KAR

2019
2020

# MEASURING INSTRUMENTS

CATALOGUE NO. CAN2019

INSIZE

# QUALITY | INNOVATION | SERVICE | VALUE

## INSPECTION CERTIFICATE

NIST CERTIFICATION

The products with this mark are supplied with manufacturer inspection certificate. Some of them are traceable to NIST.

### Sample for Electronic Caliper 817000 ( Part No. 1108-150)

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 | Dave |
| Resolution | 0.01mm / 0.0005" | | |
| Serial No. | 0910120004 | Judgement | Passed |
| Standard temperature | 20°C / 68°F | | |

Unit: inch

| Measuring Length | Permissible Error | Error | |
|---|---|---|---|
| | | External | Internal |
| 0.4 DIA | +0.0005 -0.0010 | / | 0.0005 |
| 2 | ±0.0010 | -0.0005 | / |
| 4 | | -0.0005 | / |
| 6 | ±0.0015 | -0.0010 | / |
| 8 | | / | / |
| 10 | | / | / |
| 12 | | / | / |

Unit: mm

| Measuring Length | Permissible Error | Error | |
|---|---|---|---|
| | | External | Internal |
| Φ10 | +0.01 -0.02 | / | 0.01 |
| 50 | ±0.02 | -0.01 | / |
| 100 | | -0.01 | / |
| 150 | ±0.03 | -0.02 | / |
| 200 | | / | / |
| 250 | | / | / |
| 300 | | / | / |

### Sample for Outside Micrometer 816564 ( Part No. 3203-1A)

INSIZE Inspection Certificate

| | |
|---|---|
| Product name | Outside Micrometer |
| Code No. | 3203-1A |
| Measuring range | 0-1" |
| Graduation | 0.0001" |
| Serial No. | 0910120004 |
| Standard temperature | 68 °F |
| Based on | ASME B89.1.13-2013 |
| Traceable to | USA NIST No.821/279484-10 |
| Inspector | Paulo |

Unit: inch

| Measuring Length | Permissible Error | Error |
|---|---|---|
| 0.000 | 0.00015 | 0.0000 |
| 0.210 | | 0.0001 |
| 0.420 | | -0.0001 |
| 0.605 | | 0.0000 |
| 0.815 | | -0.0001 |
| 1.000 | | 0.0001 |

Judgement: Passed

INSIZE provides one year manufacturer warranty for all products.

We reserve the right to change or modify the design and specification of products in this catalogue without prior notice.

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SYSTEM CERTIFICATION ISO 9001 SGS

UKAS QUALITY MANAGEMENT 005

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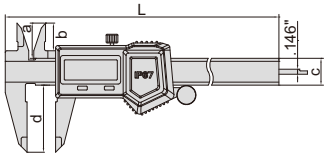
## ELECTRONIC COOLANT PROOF CALIPERS

NIST CERTIFICATION

IP67

1118-150B

- IP67 dust/coolant proof
- Resolution .0005"/0.01mm
- Button function: zero, on/off, inch/mm, ABS/REL, hold
- Battery CR2032
- Made of stainless steel




| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1118-150B** | 816018 | 0-6"/0-150mm | ±.0012" | 9.291" | .827" | .630" | .630" | 1.575" |
| **1118-200B** | 280014 | 0-8"/0-200mm | ±.0012" | 11.260" | .945" | .748" | .630" | 1.969" |
| **1118-300B** | 280015 | 0-12"/0-300mm | ±.0012" | 15.748" | .984" | .807" | .669" | 2.362" |

