2, 0.4, 0.8, 1.6µm | 0.55, 1, 1.6, 3, 6, 10µm | 6 pcs    |
|                    | 2, 4, 8, 16, 32, 63µin          |                          |          |
| Horizontal milling | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 2.5, 4, 8, 16, 32, 50µm  | 6 pcs    |
|                    | 16, 32, 63, 125, 250, 500µin    |                          |          |
| Vertical milling   | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 2.5, 4, 8, 16, 32, 50µm  | 6 pcs    |
|                    | 16, 32, 63, 125, 250, 500µin    |                          |          |
| Turning            | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 2.5, 4, 8, 16, 32, 50µm  | 6 pcs    |
|                    | 16, 32, 63, 125, 250, 500µin    |                          |          |

## 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 |

## SURFACE ROUGHNESS REFERENCE SPECIMENS

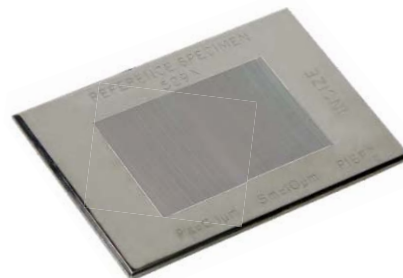
**INSIZE PLUS**  
MADE IN EUROPE

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

| Code       | Roughness (Ra)                      |
|------------|-------------------------------------|
| ISR-RS525X | 6.25µm *                            |
| ISR-RS526X | 3.15µm *                            |
| ISR-RS527X | 3.0µm *                             |
| ISR-RS528X | 0.5µm *                             |
| ISR-RS529X | 0.1µm * (not suitable for ISR-S400) |
| ISR-RS530X | 1.0µm *                             |
| ISR-RS531X | 0.3µm * (not suitable for ISR-S400) |

\*The actual value may be slightly different



ISR-RS529X



SUITABLE FOR SMALL SURFACES,  
CONCAVE OR CONVEX SURFACES

FOR MAGNETIC AND  
NON-MAGNETIC SUBSTRATES

## COATING THICKNESS GAGE

**INSIZE PLUS**  
MADE IN EUROPE



**magnetic induction probe Fe (optional)**  
ISO-2000FN-FE



**eddy current probe NFe (optional)**  
ISO-2000FN-NFE

- Suitable for small surfaces, concave or convex surfaces
- Magnetic induction probe (Fe) measures the thickness of non-magnetic coating on magnetic 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



standard foils (included)

### MAIN UNIT

|                                    |   |          |
|------------------------------------|---|----------|
| <b>Code</b>                        | <b>ISO-2000FN (without probes)</b>  |          |
| <b>Measuring range</b>             | <b>magnetic induction probe (Fe)</b>                                      | 0~2000µm |
|                                    | <b>eddy current probe (NFe)</b>   | 0~800µm  |
| <b>Accuracy</b>                    | ±(1.5+2%L)µm L is measuring thickness in µm                               |          |
| <b>Resolution</b>                  | 0.1µm (range<100µm)   |          |
|                                    | 1µm (range 100~1000µm)  |          |
|                                    | 10µm (range≥1000µm)   |          |
| <b>Repeatability</b>               | 1µm (range 0~1000µm)  |          |
|                                    | 10µm (range≥1000µm)   |          |
| <b>Measuring mode</b>              | continuous or single  |          |
| <b>Calibration mode</b>            | four points calibration   |          |
| <b>Minimum substrate thickness</b> | magnetic induction probe (Fe): 0.2mm,<br>eddy current probe (NFe): 0.05mm |          |
| <b>Minimum measuring area</b>      | 5x5mm, calibration should be made on workpieces without coating           |          |
| <b>Power supply</b>                | 2×1.5V AA batteries   |          |
| <b>Dimension of main unit</b>      | 122×65×22mm   |          |
| <b>Weight of main unit</b>         | 150g  |          |

### STANDARD DELIVERY

|   |       |
|---|-------|
| <b>Main unit</b>                            | 1 pc  |
| <b>Zero calibration block for Fe probe</b>  | 1 pc  |
| <b>Zero calibration block for NFe probe</b> | 1 pc  |
| <b>Standard foil</b>                        | 7 pcs |
| <b>Battery (AA)</b>                         | 2 pcs |

### PROBE (OPTIONAL)

|                                      |                |
|--------------------------------------|----------------|
| <b>Magnetic induction probe (Fe)</b> | ISO-2000FN-FE  |
| <b>Eddy current probe (NFe)</b>      | ISO-2000FN-NFE |

# COATING THICKNESS GAGE CODE 9501-1200

FOR MAGNETIC AND  
NON-MAGNETIC SUBSTRATES

DATA  
OUTPUT



eddy current probe  
NFE (optional) with  
zero calibration block



magnetic induction  
probe FE90 for bores  
and grooves (optional)



magnetic induction  
probe FE10 for large  
range (optional)



zero calibration block  
for FE (included)



calibration foils  
(included)



data transmission  
cable (optional)



magnetic induction  
probe FE (included)



software CD  
(included)

- Magnetic induction probe (FE) measures the thickness of non-magnetic coating on magnetic 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 substrate.  
Substrate: copper, aluminum, zinc, non-magnetic stainless steel  
Coating: plastic, powder, paint, anodizing
- Tolerance measurement
- Automatic power off

## SPECIFICATION

| Probe type                                   | FE (included)<br>magnetic<br>induction probe   | NFE (optional)<br>eddy current<br>probe | FE90 (optional)<br>magnetic induction probe<br>for bores and grooves | Fe10 (optional)<br>magnetic induction<br>probe for large range |
|--|--|---|--|--|
| Measuring range                              | 0~1250µm   | 0~1250µm                                | 0~1250µm   | 500~10000µm  |
| Accuracy                                     | $\pm(3\%L+1)\mu\text{m}$ (range $\leq 1250\mu\text{m}$ )<br>$\pm(3\%L+10)\mu\text{m}$ (range $> 1250\mu\text{m}$ )<br>L is measuring thickness in µm |   |  |  |
| Resolution                                   | 0.1µm (range $< 100\mu\text{m}$ )<br>1µm (range $\geq 100\mu\text{m}$ )  |   |  |  |
| Measuring mode                               | continuous and single  |   |  |  |
| Minimum substrate thickness                  | 0.5mm  | 0.3mm                                   | 0.5mm  | 2mm  |
| Minimum measuring area                       | Ø7mm   | Ø5mm                                    | Ø7mm   | Ø40mm  |
| Minimum curvature radius of convex workpiece | 1.5mm  | 3mm                                     | —  | 10mm   |
| Memory                                       | 500  |   |  |  |
| Output                                       | USB  |   |  |  |
| Power supply                                 | 2×1.5V AA batteries  |   |  |  |
| Dimension                                    | 128×68×32mm  |   |  |  |
| Weight                                       | 340g   |   |  |  |

## STANDARD DELIVERY

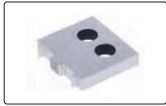
|   |       |
|---|-------|
| Main unit   | 1 pc  |
| Magnetic induction probe (FE)                         | 1 pc  |
| Zero calibration block for FE probe                   | 1 pc  |
| Calibration foils (50µm, 100µm, 250µm, 500µm, 1000µm) | 1 set |
| 1.5V AA battery                                       | 2 pcs |
| Software and USB cable                                | 1 pc  |

## OPTIONAL ACCESSORY

|   |                |
|---|----------------|
| Data transmission cable                               | 9501-1200-SPC  |
| 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 |

## CROSS CUT ADHESION TESTER CODE ISQ-PK100

- To test the adhesion of paint coating on metal, wood, plastic, etc.
- According to ISO 2409, ASTM D3359, DIN53151



1mm pitch blade  
(included)



2mm pitch blade  
(included)



3mm pitch blade  
(included)



2X magnifier  
(included)



brush (included)



test tape (included)  
**ISQ-PK100-1**



VIDEO

### SPECIFICATION

| Blade                       |  | 1mm pitch   | 2mm pitch | 3mm pitch |
|-----------------------------|--|-------------|-----------|-----------|
| 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      | 0.25mm    | 0.25mm    |
|                             | soft substrate (like wood, plaster)    | —           | 10mm      | 10mm      |
| Minimum size of test sample |  | 150×100mm   | 150×100mm | 150×100mm |
| Dimension                   |  | 170×28×40mm |           |           |
| Weight                      |  | 430g        |           |           |

### STANDARD DELIVERY

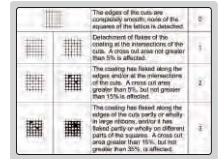
|                         |      |
|-------------------------|------|
| Handle                  | 1 pc |
| 1mm pitch blade         | 1 pc |
| 2mm pitch blade         | 1 pc |
| 3mm pitch blade         | 1 pc |
| Test tape (ISQ-PK100-1) | 1 pc |
| 2X magnifier            | 1 pc |
| Brush                   | 1 pc |



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

DATA  
OUTPUT

DISPLAY MAXIMUM, MINIMUM, DIFFERENCE  
VALUE BETWEEN MAXIMUM AND MINIMUM

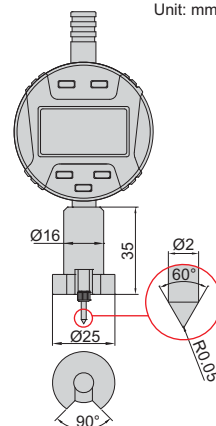
- Measure peak-to-valley height of blast cleaned surface. If the profile is too low, the adhesion of the coating to the surface will be reduced. If the profile is too high, there is the danger that the profile peaks will remain uncoated, allowing rust spots to occur.
- Meet ASTM D 4417-B
- Zero set block 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
- Data output
- Stainless steel base
- Optional accessory: data output cable (code 7315-, 7302-, 7305-)



VIDEO



2844-10

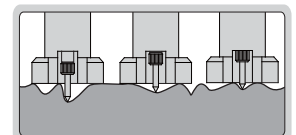


set zero



zero set block  
(included)

measure peak-to-valley height  
of blast cleaned surfaces



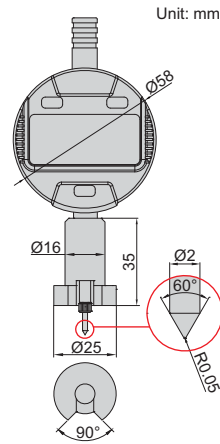
| Code    | Range           | Digital indicator stroke | Digital indicator resolution | Accuracy |
|---------|-----------------|--------------------------|------------------------------|----------|
| 2844-10 | 0-12.7mm/0-0.5" | 12.7mm/0.5"              | 0.001mm/0.00005"             | ±0.005mm |

## DIGITAL SURFACE PROFILE GAGE

- 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
- Data output
- Stainless steel base
- Optional accessory: data output cable (code 7315-, 7302-, 7305-)



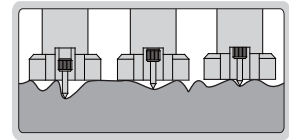
2843-10



DATA OUTPUT



measure peak-to-valley height of blast cleaned surfaces



| 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 |

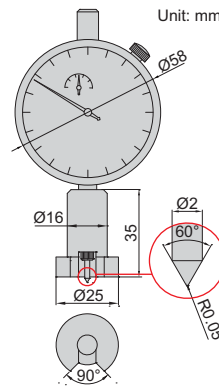


## SURFACE PROFILE GAGE

- 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



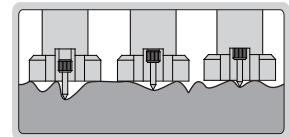
2344-1



set zero



measure peak-to-valley height of blast cleaned surfaces

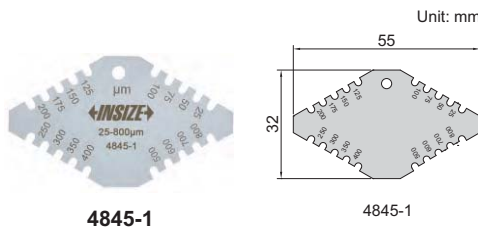


| Code   | Range | Dial indicator stroke | Dial indicator graduation | Accuracy |
|--------|-------|-----------------------|---------------------------|----------|
| 2344-1 | 0-1mm | 1mm                   | 0.001mm                   | ±0.005mm |



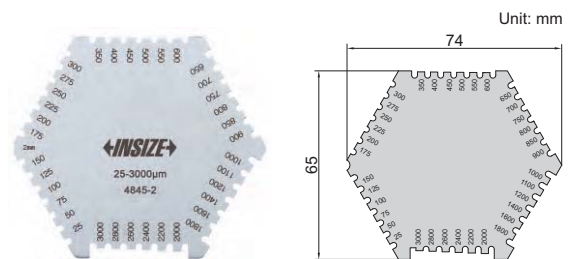
## WET FILM GAGES

- Made of stainless steel



4845-1

4845-1



4845-2

4845-2

| Code   | Range     | Accuracy                            | Thickness |
|--------|-----------|-------------------------------------|-----------|
| 4845-1 | 25-800µm  | ±5µm                                | 1.8mm     |
| 4845-2 | 25-3000µm | 25-100µm: ±5µm<br>100µm-3000µm: ±5% | 1mm       |

DATA OUTPUT

WITH A AND B SCAN

PENETRATE NON-METALLIC COATING AND MEASURE THE THICKNESS OF METAL SUBSTRATES

## ULTRASONIC THICKNESS GAGE 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 and transmitted through USB cable
- 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

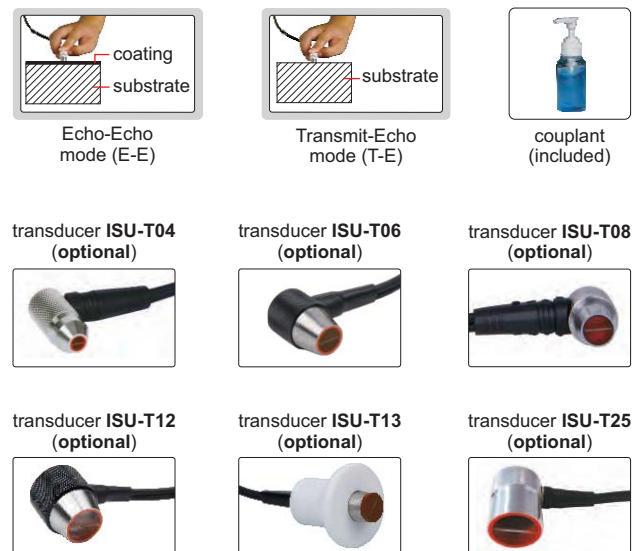


### SPECIFICATION

|                        |   |
|------------------------|---|
| Measuring range        | T-E mode:<br>substrate thickness 1.5~200mm  |
|                        | E-E mode:<br>substrate thickness 3~25mm   |
| Measuring unit         | mm/inch   |
| Resolution             | 0.1/0.01mm  |
| Accuracy               | ±0.04mm (H<9.9mm)   |
|                        | ±(0.04+0.1%H)mm (H: 10~99.9mm)<br>±(0.3%H)mm (H>100mm)<br>H is the thickness to be measured in mm |
| Frequency              | 5.0MHZ  |
| Display                | 320×240, color screen display   |
| Velocity               | 1000~9999m/s  |
| Measuring frequency    | 2 times/second and 10 times/second  |
| Applicable temperature | -20~50°C  |
| Output                 | USB   |
| Power supply           | 2×1.5V AA batteries   |
| Dimension              | 133×75×29mm   |
| Weight                 | 260g (including batteries)  |

### 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-COULPLANT                                    |

### SPECIFICATION OF TRANSDUCERS

| 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   | <60°C                  | general use                         |
| ISU-T04 (optional) | T-E        | 10.0MHz   | 6mm           | 0.7~20mm                                | Ø15×1mm   | <60°C                  | for small tubes                     |
| ISU-T06 (optional) | T-E        | 7.5MHz    | 9mm           | 0.7~50mm                                | Ø15×1.2mm   | <60°C                  | for thin workpieces                 |
| ISU-T08 (optional) | T-E        | 5.0MHz    | 11mm          | 0.8~300mm                               | Ø25×1.2mm   | <60°C                  | general use                         |
| ISU-T12 (optional) | T-E        | 2.0MHz    | 17mm          | 2~400mm                                 | Ø40×3mm   | <60°C                  | for casting iron                    |
| ISU-T13 (optional) | T-E        | 5.0MHz    | 15mm          | 2~200mm                                 | Ø25×2mm   | <350°C                 | for high temperature                |
| ISU-T25 (optional) | T-E        | 1.0MHz    | 26mm          | 3~200mm                                 | -   | <60°C                  | for fiberglass and organic material |

## ULTRASONIC THICKNESS GAGE (FOR THICK WORKPIECES MADE OF ORGANIC MATERIALS) CODE ISU-710D

DATA  
OUTPUT

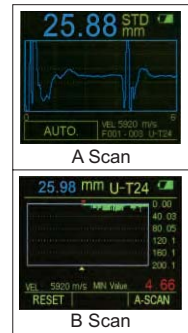
WITH A AND B SCAN

### SPECIFICATION

|                        |   |                   |
|------------------------|---|-------------------|
| Measuring range        | 20~590mm  |                   |
| Measuring unit         | mm/inch   |                   |
| Resolution             | 0.1/0.01mm  |                   |
| Accuracy               | $\pm(0.04+0.1\%H)$ mm (H: 10~99.9mm)<br>$\pm(0.3\%H)$ mm (H>100mm)<br>H is the thickness to be measured in mm |                   |
| Transducer             | Type  | Monocrystal probe |
|                        | 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  |                   |
| Applicable temperature | -20~50°C  |                   |
| Output                 | USB   |                   |
| 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     |



- 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 and transmitted through USB cable
- 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

## ULTRASONIC THICKNESS GAGE (FOR THIN WORKPIECES) CODE ISU-700D



DATA  
OUTPUT

WITH A AND B SCAN

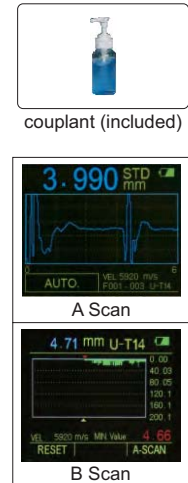
### SPECIFICATION

|                        |   |                   |
|------------------------|---|-------------------|
| Measuring range        | Transmit-echo (T-E) mode: 1.5~20mm  |                   |
|                        | Echo-echo (E-E) mode: 0.2~10mm  |                   |
| Measuring unit         | mm/inch   |                   |
| Resolution             | 0.1/0.01/0.001mm  |                   |
| Accuracy               | $\pm 0.04$ mm (H<9.99mm)<br>$\pm(0.04+0.1\%H)$ mm (H≥10mm)<br>H is the thickness to be measured in mm |                   |
| Transducer             | Type  | Monocrystal probe |
|                        | 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  |                   |
| Applicable temperature | -20~50°C  |                   |
| Output                 | USB   |                   |
| Power supply           | 2×1.5V AA batteries   |                   |
| Dimension              | 133×75×29mm   |                   |
| Weight                 | 260g (including batteries)  |                   |

### 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     |

transducer protection  
sleeve (included)



- 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 and transmitted through USB cable
- 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

**PENETRATE NON-METALLIC COATING AND MEASURE THE THICKNESS OF METAL SUBSTRATE**

**DATA OUTPUT**



## ULTRASONIC THICKNESS GAGE (THROUGH COATING) CODE ISU-300D

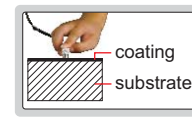


- Two measuring modes, Echo-Echo (E-E) and Transmit-Echo (T-E):
  - E-E is applicable for non-metallic coating (such as paint, plastic resin, etc.) on metal substrates, can penetrate coating and measure the thickness of substrates
  - T-E is to measure the thickness of material without coating, such 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

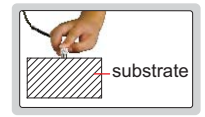


### SPECIFICATION

|                 |  |
|-----------------|--|
| Measuring range | E-E mode: coating thickness 0~1mm, substrate thickness 4~25mm  |
|                 | T-E mode: substrate thickness 1.5~200mm  |
| Resolution      | 0.01mm (range<100mm)<br>0.1mm (range≥100mm)  |
| Repeatability   | 0.03mm (range<100mm)<br>0.1mm (range≥100mm)  |
| Accuracy        | ±0.04mm (range<10mm)<br>±(0.04+H/1000)mm (range 10~100mm)<br>±H/333mm (range≥100mm)<br>H is the thickness to be measured in mm |
| Velocity        | 1000~9999m/s   |
| Power supply    | 2×1.5V AAA batteries   |
| Dimension       | 116×64×27mm  |
| Weight          | 220g   |



Echo-Echo mode (E-E)



Transmit-Echo mode (T-E)



couplant (included)



transducer ISU-T04 (optional)



transducer ISU-T06 (optional)



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-COULPLANT                  |

### SPECIFICATION OF TRANSDUCERS

| 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: 20×1.2mm<br>E-E mode: 20×4mm                            | <60°C                  | general use          |
| ISU-T04 (optional) | T-E        | 10.0MHz   | 6mm           | 0.7~20mm                                | 10×1mm  | <60°C                  | for small tubes      |
| ISU-T06 (optional) | T-E        | 7.5MHz    | 8.5mm         | 0.7~50mm                                | 15×1.2mm  | <60°C                  | for thin workpieces  |
| ISU-T12 (optional) | T-E        | 2.0MHz    | 16.3mm        | 2~400mm                                 | 30×4mm  | <60°C                  | for casting iron     |
| ISU-T13 (optional) | T-E        | 5.0MHz    | 13mm          | 2~200mm                                 | 25×3mm  | <350°C                 | for high temperature |

## ULTRASONIC THICKNESS GAGE CODE ISU-250C



DATA  
OUTPUT



- 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

|               |   |
|---------------|---|
| Resolution    | 0.01mm (range<100mm)                    |
|               | 0.1mm (range≥100mm)                     |
| Repeatability | 0.03mm (range<100mm)                    |
|               | 0.1mm (range≥100mm)                     |
| Accuracy      | ±0.04mm (range<10mm)                    |
|               | ±(0.04+H/1000)mm (range 10~100mm)       |
|               | ±H/333mm (range≥100mm)                  |
|               | H is the thickness to be measured in mm |
| Velocity      | 1000-9999m/s                            |
| Power supply  | 2×1.5V AAA batteries                    |
| Dimension     | 64×116×27mm                             |
| Weight        | 220g                                    |



couplant (included)



transducer ISU-T04 (optional)



transducer ISU-T06 (optional)



transducer ISU-T12 (optional)



transducer ISU-T13 (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-COUPPLANT                  |

### SPECIFICATION OF TRANSDUCERS

| Code               | Frequency | Diameter (Ød) | Measuring range | Minimum size of pipes for measurement (diameter × wall thickness) | Applicable temperature | Application          |
|--------------------|-----------|---------------|-----------------|---|------------------------|----------------------|
| ISU-T08 (included) | 5.0MHz    | 10.8mm        | 0.8~300mm       | 20×1.2mm  | <60°C                  | general use          |
| ISU-T04 (optional) | 10.0MHz   | 6mm           | 0.7~20mm        | 10×1mm  | <60°C                  | for small tubes      |
| ISU-T06 (optional) | 7.5MHz    | 8.5mm         | 0.7~50mm        | 15×1.2mm  | <60°C                  | for thin workpieces  |
| ISU-T12 (optional) | 2.0MHz    | 16.3mm        | 2~400mm         | 30×4mm  | <60°C                  | for casting iron     |
| ISU-T13 (optional) | 5.0MHz    | 13mm          | 2~200mm         | 25×3mm  | <350°C                 | for high temperature |

## ULTRASONIC THICKNESS GAGE (BASIC TYPE) CODE ISU-100D

- Measure the thickness from one side of objects, suitable for pipes, tanks, etc.
- Applicable material: metal, plastic, glass, nylon, resin, ceramic, ice

### SPECIFICATION

|                                       |   |        |
|---------------------------------------|---|--------|
| Measuring range                       | 0.8~300mm                               |        |
| Resolution                            | 0.01mm (range<100mm)                    |        |
|                                       | 0.1mm (range≥100mm)                     |        |
| Accuracy                              | ±0.04mm (range<10mm)                    |        |
|                                       | ±(0.04+H/1000)mm (range 10~100mm)       |        |
|                                       | ±H/333mm (range≥100mm)                  |        |
|                                       | H is the thickness to be measured in mm |        |
| Transducer                            | frequency                               | 5MHz   |
|                                       | diameter (Ød)                           | 10.8mm |
| Minimum size of pipes for measurement | 20×1.2mm (diameter × wall thickness)    |        |
| Applicable temperature                | <60°C                                   |        |
| Velocity                              | 1000-9999m/s                            |        |
| Power supply                          | 2×AAA batteries                         |        |
| Dimension                             | 114×64×28mm                             |        |
| Weight                                | 200g                                    |        |



ATTENTION: NOT SUITABLE FOR CASTING WORKPIECES



### STANDARD DELIVERY

|               |          |
|---------------|----------|
| Main unit     | 1 pc     |
| Transducer    | 1 pc     |
| Couplant      | 1 bottle |
| Battery (AAA) | 2 pcs    |





## LASER DISTANCE METERS

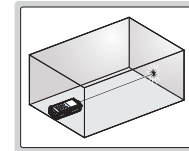


9561-80

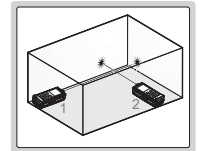
- Large display with backlight
- Unit: m, ft, in
- Distance, area, volume and height measurement
- Continuous measuring mode to track maximum and minimum value
- Memory of 99 measurement values
- Automatic power off: laser 20s, main unit 150s

### SPECIFICATION

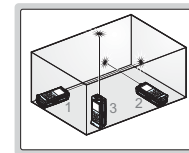
| Code              | 9561-40   | 9561-80  |
|-------------------|---|----------|
| Measuring range   | 0.05~40m  | 0.05~80m |
| Accuracy          | $\pm(5.0+D/20)$ mm<br>D: measured distance, unit: m |          |
| Resolution        | 1mm, 10mm, .1", .01ft                               |          |
| Measuring speed   | 0.5 second  |          |
| Laser type        | 635nm, class II, <1mW                               |          |
| Power supply      | 3×AAA batteries, for 4000 measurements              |          |
| Dimension (L×W×H) | 120×60×28mm   |          |
| Weight            | 175g  |          |



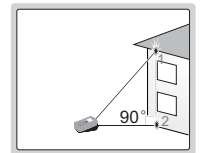
distance measurement



area measurement



volume measurement



height measurement

### STANDARD DELIVERY

|               |       |
|---------------|-------|
| Main unit     | 1 pc  |
| Battery (AAA) | 3 pcs |



## INFRARED THERMOMETER CODE 9120-550

- With maximum reading
- Tolerance measurement
- Automatic power off

### SPECIFICATION

|                              |  |
|------------------------------|--|
| Measuring range              | -30~550°C/-22~1022°F   |
| Accuracy                     | -30~0°C (-22~32°F): $\pm 3^{\circ}\text{C}$<br>0~550°C (32~1022°F): $\pm(1.5\%+2^{\circ}\text{C})$ |
| Resolution                   | 0.1°C/0.1°F  |
| Distance to spot ratio (D:S) | 12:1   |
| Emissivity                   | 0.1~1 (adjustable)   |
| Laser type                   | 630~670nm, class II, <1mW  |
| Response time                | <0.5s  |
| Power supply                 | 2×1.5V AAA batteries   |
| Dimension                    | 155×110×45mm   |
| Weight                       | 126g (without batteries)   |