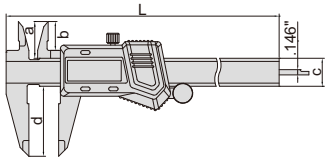
## ELECTRONIC CALIPERS

NIST CERTIFICATION

SPC

1114-150A

- Zinc alloy housing for electronic unit
- Resolution .0005"/0.01mm
- Buttons: zero, on/off, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel




| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1114-150A** | 816012 | 0-6"/0-150mm | ±.0012" | 9.291" | .827" | .630" | .630" | 1.575" |
| **1114-200A** | 816014 | 0-8"/0-200mm | ±.0012" | 11.260" | .945" | .748" | .630" | 1.969" |
| **1114-300A** | 816016 | 0-12"/0-300mm | ±.0012" | 15.748" | .984" | .807" | .669" | 2.362" |

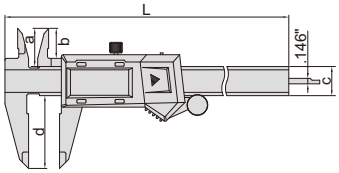
## ELECTRONIC CALIPERS (FRACTION READING)

NIST CERTIFICATION

1102-150

fraction reading

- Resolution: 0.01mm, .0005", 1/128"
- Buttons: unit (mm/in/fraction), ABS, on/off, zero
- Absolute and incremental measurement
- Battery CR2032, automatic power off
- Made of stainless steel




| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1102-150** | 280003 | 0-6"/0-150mm | ±.0012" | 9.213" | .787" | .591" | .630" | 1.575" |
| **1102-200** | 280004 | 0-8"/0-200mm | ±.0012" | 11.260" | .945" | .748" | .630" | 1.969" |
| **1102-300** | 280005 | 0-12"/0-300mm | ±.0012" | 15.354" | 1.024" | .846" | .630" | 2.362" |

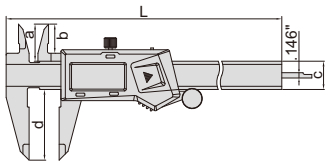
## ELECTRONIC CALIPERS (STANDARD MODEL)

NIST CERTIFICATION

SPC

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1108-150**




| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1108-150** | 817000 | 0-6"/0-150mm | ±.0008" | 9.291" | .827" | .630" | .630" | 1.575" |
| **1108-200** | 817001 | 0-8"/0-200mm | ±.0012" | 11.260" | .945" | .748" | .630" | 1.969" |
| **1108-300** | 817002 | 0-12"/0-300mm | ±.0012" | 15.748" | .984" | .807" | .630" | 2.362" |

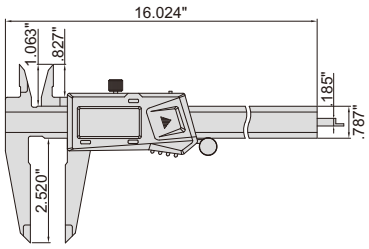
## HEAVY DUTY 12" ELECTRONIC CALIPERS

NIST CERTIFICATION

SPC

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1196-300**




| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1196-300** | 877124 | 0-12"/0-300mm | ±.0012" |

## ELECTRONIC CALIPER WITH ROUND DEPTH BAR

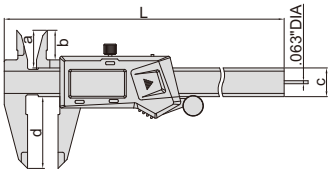
NIST CERTIFICATION

SPC

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1119-150**

round depth bar .063" DIA




| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1119-150** | 877109 | 0-6"/0-150mm | ±.0012" | 9.291" | .827" | .630" | .630" | 1.575" |

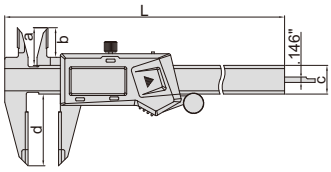
## ELECTRONIC CALIPERS WITH CARBIDE TIPPED JAWS

NIST CERTIFICATION

SPC

- Carbide tipped jaws for inside and outside measurements
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1110-150A**




| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1110-150A** | 280021 | 0-6"/0-150mm | ±.0012" | 9.291" | .827" | .630" | .630" | 1.575" |
| **1110-200A** | 280022 | 0-8"/0-200mm | ±.0012" | 11.260" | .945" | .748" | .630" | 1.969" |
| **1110-300A** | 280023 | 0-12"/0-300mm | ±.0012" | 15.748" | .984" | .807" | .630" | 2.362" |