### STANDARD DELIVERY

|                  |       |
|------------------|-------|
| Main unit        | 1 pc  |
| 1.5V AAA battery | 2 pcs |



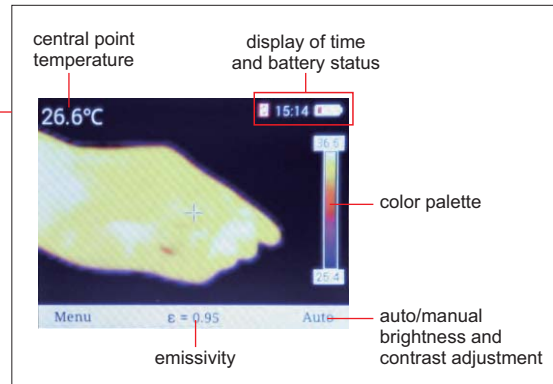
front view



## INFRARED THERMAL IMAGING CAMERA (BASIC TYPE) CODE 9131-B350

**IP43**  
WATERPROOF

**DATA**  
OUTPUT



- Easy to use
- Four image presentations: IR, visible, PIP and MIF
- WIFI real-time sharing, one-click connection to mobile devices
- USB interface for data transmission and charging

### SPECIFICATION

|                       |  |
|-----------------------|--|
| IR resolution         | 160×120                                      |
| NETD                  | ≤50mk  |
| Focus length          | 5mm/F1.2                                     |
| Angle of view         | 30°×23°                                      |
| Spatial resolution    | 3.30mrad                                     |
| Focus adjustment      | fixed  |
| Detector type         | unrefrigerated vanadium oxide/8~14μm         |
| Pixel size            | 17μm   |
| Visible camera        | resolution 640×480, automatic focus          |
| Display               | 3.5" highlight LCD screen, 320×240           |
| Image mode            | IR image, visible image, MIF, PIP            |
| Digital zoom          | x2, x4                                       |
| Color palette         | 6 modes                                      |
| Temperature range     | -20°C~350°C                                  |
| Accuracy              | ±2°C or ±2% (of maximize range)              |
| Emissivity            | 0.01-1.00 (adjustable)                       |
| Storage               | SD card (16G)                                |
| Image format          | JPG with temp info                           |
| Output                | USB  |
| Power                 | rechargeable Li-ion battery, working time≥4h |
| Operating temperature | -10°C~50°C                                   |
| Operating humidity    | 10%~95%RH                                    |
| Vibration             | 10HZ~150HZ~10HZ 0.15mm (IEC 60068-2-6)       |
| Impact                | 30g (IEC 60068-2-27)                         |
| Weight                | 740g   |
| Dimension             | 258x98x90mm                                  |



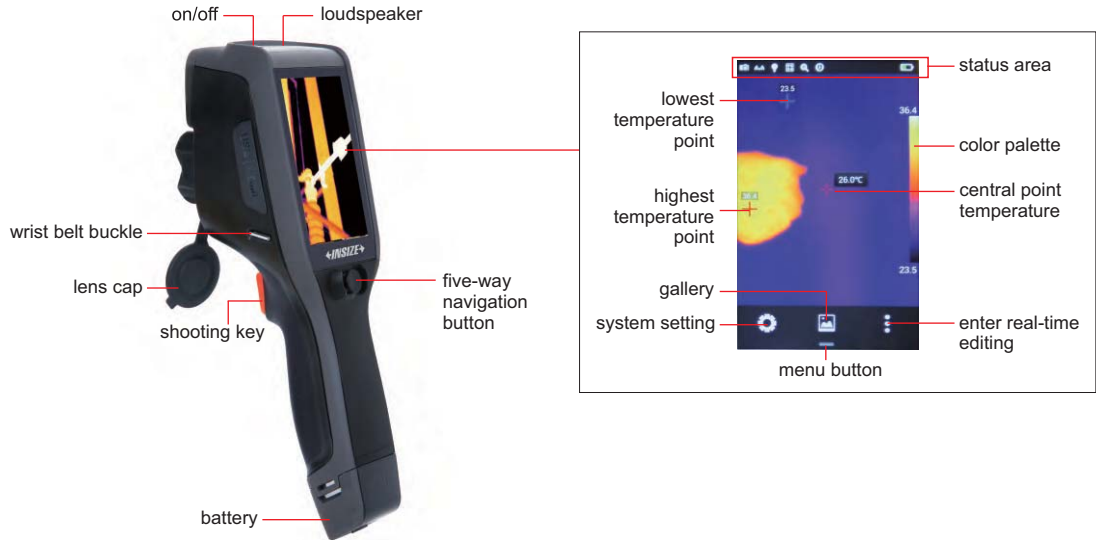
### STANDARD DELIVERY

|                      |      |
|----------------------|------|
| Main unit            | 1 pc |
| Power supply adapter | 1 pc |
| USB cable            | 1 pc |
| 16G SD card          | 1 pc |

**IP54**  
WATERPROOF

**DATA**  
OUTPUT

## INFRARED THERMAL IMAGING CAMERA CODE 9130-H360



- 4 inch high-brightness touchscreen
- Four image presentations: IR, visible, PIP and MIF
- WIFI real-time sharing, one-click connection to mobile devices
- USB interface for data transmission and charging
- Built-in illumination
- Video can be recorded and stored

### SPECIFICATION

|                       |   |
|-----------------------|---|
| IR resolution         | 192×144   |
| NETD                  | ≤50mk   |
| Focus length          | 7mm/F1.1  |
| Angle of view         | 37.8°×28.8°   |
| Spatial resolution    | 3.45mrad  |
| Focus adjustment      | focus-free  |
| Detector type         | unrefrigerated vanadium oxide/8~14μm                |
| Pixel size            | 25μm  |
| Visible camera        | resolution 500W, focus-free                         |
| Display               | 4" highlight LCD touch screen, 480×800              |
| Image mode            | IR image, visible image, MIF, PIP                   |
| Digital zoom          | 1.1~4   |
| Color palette         | 8 modes   |
| Temperature range     | -20°C~350°C   |
| Accuracy              | ±2°C or ±2% (of maximize range)                     |
| Emissivity            | 0.01-1.00 (adjustable)                              |
| Storage               | in camera and TF card (up to 32GB)                  |
| Image format          | JPG with temp info                                  |
| Output                | USB, HDMI   |
| Power                 | rechargeable Li-ion battery (7.4V), working time≥4h |
| Operating temperature | -10°C~50°C  |
| Vibration             | 10HZ~150HZ~10HZ 0.15mm (IEC 60068-2-6)              |
| Impact                | 30g 11ms (IEC 60068-2-27)                           |
| Weight                | 735g  |
| Dimension             | 274×97×78mm   |



### STANDARD DELIVERY

|                          |      |
|--------------------------|------|
| Main unit                | 1 pc |
| Power supply adapter     | 1 pc |
| USB cable                | 1 pc |
| HDMI cable               | 1 pc |
| Capacitive screen gloves | 1 pc |
| TF card (16GB)           | 1 pc |

## FACE RECOGNITION THERMAL SCANNER 4 IN 1

- TEMPERATURE DETECTION
- MASK DETECTION
- TIME ATTENDANCE
- ACCESS CONTROL



ATF-1612

| Code     | Description     |
|----------|-----------------|
| ATF-1612 | With desk stand |



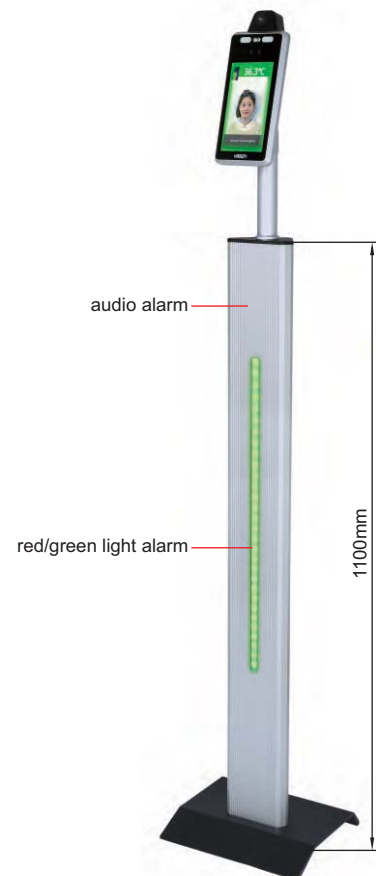
ATF-1612L

| Code      | Description                   |
|-----------|-------------------------------|
| ATF-1612L | With floor stand for children |



ATF-1612N

| Code      | Description                 |
|-----------|-----------------------------|
| ATF-1612N | With mount for door control |



ATF-1612H

| Code      | Description      |
|-----------|------------------|
| ATF-1612H | With floor stand |

To be continued



ATF-1612W

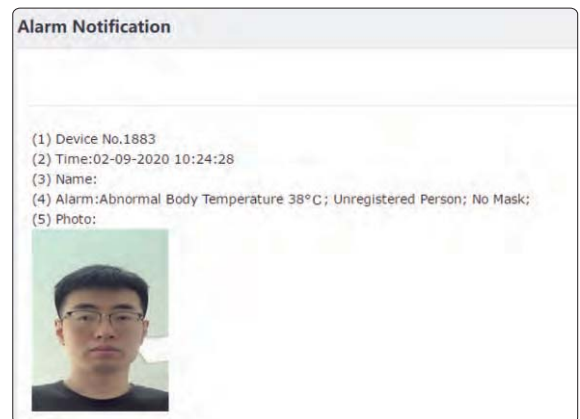
| Code      | Description     |
|-----------|-----------------|
| ATF-1612W | With wall-mount |

Continued from previous page

- This device introduces a highly advanced built-in facial recognition algorithm and high resolution infrared thermal imaging camera. This brand new technology will identify someone by face, even while wearing a face mask. It locates the forehead and measures forehead temperature without touch. This device is the ideal solution for fully automatic contactless access control, time attendance, and temperature measurement.



can be connected with computer through WiFi



automatic email notification (abnormal body temperature, no mask, unregistered person)

**Features:**

- **Access at a glance**  
Walk through identification & authorization, no slowing down or stopping needed.
- **Contactless forehead temperature measurement**  
High resolution infrared thermal imaging camera enhanced by an algorithm provides instant and high accuracy forehead temperature measurement with zero human involvement in less than 0.1 second.  
The new technology comes pre-calibrated and has automatic temperature calibration through software and algorithm when the camera is turned on every time. This eliminates the need for a calibration system generally referred to as a black body. This eliminates not just added cost but human error when attempting to calibrate.  
(1) To be used for initial temperature assessment for triage use in high throughput areas (e.g., airports, businesses, warehouses, factories) due to the high detection speed.  
(2) Working distance is 0.5-1.2m and no operation needed, which can avoid inter infection.  
(3) Captures photo of people when abnormal body temperature is detected, which can be used for tracing.
- **High accurate & reliable face ID**  
Built-in world class facial recognition algorithm with dual cameras detects the identification in less than 0.2 seconds with the accuracy rate more than 99.9%. High performance face anti-spoofing technology can resist many kinds of presentation attack, such as, printed photo, the electronic display of a facial photo, replaying video using an electronic display and 3D face masks. Enhanced facial recognition algorithm can identify people even if they are wearing masks with the accuracy rate more than 90%.
- **Detect someone wearing or not wearing a mask**
- **Snapshot function can be disabled to protect privacy**

**Use:**

- This device is for indoor use only. It detects one person at a time.
- The device is used for initial temperature assessment. The final temperature should be confirmed with secondary evaluation methods (e.g., clinical grade contact thermometer).
- Select "Temperature", "Mask" and "Face recognition" as conditions to trigger alarm or to control door opening.
- For hospital / restaurant / hotel / retail store, etc., it can be used as thermal detector and/or mask detector. No need to input facial pictures in advance. It will alert you when the forehead temperature is above the preset target (for example, 37.3°C), for people with or without marks. It can also detect if people wear or not wear masks.
- A plant or school can have this set up at entrance for access control and time attendance, as well as temperature and mask detection. Input face pictures taken with a cell phone in advance for facial recognition. The readings can be monitored in an office.

To be continued

Continued from previous page

**time attendance record including staffs and visitors  
(temperature documentation)**

|         | ID | Name   | Gender   | Age | Phone | Time | Temperature         | Mask   |   |
|---------|----|--------|----------|-----|-------|------|---------------------|--------|---|
| Visitor | 1  | 001501 | Anderson | 0   | 29    | -    | 2020/07/16-09:06:38 | 35.8°C | 1 |
|         | 2  | 001502 | polo     | 0   | 30    | -    | 2020/07/16-09:06:41 | 35.8°C | 1 |
|         | 3  |        |          |     |       |      | 2020/07/16-09:06:43 | 35.9°C | 1 |
|         | 4  | 001504 | nich     | 1   | 30    | -    | 2020/07/16-09:06:59 | 35.9°C | 1 |
|         | 5  | 001505 | aimly    | 0   | 30    | -    | 2020/07/16-09:07:11 | 35.8°C | 1 |
|         | 6  | 001506 | hamer    | 1   | 28    | -    | 2020/07/16-09:08:30 | 36.0°C | 1 |
|         | 7  | 001507 | Aaron    | 0   | 32    | -    | 2020/07/17-10:19:56 | 36.3°C | 0 |
|         | 8  | 001508 | Barbara  | 0   | 30    | -    | 2020/07/17-10:20:07 | 36.3°C | 1 |
|         | 9  | 001509 | Robert   | 1   | 25    | -    | 2020/07/17-10:20:19 | 36.3°C | 1 |
|         | 10 | 001510 | Henry    | 1   | 30    | -    | 2020/07/17-10:20:21 | 36.3°C | 1 |
|         | 11 | 001511 | Nacy     | 0   | 27    | -    | 2020/07/17-10:20:34 | 36.4°C | 1 |
|         | 12 | 001512 | Mike     | 1   | 30    | -    | 2020/07/17-10:20:37 | 35.5°C | 1 |
|         | 13 | 001513 | Daisy    | 1   | 31    | -    | 2020/07/17-10:20:39 | 36.3°C | 1 |
|         | 14 | 001514 | Emma     | 0   | 31    | -    | 2020/07/17-10:21:10 | 36.6°C | 0 |
|         | 15 | 001515 | Jack     | 0   | 30    | -    | 2020/07/17-10:21:13 | 36.3°C | 1 |

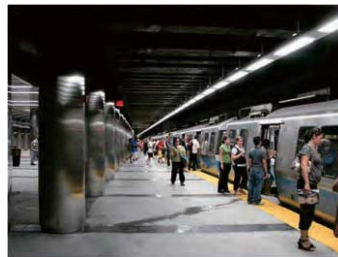
**SPECIFICATION**

|                                       |   |
|---------------------------------------|---|
| Operation system                      | Linux   |
| Display                               | 7 inch screen TFT   |
| Speaker                               | voice prompt  |
| Language                              | English, Spanish, etc.  |
| Face database capacity                | 50K   |
| Verification & identification speed   | less than 0.1 second for thermal and less than 0.2 second for facial                      |
| Face anti spoofing                    | printed photo, electronic display of a facial photo, replaying video, 3D face masks, etc. |
| Facial recognition accuracy rate      | >99.9%  |
| Forehead thermometer range & accuracy | 32°C~42°C, ±0.5°C   |
| Work range                            | 0.5~1.2m  |
| Infrared thermal imaging camera       | Uncooled infrared focal plane junction detectors array sensor<br>Resolution: 160x120      |
| Facial recognition camera             | dual 1080p starlight CMOS sensors for visible light and near infrared light               |
| Communication                         | RS232/485, TCP/IP, USB-Host, USB-Client, RJ45   |
| Power supply                          | 12V DC 2A   |
| Ambient temperature                   | 18°C~32°C   |

**Application**



school/campus



public transportation



airport



office



shopping mall



hospital



VIDEO

## THERMOHYGROMETER CODE 9361-T65

- Measure humidity, ambient temperature, dew-point temperature and wet bulb temperature
- Min/Max/Average, data hold function
- Display backlight
- Auto power off

### SPECIFICATION

| Function              | Measuring range       | Resolution  | Accuracy |
|-----------------------|-----------------------|-------------|----------|
| Ambient temperature   | -20°C~60°C/-4°F~140°F | 0.1°C/0.1°F | ±1°C/2°F |
| Wet bulb temperature  | -20°C~60°C/-4°F~140°F |             |          |
| Dew-point temperature | -10°C~50°C/14°F~122°F |             |          |
| Humidity              | 0~99.9%RH             | 0.1%RH      | ±5%RH    |
| Date storage          | 99 groups             |             |          |
| Auto power off        | 30 minutes            |             |          |
| Weight                | 190g                  |             |          |
| Dimension             | 180×60×33mm           |             |          |
| Power supply          | 3×AAA battery         |             |          |



### STANDARD DELIVERY

|               |       |
|---------------|-------|
| Main unit     | 1 pc  |
| Battery (AAA) | 3 pcs |



VIDEO

## LUX METER CODE 9371-L110

- Measure visible light emitted by fluorescent lamps, metal halide lamps, high voltage sodium lamps or incandescent lamps
- Min/Max, data hold
- Two units: LUX and FC
- Reading in digital and analog
- Display backlight
- Auto power off

### SPECIFICATION

|                       |  |
|-----------------------|--|
| Measuring range       | 0~200000LUX (0~20000FC)  |
| Resolution            | 0.1LUX (range<1000LUX), 1LUX (range≥1000LUX)<br>0.01FC (range<100FC), 0.1FC (range<1000FC), 1FC (range≥1000FC) |
| Accuracy              | ±4%  |
| LED type              | standard light source, white LED, red LED, yellow LED, green LED, blue LED, purple LED                         |
| Sensor                | silicon photo-diode and spectral response filter   |
| Operating temperature | 0°C~40°C   |
| Operating humidity    | <80%RH   |
| Operating altitude    | <2000m   |
| Sampling rate         | about 0.5 seconds  |
| Spectral range        | 320~730nm  |
| Auto power off        | 10 minutes   |
| Dimension             | 190×60×33mm  |
| Weight                | 180g   |
| Power supply          | 3×AAA battery  |

sensor can rotate 180°



### STANDARD DELIVERY

|               |       |
|---------------|-------|
| Main unit     | 1 pc  |
| Battery (AAA) | 3 pcs |

## DIGITAL ANEMOMETER CODE 9331-40

- Measure velocity, flow, temperature and relative humidity
- Velocity unit: m/s, km/h, mil/h, ft/m, ft/s, knots
- Flow unit: CMS (cubic meter per second), CMM (cubic meter per minute), CFM (cubic feet per minute)
- Temperature type: ambient, dew point, wet bulb
- Maximum and minimum modes
- Automatic power off



VIDEO



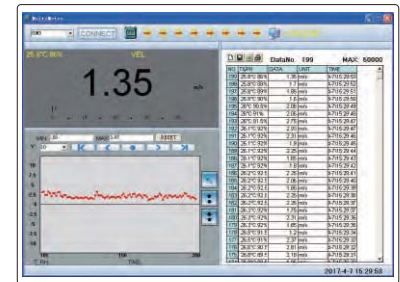
software CD  
(included)



DATA  
OUTPUT

### SPECIFICATION

|                          |   |   |
|--------------------------|---|---|
| Measuring range          | velocity                                      | 0.8~30m/s, 1.4~108km/h, 0.9~67.2mil/h, 1.3~98.5ft/s, 78~5900ft/m, 0.8~58.3knots |
|                          | flow  | 0~9999CMS, 0~99990CMM, 0~99990CFM   |
|                          | temperature                                   | -20~60°C/-4~140°F   |
|                          | relative humidity                             | 0~100%RH  |
| Accuracy                 | velocity                                      | ±(2%+0.5) for m/s, km/h, mil/h, ft/s, knots<br>±(2%+50) for ft/m                |
|                          | temperature                                   | ±1.5°C/±2.7°F   |
|                          | relative humidity                             | ±3% (20~80%RH), ±5% (<20%RH or >80%RH)  |
| Resolution               | velocity                                      | 0.01m/s, 0.01km/h, 0.01mil/h, 0.01ft/s, 1ft/m, 0.01knots                        |
|                          | flow  | 0.01CMS, 0.1CMM, 0.1CFM   |
|                          | temperature                                   | 0.1°C/0.1°F   |
|                          | relative humidity                             | 0.1%RH  |
| Flowing area range       | 0~9.999m <sup>2</sup> /0~9.999ft <sup>2</sup> |   |
| Sampling time            | 0.4s  |   |
| Maximum working altitude | 2000m   |   |
| Output                   | USB   |   |
| Power supply             | 9V battery                                    |   |
| Dimension                | 165×85×38mm                                   |   |
| Weight                   | 200g  |   |



software (included), display measurement values and graph, save and output data

### STANDARD DELIVERY

|                        |      |
|------------------------|------|
| Main unit              | 1 pc |
| Software and USB cable | 1 pc |
| 9V battery             | 1 pc |

## 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



VIDEO

cover (included)



### 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%               |
|                 | 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<br>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 |



DATA  
OUTPUT

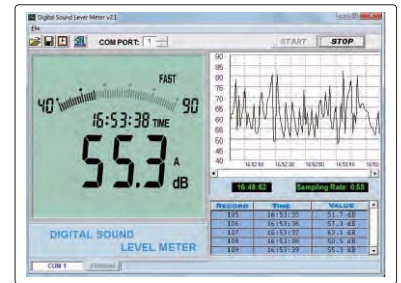
## DIGITAL SOUND LEVEL METER CODE 9351-130



- 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

### 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                                 |



software (included), display measurement values and graph, save and output data

### STANDARD DELIVERY

|                          |       |
|--------------------------|-------|
| Main unit                | 1 pc  |
| RS232 cable and software | 1 pc  |
| Output connector         | 1 pc  |
| Battery (AAA)            | 6 pcs |



software CD  
(included)



## NON-CONTACT DIGITAL TACHOMETER CODE 9221-999

- Maximum and minimum modes
- Memory 100 measurement values
- Automatic power off

### SPECIFICATION

|                    |                              |
|--------------------|------------------------------|
| Measuring range    | 50~99999RPM                  |
| Accuracy           | ±(0.03%+2) RPM               |
| Resolution         | 0.01RPM (range 50~99.99RPM)  |
|                    | 0.1RPM (range 100~9999.9RPM) |
|                    | 1RPM (range 10000~99999RPM)  |
| Measuring distance | 50~250mm                     |
| Power supply       | 4×AAA batteries              |
| Dimension          | 155×60×27mm                  |
| Weight             | 118g                         |



reflection sticker (included)



### STANDARD DELIVERY

|                    |        |
|--------------------|--------|
| Main unit          | 1 pc   |
| Reflection sticker | 1 roll |
| Battery (AAA)      | 4 pcs  |

## CONTACT DIGITAL TACHOMETER CODE 9222-199



VIDEO

- Unit: RPM, m/min, m/sec, ft/min, ft/sec, in/min
- Maximum and minimum modes
- Memory 100 measurement values
- Automatic power off



wheel with 0.1m perimeter (included)



wheel with 6" perimeter (included)



extension rod (included)



cone cavity head (included)



cone head (included)

### SPECIFICATION

|                 |   |
|-----------------|---|
| Measuring range | 50~19999RPM   |
| Accuracy        | $\pm(0.03\%+2)$ RPM   |
| Resolution      | 0.01RPM (range 50~99.99RPM)                                 |
|                 | 0.1RPM (range 100~9999.9RPM)<br>1RPM (range 10000~19999RPM) |
| Power supply    | 4×AAA batteries   |
| Dimension       | 183×60×27mm   |
| Weight          | 122g  |

### STANDARD DELIVERY

|                           |       |
|---------------------------|-------|
| Main unit                 | 1 pc  |
| Wheel with 0.1m perimeter | 1 pc  |
| Wheel with 6" perimeter   | 1 pc  |
| Cone cavity head          | 1 pc  |
| Cone head                 | 1 pc  |
| Extension rod             | 1 pc  |
| Battery (AAA)             | 4 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

|                       |   |
|-----------------------|---|
| Code                  | 9720-199                                |
| Measured parameter    | speed                                   |
| Measuring range       | 0.1~199.9mm/s                           |
| Frequency             | 10Hz~1KHz                               |
| Accuracy              | $\pm(5\%+2)$ mm/s                       |
| Operating temperature | 0°C~40°C                                |
| Operating humidity    | < 85%                                   |
| Power supply          | 2×LR44 batteries (for 10 hours working) |
| Dimension             | 150x22x18mm                             |
| Weight                | 55g                                     |

### STANDARD DELIVERY

|              |       |
|--------------|-------|
| Main unit    | 1 pc  |
| LR44 battery | 2 pcs |



## PEN-TYPE DIGITAL MULTIMETER CODE 9241-ML200

- Automatic ranging
- Maximum mode
- Data hold
- Low battery display
- Auto power off
- Safety rating: CAT III 600V



probe (included)



clips (included)



### SPECIFICATION

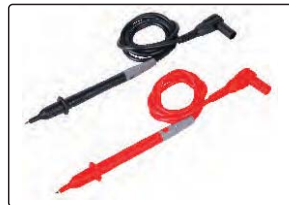
| Function          | Range   | Resolution  | Accuracy       |
|-------------------|---|---|----------------|
| DC Voltage        | 200mV/2V/20V/200V/600V                                | 0.1mV/1mV/10mV/0.1V/1V                              | $\pm(0.7\%+2)$ |
|                   | 200mV/2V/20V/200V                                     | 0.1mV/1mV/10mV/0.1V                                 | $\pm(0.8\%+3)$ |
| AC Voltage        | 600V  | 1V  | $\pm(1.0\%+3)$ |
|                   | 20mA/200mA  | 10 $\mu$ A/0.1mA                                    | $\pm(1.5\%+3)$ |
| DC Current        | 20mA/200mA  | 10 $\mu$ A/0.1mA                                    | $\pm(2.0\%+3)$ |
| AC Current        | 200 $\Omega$  | 0.1 $\Omega$  | $\pm(1.0\%+3)$ |
|                   | 2k $\Omega$ /20k $\Omega$ /200k $\Omega$ /2M $\Omega$ | 1 $\Omega$ /10 $\Omega$ /0.1k $\Omega$ /1k $\Omega$ | $\pm(1.0\%+1)$ |
|                   | 20M $\Omega$  | 10k $\Omega$  | $\pm(1.0\%+5)$ |
| 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 | <50 $\Omega$  |   |                |
| Power supply      | 2×1.5V AAA batteries                                  |   |                |

### STANDARD DELIVERY

|              |       |
|--------------|-------|
| Main unit    | 1 pc  |
| Probe        | 1 pc  |
| Clip         | 2 pcs |
| 1.5V battery | 2 pcs |

## DIGITAL MULTIMETER CODE 9242-ML100

- Data hold
- Display backlight
- Low battery display
- Safety rating: CAT II 600V



probes (included)



### SPECIFICATION

| Function          | Range                                    | Resolution                             | Accuracy        |
|-------------------|--|--|-----------------|
| DC Voltage        | 200mV/2V/20V/200V                        | 0.1mV/1mV/10mV/0.1V                    | $\pm(0.5\%+3)$  |
|                   | 600V                                     | 1V                                     | $\pm(0.8\%+5)$  |
| AC Voltage        | 200V/600V                                | 0.1V/1V                                | $\pm(1.2\%+10)$ |
|                   | 200 $\mu$ A/2mA                          | 0.1 $\mu$ A/1 $\mu$ A                  | $\pm(1.0\%+3)$  |
| DC Current        | 20mA                                     | 10 $\mu$ A                             | $\pm(1.0\%+5)$  |
|                   | 200mA                                    | 0.1mA                                  | $\pm(1.5\%+5)$  |
|                   | 10A                                      | 10mA                                   | $\pm(3.0\%+10)$ |
|                   | 200 $\Omega$                             | 0.1 $\Omega$                           | $\pm(0.8\%+5)$  |
| Resistance        | 2k $\Omega$ /20k $\Omega$ /200k $\Omega$ | 1 $\Omega$ /10 $\Omega$ /0.1k $\Omega$ | $\pm(0.8\%+2)$  |
|                   | 2M $\Omega$                              | 1k $\Omega$                            | $\pm(1.0\%+5)$  |
|                   | Diode                                    | open circuit voltage 3.0V              |                 |
| Continuity buzzer | <70 $\pm$ 30 $\Omega$                    |  |                 |
| Transistor hFE    | measuring range 0~1000                   |  |                 |
| Power supply      | 1×9V 6F22/NEDA 1604 battery              |  |                 |

### STANDARD DELIVERY

|            |       |
|------------|-------|
| Main unit  | 1 pc  |
| Probe      | 2 pcs |
| 9V battery | 1 pc  |

## AC DIGITAL CLAMP METER CODE 9243-CA600

- Auto/manual ranging
- Maximum mode
- Data hold
- Display backlight
- Work light
- Low battery display
- Auto power off
- Safety rating: CAT III 600V



probes (included)



### SPECIFICATION

| Function          | Range                     | Resolution            | Accuracy   |
|-------------------|---------------------------|-----------------------|------------|
| DC Voltage        | 200mV/2V/20V/200V         | 0.1mV/1mV/10mV/0.1V   | ±(0.8%+2)  |
|                   | 600V                      | 1V                    | ±(1.0%+2)  |
| AC Voltage        | 2V/20V/200V               | 1mV/10mV/0.1V         | ±(1.0%+5)  |
|                   | 600V                      | 1V                    | ±(1.2%+5)  |
| AC Current        | 2A(≤0.5A)                 | 1mA                   | ±(3.5%+20) |
|                   | 2A                        | 1mA                   | ±(3.0%+10) |
|                   | 20A                       | 10mA                  | ±(3.0%+10) |
|                   | 200A                      | 0.1A                  | ±(2.5%+10) |
|                   | 600A                      | 1A                    | ±(1.5%+5)  |
| Resistance        | 200Ω/2kΩ/20kΩ/200kΩ/2MΩ   | 0.1Ω/1Ω/10Ω/0.1kΩ/1kΩ | ±(1.2%+2)  |
|                   | 20MΩ                      | 10kΩ                  | ±(2.0%+5)  |
| Diode             | open circuit voltage 1.5V |                       |            |
| Continuity buzzer | <50Ω                      |                       |            |
| Power supply      | 3×1.5V AAA batteries      |                       |            |
| Dimension         | 208×78×35mm               |                       |            |
| Weight            | 245g                      |                       |            |

### STANDARD DELIVERY

|              |       |
|--------------|-------|
| Main unit    | 1 pc  |
| Probe        | 2 pcs |
| 1.5V battery | 3 pcs |

## 60° GLOSS METER CODE ISQ-DG6



- 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)

### 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           |
| 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 |



DATA OUTPUT

BLUETOOTH

CAN BE OPERATED BY COMPUTERS OR MOBILE PHONES

## 20°/60°/85° GLOSS METER CODE ISQ-DG8



base with calibration block (included)



software CD (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

connect mobile phone via bluetooth (only Android system)



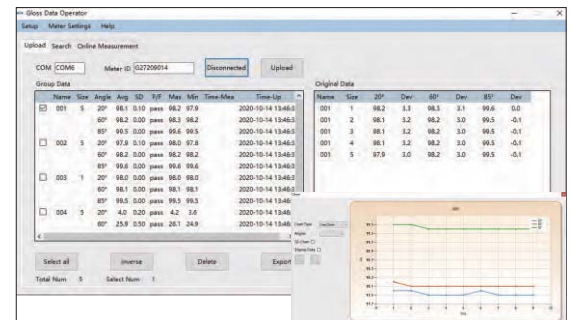
operate and output data by mobile phone

connect computer via bluetooth or USB cable



### SPECIFICATION

| Incidence angle | 20°   | 60°      | 85°     |
|-----------------|---|----------|---------|
| Measuring range | 0~2000GU  | 0~1000GU | 0~160GU |
| Resolution      | 0.1GU (range≤119.9GU)<br>1GU (range>119.9GU)    |          |         |
| Accuracy        | ±1.5GU (range≤119.9GU)<br>±1.5% (range>119.9GU) |          |         |
| Repeatability   | 0.2GU (range≤119.9GU)<br>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  |          |         |



software (included), test can be controlled from the software, display test data, output to Excel

### STANDARD DELIVERY

|                             |      |
|-----------------------------|------|
| Main unit                   | 1 pc |
| Base with calibration block | 1 pc |
| Software and USB cable      | 1 pc |
| Bluetooth receiver          | 1 pc |

# SPECTROPHOTOMETER CODE 9710-30



- 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, GB/T 3978, GB2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil
- 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

DATA  
OUTPUT

CONCAVE GRATING  
SPECTROPHOTOMETRIC

Ø8/4mm DUAL APERTURE

BLUETOOTH



software CD  
(included)



white and black calibration  
cavity (included)



printer (optional)

## 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   | $\Delta E^*_{ab}$ , $\Delta E^*_{uv}$ , $\Delta E^*_{94}$ , $\Delta E^*_{cmc}$ (2:1), $\Delta E^*_{cmc}$ (1:1), $\Delta E^*_{00v}$ , $\Delta E$ (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°   |
| Illuminant                 | A, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, T183, T184, U35   |
| Displayed data             | spectrogram/values, samples chromaticity values, color difference values/graph, PASS/FAIL result, color offset   |
| Measuring time             | 2.6s   |
| Repeatability              | spectral reflectance   |
|                            | colorimetric values  |
| Inter-instrument error     | MAV/SCI: within 0.08% of standard deviation (400~700nm: 0.18%)   |
| Measurement mode           | MAV/SCI: $\Delta E^* \leq 0.03$  |
| Measurement mode           | MAV/SCI: $\Delta E^* \leq 0.15$  |
| 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  |
| Battery                    | Li-ion battery, 5000 measurements within 8 hours   |
| Dimension                  | 184×77×105mm   |
| Weight                     | 600g   |



measurement



reflectivity

software (included), test can be controlled from the software, display test data, report

## 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   |

## 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   |  |



proximity trigger (included)



make LED flash frequency same as the rotation or vibration (power supply from AC/DC adapter when external trigger is used)

### STANDARD DELIVERY

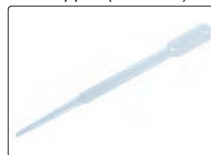
|                   |      |
|-------------------|------|
| Main unit         | 1 pc |
| AC/DC adapter     | 1 pc |
| Proximity trigger | 1 pc |

- Quickly measure the concentration of coolant
- 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  $(2.1 \times 6\%) = 12.6\%$
- Automatic power off

### 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                     |

dropper (included)



### STANDARD DELIVERY

|               |      |
|---------------|------|
| Main unit     | 1 pc |
| Dropper       | 1 pc |
| Battery (AAA) | 1 pc |

## DIGITAL REFRACTOMETER CODE ISQ-DRM31

SUITABLE FOR WATER BASED COOLANT



SUITABLE FOR WATER BASED COOLANT

- Quickly measure the concentration of coolant
- 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  $(2.1 \times 6\%) = 12.6\%$

### SPECIFICATION

|                 |             |
|-----------------|-------------|
| Measuring range | 0~32%       |
| Graduation      | 0.2%        |
| Dimension       | 27×40×160mm |
| Weight          | 175g        |

## PORTABLE REFRACTOMETER CODE ISQ-RM30



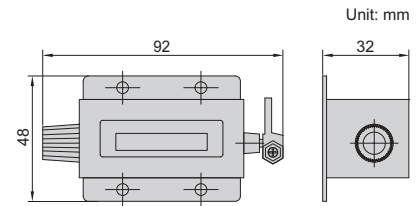
## STROKE COUNTER CODE 7600-6

- Accumulate and record the number of mechanical movements
- Rotate back to zero



### SPECIFICATION

| Code   | Number of digits | Range    |
|--------|------------------|----------|
| 7600-6 | 6                | 0-999999 |



## DIGITAL LEVEL CODE ISE-2DT

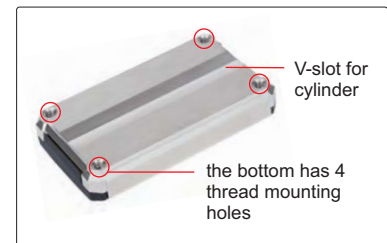
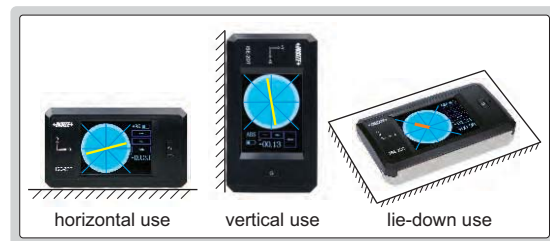
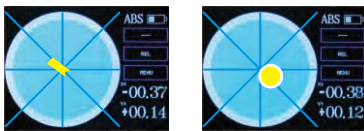
DATA  
OUTPUT

- Color LCD, touch panel
- X-Y axis measurement
- Set the tolerance and the display is shown in different colors



within the tolerance (green)    slightly out of the tolerance (yellow)    seriously out of the tolerance (red)

- To show the incline with line or bubble



### SPECIFICATION

|                 |   |
|-----------------|---|
| Measuring range | ±30°                                      |
| Resolution      | 0.01°, 0.1mm/m                            |
| Accuracy        | ±0.03° (range 0~3°)<br>±0.05° (range >3°) |
| Power supply    | rechargeable battery                      |
| Dimension       | 115×66×23mm                               |
| Weight          | 224g                                      |

### STANDARD DELIVERY

|           |      |
|-----------|------|
| Main unit | 1 pc |
| USB cable | 1 pc |

### OPTIONAL ACCESSORY

|          |                  |
|----------|------------------|
| Software | ISE-2DT-SOFTWARE |
|----------|------------------|



**IP67**  
WATERPROOF

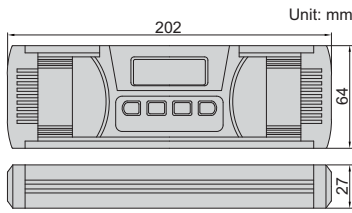
**ABSOLUTE LEVEL**

**BACKLIGHT**

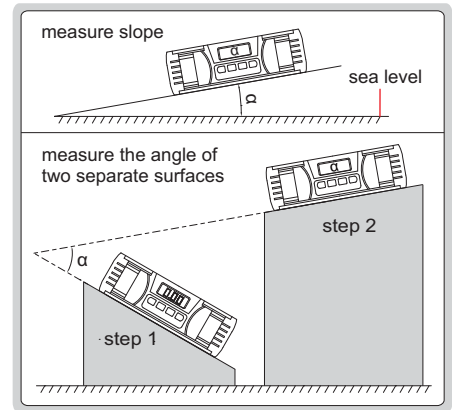
**BUZZER ALARM AT 0° AND 90°**

**WORKING TEMPERATURE -5°C ~ 50°C**

## DIGITAL LEVEL AND SLOPE METER



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°x4) | 0.05° (=0.873mm/m) | at 0°: ±0.05°; at others: ±0.1° |

**IP54**  
WATERPROOF

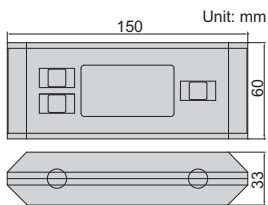
**ABSOLUTE LEVEL**

**BACKLIGHT**

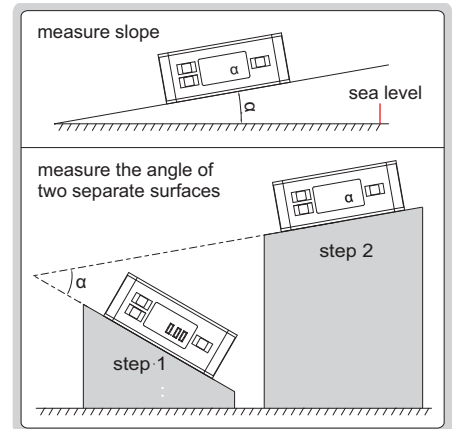
**BUZZER ALARM AT 0° AND 90°**

**WORKING TEMPERATURE -5°C ~ 50°C**

## DIGITAL LEVEL AND SLOPE METER



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°x4) | 0.05° (=0.873mm/m) | at 0° and 90°: ±0.1°; at others: ±0.2° |

**DISPLAY FLIPS OVER WHEN THE BOTTOM FACES UP**

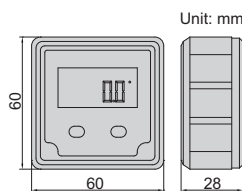
**WORKING TEMPERATURE -5°C ~ 50°C**

**BACKLIGHT**

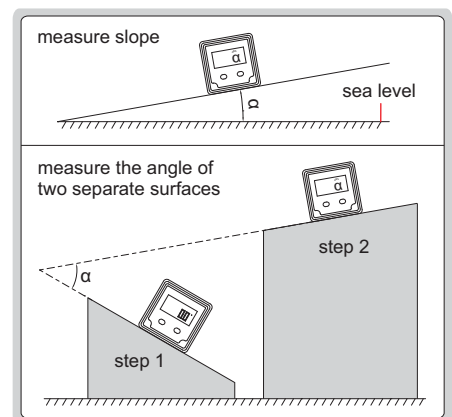
**ABSOLUTE LEVEL**

**MAGNETIC BOTTOM**

## DIGITAL LEVEL AND SLOPE METER



2170-1



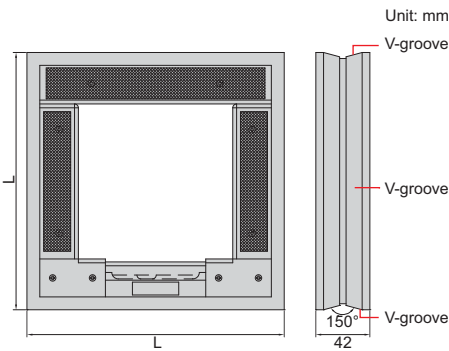
- Used as level and slope meter
- Aluminum frame
- Magnetic bottom
- The display flips over when the bottom faces up
- The backlight is on automatically when in use, and automatically off in 15 seconds after use
- The sea level is permanently set inside the chip, zero setting is not needed when battery 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

**INSIZE PLUS**  
MADE IN EUROPE

- No need to set zero before use
- Three V-grooves for shafts (shafts dia. 19.3~115.9mm)
- With longitudinal vial



NO NEED TO SET ZERO BEFORE USE



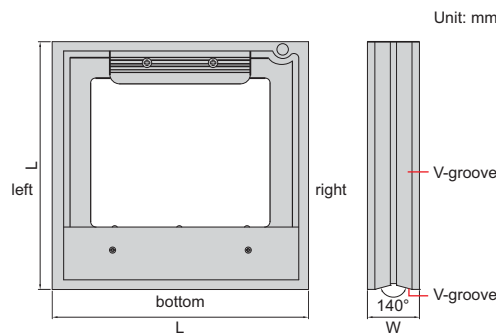
4906-200

| Code                           |                                | Size (LxL) |
|--------------------------------|--------------------------------|------------|
| Sensitivity 0.02mm/m (=0.001°) | Sensitivity 0.1mm/m (=0.0057°) |            |
| 4906-150                       | 4906-B150                      | 150x150mm  |
| 4906-200                       | 4906-B200                      | 200x200mm  |
| 4906-300                       | 4906-B300                      | 300x300mm  |

## FRAME LEVELS (ECONOMIC TYPE)



- V-groove on bottom and left for shafts (shafts dia. 15~70mm)
- With transverse vial
- Supplied with adjusting wrench



4902-200

| Code                           |                                 | Size (LxL) | 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 |

## BLOCK LEVELS

**INSIZE PLUS**  
MADE IN EUROPE

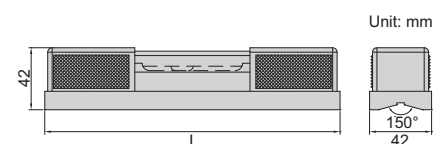
- No need to set zero before use
- V-groove on bottom for shafts (shafts dia. 19.3~115.9mm)
- With longitudinal vial



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    |



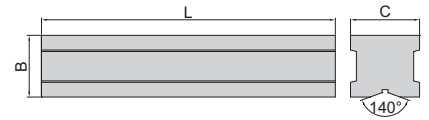


## BLOCK LEVELS (ECONOMIC TYPE)



4903-200A

- V-groove on bottom for shafts (shafts dia. 15~70mm)
- With transverse vial
- Supplied with adjusting wrench



| Code                           |                                 | Length (L) | B    | C    |
|--------------------------------|---------------------------------|------------|------|------|
| Sensitivity 0.02mm/m (=0.001°) | Sensitivity 0.05mm/m (=0.0029°) |            |      |      |
| 4903-150A                      | 4903-C150                       | 150mm      | 40mm | 45mm |
| 4903-200A                      | 4903-C200                       | 200mm      | 42mm | 47mm |
| 4903-300A                      | 4903-C300                       | 300mm      | 45mm | 50mm |

NO NEED TO SET ZERO BEFORE USE

- 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

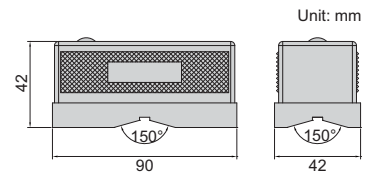


4907-90

| Code    | Length | Sensitivity        |
|---------|--------|--------------------|
| 4907-90 | 90mm   | 0.1mm/m (=0.0057°) |

## SHORT LEVEL

**INSIZE PLUS**  
MADE IN EUROPE



NO NEED TO SET ZERO BEFORE USE

- No need to set zero before use
- With mounting holes (for M5 screws)

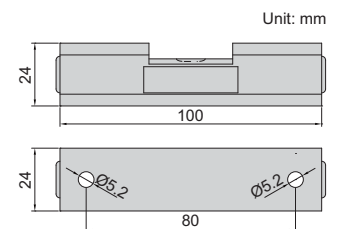


4908-100

| Code     | Length | Sensitivity        |
|----------|--------|--------------------|
| 4908-100 | 100mm  | 0.1mm/m (=0.0057°) |

## MINI LEVEL

**INSIZE PLUS**  
MADE IN EUROPE



## MACHINISTS' LEVELS

- With transverse and longitudinal vials
- V-groove on bottom for shafts (shafts dia. 15-60mm for 4904-150, and 15-70mm for 4904-200/300)
- Supplied with adjust wrench

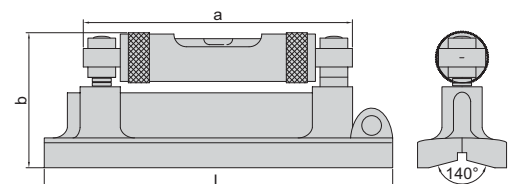


4904-200

rotate cover to protect vials



| Code     | Sensitivity       | Size (L) | a     | b    |
|----------|-------------------|----------|-------|------|
| 4904-150 | 0.3mm/m (=0.017°) | 150mm    | 116mm | 58mm |
| 4904-200 | 0.3mm/m (=0.017°) | 200mm    | 135mm | 73mm |
| 4904-300 | 0.3mm/m (=0.017°) | 300mm    | 216mm | 73mm |

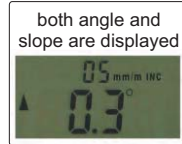
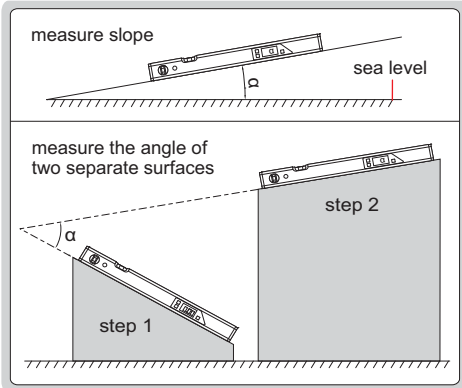


## DIGITAL LEVELS AND SLOPE METERS

ABSOLUTE LEVEL

BACKLIGHT

WORKING TEMPERATURE  
0°C ~ 50°C

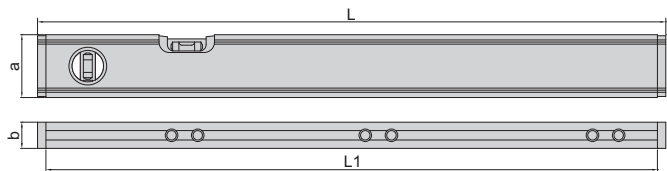


4910-400



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°<br>(90°×4) | angle: 0.1°; slope: 1mm/m   | ±0.2°                                     | both angle and slope are displayed | 416 | 400 | 50 | 21 |
| 4910-600 | 0~360°<br>(90°×4) | at 0° and 90°: 0.05° (=0.8725mm/m);<br>at others: 0.1° (=1.745mm/m) | at 0° and 90°: ±0.1°;<br>at others: ±0.2° | at 0° and 90°<br>buzzer alarms     | 600 | 585 | 60 | 25 |

## ALUMINUM ALLOY LEVELS

LIFETIME WARRANTY VIALS

- 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

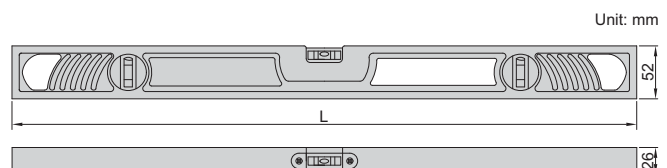


4911-600

bottom surface (non-magnetic, milled)



| Code     | Length (L) | Accuracy |
|----------|------------|----------|
| 4911-600 | 600mm      | 0.5mm/m  |
| 4911-800 | 800mm      | 0.5mm/m  |



MAGNETIC BASE

LIFETIME WARRANTY VIALS

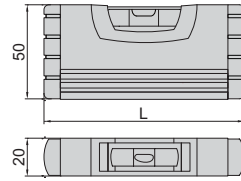
### HANDY LEVEL

magnetic base surface



4912-100

Unit: mm



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  |

MAGNETIC BASE

LIFETIME WARRANTY VIALS

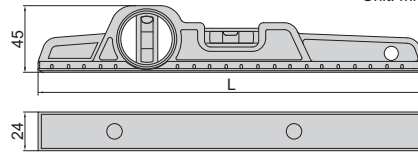
### CASTING ALUMINUM LEVEL

magnetic bottom surface (milled)



4913-250

Unit: mm



packaging



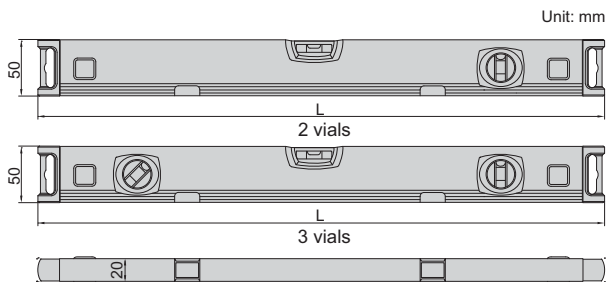
- Shockproof horizontal and vertical vials
- Magnetic base
- Working temperature: -15°C~55°C
- Casting aluminum body

| Code     | Size (L) | Accuracy |
|----------|----------|----------|
| 4913-250 | 250mm    | 0.5mm/m  |

LIFETIME WARRANTY VIALS

MAGNETIC BASE

### ALUMINUM LEVELS

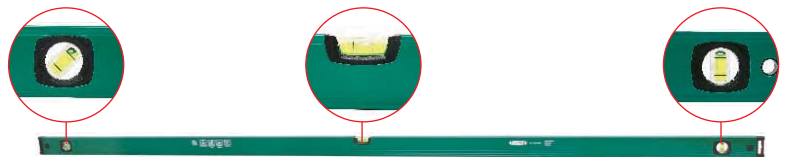


Unit: mm



4914-600

- Shockproof horizontal and vertical vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C



4914-2000

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               |

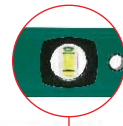
## ALUMINUM ALLOY LEVELS (BASIC TYPE)

MAGNETIC BASE

LIFETIME WARRANTY VIALS



4918-300



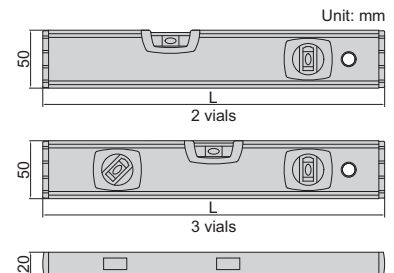
4918-2000

magnetic bottom surface



- Shock-proof and UV-proof vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C

| 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               |



## CROSS-LINE LASER LEVEL CODE 4917-30

- Red horizontal and vertical cross laser lines
- Self-leveling within  $\pm 3^\circ$ , self-leveling time within 4s, audible and visual warning when out of  $\pm 3^\circ$
- Folding legs for angle and height adjustment
- Outdoor use with the detector (code: 4917-DETECTOR)

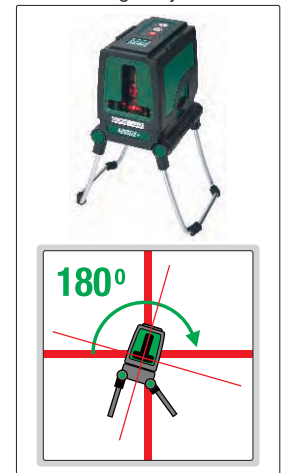
application examples



IP54  
WATERPROOF

AUDIBLE AND VISUAL  
WARNING WHEN OUT OF  $\pm 3^\circ$

folding legs for angle  
and height adjustment



### SPECIFICATION

|                       |  |
|-----------------------|--|
| Laser line width      | 2 $\pm$ 0.5mm (within 5m)                          |
| Laser type            | 630~660nm, class II, <1mW                          |
| Beam angle            | 120 $\pm$ 0.5°                                     |
| Self-leveling range   | $\pm 3^\circ$                                      |
| Working distance      | indoor: 30m, outdoor: 50m with detector (optional) |
| Accuracy              | 0.2mm/m  |
| Operation temperature | -10~40°C   |
| Power supply          | 3 $\times$ AA batteries, for 3 hours working       |
| Dimension             | 100 $\times$ 82 $\times$ 104mm                     |
| Weight                | 620g   |

### 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 |
|------------------|---------------|

### OUTDOOR DETECTOR (OPTIONAL)

|                      |   |
|----------------------|---|
| Detecting distance   | horizontal 1~50m, vertical 1~30m                      |
| Detecting accuracy * | high accuracy $\pm 1.5$ mm, low accuracy $\pm 2.5$ mm |
| Power supply         | 9V battery  |
| Dimension            | 168 $\times$ 58 $\times$ 30mm                         |
| Weight               | 140g (battery included)                               |

\* Use high accuracy detection mode within 15m, use low accuracy detection mode over 15m



outdoor detector (optional)



stand  
(included with outdoor detector)

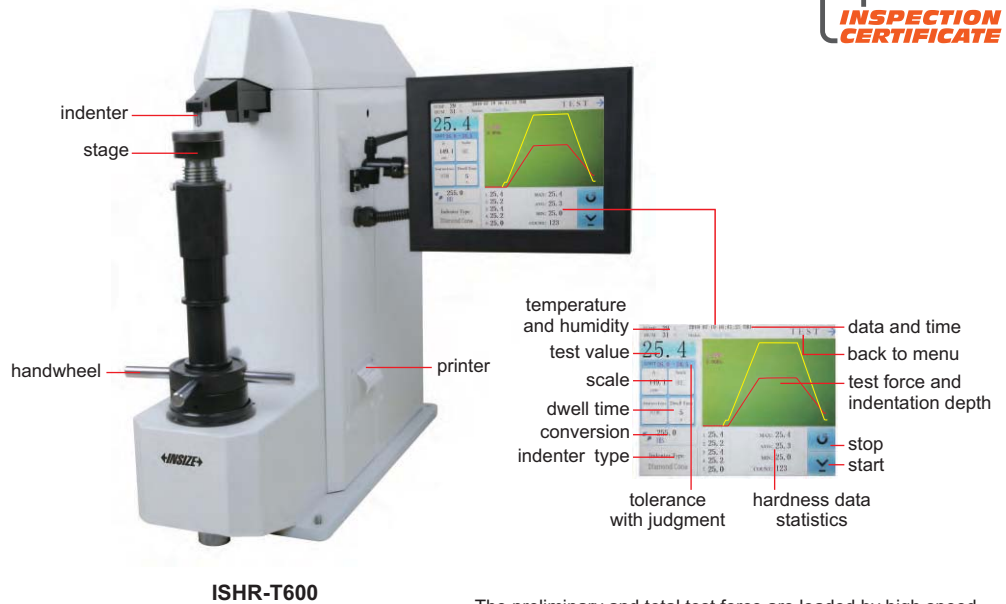
FORCE LOADING BY CLOSE-LOOP SYSTEM (WITHOUT WEIGHTS)

AUTOMATIC TESTING, CONTINUOUS TESTING

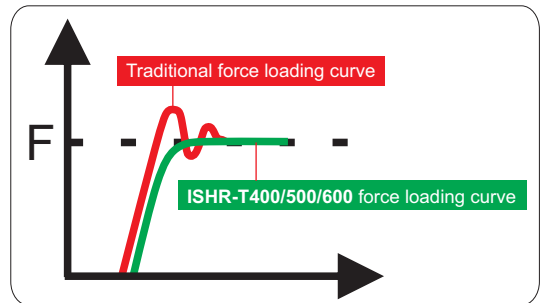


## AUTOMATIC DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS (DOLPHIN-NOSE TYPE)

INSPECTION CERTIFICATE



The preliminary and total test force are loaded by high speed close-loop system automatically, faster and more stable than traditional motor loading. Loading process is smooth, no overshoot. Loading speed and accuracy are improved greatly



- Automatic testing, the preliminary and total test force are loaded by high speed close-loop system automatically
- Dolphin-nose indenter for easy reach of the internal wall of pipes and grooves, the minimum internal diameter is 40mm
- Can transmit test data to computer
- LCD touch screen
- Tolerance with judgement
- Memory of 120 test values for browsing and output
- Provide the maximum, minimum and average values of measurement
- The test process curve shows the material property
- Test force is selected automatically according to hardness scale

### SPECIFICATION

| Code                   | ISHR-T400  | ISHR-T500                                   | ISHR-T600  |
|------------------------|--|---|--|
| Type                   | Rockwell   | Superficial Rockwell                        | Rockwell and Superficial Rockwell  |
| Hardness scale         | with standard indenters  | HR15N, HR30N, HR45N, HR15T, HR30T, HR45T    | HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T                                     |
|                        | with optional indenters  | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y |
| Preliminary test force | Rockwell: 98N (10kg)   | Superficial Rockwell: 29.4N (3kg)           | Rockwell: 98N (10kg)<br>Superficial Rockwell: 29.4N (3kg)  |
| Total test force       | 588N (60kg), 980N (100kg), 1471N (150kg)                           | 147.1N (15kg), 294.2N (30kg), 441.3N (45kg) | 147.1N (15kg), 294.2N (30kg), 441.3N (45kg), 588N (60kg), 980N (100kg), 1471N (150kg)                      |
| Conversion scale       | HR, HB, HK, HV   |   |  |
| Stage elevation        | manual   |   |  |
| Load control           | high speed close-loop system automatic loading (load/dwell/unload) |   |  |
| Load dwell time        | 0~99 second  |   |  |
| Resolution             | 0.1HR  |   |  |
| Data output            | built-in printer, RS232  |   |  |
| Max. workpiece height  | 260mm  |   |  |
| Max. testing width     | 150mm (from the center of indenter to the wall of main body)       |   |  |
| Power supply           | 110/220V, 50/60Hz  |   |  |
| Dimension              | 700×260×700mm  |   |  |
| Weight                 | 85kg   |   |  |

To be continued

Continued from previous page

### STANDARD DELIVERY

| Code                            | ISHR-T400 | ISHR-T500 | ISHR-T600 |
|---------------------------------|-----------|-----------|-----------|
| Main unit                       | 1 pc      | 1 pc      | 1 pc      |
| Ø60mm 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      |
| Ø1.5875mm carbide ball indenter | 1 pc      | 1 pc      | 1 pc      |
| Diamond indenter                | 1 pc      | 1 pc      | 1 pc      |
| Hardness test block HRB88~95    | 1 pc      | —         | 1 pc      |
| Hardness test block HRC20~30    | 1 pc      | —         | 1 pc      |
| Hardness test block HRC40~50    | 1 pc      | —         | 1 pc      |
| Hardness test block HRC60~65    | 1 pc      | —         | 1 pc      |
| Hardness test block 78~88HR15N  | —         | 1 pc      | 1 pc      |
| Hardness test block 55~73HR30N  | —         | 1 pc      | 1 pc      |
| Hardness test block 57~69HR30T  | —         | 1 pc      | 1 pc      |



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

### OPTIONAL ACCESSORY

|                                |                 |
|--------------------------------|-----------------|
| 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      |
| Hardness test block 78~88HR15N | HDT-B-HR15N2    |
| Hardness test block 55~73HR30N | HDT-B-HR30N2    |
| Hardness test block 57~69HR30T | ISH-BHR30T1     |
| Small V-type anvil             | ISH-SMALLANVIL  |
| Connection cable and software  | ISHR-T-SOFTWARE |

## AUTOMATIC DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS

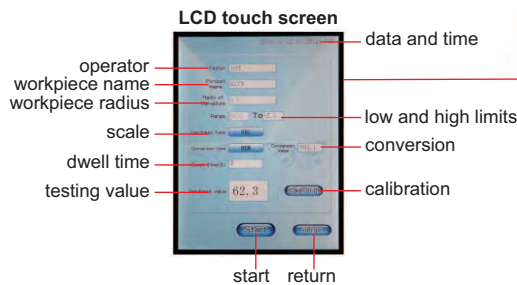
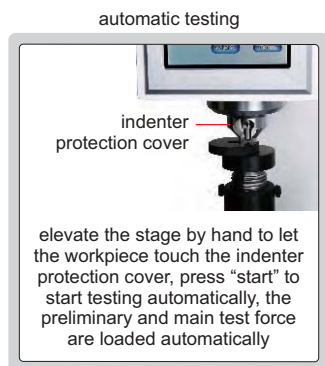
INSPECTION CERTIFICATE



VIDEO

FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS)

DATA OUTPUT



ISH-RSR400

- Automatic testing, the preliminary and main test force are loaded automatically
- LCD touch screen, easy operation
- Convert to other Rockwell scales, HV or HB automatically
- Tolerance testing
- Insert USB flash disk, save the testing results as Excel
- Self-correcting the hardness value for curved workpieces
- Force loading by electric motor (without weights)
- The test force is selected automatically according to hardness scale

To be continued



Continued from previous page



Ø63mm flat anvil  
(included)



Ø150mm flat anvil  
(included)



level (included)



touch pen (included)



V-type anvil (included)  
for cylinders with  
diameter Ø4~60mm



small V-type anvil  
**(optional)**  
for cylinders with  
diameter Ø2~4mm

## SPECIFICATION

| Code                   |                         | ISH-RSR400 **  | ISH-RSR500 **   | ISH-RSR600 **  |
|------------------------|-------------------------|--|---|--|
| Type                   |                         | Rockwell   | Superficial Rockwell  | Rockwell and Superficial Rockwell  |
| Hardness scale         | with standard indenters | 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)                     | 147.1N (15kg), 294.2N (30kg), 441.3N (45kg)                   | 147.1N (15kg), 294.2N (30kg), 441.3N (45kg), 588N (60kg), 980N (100kg), 1471N (150kg)                      |
| Stage elevation        |                         | manual   |   |  |
| Load control           |                         | automatic (load/dwell/unload)                                |   |  |
| Load dwell time        |                         | 0~60 second  |   |  |
| Resolution             |                         | 0.1HR  |   |  |
| Output                 |                         | USB  |   |  |
| Max. workpiece height  |                         | 220mm  |   |  |
| Max. testing width     |                         | 200mm (from the center of indenter to the wall of main body) |   |  |
| Power supply           |                         | 220V, 50/60Hz **   |   |  |
| Dimension              |                         | 510×260×780mm  |   |  |
| Weight                 |                         | 70kg   |   |  |

## STANDARD DELIVERY

| Code                            | ISH-RSR400 ** | ISH-RSR500 ** | ISH-RSR600 ** |
|---------------------------------|---------------|---------------|---------------|
| Main unit                       | 1 pc          | 1 pc          | 1 pc          |
| Ø63mm 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          |
| Diamond indenter                | 1 pc          | 1 pc          | 1 pc          |
| Ø1.5875mm carbide ball indenter | 1 pc          | 1 pc          | 1 pc          |
| Hardness test block HRB88~95    | 1 pc          | —             | 1 pc          |
| Hardness test block HRC60~65    | 1 pc          | —             | 1 pc          |
| Hardness test block HRC20~30    | 1 pc          | —             | 1 pc          |
| Hardness test block 78~88HR15N  | —             | 1 pc          | 1 pc          |
| Hardness test block 55~73HR30N  | —             | 1 pc          | 1 pc          |
| Hardness test block 57~69HR30T  | —             | 1 pc          | 1 pc          |
| USB flash disk (8G)             | 1 pc          | 1 pc          | 1 pc          |
| Level                           | 1 pc          | 1 pc          | 1 pc          |
| Touch pen                       | 1 pc          | 1 pc          | 1 pc          |
| Anti-dust cover                 | 1 pc          | 1 pc          | 1 pc          |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

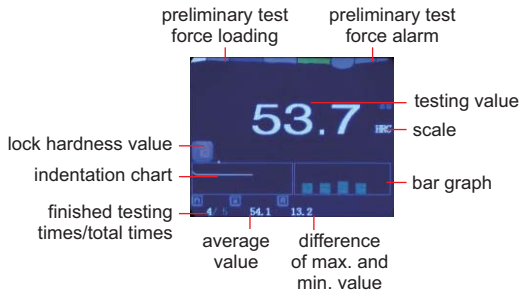
## OPTIONAL ACCESSORY

|                                |                |
|--------------------------------|----------------|
| 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 78~88HR15N | HDT-B-HR15N2   |
| Hardness test block 55~73HR30N | HDT-B-HR30N2   |
| Hardness test block 57~69HR30T | ISH-BHR30T1    |
| Small V-type anvil             | ISH-SMALLANVIL |

## AUTOMATIC DIGITAL ROCKWELL HARDNESS TESTER CODE ISH-MRD200\*\*

INSPECTION  
CERTIFICATE

DATA  
OUTPUT



software CD (included)

- Tolerance testing
- Set testing times (2~10) to have average value and the difference of max. and min. value
- Convert to other Rockwell scales, HV or HB
- Memory of 500 testing values for browsing and output
- Testing value can be sent to wireless printer automatically
- Calibration function compensates the testing value for high accuracy
- The hardness value of soft materials like plastic is not stable, the lock function can obtain the value automatically
- Display unit is automatic power off



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



wireless printer (optional)

### SPECIFICATION

|                                  |  |
|----------------------------------|--|
| Hardness scale                   | HRA, HRB, HRC, HRD<br>HRF, HRG (with standard indenters)<br>HRE, HRH, HRK (with optional indenter) |
| Preliminary test force           | 98N  |
| Test force                       | 588N, 980N, 1471N  |
| Stage elevation                  | manual   |
| Load control                     | automatic (load/dwell/unload)  |
| Load dwell time                  | 1~99 second  |
| Resolution                       | 0.1HR  |
| Output                           | wireless and USB   |
| Memory                           | 500  |
| Max. workpiece height            | 170mm  |
| Max. testing width               | 165mm (from the center of indenter to the wall of main body)                                       |
| Power supply of the display unit | built-in rechargeable battery  |
| Power supply                     | 220V, 50/60Hz **   |
| Dimension                        | 520×160×700mm  |
| Weight                           | 60kg   |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

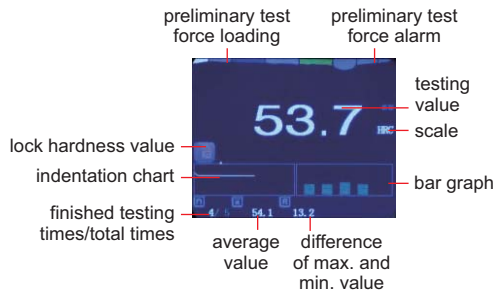
### STANDARD DELIVERY

|                                 |      |
|---------------------------------|------|
| 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 |
| Software and USB cable          | 1 pc |
| AC/DC adapter                   | 1 pc |

### OPTIONAL ACCESSORY

|                                |                  |
|--------------------------------|------------------|
| Wireless printer               | ISH-DS-PRINTER   |
| Ø3.175mm carbide ball indenter | ISH-EHK-INDENTER |
| 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   |

# MANUAL DIGITAL ROCKWELL HARDNESS TESTER CODE ISH-RD200



- Tolerance testing
- Set testing times (2~10) to have average value and the difference of max. and min. value
- Convert to other Rockwell scales, HV or HB
- Memory of 500 testing values for browsing and output
- Testing value can be sent to wireless printer automatically
- Calibration function compensates the testing value for high accuracy
- The hardness value of soft materials like plastic is not stable, the lock function can obtain the value automatically
- Automatic power off



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



wireless printer (optional)

## SPECIFICATION

|                        |  |
|------------------------|--|
| Hardness scale         | HRA, HRB, HRC, HRD<br>HRF, HRG (with standard indenters)<br>HRE, HRH, HRK (with optional indenter) |
| Preliminary test force | 98N  |
| Test force             | 588N, 980N, 1471N  |
| Stage elevation        | manual   |
| Load control           | manual   |
| Resolution             | 0.1HR  |
| Output                 | wireless and USB   |
| Memory                 | 500  |
| Max. workpiece height  | 170mm  |
| Max. testing width     | 165mm (from the center of indenter to the wall of main body)                                       |
| Power supply           | built-in rechargeable battery  |
| 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 |
| Software and USB cable          | 1 pc |
| AC/DC adapter                   | 1 pc |

## OPTIONAL ACCESSORY

|                                |                  |
|--------------------------------|------------------|
| Wireless printer               | ISH-DS-PRINTER   |
| Ø3.175mm carbide ball indenter | ISH-EHK-INDENTER |
| 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   |

## AUTOMATIC ROCKWELL HARDNESS TESTER CODE ISH-MR150\*\*



### 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 |

### SPECIFICATION

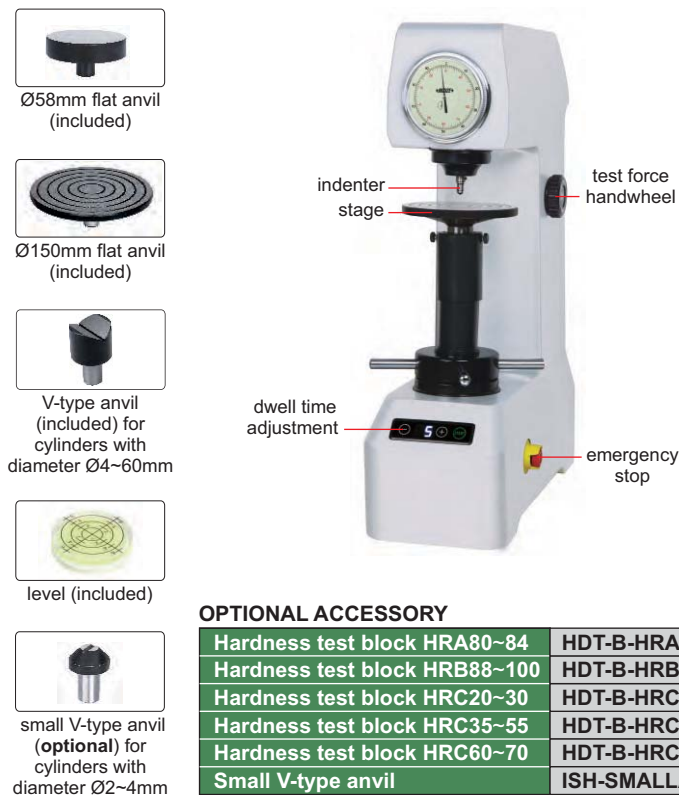
|                        |  |
|------------------------|--|
| Hardness scale         | HRA, HRB, HRC, HRD, HRF, HRG                                 |
| Preliminary test force | 98N  |
| Test force             | 588N, 980N, 1471N  |
| Display                | analogue   |
| Stage elevation        | manual   |
| Load control           | automatic (load/dwell/unload)                                |
| Load dwell time        | 1~99 second  |
| Min. reading           | 0.5HR  |
| Max. workpiece height  | 170mm  |
| Max. testing width     | 165mm (from the center of indenter to the wall of main body) |
| Power supply           | 220V, 50/60Hz**  |
| Dimension              | 520×160×700mm  |
| Weight                 | 60kg   |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### 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 |

## AUTOMATIC ROCKWELL HARDNESS TESTER (BASIC TYPE) CODE HDT-RA151\*\*



### 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            | ISH-SMALLANVIL |

### 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              | 520×225×640mm  |
| Weight                 | 65kg   |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### 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 |



## MANUAL ROCKWELL HARDNESS TESTER CODE ISH-R150

### 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 |



V-type anvil (included) for cylinders with diameter Ø4~60mm



small V-type anvil (optional) for cylinders with diameter Ø2~4mm

### 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 |



## MANUAL ROCKWELL HARDNESS TESTER (BASIC TYPE) CODE HDT-RW160

### 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  |



V-type anvil (included) for cylinders with diameter Ø4~60mm



level (included)



small V-type anvil (optional) for cylinders with diameter Ø2~4mm

### 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            | ISH-SMALLANVIL |

## MANUAL ROCKWELL AND SUPERFICIAL ROCKWELL HARDNESS TESTER CODE HDT-RSR100



### INSPECTION CERTIFICATE



Ø60mm flat anvil  
(included)



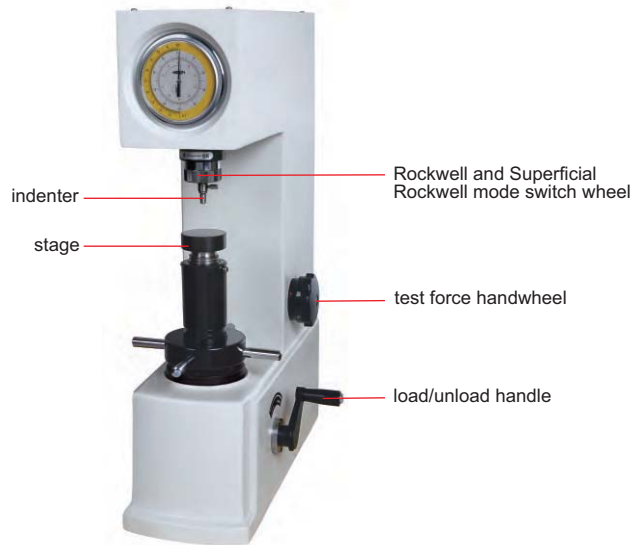
Ø150mm flat anvil  
(included)



V-type anvil  
(included) for  
cylinders with  
diameter Ø4~60mm



small V-type anvil  
(optional) for  
cylinders with  
diameter Ø2~4mm



### SPECIFICATION

|                        |   |
|------------------------|---|
| Hardness scale         | HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T    |
| Preliminary test force | 29.4N/3kgf for Superficial Rockwell<br>98N/10kgf for Rockwell             |
| Test force             | 147N/15kgf, 294N/30kgf, 441N/45kgf, 588N/60kgf, 980N/100kgf, 1471N/150kgf |
| Display                | analogue  |
| Stage elevation        | manual  |
| Load control           | manual  |
| Min. reading           | 0.5HR   |
| Max. workpiece height  | 160mm   |
| Max. testing width     | 140mm (from the center of indenter to the wall of main body)              |
| Dimension              | 460×240×660mm   |
| Weight                 | 75kg  |

### 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 |
| Hardness test block 78~88HR15N  | 1 pc |
| Hardness test block 55~73HR30N  | 1 pc |
| Hardness test block 57~69HR30T  | 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 78~88HR15N | HDT-B-HR15N2   |
| Hardness test block 55~73HR30N | HDT-B-HR30N2   |
| Hardness test block 57~69HR30T | ISH-BHR30T1    |
| Small V-type anvil             | ISH-SMALLANVIL |



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



### 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   |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### 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 200-3000HBW2.5/187.5 | HDT-B-HB25A2   |
| Small V-type anvil for Rockwell          | ISH-SMALLANVIL |

## AUTOMATIC DIGITAL BRINELL HARDNESS TESTERS

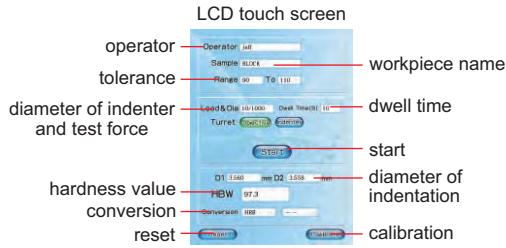
AUTOMATIC TESTING,  
AUTOMATIC TEST FORCE LOADING



VIDEO

FORCE LOADING BY ELECTRIC  
MOTOR (WITHOUT WEIGHT)

INSPECTION  
CERTIFICATE



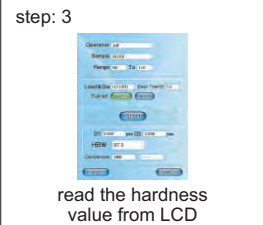
ISHB-D200



step 1  
elevate the stage by hand to let the indenter approach the workpiece, press "start" to start testing automatically, the test force is loaded automatically



step 2  
measuring microscope  
measure indentation with measuring microscope



step 3  
read the hardness value from LCD

- Automatic testing, automatic test force loading
- LCD touch screen, easy operation
- Measure indentation by measuring microscope then read the hardness value from LCD
- Tolerance testing
- Insert USB flash disk, save the test results as Excel
- Converted to HRA, HRB, HRC, HRD, HRF, HV, HB, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
- Force loading by electric motor, without weights



Ø80mm flat anvil (included)



Ø200mm flat anvil (included)



V-type anvil (included)



touch pen (included)

### SPECIFICATION

| Code                  | ISHB-D200 **   | ISHB-D300 ** |
|-----------------------|--|--------------|
| Turret rotation       | manual   | automatic    |
| Range                 | 8~650HBW   |              |
| Reading mode          | directly read from LCD                                       |              |
| Test force            | 62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500, 3000kgf    |              |
| Max. workpiece height | 200mm  |              |
| Max. testing width    | 155mm (from the center of indenter to the wall of main body) |              |
| Stage elevation       | manual   |              |
| Load control          | automatic (load/dwell/unload)                                |              |
| Load dwell time       | 5~60 second  |              |
| Measuring microscope  | magnification  | 20X          |
|                       | resolution   | 0.625mm      |
| Power supply          | 220V, 50/60Hz **   |              |
| Dimension             | 550x210x750mm  |              |
| Weight                | 110kg  |              |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

### STANDARD DELIVERY

|   |      |
|---|------|
| Main unit                               | 1 pc |
| Ø80mm 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 |
| USB flash disk (8G)                     | 1 pc |
| Ø10mm carbide ball indenter             | 1 pc |
| Hardness test block 150~250HBW2.5/187.5 | 1 pc |
| Hardness test block 75~125HBW10/1000    | 1 pc |
| Hardness test block 175~250HBW10/3000   | 1 pc |
| Touch pen                               | 1 pc |
| Anti-dust cover                         | 1 pc |

### OPTIONAL ACCESSORY

|   |              |
|---|--------------|
| Hardness test block 200~300HBW2.5/187.5 | HDT-B-HB25A2 |
| Hardness test block 90~200HBW10/1000    | HDT-B-HB10C1 |
| Hardness test block 200~300HBW10/3000   | HDT-B-HB10A2 |
| Brinell indentation measuring system    | ISHB-MSA     |



FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS)

AUTOMATIC TESTING AFTER PRELIMINARY TEST FORCE IS LOADED BY HAND

# AUTOMATIC BRINELL HARDNESS TESTER CODE ISHB-M100\*\*

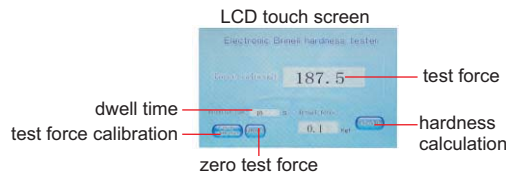


**step: 1**

measure indentation diameter by measuring microscope

**step: 2**

input the diameters, the hardness value is shown on screen automatically



- LCD touch screen, easy operation
- Automatic testing after preliminary test force is loaded by hand
- Measure indentation diameter by measuring microscope, input the diameters, the hardness value is shown on screen automatically
- Force loading by electric motor, without weights



## SPECIFICATION

|                       |  |        |
|-----------------------|--|--------|
| Range                 | 8~650HBW   |        |
| Reading mode          | directly read from LCD                                       |        |
| Test force            | 62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500, 3000kgf    |        |
| Max. workpiece height | 230mm  |        |
| Max. testing width    | 160mm (from the center of indenter to the wall of main body) |        |
| Stage elevation       | manual   |        |
| Load control          | automatic (load/dwell/unload)                                |        |
| Load dwell time       | 5~60 second  |        |
| Measuring microscope  | magnification  | 20X    |
|                       | graduation   | 0.01mm |
| Power supply          | 220V, 50/60Hz **   |        |
| Dimension             | 550×210×750mm  |        |
| Weight                | 90kg   |        |

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

## STANDARD DELIVERY

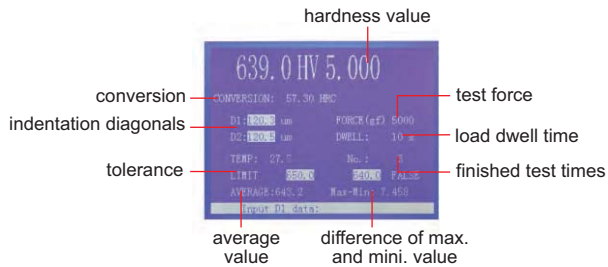
|   |      |
|---|------|
| Main unit                               | 1 pc |
| Ø80mm flat anvil                        | 1 pc |
| Ø200mm flat anvil                       | 1 pc |
| V-type anvil                            | 1 pc |
| Ø2.5mm carbide ball indenter            | 1 pc |
| Ø5mm carbide ball indenter              | 1 pc |
| Ø10mm carbide ball indenter             | 1 pc |
| Hardness test block 150~250HBW2.5/187.5 | 1 pc |
| Hardness test block 75~125HBW10/1000    | 1 pc |
| Hardness test block 175~250HBW10/3000   | 1 pc |
| Measuring microscope                    | 1 pc |
| Anti-dust cover                         | 1 pc |

## OPTIONAL ACCESSORY

|   |              |
|---|--------------|
| Hardness test block 200~300HBW2.5/187.5 | HDT-B-HB25A2 |
| Hardness test block 90~200HBW10/1000    | HDT-B-HB10C1 |
| Hardness test block 200~300HBW10/3000   | HDT-B-HB10A2 |
| Brinell indentation measuring system    | ISHB-MSA     |

## DIGITAL VICKERS HARDNESS TESTERS

**INSPECTION  
CERTIFICATE**



**ISH-DV5**

- Based on Vickers (HV), can be converted to HRA, HRB, HRC, HRD, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HK, HBW
- Can take tests up to 99 times, display average value and the difference of max. and mini. value
- Tolerance testing
- Also for Knoop hardness test, Knoop indenter is needed (optional)

### SPECIFICATION

| Code                  | ISH-DV5 **   | ISH-DV10 **              | ISH-DV50 **  |
|-----------------------|--|--------------------------|--|
| Measuring range       | 5HV0.2~2500HV5   | 8HV0.3~2500HV10          | 5HV1~2500HV50  |
| Test force            | 0.2, 0.5, 1, 2, 3, 5kgf                                      | 0.3, 0.5, 1, 3, 5, 10kgf | 1, 5, 10, 20, 30, 50kgf  |
| Accuracy              | ±3%  | ±3%                      | ±3% (test force 1, 5, 10, 20kgf)<br>±2% (test force 30, 50kgf) |
| Eyepiece              | magnification  | 10X                      |  |
|                       | resolution   | 0.0625µm                 |  |
| Objective             | 10X, 20X   |                          |  |
| Total magnification   | 100X (for observation)<br>200X (for measuring)               |                          |  |
| Stage elevation       | manual   |                          |  |
| Load control          | automatic (load/dwell/unload)                                |                          |  |
| Dwell time            | 5~60 second  |                          |  |
| Max. workpiece height | 160mm  |                          |  |
| Max. testing width    | 135mm (from the center of indenter to the wall of main body) |                          |  |
| Data output           | RS232C   |                          |  |
| Power supply          | 220V, 50/60Hz **   |                          |  |
| Dimension             | 540×270×650mm  |                          |  |
| Weight                | 33kg   | 35kg                     | 45kg   |



Ø60mm flat anvil (included)



Ø150mm flat anvil (included)



V-type anvil (included)

\*\* Add "-U" on code No. when power supply is 110V, 50/60Hz

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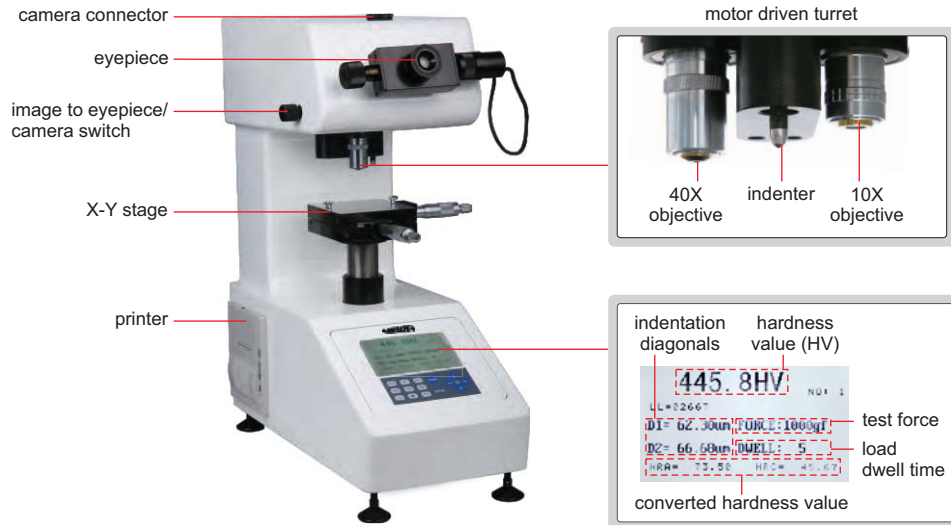
### STANDARD DELIVERY

|                    |       |
|--------------------|-------|
| Main unit          | 1 pc  |
| Ø60mm flat anvil   | 1 pc  |
| Ø150mm flat anvil  | 1 pc  |
| V-type anvil       | 1 pc  |
| Vickers indenter   | 1 pc  |
| 10X objective      | 1 pc  |
| 20X objective      | 1 pc  |
| Vickers test block | 2 pcs |
| Anti-dust cover    | 1 pc  |

### OPTIONAL ACCESSORY

|                                 |                |
|---------------------------------|----------------|
| Knoop indenter                  | ISH-KNOOP      |
| Hardness test block 400~500HV5  | HDT-B-HV5D     |
| Hardness test block 700~750HV5  | HDT-B-HV5G     |
| Hardness test block 400~500HV10 | HDT-B-HV10D    |
| Hardness test block 700~750HV10 | HDT-B-HV10G    |
| Hardness test block 400~500HV30 | HDT-B-HV30D    |
| Camera adapter                  | ISH-DV-ADAPTER |
| Measuring system                | 9631-130       |

# DIGITAL MICRO-VICKERS HARDNESS TESTER CODE ISH-TDV1000A \*\*



- Measure hardness of thin or small workpieces
- Based on Vickers (HV), can be converted to Rockwell (HRA, HRB and HRC)



cylinder holder (included)



vice (included)



slice holder (included)

## SPECIFICATION

|                       |   |
|-----------------------|---|
| Test force            | 0.01, 0.025, 0.05, 0.1, 0.2, 0.3, 0.5, 1kgf                 |
| Vickers scales        | HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1    |
| Stage elevation       | manual  |
| Load control          | automatic (load/dwell/unload)                               |
| Load dwell time       | 5~60 second (5 second increment)                            |
| Objective             | 10X, 40X  |
| Eyepiece              | 15X   |
| Total magnification   | 150X (for observation)<br>600X (for measurement)            |
| Max. workpiece height | 85mm  |
| Max. testing width    | 85mm (from the center of indenter to the wall of main body) |
| X-Y stage             | dimensions: 100×100mm                                       |
|                       | travel range: 25×25mm                                       |
|                       | graduation: 0.01mm  |
| Data output           | RS232C  |
| Power supply          | 110/220V, 50Hz **   |
| Dimension             | 540x500x640mm   |
| Weight                | 50kg  |

## STANDARD DELIVERY

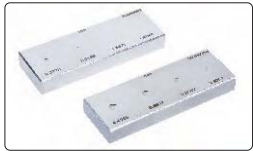
|                                  |              |
|----------------------------------|--------------|
| Main unit                        | 1 pc         |
| 10X, 40X objective               | 1 pc of each |
| Micro Vickers indenter           | 1 pc         |
| Hardness test block 400~500HV0.2 | 1 pc         |
| Hardness test block 700~800HV1   | 1 pc         |
| Slice holder                     | 1 pc         |
| Vice                             | 1 pc         |
| Cylinder holder                  | 1 pc         |
| Level                            | 1 pc         |
| Anti-dust cover                  | 1 pc         |

## OPTIONAL ACCESSORY

|                                  |                 |
|----------------------------------|-----------------|
| 20X objective                    | ISH-TDV-20X     |
| Hardness test block 400~500HV0.2 | HDT-B-HV02C     |
| Hardness test block 700~750HV1   | HDT-B-HV1F      |
| Measuring system                 | 9631-130        |
| Camera adapter                   | ISH-TDV-ADAPTER |

\*\* Add "-B" on code No. when power supply is 110/220V, 60Hz

## BRINELL INDENTATION MEASURING SYSTEM CODE ISHB-MSA



standard blocks for Ø5mm and Ø10mm indenters (included)



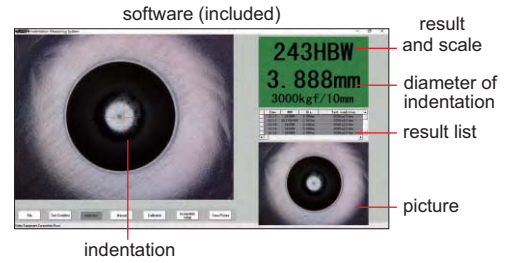
VIDEO



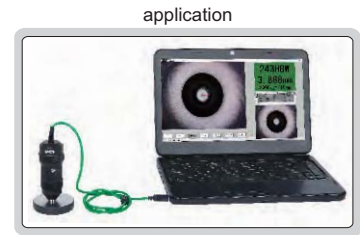
- Connected to computer USB port
- Automatically measure the indentation
- Result saved to Excel automatically
- Tolerance testing
- Calibration with standard hardness blocks or standard indentation blocks

### SPECIFICATION

|                               |   |                              |
|-------------------------------|---|------------------------------|
| Applicable Brinell indenter   | Ø10mm, Ø7.26mm, Ø5mm, Ø4mm, Ø2.5mm                        |                              |
| Hardness range                | 16~650HB  |                              |
| Range of indentation diameter | Ø0.6~6mm  |                              |
| Test force                    | 62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500, 3000kgf |                              |
| Hardness resolution           | 1HB   |                              |
| Diameter measuring resolution | 0.001mm   |                              |
| Diameter measuring accuracy   | Ø10mm ball indneter                                       | ±0.4% (indentation diameter) |
|                               | Ø5mm ball indneter  | ±0.8% (indentation diameter) |
|                               | Ø2.5mm ball indneter                                      | ±1.2% (indentation diameter) |
| Camera                        | sensor  | 1/3.2" CMOS                  |
|                               | pixel   | 2M (resolution 1600×1200)    |
|                               | view filed  | 8×6mm                        |
| Dimension                     | 170×54×54mm   |                              |
| Weight                        | 385g  |                              |



software CD (included)



### STANDARD DELIVERY

|                                  |      |
|----------------------------------|------|
| Main unit                        | 1 pc |
| Software                         | 1 pc |
| Ø5mm standard indentation block  | 1 pc |
| Ø10mm standard indentation block | 1 pc |

### OPTIONAL ACCESSORY

|                                   |                  |
|-----------------------------------|------------------|
| Ø2.5mm standard indentation block | ISHB-MSA-BLOCK25 |
|-----------------------------------|------------------|

## VICKERS HARDNESS MEASURING SYSTEM CODE 9631-130

- Connected to computer USB port
- Measure the indentation sizes automatically or manually
- Multiple measurements to have average value, max. value and min. value
- Tolerance testing
- Convert to HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15T/30T/45T, HR15N/30N/45N, HK, HV, HB, HS, HSD
- Calibration with standard test block
- Measurement result can be sent to Word or Excel



### application example



VIDEO



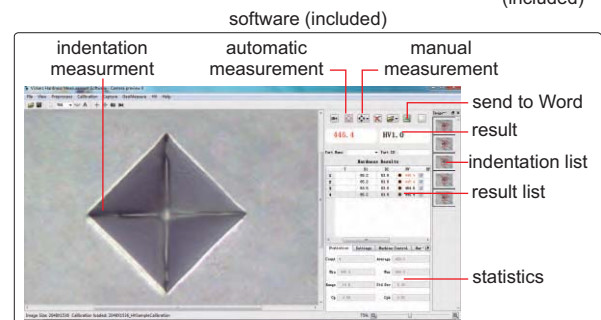
software CD (included)

### SPECIFICATION

|                                 |  |
|---------------------------------|--|
| Sensor                          | 1/2" CMOS  |
| Pixel                           | 1.3M (resolution 1280×1024)  |
| Hardness measurement resolution | 0.1HV  |
| Length measurement resolution   | 0.1µm  |
| Hardness measurement accuracy   | ±3%  |
| Test force                      | 0.01, 0.025, 0.05, 0.1, 0.2, 0.3, 0.5, 1, 2, 2.5, 3, 5, 10, 20, 30, 50, 100kgf |
| Dimension                       | 57×51×49mm   |
| Weight                          | 200g   |

### STANDARD DELIVERY

|                        |      |
|------------------------|------|
| Main unit              | 1 pc |
| USB dongle             | 1 pc |
| Software and USB cable | 1 pc |



ATTENTION: HARDNESS BLOCKS FOR CALIBRATION ARE OPTIONAL

ATTENTION: NEED TO CONFIRM IF THE WORKPIECES ARE SUITABLE BEFORE PURCHASE

## ULTRASONIC HARDNESS TESTER CODE ISHU-330

INSPECTION  
CERTIFICATE

DATA  
OUTPUT



software CD  
(included)

Application:

1. For steel material
2. Test surface hardening layers (carburized, nitriding, high frequency hardened, etc.)
3. Suitable for arc and conical surface
4. Suitable for small or light workpieces
5. Test large workpieces at any direction
6. Suitable for rough surfaces



test flat surfaces  
(with the cover)



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



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

### 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                                       |       |

### STANDARD DELIVERY

|                        |       |
|------------------------|-------|
| Main unit              | 1 pc  |
| Probe A                | 1 pc  |
| Rechargeable battery   | 2 pcs |
| Charger                | 1 pc  |
| Software and USB cable | 1 pc  |

### SPECIFICATION OF PROBE

| Type  | A (standard)    | B (optional)      |
|---|-----------------|-------------------|
| Test force  | 50N             | 10N (small force) |
| Application   | general use     | plating           |
| Maximum roughness of workpieces (Ra)                    | 2.5μm           | 1.5μm             |
| Minimum weight of workpieces (direct measurement)       | 0.1kg *         | 0.1kg *           |
| Minimum thickness of workpieces (direct measurement)    | 1mm *           | 1mm *             |
| Minimum radius of workpieces                            | 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   |

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

|            |       |             |                 |  |        |
|------------|-------|-------------|-----------------|--|--------|
|            | steel | alloy steel | stainless steel |  |        |
|            | ST    | AST         | SST             |  |        |
| HRC        | ▬     |             |                 |  |        |
| HB         | ▬     |             |                 |  |        |
| HV         | ▬     |             |                 |  |        |
| user scale | U1    |             |                 |  |        |
|            | BACK  |             |                 |  | SELECT |

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)

### OPTIONAL ACCESSORY

|                                  |               |
|----------------------------------|---------------|
| Probe B                          | ISHU-460-B    |
| Couplant                         | ISH-COULPLANT |
| Hardness block HRC20~30          | HDT-B-HRC1    |
| Hardness block HRC35~55          | HDT-B-HRC2    |
| Hardness block HRC60~70          | HDT-B-HRC3    |
| Hardness block 200~300HV5        | HDT-B-HV5B    |
| Hardness block 400~500HV5        | HDT-B-HV5D    |
| Hardness block 700~750HV5        | HDT-B-HV5G    |
| Hardness block 90~200HBW10/1000  | HDT-B-HB10C1  |
| Hardness block 200~300HBW10/3000 | HDT-B-HB10A2  |
| Hardness block 400~500HBW10/3000 | HDT-B-HB10A4  |

## 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 TESTER CODE ISH-PHB



- 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



hardness test block D (included)



small support ring (included)



wireless printer (optional)

### 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<br>2kg (on solid support)<br>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 |
| Small support ring    | 1 pc |
| Cleaning brush        | 1 pc |

### OPTIONAL ACCESSORY

|                       |                |
|-----------------------|----------------|
| Wireless printer      | ISH-DS-PRINTER |
| Couplant              | ISH-COUPPLANT  |
| Support rings         | see details    |
| Hardness test block D | HDT-B-HLD3     |



DATA  
OUTPUT



## 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
- Tolerance testing
- 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  |

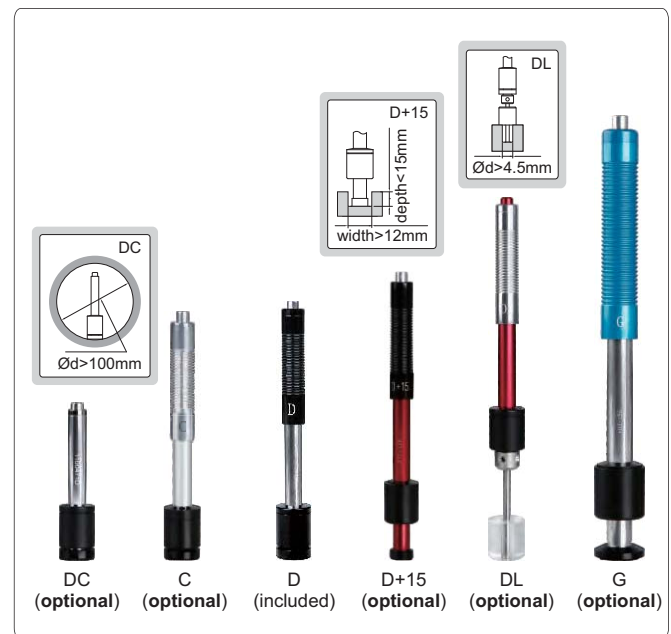
### STANDARD DELIVERY

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

### 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* | HDT-B-HLD3    |
| Hardness test block G* | HDT-B-HLG2    |
| Couplant               | ISH-COUPPLANT |
| Support rings          | see details   |

- \* Hardness test block G (HDT-B-HLG2) is for impact device G (ISH-SPHA-G).  
Hardness test block D (HDT-B-HLD3) 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                       | 15kg                         |
|                                     | on solid support          | 2kg                                    | 0.5kg       | 2kg         | 2kg                       | 5kg                          |
|                                     | coupled on plate          | 0.1kg                                  | 0.02kg      | 0.1kg       | 0.1kg                     | 0.5kg                        |
| Minimum thickness of workpiece      | 5mm                       | 1mm                                    | 5mm         | 5mm         | 5mm                       | 10mm                         |

## PORTABLE LEEB HARDNESS TESTERS (BASIC TYPE)



- 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, HRA and HRB), Shore (HS) and tensile strength (SGM)
- 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
- Operating temperature: -10°C~45°C
- According to ASTM A956, DIN 50156, GB/T 17394

### SPECIFICATION

| Code            | HDT-LP200   | HDT-LP200B |
|-----------------|---|------------|
| Printer         | not included  | included   |
| Output          | —   | bluetooth  |
| Resolution      | 1HLD/1HV/1HB/0.1HRC/0.1HRB/<br>0.1HRA/0.1HS/1SGM  |            |
| Accuracy        | ±6HLD (when HLD=800)  |            |
| Measuring range | HL 100-960/HRC 0.9-79.2/HRB 1-140/<br>HB 1-1878/HV 1-1698/HS 0.5-1370/<br>HRA 1-88.5/SGM (rm) 1-6599N/mm <sup>2</sup> |            |
| Power supply    | 2xAAA battery   |            |
| Dimension       | 127×67×30mm   |            |
| 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 |
| 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 E        | HDT-LP200-E   |
| Impact device G        | HDT-LP200-G   |
| Hardness test block D* | HDT-B-HLD3    |
| Hardness test block G* | HDT-B-HLG2    |
| Support rings          | see details   |

\* 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 others impact devices.



HDT-LP200



hardness test block D (included)



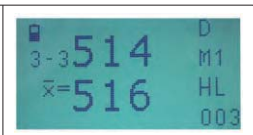
small support ring (included)



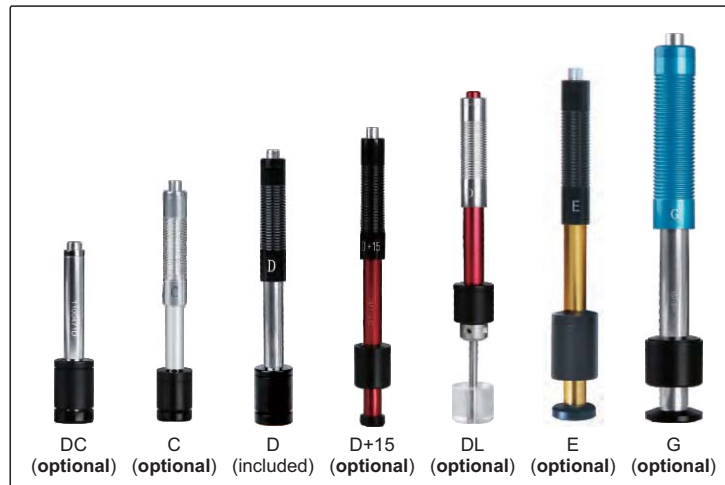
wireless printer (included in HDT-LP200B)



large font display



statistics display



### APPLICABLE WORKPIECE

| Impact device                       | 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                | 15kg                         |
|                                     | on solid support          | 2kg                                    | 0.5kg       | 2kg         | 2kg                       | 2kg                | 5kg                          |
|                                     | coupled on plate          | 0.05kg                                 | 0.02kg      | 0.05kg      | 0.1kg                     | 0.05kg             | 0.05kg                       |
| Minimum thickness of workpiece      | 3mm                       | 1mm                                    | 3mm         | 3mm         | 3mm                       | 3mm                | 10mm                         |



DATA OUTPUT

HIGH ACCURACY

DL PROBE IS OPTIONAL

## PORTABLE LEEB HARDNESS TESTER (HIGH ACCURACY) CODE HDT-L410

**INSPECTION CERTIFICATE**



software CD (included)



hardness test block D (included)



wireless printer (optional)



small support ring (included)

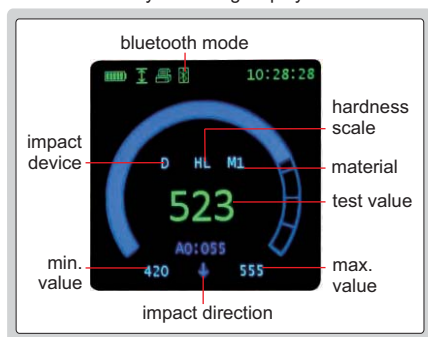
DL probe can be installed (optional)



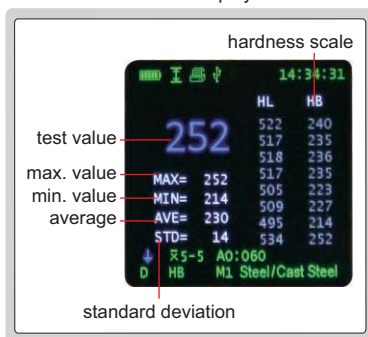
- Metal housing
- HD TFT 320×320 display
- Impact device D
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (SGM)
- Four display modes
- Automatic direction correction
- Tolerance testing
- Automatic power off, automatic calculation 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
- Operating temperature: -20°C~70°C
- According to ASTM A956, DIN 50156, GB/T 17394



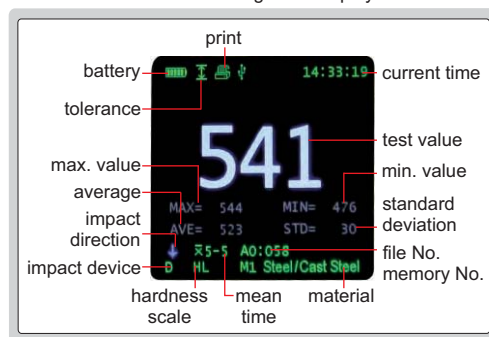
dynamic ring display



statistic display



can choose large font display



Software (included), upload the memory to PC, print and send to EXCEL

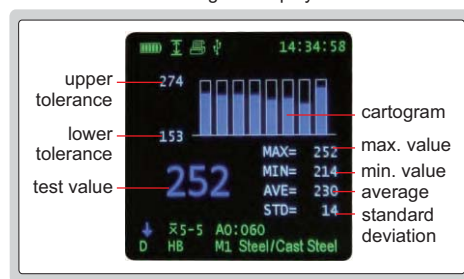
upload the memory to PC software via USB cable or Bluetooth



send the stored data to EXCEL



histogram display



### SPECIFICATION

|  |   |                           |
|--|---|---------------------------|
| <b>Resolution</b>                      | 1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HS, 1SGM |                           |
| <b>Accuracy</b>                        | ±4HLD (when HLD=800)                                |                           |
| <b>Output</b>                          | USB and bluetooth                                   |                           |
| <b>Applicable workpiece</b>            | 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            |   |                           |
| <b>Power supply</b>                    | built-in 3.7V rechargeable battery                  |                           |
| <b>Dimension</b>                       | 148×44×22mm   |                           |
| <b>Weight</b>                          | 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 disc and USB cable | 1 pc |

### OPTIONAL ACCESSORY

|                       |                  |
|-----------------------|------------------|
| Printer               | HDT-L410-PRINTER |
| Support rings         | see details      |
| Hardness test block D | HDT-B-HLD3       |
| DL probe              | HDT-L410-DL      |

# PORTABLE LEEB HARDNESS TESTER (BASIC TYPE) CODE HDT-L411

DATA  
OUTPUT

INSPECTION  
CERTIFICATE



software CD  
(included)



VIDEO



hardness test  
block D (included)

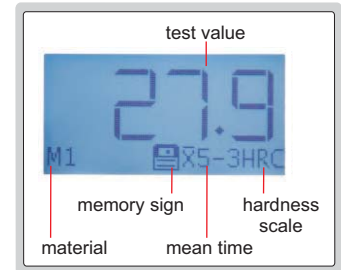


small support ring  
(included)



- 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
- Operating temperature: -20°C~45°C
- According to ASTM A956, DIN 50156, GB/T 17394

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



## SPECIFICATION

|  |   |                           |
|--|---|---------------------------|
| <b>Resolution</b>                      | 1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HS, 1SGM   |                           |
| <b>Accuracy</b>                        | ±6HLD (when HLD=800)  |                           |
| <b>Output</b>                          | USB   |                           |
| <b>Measuring range</b>                 | HL100-960, HRC1-74.7, HRB1.2-140, HB28-1027, HV45-1230, HS4-112, HRA7-88.5, SGM (m) 118-3315N/mm <sup>2</sup> |                           |
| <b>Applicable workpiece</b>            | 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            |   |                           |
| <b>Power supply</b>                    | 1xAAA battery   |                           |
| <b>Dimension</b>                       | 148×45×21mm   |                           |
| <b>Weight</b>                          | 105g  |                           |

## STANDARD DELIVERY

|                                    |      |
|------------------------------------|------|
| <b>Main unit</b>                   | 1 pc |
| <b>Hardness test block D</b>       | 1 pc |
| <b>Cleaning brush</b>              | 1 pc |
| <b>AAA battery</b>                 | 1 pc |
| <b>Small support ring</b>          | 1 pc |
| <b>Software disc and USB cable</b> | 1 pc |

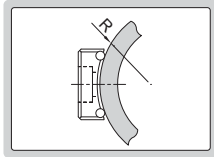
## OPTIONAL ACCESSORY

|                              |                   |
|------------------------------|-------------------|
| <b>Support rings</b>         | see details       |
| <b>Hardness test block D</b> | <b>HDT-B-HLD3</b> |

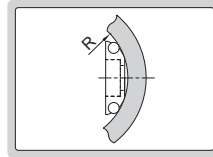


## SUPPORT RING SET FOR PORTABLE LEEB HARDNESS TESTER CODE ISH-PH-SP9

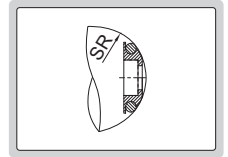
type A



type B



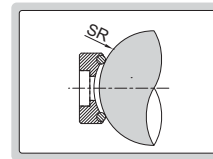
type C



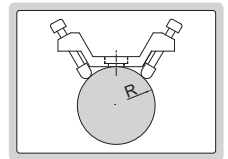
### SPECIFICATION

| 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<br>SR14.5-30 | 2 pcs    |
| 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×AAA 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

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



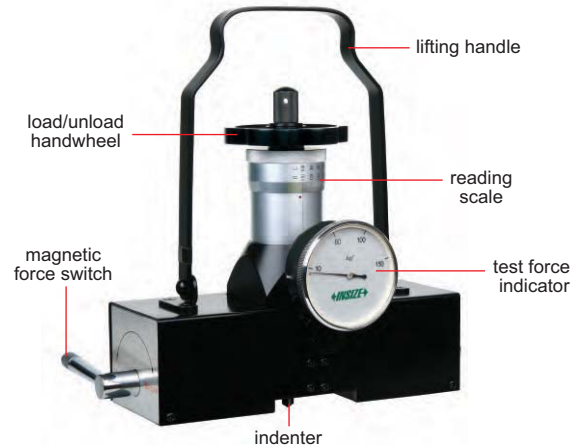
flat anvil for test block  
(included)



supports for cylinder or  
tube workpieces (included)



magnifier with LED  
(included)



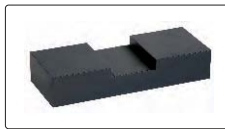
### SPECIFICATION

|  |  |
|--|--|
| 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



flat anvil for test block  
(included)



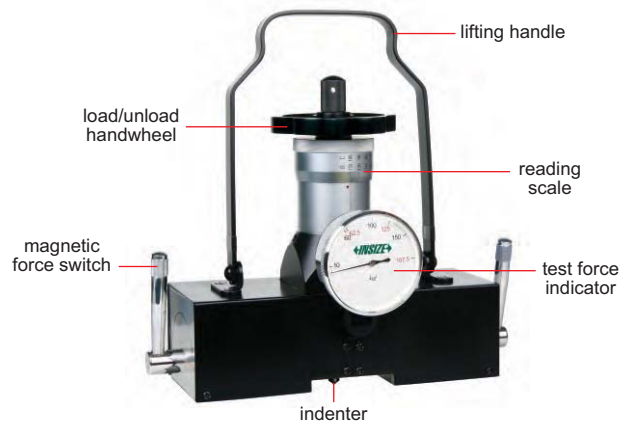
supports for cylinder or  
tube workpieces (included)



magnifier with LED  
(included)



measuring microscope  
(included)



- 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                       | 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  |

## PORTABLE ROCKWELL HARDNESS TESTER CODE ISHR-P151



flat anvil (included)



V-type anvil (included)



anvil extension for thin workpieces (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 |



- 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

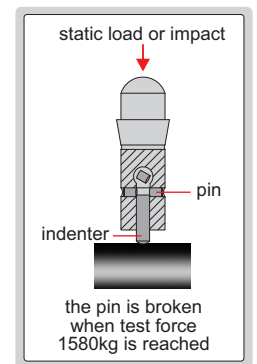
## PIN BRINELL HARDNESS TESTER CODE ISHB-P101



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      |

## HYDRAULIC BRINELL HARDNESS TESTER CODE ISHB-H131



V-type anvil  
(included)



spherical anvil  
(included)

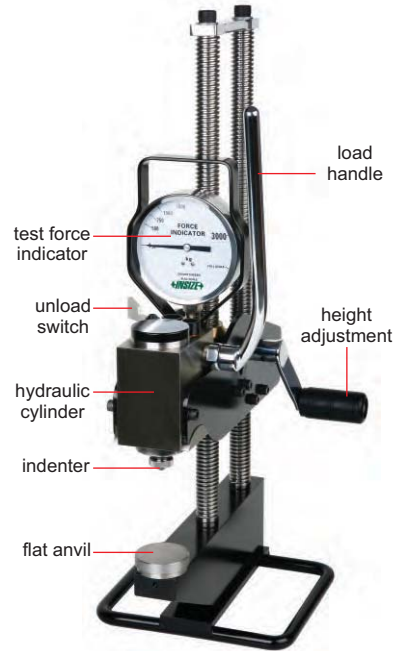


measuring microscope  
(included)

- 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  |

## CHAIN TYPE HYDRAULIC BRINELL HARDNESS TESTER CODE ISHB-C161



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

## BARCOL HARDNESS TESTER CODE ISHB-B300

- 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 (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  |



## WEBSTER HARDNESS TESTERS

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

### STANDARD DELIVERY

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



ISHW-L20

### 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)<br>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



calibration block  
(included)

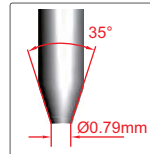


printer (optional)



VIDEO

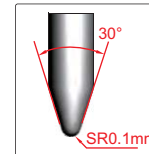
- According to ISO868, ISO7619, ASTM D 2240
- Average and peak (max.) mode
- Dwell time is adjustable
- Tolerance testing
- 500 memories
- Wireless connection to printer
- Handhold use or work with test stand (code **ISH-DS-STANDA**)
- Automatic power off



blunt taper indenter



ISH-DSA



sharp point indenter



ISH-DSD



software CD  
(included)

### 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                            |                                 |

- \* 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  |

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

- For digital shore durometers (code **ISH-DSA** and **ISH-DSD**)
- 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**



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 |
|------------------------------|-----------|



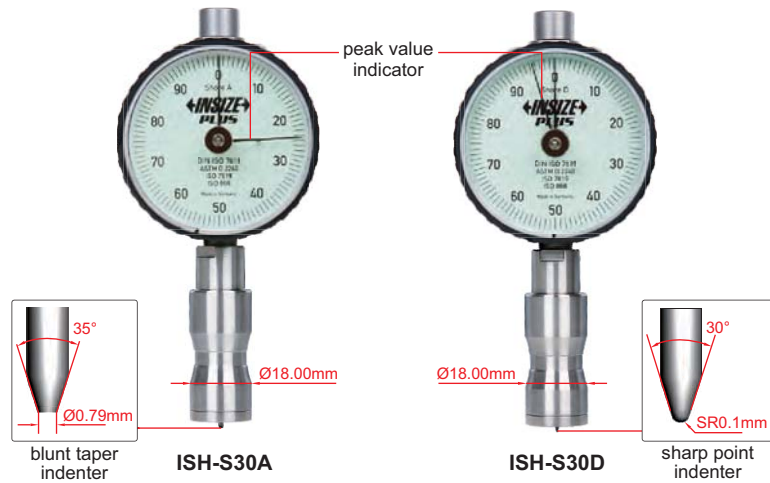


## SHORE DUROMETERS

**INSIZE PLUS**  
MADE IN EUROPE



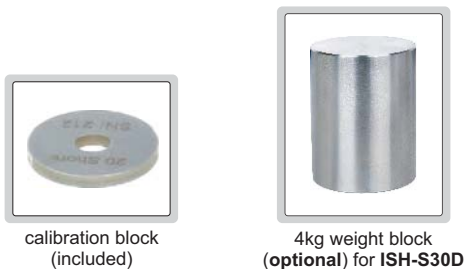
- According to ISO868, ISO7619, ASTM D 2240
- With peak value indicator
- Handhold use or work with test stand (code **ISH-OS2**)



### 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                         |
| Resolution          | 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



calibration block  
(included)

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

- 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**

### SPECIFICATION

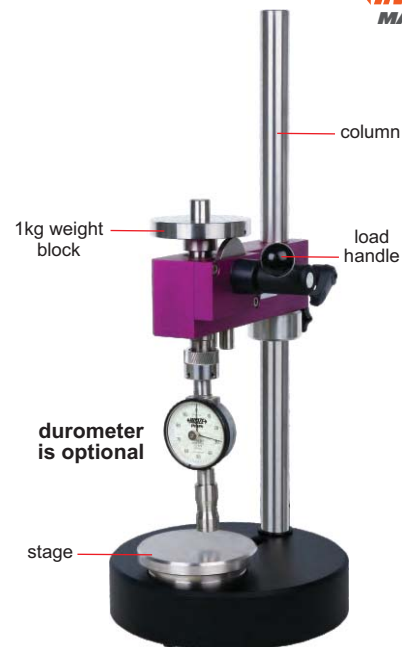
|                       |                                       |
|-----------------------|---------------------------------------|
| Stage diameter        | Ø98mm                                 |
| Max. workpiece height | 180mm                                 |
| Max. testing width    | 115mm (from test point to the column) |
| Dimension             | Ø200×500mm                            |
| Weight                | 18kg                                  |

### STANDARD DELIVERY

|   |      |
|---|------|
| Test stand                              | 1 pc |
| 1kg weight block (for <b>ISH-S30A</b> ) | 1 pc |
| Calibration block                       | 1 pc |

## TEST STAND FOR SHORE DUROMETERS CODE ISH-OS2

**INSIZE PLUS**  
MADE IN EUROPE



### OPTIONAL ACCESSORY

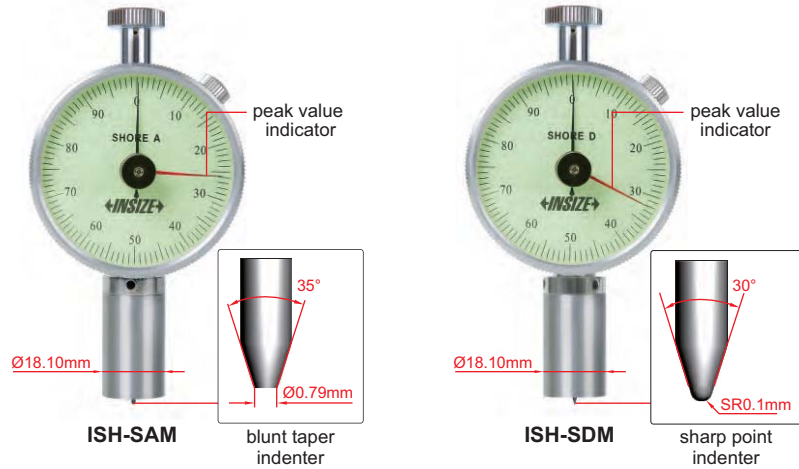
|   |            |
|---|------------|
| 4kg weight block (for <b>ISH-S30D</b> ) | ISH-OS2-W4 |
|---|------------|

## SHORE DUROMETERS



VIDEO

- 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                                |  |

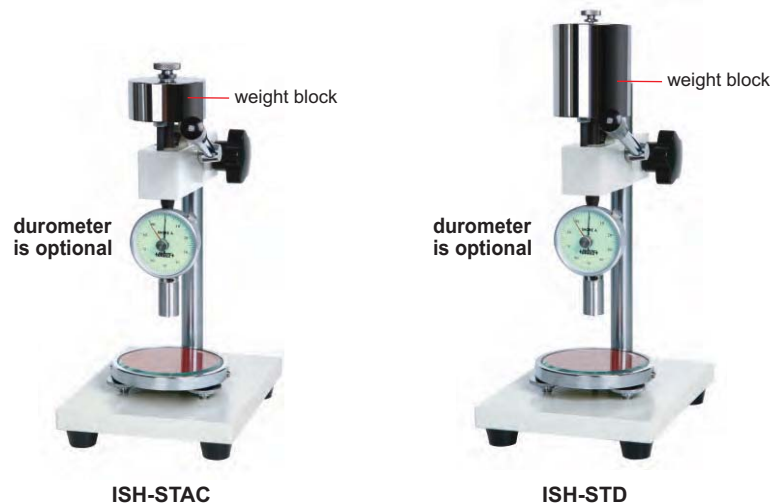
- \* Use **ISH-SDM** when measuring result is higher than 90HA  
Use **ISH-SAM** when measuring result is lower than 20HD

## TEST STANDS FOR SHORE DUROMETERS



VIDEO

- 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                               |
| 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                                  |

## HARDNESS TEST BLOCKS



Rockwell



Vickers



Leeb



Micro-Vickers



Brinell



Shore

▪ Supplied with manufacturer inspection certificate

### Rockwell hardness test blocks

| Code       | Type | Hardness |
|------------|------|----------|
| HDT-B-HRA  | HRA  | 80-84    |
| 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 |
|--------------|-------|----------|
| HDT-B-HR15N1 | HR15N | 70-77    |
| 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 |
|------------|------|----------|
| HDT-B-HLD1 | HLD  | 490-570  |
| HDT-B-HLD2 | HLD  | 590-670  |
| HDT-B-HLD3 | HLD  | 750-830  |
| HDT-B-HLG1 | HLG  | 460-540  |
| HDT-B-HLG2 | HLG  | 550-630  |

### Vickers hardness test blocks

| Code         | Type  | Hardness |
|--------------|-------|----------|
| HDT-B-HV5A   | HV5   | 175-200  |
| 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

Continued from previous page

**Micro-Vickers hardness test blocks**

| Code         | Type   | Hardness |
|--------------|--------|----------|
| HDT-B-HV005A | HV0.05 | 200-300  |
| 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  |

**Shore hardness test blocks**

| Code     | Type | Hardness  |
|----------|------|-----------|
| HDT-B-SA | SA   | 6 pcs/set |
| HDT-B-SD | SD   | 3 pcs/set |

**Brinell hardness test blocks**

| Code         | Type         | Hardness |
|--------------|--------------|----------|
| HDT-B-HB10A1 | HBW10/3000   | 100-200  |
| 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  |
| 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  |
| 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   |
| HDT-B-HB5B2  | HBW5/250     | 200-300  |
| HDT-B-HB5B3  | HBW5/250     | 300-400  |
| HDT-B-HB5B4  | HBW5/250     | 400-450  |

**FRUIT HARDNESS TESTER**

23

- Measure the hardness of apples, pears, strawberries and grapes, etc.
- The degree of ripeness can be judged by measuring the hardness of the fruit

**SPECIFICATION**

| Code   | Range   | Graduation  | Accuracy | Probe diameter | Probe depth | Dimension   | Weight |
|--------|---|---|----------|----------------|-------------|-------------|--------|
| 9643-4 | 0.5-4kg/cm <sup>2</sup><br>(0.5-4×10 <sup>5</sup> Pa) | 0.02kg/cm <sup>2</sup><br>(0.02×10 <sup>5</sup> Pa) | ±2%      | Ø3.5mm         | 10mm        | 151×55×30mm | 0.2kg  |



9643-4

DATA  
OUTPUT

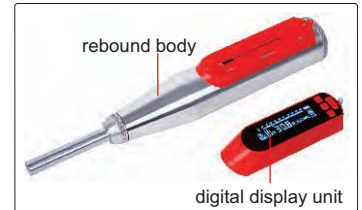
## CONCRETE STRENGTH TESTERS



CST-D101

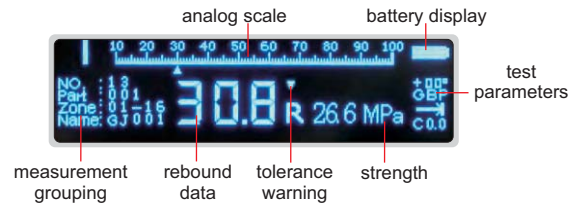


CST-D102



CST-D102 separable

- 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
- According to JGJ / T23-2011, the curve of rebound meter can be customized to calculate the compressive strength of concrete



### SPECIFICATION

| Code                  | CST-D101  | CST-D102  |
|-----------------------|---|---|
| Display               | OLED display  |   |
| Range                 | 10-70N/mm <sup>2</sup>                                    |   |
| Accuracy              | ±1R   |   |
| Parameter             | MPa, N/mm <sup>2</sup> , Kg/mm <sup>2</sup>               |   |
| 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   |   |
| Operating temperature | -40°C~60°C  |   |
| Power supply          | built-in rechargeable battery                             |   |
| Dimension             | 280×75×60mm   |   |
| Weight                | 1.1Kg   |   |



software CD (included)



sander (included)

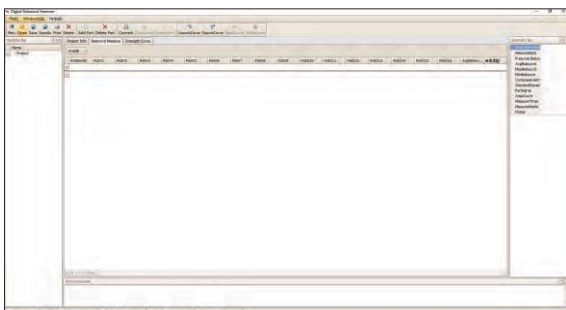
### STANDARD DELIVERY

|                        |      |
|------------------------|------|
| Main unit              | 1 pc |
| Sander                 | 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 |

Software (included) for uploading and storing data, printing and importing/exporting strength curves



|    | A  | B    | C   | D   | E    | F   | G |
|----|----|------|-----|-----|------|-----|---|
| 1  | 1  | 15.2 |     |     |      |     |   |
| 2  | 2  | 15.2 |     |     |      |     |   |
| 3  | 3  | 15.8 |     |     |      |     |   |
| 4  | 4  | 15.8 |     |     |      |     |   |
| 5  | 5  | 15.8 |     |     |      |     |   |
| 6  | 6  | 16   |     |     |      |     |   |
| 7  | 7  | 16.2 |     |     |      |     |   |
| 8  | 8  | 16.4 |     |     |      |     |   |
| 9  | 9  | 16.6 |     |     |      |     |   |
| 10 | 10 | 16.8 |     |     |      |     |   |
| 11 | 11 | 17   |     |     |      |     |   |
| 12 | 12 | 17.2 |     |     |      |     |   |
| 13 | 13 | 17.4 |     |     |      |     |   |
| 14 | 14 | 17.6 |     |     |      |     |   |
| 15 | 15 | 17.8 |     |     |      |     |   |
| 16 | 16 | 18   |     |     |      |     |   |
| 17 | 17 | 18.2 |     |     |      |     |   |
| 18 | 18 | 18.4 |     |     |      |     |   |
| 19 | 19 | 18.6 |     |     |      |     |   |
| 20 | 20 | 18.8 |     |     |      |     |   |
| 21 | 21 | 19   |     |     |      |     |   |
| 22 | 22 | 19.2 |     |     |      |     |   |
| 23 | 23 | 19.4 |     |     |      |     |   |
| 24 | 24 | 19.6 |     |     |      |     |   |
| 25 | 25 | 19.8 |     |     |      |     |   |
| 26 | 26 | 20   | 1.7 | 3.3 | 13.4 | 8.3 |   |
| 27 | 27 | 20.2 | 1.8 | 3.5 | 13.6 | 8.4 |   |
| 28 | 28 | 20.4 | 1.8 | 3.5 | 13.7 | 8.5 |   |

| Concrete compressive strength report detected by rebound method |                   |                      |                   |                   |                   |                   |
|---|-------------------|----------------------|-------------------|-------------------|-------------------|-------------------|
| Report Name   | Project           | Testing Unit         | Report Date       | Report Date       | Report Date       | Report Date       |
| Construction Unit   | Construction Unit | Construction Unit    | Construction Unit | Construction Unit | Construction Unit | Construction Unit |
| Test No.  | Test Name         | Test Area            | Area              | ETOR              | Report No.        | Report Date       |
| Result  | The type of brick | Rebound value (1-10) | Area value        | Area value        | Area value        | Area value        |
| 1   |                   |                      |                   |                   |                   |                   |
| 2   |                   |                      |                   |                   |                   |                   |
| 3   |                   |                      |                   |                   |                   |                   |
| 4   |                   |                      |                   |                   |                   |                   |
| 5   |                   |                      |                   |                   |                   |                   |
| 6   |                   |                      |                   |                   |                   |                   |
| 7   |                   |                      |                   |                   |                   |                   |
| 8   |                   |                      |                   |                   |                   |                   |
| 9   |                   |                      |                   |                   |                   |                   |
| 10  |                   |                      |                   |                   |                   |                   |
| 11  |                   |                      |                   |                   |                   |                   |
| 12  |                   |                      |                   |                   |                   |                   |
| 13  |                   |                      |                   |                   |                   |                   |
| 14  |                   |                      |                   |                   |                   |                   |
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| 18  |                   |                      |                   |                   |                   |                   |
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| 22  |                   |                      |                   |                   |                   |                   |
| 23  |                   |                      |                   |                   |                   |                   |
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| 25  |                   |                      |                   |                   |                   |                   |
| 26  |                   |                      |                   |                   |                   |                   |
| 27  |                   |                      |                   |                   |                   |                   |
| 28  |                   |                      |                   |                   |                   |                   |

## DIGITAL FORCE GAGES (HIGH ACCURACY)



**INSPECTION  
CERTIFICATE**

**DATA  
OUTPUT**

printer (optional)



software CD (included)



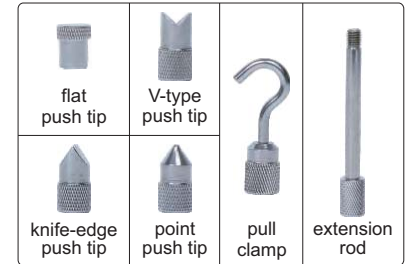
- Push and pull test
- Peak (max.) and tracking mode
- Units: mN, N, gf, kgf, ozf, lbf, MPa (only for type B)
- Tolerance testing
- 1000 memories
- Automatic power off
- Metal case, touch buttons
- LCD display with backlight
- The display flips over when the bottom faces up
- Overload alarm



**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              | 1 pc   |            |            |            |             |             |             |            | 1 pc  |            |             |             |
| AC/DC adapter          | 1 pc   |            |            |            |             |             |             |            | 1 pc  |            |             |             |
| Software and USB cable | 1 pc   |            |            |            |             |             |             |            | 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) |            |            |            |             |             |             |            | 4 pcs (flat push tip, adapter, pull clamps) |            |             |             |

### OPTIONAL ACCESSORY

|            |                |
|------------|----------------|
| Printer    | ISF-DF-PRINTER |
| Test stand | ISF-MT1K       |

## TEST STAND FOR DIGITAL FORCE GAGE CODE ISF-MT1K

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

### SPECIFICATION

|               |   |
|---------------|---|
| Load capacity | 1000N   |
| Travel        | 200mm (3mm vertical movement per revolution of handwheel) |
| Dimension     | 196x250x446mm   |
| Weight        | 13kg  |

### OPTIONAL ACCESSORY

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

force gage is optional



digital scale (optional)

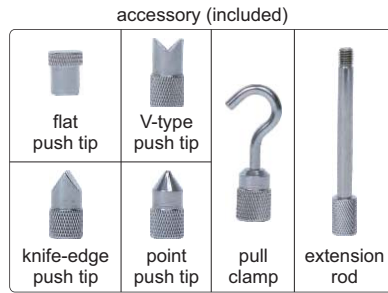


horizontal orientation test



DATA OUTPUT

- 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



ISF-1DF100

## DIGITAL FORCE GAGES

software CD (included)



printer (optional)



### 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       |

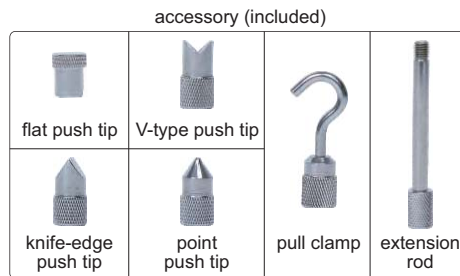
### SPECIFICATION

| 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                                     |           |            |            |             |

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

### STANDARD DELIVERY

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



ISF-F500



### 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) |         |         |         |          |          |          |          |

### OPTIONAL ACCESSORY

|            |           |
|------------|-----------|
| Test stand | ISF-MT500 |
|------------|-----------|

## TEST STAND FOR FORCE GAGE CODE ISF-MT500

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



### SPECIFICATION

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

force gage is optional



horizontal orientation test

## MANUAL VERTICAL TEST STANDS FOR FORCE GAGES



- For press test with force gages

### SPECIFICATION

| Code                     | ISF-V10A                             | ISF-V10D   |
|--------------------------|--------------------------------------|--|
| Apply to                 | dial force gages<br>(code ISF-1F□□□) | digital force gages<br>(code ISF-1DF□□□ and ISF-DF□□□) |
| Load capacity            | 500N                                 |  |
| Maximum workpiece height | 280mm                                |  |
| Travel                   | 70mm                                 |  |
| Dimension                | 152×235×425mm                        |  |
| Weight                   | 10.7kg                               |  |

ATTENTION:  
ONLY FOR PRESS TEST

force gage  
is optional



ISF-V10A

## MANUAL HORIZONTAL TEST STANDS FOR FORCE GAGES



- For pull test with force gages

### SPECIFICATION

| Code          | ISF-H20A                             | ISF-H20D   |
|---------------|--------------------------------------|--|
| Apply to      | dial force gages<br>(code ISF-1F□□□) | digital force gages<br>(code ISF-1DF□□□ and ISF-DF□□□) |
| Load capacity | 500N                                 |  |
| Travel        | 60mm                                 |  |
| Dimension     | 450×185×170mm                        |  |
| Weight        | 9kg                                  |  |

ATTENTION:  
ONLY FOR PULL TEST

force gage  
is optional



ISF-H20A

## MANUAL STRIPPING FORCE TEST STANDS



- For stripping force test with force gages

### SPECIFICATION

| Code              | ISF-P30A                             | ISF-P30D   |
|-------------------|--------------------------------------|--|
| Apply to          | dial force gages<br>(code ISF-1F□□□) | digital force gages<br>(code ISF-1DF□□□ and ISF-DF□□□) |
| Load capacity     | 500N                                 |  |
| Horizontal travel | 170mm                                |  |
| Dimension         | 420×215×480mm                        |  |
| Weight            | 22kg                                 |  |

force gage  
is optional



ISF-P30A



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        |

\*Add "-U" on code No. when power supply is 110V, 50/60Hz

## STANDARD DELIVERY

|                      |      |
|----------------------|------|
| Main unit            | 1 pc |
| Power supply adapter | 1 pc |

## ELECTRONIC UNIVERSAL TESTING MACHINES



flat jaws (included)

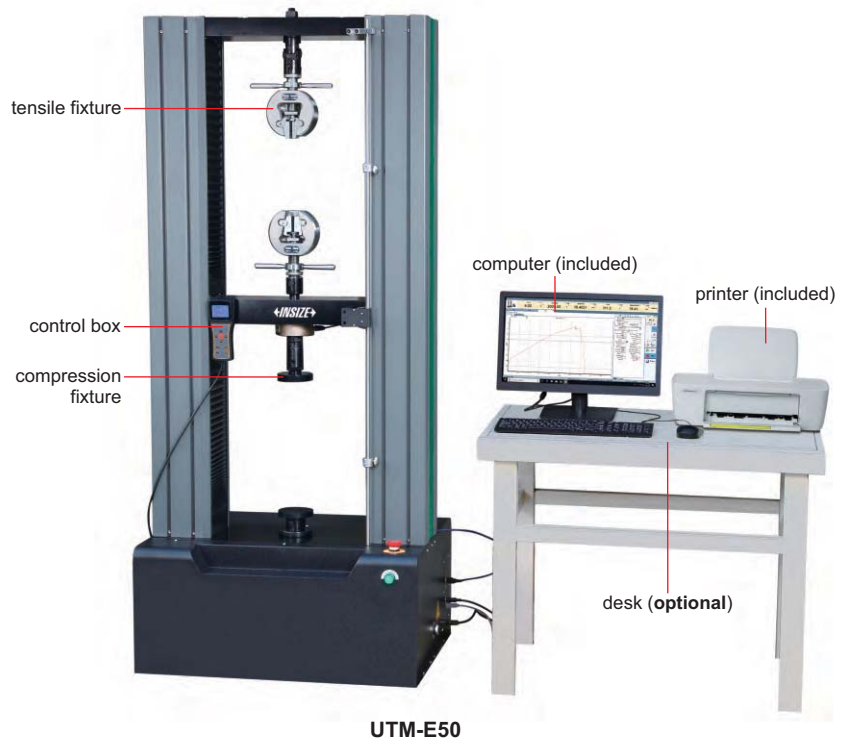


V-shaped jaws (included)

- For tensile, compression, bend, shear, peel, tear tests of metal and non-metal materials

### STANDARD DELIVERY

|   |       |
|---|-------|
| Main unit   | 1 pc  |
| Control box   | 1 pc  |
| Computer  | 1 pc  |
| Measuring software  | 1 pc  |
| Printer   | 1 pc  |
| Wedge tension fixture (including flat jaws and V-shaped jaws) | 1 set |
| Compression fixture   | 1 set |
| Extensometer (only for UTM-E100, UTM-E300)                    | 1 pc  |



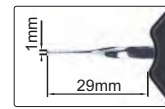
UTM-E50

### SPECIFICATION

| Code                                     | UTM-E10  | UTM-E50        | UTM-E100            | UTM-E300        |
|--|--|----------------|---------------------|-----------------|
| Max. test force                          | 10kN   | 50kN           | 100kN               | 300kN           |
| Accuracy class                           | 0.5 class  |                |                     |                 |
| Test force measurement range             | 0.2%~100%FS  |                |                     |                 |
| Test force indication accuracy           | ±0.5% of indicating value  |                |                     |                 |
| Resolution of test force measurement     | 1/300000 of Max. test force (same resolution all the way)                        |                |                     |                 |
| Deformation measurement range            | 0.2%~100%FS  |                |                     |                 |
| Deformation indication accuracy          | ±0.5% of indicating value  |                |                     |                 |
| Deformation resolution                   | 1/300000 of Max. deformation   |                |                     |                 |
| Large deformation measurement range      | 10~800mm   |                |                     |                 |
| Large deformation indication accuracy    | ±1% of indicating value  |                |                     |                 |
| Large deformation resolution             | 8μm  |                |                     |                 |
| Displacement indication accuracy         | ±0.5% of indicating value  |                |                     |                 |
| Displacement resolution                  | 0.025μm  |                |                     |                 |
| Force control speed adjustment range     | 0.005~5%FS/s   |                |                     |                 |
| Force control speed control accuracy     | ±2% of the set value (rate<0.05%FS/s)<br>±0.5% of the set value (rate≥0.05%FS/s) |                |                     |                 |
| Deformation rate adjustment range        | 0.2%~100%FS  |                |                     |                 |
| Deformation rate control accuracy        | ±2% of the set value (rate<0.05%FS/s)<br>±0.5% of the set value (rate≥0.05%FS/s) |                |                     |                 |
| Beam displacement speed adjustment range | 0.001~500mm/min  |                |                     |                 |
| Beam displacement speed control accuracy | ±1% of the set value (rate<0.5mm/min)<br>±0.2% of the set value (rate≥0.5mm/min) |                |                     |                 |
| Crosshead travel                         | 1030mm   | 970mm          | 1250mm              | 1000mm          |
| Effective compression travel             | 800mm  | 700mm          | 700mm               | 600mm           |
| Horizontal test space                    | 400mm  | 440mm          | 600mm               | 550mm           |
| Power supply                             | 220V, 50Hz, 0.4kW~1kW  |                | 380V, 50Hz, 2kW~5kW |                 |
| Dimension                                | 715×500×1680mm   | 820×620×1880mm | 1070×855×2180mm     | 1070×920×2550mm |
| Weight                                   | 230kg  | 350kg          | 1000kg              | 1500kg          |

## DIAL TENSION GAGES

- 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              |          |          |           |           |           |           |

**ATTENTION: NOT SUITABLE FOR ELECTRIC WRENCHES, IMPACT WRENCHES OR PNEUMATIC WRENCHES**

## DIGITAL TORQUE TESTERS

- 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
- Unit: N.m, in.lb, ft.lb, kg.cm
- Tolerance testing
- LED indicator for the 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
- Automatic power off



IST-TT550

### STANDARD DELIVERY

|                            |             |
|----------------------------|-------------|
| Main unit                  | 1 pc        |
| Transducer with 1.5m cable | 1 pc        |
| Extension cable (1.2m)     | 1 pc        |
| AC/DC adapter              | 1 pc        |
| Adaptor                    | see details |



extension cable (included)



adaptor (included)



with 3 mounting holes on the bottom

### SPECIFICATION

| Code                 | IST-TT05                              | IST-TT5        | IST-TT30       | IST-TT50       | IST-TT220                    | IST-TT550                    | IST-TT1000                                 | IST-TT2200                 |
|----------------------|---------------------------------------|----------------|----------------|----------------|------------------------------|------------------------------|--|----------------------------|
| 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                |
| Accuracy             | ±1% (clockwise and counter-clockwise) |                |                |                |                              |                              |  |                            |
| 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                     |
| Square socket (L)    | 1/4"                                  | 1/4"           | 3/8"           | 3/8"           | 1/2"                         | 3/4"                         | 1"   | 1"                         |
| Power supply         | DC                                    |                |                |                |                              |                              |  |                            |
| Adaptor              | no                                    | no             | 3/8" to 1/4"   | 3/8" to 1/4"   | 1/2" to 3/8"<br>3/8" to 1/4" | 3/4" to 1/2"<br>1/2" to 3/8" | 1" to 3/4"<br>3/4" to 1/2"<br>1/2" to 3/8" | 1" to 3/4"<br>3/4" to 1/2" |
| Transducer dimension | 63×63<br>×65mm                        | 63×63<br>×65mm | 89×89<br>×75mm | 89×89<br>×75mm | 109×109<br>×83mm             | 140×140<br>×107mm            | 160×160<br>×126mm                          | 160×160<br>×126mm          |
| Weight               | 0.75kg                                | 0.75kg         | 1.1kg          | 1.1kg          | 1.4kg                        | 2.9kg                        | 5.0kg                                      | 5.1kg                      |

## TORQUE WRENCH TEST STAND CODE IST-TS500



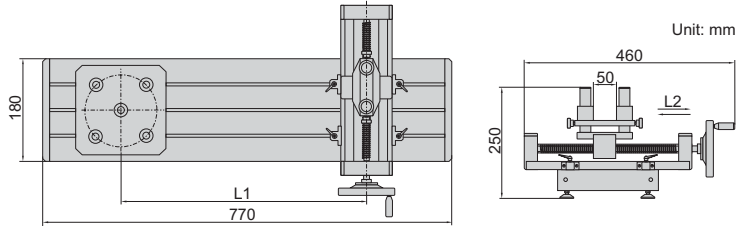
application example



digital torque tester (optional)



adaptor (optional, for digital torque tester IST-TT5, IST-TT30, IST-TT50, IST-TT220)



- Work with digital torque testers (IST-TT5, IST-TT30, IST-TT50, IST-TT220, IST-TT550)

### SPECIFICATION

| Digital torque tester      | IST-TT5 (optional)    | IST-TT30 (optional) | IST-TT50 (optional) | IST-TT220 (optional) | IST-TT550 (optional) |
|----------------------------|-----------------------|---------------------|---------------------|----------------------|----------------------|
| Applicable torque wrenches | 0.5~5N.m              | 3~30N.m             | 5~50N.m             | 22~220N.m            | 220~340N.m           |
| Arm length (L1)            | 150~620mm, adjustable |                     |                     |                      |                      |
| Maximum travel (L2)        | 200mm                 |                     |                     |                      |                      |
| Weight                     | 12.78kg               |                     |                     |                      |                      |

### OPTIONAL ACCESSORY

|                       |   |
|-----------------------|---|
| Digital torque tester | IST-TT5, IST-TT30, IST-TT50, IST-TT220, IST-TT550   |
| Adaptor               | IST-TS500-BLOCK (necessary for IST-TT5, IST-TT30, IST-TT50 and IST-TT220, not needed for IST-TT550) |

## DIGITAL TORQUE TESTERS



printer (optional)



software CD (included)

- External sensor
- Metal case, touch buttons
- Clockwise and counter-clockwise operation
- Test mode: track, peak, first peak, preset tolerance
- Unit: N.m, N.cm, kgf.cm, lbf.in, lbf.ft
- Set tolerance with judgement
- 1000 memories
- LCD display with backlight, can automatically turn 180°
- Overload alarm
- Automatic power off



IST-DTT5



DATA OUTPUT

two display modes



### SPECIFICATION

| Code                   | IST-DTT1                      | IST-DTT5 | IST-DTT10 |
|------------------------|-------------------------------|----------|-----------|
| Load capacity          | 1N.m                          | 5N.m     | 10N.m     |
| Resolution             | 0.001N.m                      | 0.001N.m | 0.01N.m   |
| Max. clamping diameter | Ø10mm                         | Ø10mm    | Ø13mm     |
| Sampling frequency     | 2000 times per second         |          |           |
| Accuracy               | ±0.3% (of load capacity)      |          |           |
| Output                 | USB, RS232, alarm signal      |          |           |
| Power supply           | built-in rechargeable battery |          |           |
| Dimension              | 145x73x34mm                   |          |           |
| Weight                 | 1.4kg                         |          |           |

### STANDARD DELIVERY

|                        |      |
|------------------------|------|
| Main unit              | 1 pc |
| External sensor        | 1 pc |
| AC/DC adapter          | 1 pc |
| Software and USB cable | 1 pc |

### OPTIONAL ACCESSORY

|             |                |
|-------------|----------------|
| Printer     | ISF-DF-PRINTER |
| RS232 cable | IST-DTT-CABLE  |



DATA  
OUTPUT

## DIGITAL BOTTLE CAP TORQUE TESTERS



software CD  
(included)



printer (optional)

- Measure the opening and tightening torque of bottle caps
- Unit: N.m, N.cm, kgf.cm, lbf.in, lbf.ft
- 1500 memories
- Wireless connection to printer
- Automatic power off
- LCD display with backlight
- Overload alarm
- With calibration function



IST-DCT20

two display modes



digit mode



graph mode

### SPECIFICATION

| Code           | IST-DCT2  | IST-DCT5 | IST-DCT10 | IST-DCT20 |
|----------------|---|----------|-----------|-----------|
| Load capacity  | 2N.m  | 5N.m     | 10N.m     | 20N.m     |
| Resolution     | 0.001N.m  | 0.001N.m | 0.01N.m   | 0.01N.m   |
| Clamping range | Ø19.5~190mm   |          |           |           |
| Accuracy       | ±0.5% (of load capacity)  |          |           |           |
| Measuring mode | tracking, peak (max.), first peak, double peak, tolerance testing |          |           |           |
| Output         | wireless and USB  |          |           |           |
| Power supply   | built-in rechargeable battery                                     |          |           |           |
| Dimension      | 200×197×142mm   |          |           |           |
| Weight         | 2.5kg   |          |           |           |

### STANDARD DELIVERY

|                        |      |
|------------------------|------|
| Main unit              | 1 pc |
| AC/DC adapter          | 1 pc |
| Software and USB cable | 1 pc |

### OPTIONAL ACCESSORY

|         |                |
|---------|----------------|
| Printer | ISH-DS-PRINTER |
|---------|----------------|

## DIAL TORQUE SCREWDRIVERS



IST-DS2

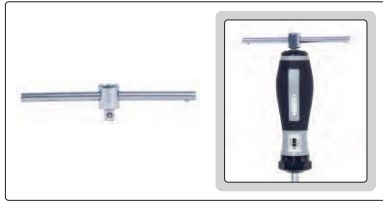
- Clockwise and counter-clockwise operation
- With peak value indicator

### SPECIFICATION

| Code       | IST-DS02        | IST-DS05   | IST-DS1  | IST-DS2  | IST-DS5 |
|------------|-----------------|------------|----------|----------|---------|
| Range      | 0.05~0.2N.m     | 0.1~0.5N.m | 0.2~1N.m | 0.5~2N.m | 1~5N.m  |
| Graduation | 0.005N.m        | 0.01N.m    | 0.02N.m  | 0.05N.m  | 0.1N.m  |
| Head       | 1/4" hex socket |            |          |          |         |
| Accuracy   | ±6%             |            |          |          |         |
| Length     | 152mm           | 273mm      | 273mm    | 273mm    | 273mm   |
| Weight     | 170g            | 400g       | 400g     | 400g     | 400g    |

## TORQUE SCREWDRIVERS

**ATTENTION: CLOCKWISE OPERATION ONLY**



T-bar wrench (only for IST-MG250, IST-MG360, IST-MG600)



IST-MG600

### SPECIFICATION

| Code              | IST-MG50        | IST-MG100  | IST-MG250  | IST-MG360  | IST-MG600  |
|-------------------|-----------------|------------|------------|------------|------------|
| Range (clockwise) | 10~50cN.m       | 20~100cN.m | 50~250cN.m | 60~360cN.m | 1.0~6.0N.m |
| Graduation        | 1cN.m           | 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 (only for IST-MG250, IST-MG360, IST-MG600) | 1 pc |

## 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

**INSIZE**  
INSPECTION  
CERTIFICATE

### SPECIFICATION

| Code                   | IST-SD50          | IST-SD200  | IST-SD400  |
|------------------------|-------------------|------------|------------|
| Range                  | 10~50cN.m         | 40~200cN.m | 80~400cN.m |
| Accuracy               | clockwise         | ±3%        | ±2.5%      |
|                        | counter-clockwise | ±4%        | ±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       |

### OPTIONAL ACCESSORY

|                   |              |
|-------------------|--------------|
| Calibration cable | IST-SD-CABLE |
|-------------------|--------------|



## SMALL RANGE DIGITAL TORQUE WRENCHES

- 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-WP20

### SPECIFICATION

| Code              | IST-WP6           | IST-WP12  | IST-WP20 |
|-------------------|-------------------|-----------|----------|
| Range             | 1.2~6N.m          | 2.4~12N.m | 4~20N.m  |
| Accuracy          | clockwise         | ±3%       | ±3%      |
|                   | counter-clockwise | ±4%       | ±4%      |
| Resolution        | 0.001N.m          | 0.01N.m   | 0.01N.m  |
| Square driver (L) | 1/4"              | 1/4"      | 1/4"     |
| Power supply      | 1×AAA battery     |           |          |
| Length            | 260mm             | 260mm     | 260mm    |
| Weight            | 430g              | 430g      | 430g     |

### OPTIONAL ACCESSORY

|                   |              |
|-------------------|--------------|
| Calibration cable | IST-SD-CABLE |
|-------------------|--------------|

OPTIONAL ACCURACY:  
CLOCKWISE: ±1%  
COUNTER-CLOCKWISE: ±2%  
ONLY FOR RANGE 6~850N.m



## DIGITAL TORQUE WRENCHES

- 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 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-W135A



### SPECIFICATION

| Code       | Range       | Accuracy                                     | Resolution | Square driver (L) | Power supply   | Length | Weight |
|------------|-------------|--|------------|-------------------|----------------|--------|--------|
| IST-W30A   | 6~30N.m     | clockwise: ±2%<br>counter-clockwise: ±3%     | 0.01N.m    | 1/4"              | 2×AA batteries | 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  | 100~500N.m  | clockwise: ±2.5%<br>counter-clockwise: ±3.5% | 0.1N.m     | 3/4"              |                | 950mm  | 2.1kg  |
| IST-W850A  | 170~850N.m  |  | 0.1N.m     | 3/4"              |                | 1220mm | 2.55kg |
| IST-W1200A | 240~1200N.m |  | 1N.m       | 1"                |                | 1800mm | 13kg   |
| IST-W1500A | 300~1500N.m |  | 1N.m       | 1"                |                | 1800mm | 13kg   |
| IST-W2000A | 400~2000N.m |  | 1N.m       | 1"                |                | 1800mm | 14kg   |

### OPTIONAL ACCESSORY

|                   |             |
|-------------------|-------------|
| Calibration cable | IST-W-CABLE |
|-------------------|-------------|

## SHORT HANDLE DIGITAL TORQUE WRENCHES



- 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

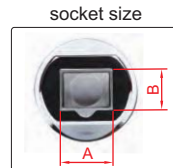
| Code              | IST-WS30          | IST-WS30A | IST-WS60 | IST-WS85 |
|-------------------|-------------------|-----------|----------|----------|
| Range             | 6~30N.m           | 6~30N.m   | 12~60N.m | 17~85N.m |
| Accuracy          | clockwise         | ±3%       |          |          |
|                   | counter-clockwise | ±4%       |          |          |
| Resolution        | 0.01N.m           | 0.01N.m   | 0.01N.m  | 0.1N.m   |
| Square driver (L) | 1/4"              | 3/8"      | 3/8"     | 3/8"     |
| Power supply      | 2×AAA batteries   |           |          |          |
| Length            | 215mm             | 215mm     | 225mm    | 271mm    |
| Weight            | 750g              | 830g      | 917g     | 1000g    |

### OPTIONAL ACCESSORY

|                   |              |
|-------------------|--------------|
| Calibration cable | IST-SD-CABLE |
|-------------------|--------------|

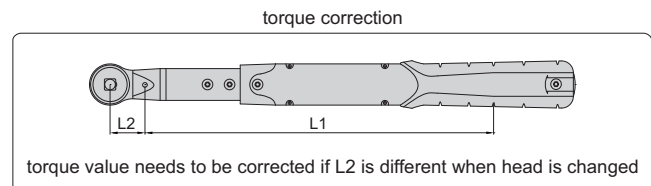
## INTERCHANGEABLE HEAD DIGITAL TORQUE WRENCHES

OPTIONAL ACCURACY:  
CLOCKWISE: ±1%  
COUNTER-CLOCKWISE: ±2%



IST-2W135A

- 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)



### 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      |

To be continued



Continued from previous page

**RATCHET HEAD (INCLUDED) SPECIFICATION**

| Code of 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       |

**STANDARD DELIVERY**

|               |      |
|---------------|------|
| Torque wrench | 1 pc |
| Ratchet head  | 1 pc |

**OPTIONAL ACCESSORY**

|                      |             |
|----------------------|-------------|
| Calibration cable    | IST-W-CABLE |
| Interchangeable head | see details |



**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-2W135A                 |
| IST-2W-A2 | 5-30mm    | IST-2W-200A<br>IST-2W-410A |
| IST-2W-A3 | 10-41mm   | IST-2W-340A<br>IST-2W-410A |



**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-2W200A<br>IST-2W340A |
| IST-2W-M13A | 13mm      |                         |                          |
| 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 TORQUE WRENCHES

ATTENTION: CLOCKWISE  
OPERATION ONLY

**INSPECTION  
CERTIFICATE**



IST-11WM200



- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable

### SPECIFICATION

| Code        | Range (clockwise) | Accuracy                     | Graduation | Socket size (A×B) | Length | Weight |
|-------------|-------------------|------------------------------|------------|-------------------|--------|--------|
| IST-11WM12  | 2.5~12N.m         | ±6% (<10N.m)<br>±4% (≥10N.m) | 0.05N.m    | 12×9mm            | 284mm  | 580g   |
| IST-11WM30  | 6.0~30N.m         | ±6% (<10N.m)<br>±4% (≥10N.m) | 0.1N.m     | 12×9mm            | 303mm  | 720g   |
| IST-11WM60  | 10~60N.m          | ±4%                          | 0.5N.m     | 12×9mm            | 372mm  | 860g   |
| IST-11WM125 | 25~125N.m         | ±4%                          | 0.5N.m     | 12×9mm            | 427mm  | 940g   |
| IST-11WM200 | 40~200N.m         | ±4%                          | 1N.m       | 18×14mm           | 460mm  | 1060g  |
| IST-11WM335 | 65~335N.m         | ±4%                          | 1N.m       | 18×14mm           | 520mm  | 1200g  |

### RATCHET HEAD (optional)

| Code         | Square driver | Applicable wrenches                                   |
|--------------|---------------|---|
| IST-11WM-R1  | 1/4"          | IST-11WM12<br>IST-11WM30                              |
| IST-11WM-R2  | 3/8"          | IST-11WM12<br>IST-11WM30<br>IST-11WM60<br>IST-11WM125 |
| IST-11WM-R3  | 1/2"          | IST-11WM200<br>IST-11WM335                            |
| IST-11WM-R4* | 3/4"          | IST-11WM200<br>IST-11WM335                            |



### 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      |   |

\*Torque value needs to be corrected with those heads



### 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      |   |

ATTENTION: CLOCKWISE OPERATION ONLY

## TORQUE WRENCHES

INSPECTION CERTIFICATE

- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable



IST-9WM335

### SPECIFICATION

| Code              | IST-9WM12                    | IST-9WM20                    | IST-9WM30                    | IST-9WM60 | IST-9WM100 | IST-9WM125 | IST-9WM200 |
|-------------------|------------------------------|------------------------------|------------------------------|-----------|------------|------------|------------|
| Range (clockwise) | 2.5~12N.m                    | 4~20N.m                      | 6~30N.m                      | 10~60N.m  | 20~100N.m  | 25~125N.m  | 40~200N.m  |
| Accuracy          | ±6% (<10N.m)<br>±4% (≥10N.m) | ±6% (<10N.m)<br>±4% (≥10N.m) | ±6% (<10N.m)<br>±4% (≥10N.m) | ±4%       | ±4%        | ±4%        | ±4%        |
| Graduation        | 0.1N.m                       | 0.1N.m                       | 0.2N.m                       | 0.5N.m    | 0.5N.m     | 0.5N.m     | 1N.m       |
| Square driver (D) | 1/4"                         | 1/4"                         | 3/8"                         | 3/8"      | 1/2"       | 1/2"       | 1/2"       |
| Length            | 290mm                        | 290mm                        | 318mm                        | 388mm     | 443mm      | 443mm      | 468mm      |
| Weight            | 680g                         | 680g                         | 820g                         | 960g      | 1040g      | 1040g      | 1160g      |

| Code              | IST-9WM335 | IST-9WM500 | IST-9WM800 | IST-9WM1000 | IST-9WM1500 | IST-9WM2000 | IST-9WM3000 |
|-------------------|------------|------------|------------|-------------|-------------|-------------|-------------|
| Range (clockwise) | 65~335N.m  | 100~500N.m | 160~800N.m | 200~1000N.m | 300~1500N.m | 400~2000N.m | 600~3000N.m |
| Accuracy          | ±4%        | ±4%        | ±4%        | ±4%         | ±4%         | ±4%         | ±4%         |
| Graduation        | 1N.m       | 2.5N.m     | 4N.m       | 5N.m        | 5N.m        | 10N.m       | 15N.m       |
| Square driver (D) | 1/2"       | 3/4"       | 3/4"       | 3/4"        | 1"          | 1"          | 1"          |
| Length            | 528mm      | 855mm      | 1055mm     | 1055mm      | 1260mm      | 1260mm      | 1260mm      |
| Weight            | 1300g      | 5000g      | 5900g      | 5900g       | 9200g       | 9200g       | 10500g      |

ATTENTION: CLOCKWISE OPERATION ONLY

## PRESET TORQUE WRENCHES

- 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



IST-PW60



torque adjustment tool (optional)

### SPECIFICATION

| Code               | IST-PW12  | IST-PW20 | IST-PW30 | IST-PW60 | IST-PW125 | IST-PW200 |
|--------------------|-----------|----------|----------|----------|-----------|-----------|
| Adjustable range * | 2.5~12N.m | 4~20N.m  | 6~30N.m  | 10~60N.m | 25~125N.m | 40~200N.m |
| Accuracy           | ±3%       | ±3%      | ±3%      | ±3%      | ±3%       | ±3%       |
| Square driver (D)  | 1/4"      | 1/4"     | 3/8"     | 3/8"     | 3/8"      | 1/2"      |
| Length             | 184mm     | 184mm    | 214mm    | 255mm    | 366mm     | 457mm     |
| Weight             | 450g      | 450g     | 500g     | 560g     | 790g      | 1200g     |

| Code               | IST-PW340 | IST-PW500  | IST-PW650  | IST-PW800  | IST-PW1000A | IST-PW1000B |
|--------------------|-----------|------------|------------|------------|-------------|-------------|
| Adjustable range * | 65~340N.m | 100~500N.m | 150~650N.m | 160~800N.m | 200~1000N.m | 200~1000N.m |
| Accuracy           | ±3%       | ±3%        | ±4%        | ±4%        | ±4%         | ±4%         |
| Square driver (D)  | 1/2"      | 3/4"       | 3/4"       | 3/4"       | 3/4"        | 1"          |
| Length             | 691mm     | 910mm      | 910mm      | 1037mm     | 1265mm      | 1265mm      |
| Weight             | 1960g     | 2800g      | 2800g      | 5000g      | 6000g       | 6000g       |

### OPTIONAL ACCESSORY

Torque adjustment tool IST-PW-TOOL

\* Adjust to a fixed torque value according to customer requirements before delivery

## DIAL TORQUE WRENCHES



- Clockwise and counter-clockwise operation
- According to DIN ISO 6789, ASME B107.300

IST-DW70

### SPECIFICATION

| Code              | IST-DW3D5               | IST-DW9                | IST-DW18                 | IST-DW35               | IST-DW70                 | IST-DW140                | IST-DW240                | IST-DW350                |
|-------------------|-------------------------|------------------------|--------------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Range             | 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 | 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 |
| Accuracy          | ±3%                     | ±3%                    | ±3%                      | ±3%                    | ±3%                      | ±3%                      | ±3%                      | ±3%                      |
| Graduation        | 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       | 1N.m<br>10in.lb          | 2N.m<br>1ft.lb           | 3N.m<br>2.5ft.lb         | 2.5N.m<br>2.5ft.lb       |
| Square driver (D) | 1/4"                    | 1/4"                   | 3/8"                     | 3/8"                   | 3/8"                     | 1/2"                     | 1/2"                     | 1/2"                     |
| Length            | 254mm                   | 254mm                  | 254mm                    | 254mm                  | 378mm                    | 546mm                    | 546mm                    | 546mm                    |
| Weight            | 480g                    | 480g                   | 480g                     | 480g                   | 820g                     | 1300g                    | 1300g                    | 1300g                    |

## DIGITAL TORQUE ADAPTERS (WITH ANGLE DETECTION)



- 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)



IST-5W135A

### SPECIFICATION

| Code              | IST-5W30A         | IST-5W135A          | IST-5W200A | IST-5W340A |
|-------------------|-------------------|---------------------|------------|------------|
| Range             | torque            | 6~30N.m             | 27~135N.m  | 40~200N.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     |
|                   | angle             | 1°                  |            |            |
| Square driver (L) | 1/4"              | 3/8"                | 1/2"       | 1/2"       |
| Power supply      | 2xAAA batteries   |                     |            |            |
| Length            | Ø85×60mm          | Ø85×75mm            | Ø85×80mm   | Ø85×80mm   |
| Weight            | 150g              | 220g                | 240g       | 240g       |

working with mechanical wrenches



### OPTIONAL ACCESSORY

Calibration cable IST-SD-CABLE



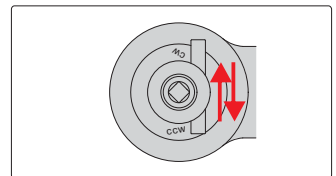
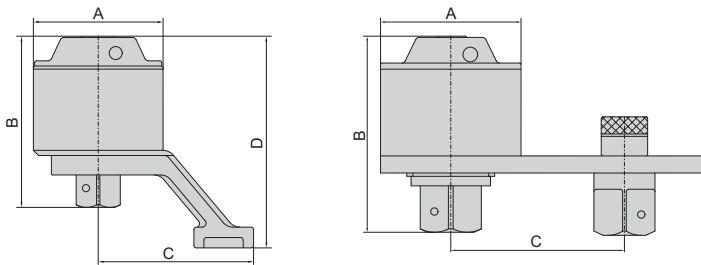
## TORQUE MULTIPLIERS



IST-TM2000



IST-TM3500P



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:  $\pm 5\%$

### 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"            | 82x98.5x97x122.4mm  | M20~30   | S30~46  | 2.1kg  |
| IST-TM2000  | 2000N.m  | 1:13         | 1/2"          | 1"            | 82x120x105x147mm    | M22~35   | S32~55  | 3.15kg |
| IST-TM3500  | 3500N.m  | 1:16         | 1/2"          | 1"            | 98x131x120x163mm    | M30~45   | S46~70  | 4.9kg  |
| IST-TM5500  | 5500N.m  | 1:20.5       | 1/2"          | 1 1/2"        | 115x163.5x137x199mm | M38~52   | S55~80  | 8.1kg  |
| IST-TM7500  | 7500N.m  | 1:23         | 1/2"          | 1 1/2"        | 127x173x146x215mm   | M42~60   | S65~90  | 10.6kg |
| IST-TM10000 | 10000N.m | 1:28         | 1/2"          | 1 1/2"        | 141x170x164x238mm   | 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"            | 82x91x (76.7~127.3)mm      | M20~30   | S30~46   | 2.4kg  |
| IST-TM2000P  | 2000N.m  | 1:13         | 1/2"          | 1"            | 82x120x (92.7~129.3)mm     | M22~35   | S32~55   | 3.5kg  |
| IST-TM3500P  | 3500N.m  | 1:16         | 1/2"          | 1"            | 98x128x (102.7~145.3)mm    | M30~45   | S46~70   | 5.0kg  |
| IST-TM5500P  | 5500N.m  | 1:20.5       | 1/2"          | 1 1/2"        | 115x157x (134.05~165.95)mm | M38~52   | S55~80   | 8.7kg  |
| IST-TM7500P  | 7500N.m  | 1:23         | 1/2"          | 1 1/2"        | 127x168x (139.05~190.95)mm | M42~60   | S65~90   | 11.7kg |
| IST-TM10000P | 10000N.m | 1:28         | 1/2"          | 1 1/2"        | 141x186x (144.05~215.95)mm | M52~72   | S80~105  | 15.2kg |
| IST-TM15000P | 15000N.m | 1:50         | 3/4"          | 2 1/2"        | 156x246x (155.25~244.75)mm | M60~85   | S80~120  | 24.1kg |
| IST-TM20000P | 20000N.m | 1:76         | 3/4"          | 2 1/2"        | 170x264x (163.75~276.25)mm | M72~100  | S105~145 | 27.8kg |

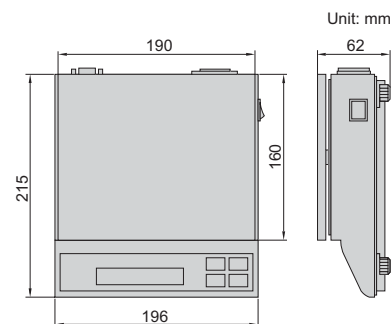
## ELECTRONIC BALANCES

DATA  
OUTPUT



8301-3000

- Automatic zero when power on
- Unit: g (gram), ct (carat), ozt (troy ounce)
- Weighing, counting, taring
- Overload alarm
- Data output



| 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                  | 0.01g         | 0.01g    | 0.01g     | 0.1g      | 0.1g      |
| Weighing pan size           | Ø135mm        |          |           | 190×160mm |           |
| Verification scale interval | 10d           |          |           |           |           |
| Working temperature         | 0~40°C        |          |           |           |           |
| Working humidity            | ≤80% RH       |          |           |           |           |
| Power supply                | power adapter |          |           |           |           |
| Dimension (L×W×H)           | 215×196×62mm  |          |           |           |           |



calibration weight  
(included in 8301-300,  
8301-600 and 8301-1200)



windshield  
(included in 8301-300,  
8301-600 and 8301-1200)

### OPTIONAL ACCESSORY

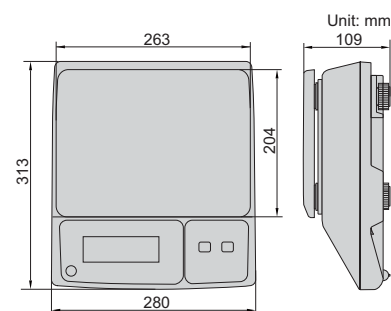
|             |            |
|-------------|------------|
| RS232 CABLE | 8301-CABLE |
|-------------|------------|

## WEIGHING SCALES (OIML CERTIFICATE)



8002-30M

- LCD display, with backlight
- Zero-setting, subtracting tare value
- Overload alarm
- Automatic power off
- OIML certificate (No. 0200-NAWI-04601)



### SPECIFICATION

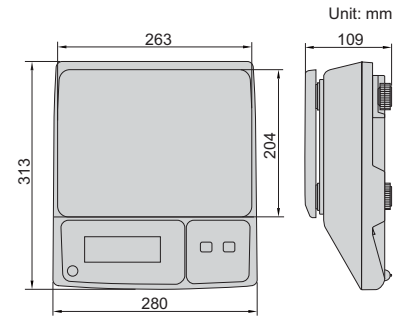
| Code                  | 8002-6M  | 8002-15M | 8002-30M | 8002-6MD | 8002-15MD | 8002-30MD |
|-----------------------|--|----------|----------|----------|-----------|-----------|
| Maximum capacity      | 3/6kg  | 6/15kg   | 15/30kg  | 3/6kg    | 6/15kg    | 15/30kg   |
| Minimum capacity      | 20g  | 40g      | 100g     | 20g      | 40g       | 100g      |
| Division              | 1/2g   | 2/5g     | 5/10g    | 1/2g     | 2/5g      | 5/10g     |
| Verification interval | 2g   | 5g       | 10g      | 2g       | 5g        | 10g       |
| Output                | no   |          |          | RS232    |           |           |
| Operating temperature | -10~40°C   |          |          |          |           |           |
| Power                 | rechargeable battery (6V/3.2Ah), power adapter (12V/500mA) |          |          |          |           |           |
| Dimensions of pan     | 263×204mm  |          |          |          |           |           |

## WEIGHING SCALES (HIGH PRECISION)

- 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 capacity      | 6kg  | 15kg    | 30kg    | 6kg     | 15kg     | 30kg     |
| Minimum capacity      | 4g   | 10g     | 20g     | 4g      | 10g      | 20g      |
| Division              | 0.2g   | 0.5g    | 1g      | 0.2g    | 0.5g     | 1g       |
| Verification interval | 2g   | 5g      | 10g     | 2g      | 5g       | 10g      |
| Output                | no   |         |         | RS232   |          |          |
| Operating temperature | -10~40°C   |         |         |         |          |          |
| Power                 | rechargeable battery (6V/3.2Ah), power adapter (12V/500mA) |         |         |         |          |          |
| Dimensions of pan     | 263×204mm  |         |         |         |          |          |



printer (optional)

### OPTIONAL ACCESSORY (for scales with RS232)

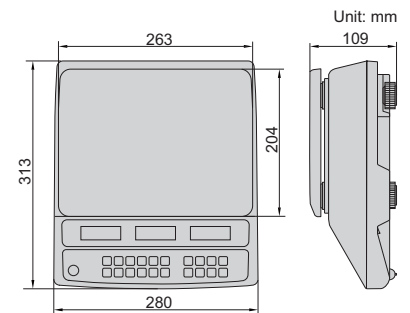
|         |              |
|---------|--------------|
| Printer | 8001-PRINTER |
|---------|--------------|

## COUNTING SCALES

- LCD display, with backlight
- Zero-setting, subtracting tare value, counting, accumulation, checking alarm
- Overload alarm



8101-30



### SPECIFICATION

| Code                  | 8101-6   | 8101-15 | 8101-30 | 8101-6D | 8101-15D | 8101-30D |
|-----------------------|--|---------|---------|---------|----------|----------|
| Maximum capacity      | 6kg  | 15kg    | 30kg    | 6kg     | 15kg     | 30kg     |
| Minimum capacity      | 4g   | 10g     | 20g     | 4g      | 10g      | 20g      |
| Division              | 0.2g   | 0.5g    | 1g      | 0.2g    | 0.5g     | 1g       |
| Verification interval | 2g   | 5g      | 10g     | 2g      | 5g       | 10g      |
| Output                | no   |         |         | RS232   |          |          |
| Operating temperature | -10~40°C   |         |         |         |          |          |
| Power                 | rechargeable battery (6V/3.2Ah), power adapter (12V/500mA) |         |         |         |          |          |
| Dimensions of pan     | 263×204mm  |         |         |         |          |          |



printer (optional)

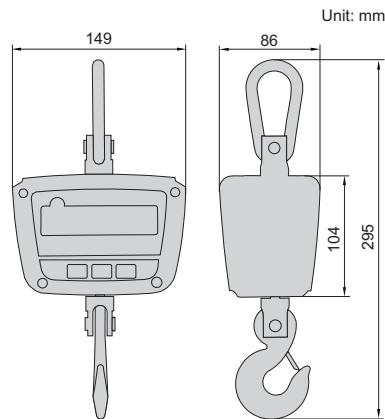
### OPTIONAL ACCESSORY (for scales with RS232)

|         |              |
|---------|--------------|
| Printer | 8001-PRINTER |
|---------|--------------|

## 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

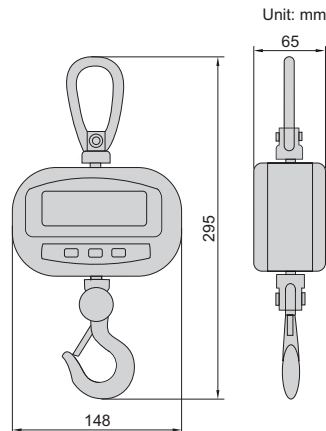
| Code                  | 8201-50KG  | 8201-150KG    | 8201-300KG    |
|-----------------------|--|---------------|---------------|
| Maximum capacity      | 50kg   | 150kg         | 300kg         |
| Minimum capacity      | 0.4kg  | 1.0kg         | 2.0kg         |
| Resolution            | 0.02kg/0.01kg                                      | 0.05kg/0.02kg | 0.10kg/0.05kg |
| Operating temperature | -10~40°C   |               |               |
| Operating humidity    | 30%~90% RH   |               |               |
| Overload alarm        | 100%F.S.+9e  |               |               |
| Maximum safe load     | 125%F.S.   |               |               |
| Limited overload      | 400%F.S.   |               |               |
| 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 |

## ELECTRONIC CRANE SCALES (ECONOMIC 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 capacity      | 50kg                                       | 150kg         | 300kg         |
| Minimum capacity      | 0.4kg                                      | 1.0kg         | 2.0kg         |
| Resolution            | 0.02kg/0.01kg                              | 0.05kg/0.02kg | 0.10kg/0.05kg |
| Operating temperature | -10~40°C                                   |               |               |
| Operating humidity    | 30%~90% RH                                 |               |               |
| Overload alarm        | 100%F.S.+9e                                |               |               |
| Maximum safe load     | 125%F.S.                                   |               |               |
| Limited overload      | 400%F.S.                                   |               |               |
| Power supply          | 4×1.5V AA batteries (for 40 hours working) |               |               |
| Stable reading time   | ≤8s  |               |               |

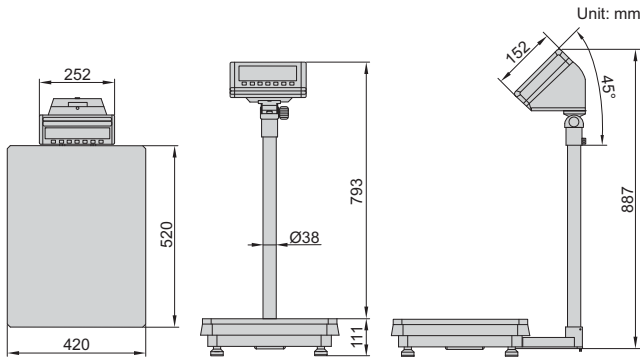
### STANDARD DELIVERY

|                   |      |
|-------------------|------|
| Main unit         | 1 pc |
| Remote controller | 1 pc |



## PLATFORM SCALES

DATA  
OUTPUT



### SPECIFICATION

| Code                  | 8501-AL60  | 8501-AL150 | 8501-AL300 |
|-----------------------|--|------------|------------|
| Maximum capacity      | 60kg   | 150kg      | 300kg      |
| Minimum capacity      | 100g   | 200g       | 400g       |
| Division              | 5g   | 10g        | 20g        |
| Verification interval | 20g  | 50g        | 100g       |
| Operating temperature | -10~40°C   |            |            |
| Material              | platform: stainless steel, base: die-cast aluminum |            |            |
| Dimension of platform | 420×520mm  |            |            |
| Power                 | rechargeable lead acid battery (6V/4Ah)            |            |            |
| Output                | RS232  |            |            |
| Weight                | 18.3kg   |            |            |



8501-AL150



printer (optional)

- LCD large screen display with LED backlight
- Weighing, overweight alarm, counting, keyboard lock, accumulating, auto zero and animal scale
- Units: kg, g, lb, oz

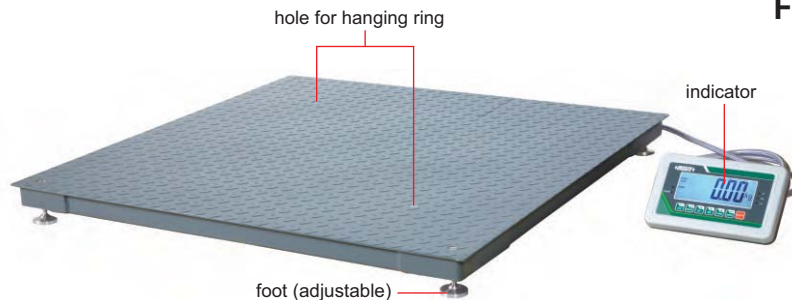
### OPTIONAL ACCESSORY

|         |              |
|---------|--------------|
| Printer | 8001-PRINTER |
|---------|--------------|

DATA  
OUTPUT

## FLOOR SCALES

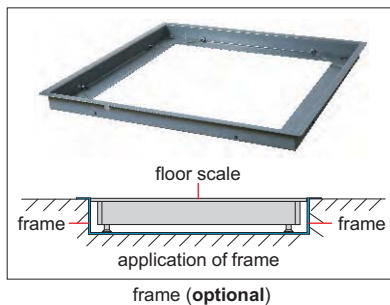
- LCD large screen display with automatic backlight
- Zero, overweight alarm, deduction, unit conversion, accumulating, animal scale, etc.
- Units: kg, g, lb, oz
- OIML approved load cell



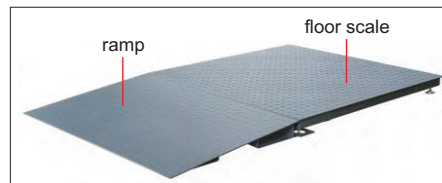
8401-1T1212



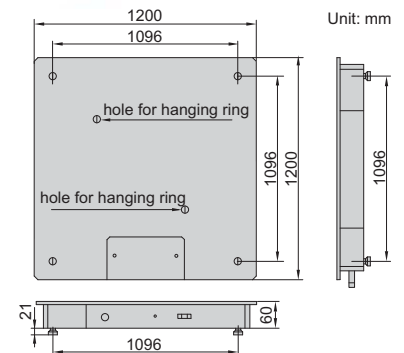
printer (optional)



frame (optional)



ramp (optional)



Unit: mm

### SPECIFICATION

| Code                  | 8401-1T1212                             | 8401-2T1212 | 8401-3T1212 |
|-----------------------|---|-------------|-------------|
| Maximum capacity      | 1t                                      | 2t          | 3t          |
| Minimum capacity      | 10kg                                    | 20kg        | 20kg        |
| Division              | 0.5kg                                   | 1kg         | 1kg         |
| Verification interval | 0.5kg                                   | 1kg         | 1kg         |
| Load cell             | 4 pcs 350Ω                              |             |             |
| Operating temperature | -10~40°C                                |             |             |
| Material              | mild steel                              |             |             |
| Dimension of platform | 1200×1200mm                             |             |             |
| Power                 | 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 |



stand (optional)

## WEIGHTS



### 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 |

■ 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                        |

| 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 (steel, chrome plated) |          |              |
| 1mg    | 8911-1MGE2                        | 8911-1MGF1                        | 8911-1MGF1S              | 8911-1MGF2               | 8911-1MGM1               | -                         | sheet    |              |
| 2mg    | 8911-2MGE2                        | 8911-2MGF1                        | 8911-2MGF1S              | 8911-2MGF2               | 8911-2MGM1               |                           |          |              |
| 5mg    | 8911-5MGE2                        | 8911-5MGF1                        | 8911-5MGF1S              | 8911-5MGF2               | 8911-5MGM1               |                           |          |              |
| 10mg   | 8911-10MGE2                       | 8911-10MGF1                       | 8911-10MGF1S             | 8911-10MGF2              | 8911-10MGM1              |                           |          |              |
| 20mg   | 8911-20MGE2                       | 8911-20MGF1                       | 8911-20MGF1S             | 8911-20MGF2              | 8911-20MGM1              |                           |          |              |
| 50mg   | 8911-50MGE2                       | 8911-50MGF1                       | 8911-50MGF1S             | 8911-50MGF2              | 8911-50MGM1              |                           |          |              |
| 100mg  | 8911-100MGE2                      | 8911-100MGF1                      | 8911-100MGF1S            | 8911-100MGF2             | 8911-100MGM1             |                           |          |              |
| 200mg  | 8911-200MGE2                      | 8911-200MGF1                      | 8911-200MGF1S            | 8911-200MGF2             | 8911-200MGM1             |                           |          |              |
| 500mg  | 8911-500MGE2                      | 8911-500MGF1                      | 8911-500MGF1S            | 8911-500MGF2             | 8911-500MGM1             |                           |          |              |
| 1g     | 8911-1GE2                         | 8911-1GF1                         | 8911-1GF1S               | 8911-1GF2                | 8911-1GM1                | -                         | cylinder |              |
| 2g     | 8911-2GE2                         | 8911-2GF1                         | 8911-2GF1S               | 8911-2GF2                | 8911-2GM1                |                           |          |              |
| 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              |          |              |



- Supplied with manufacturer inspection certificate

8910-200GF1

## 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~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~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      | 25 pcs       | 27 pcs       | 28 pcs        |
| Total range | 1mg~211.11g   | 1mg~611.11g | 1mg~2111.11g | 1mg~6111.11g | 1mg~11111.11g |

◆ sheet

■ cylinder

◆\* sheet, with mark

■\* cylinder, with mark

## CUTTING MACHINE CODE MLP-CM60



- 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



### 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             |

### STANDARD DELIVERY

|               |               |
|---------------|---------------|
| Main unit     | 1 pc          |
| Cutting blade | 2 pcs         |
| Coolant       | 1 barrel (4L) |
| Water tank    | 1 pc          |



cutting blade (optional)



coolant (optional)

### OPTIONAL ACCESSORY

|  |                |
|--|----------------|
| Coolant (4L, 1:20 diluted with water)        | MLP-CM60-COLT  |
| Cutting blade (Ø250×1.5×Ø25.4mm, 60 pcs/box) | MLP-CM60-CUT2  |
| Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)     | MLP-CM60-CUT * |
| Cutting blade chuck (Ø32mm hole)             | MLP-CM60-CHUCK |

\* When use MLP-CM60-CUT, please purchase MLP-CM60-CHUCK

## MOUNTING PRESS CODE MLP-MP30

- Automatic heating, pressuring, cooling and pressure relief
- Water cooling system

### 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            |



hot mounting resin (optional)

### OPTIONAL ACCESSORY

|                                 |              |
|---------------------------------|--------------|
| Hot mounting resin (black, 4kg) | MLP-MP30-PDR |
|---------------------------------|--------------|

## GRINDER AND POLISHER 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
- Platen rotation direction can be selected
- Replaceable platen

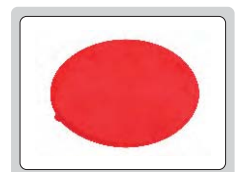


### SPECIFICATION

|                           |   |
|---------------------------|---|
| Platen diameter           | Ø250mm  |
| Platen rotation speed     | 50~999r/min (stepless adjustable), 150 or 300r/min (two fixed speeds) |
| Platen rotation direction | clockwise or counterclockwise   |
| Grinding head speed       | 50~150r/min (stepless adjustable)                                     |
| Pressure range            | 5~60N   |
| Operating 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  |



silicon carbide paper  
(optional)



polishing cloth (optional)

### STANDARD DELIVERY

|                       |                        |
|-----------------------|------------------------|
| Main unit             | 1 pc                   |
| Silicon carbide paper | 6 pcs (200, 600, 1000) |
| Polishing cloth       | 4 pcs                  |

### OPTIONAL ACCESSORY

|                         |                |   |
|-------------------------|----------------|---|
| Silicon carbide paper   | MLP-GP260-S□□* | 50 pcs/box, select granularity: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000                |
| Polishing cloth         | MLP-GP260-CLT  | 15 pcs/box, long velvet silk material   |
| Diamond polishing agent | MLP-GP260-D□□* | 500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25 |

\* □□ is granularity specification, for example, code MLP-GP260-D40 stands for diamond polishing agent 40µm granularity

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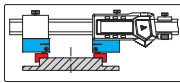
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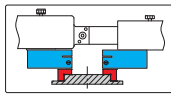
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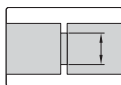
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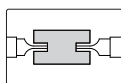
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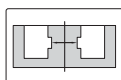
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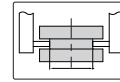
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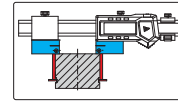
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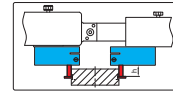
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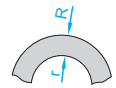
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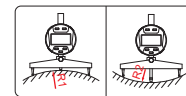
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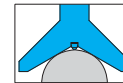
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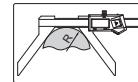
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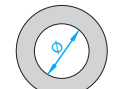
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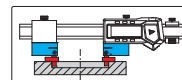
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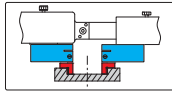
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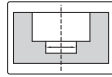
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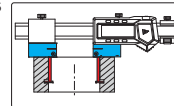


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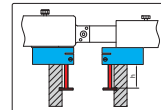
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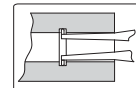
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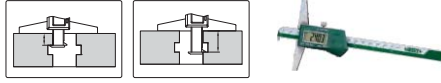
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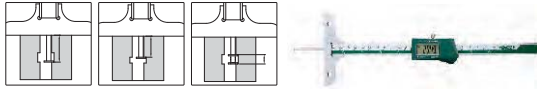
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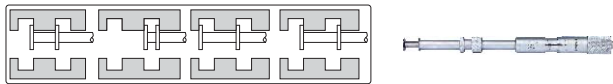
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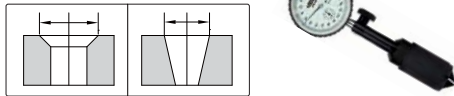
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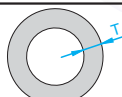
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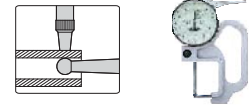
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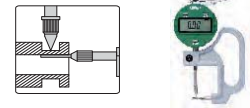
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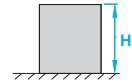
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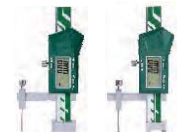
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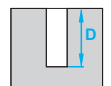
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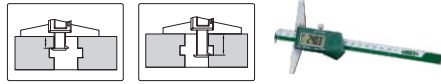
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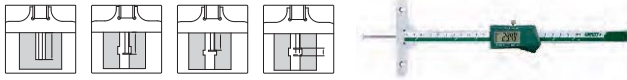
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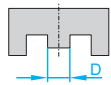


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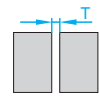


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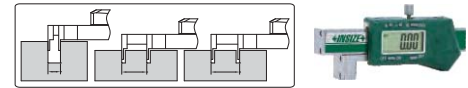
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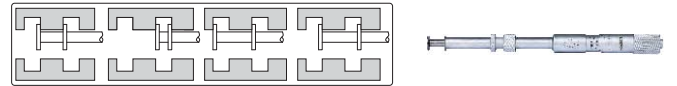
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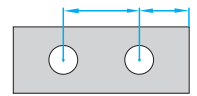


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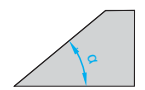


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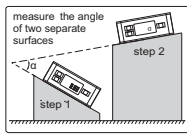
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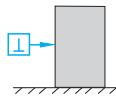


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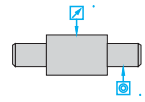


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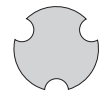
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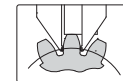
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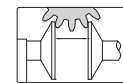
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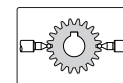
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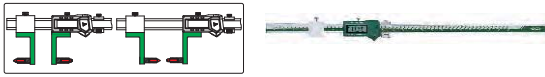
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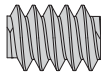
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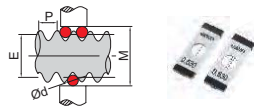
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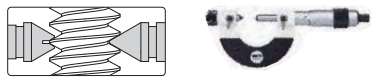
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