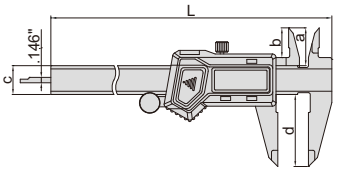
## ELECTRONIC LEFT HAND CALIPERS

NIST CERTIFICATION

SPC

- Designed for left handed users
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1130-150**

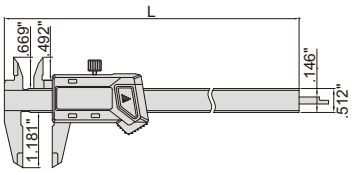



| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1130-150** | 816615 | 0-6"/0-150mm | ±.0012" | 9.291" | .827" | .630" | .630" | 1.575" |
| **1130-200** | 816616 | 0-8"/0-200mm | ±.0012" | 11.260" | .945" | .748" | .630" | 1.969" |
| **1130-300** | 816617 | 0-12"/0-300mm | ±.0012" | 15.748" | .984" | .807" | .630" | 2.362" |

## MINI ELECTRONIC CALIPERS

- Resolution .0005"/0.01mm
- Buttons: zero, inch/mm, on/off
- Automatic power off, move the digital unit to turn on power
- Battery LR44
- Made of stainless steel

**1111-100A**

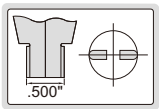


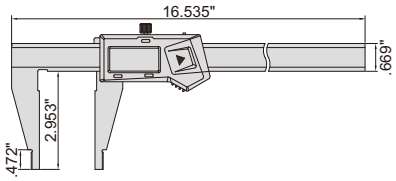

| Part No. | EDP No. | Range | Accuracy | L |
|---|---|---|---|---|
| **1111-75A** | 280019 | 0-3"/0-75mm | ±.0008" | 5.669" |
| **1111-100A** | 280020 | 0-4"/0-100mm | ±.0008" | 6.693" |

## ELECTRONIC CALIPER

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1522-127**



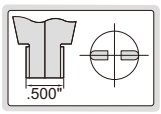



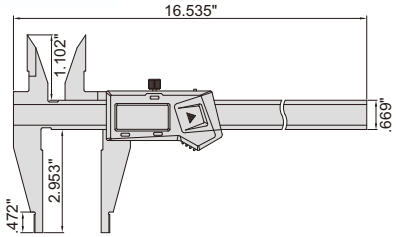

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1522-127** | 816686 | 0-12"/0-300mm | ±.0016" |

## ELECTRONIC CALIPER

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1523-127**



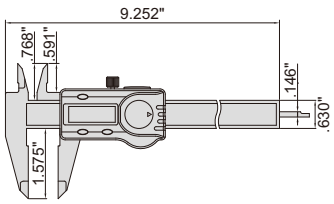




| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1523-127** | 816687 | 0-12"/0-300mm | ±.0016" |

## ELECTRONIC PLASTIC CALIPER

- Made of hard plastic, non-magnetic and non electric conductive
- Prevent workpieces from scratching by calipers
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Battery CR2032, automatic power off

**1139-150**

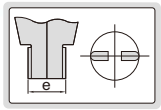


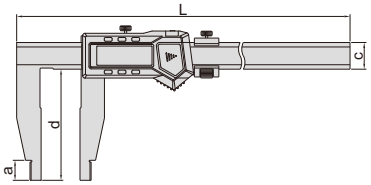

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1139-150** | 280024 | 0-6"/0-150mm | ±.004" |

## ELECTRONIC CALIPERS

- Resolution .0005"/0.01mm
- Button function: on/off, zero, inch/mm, ABS, data preset
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1131-24**



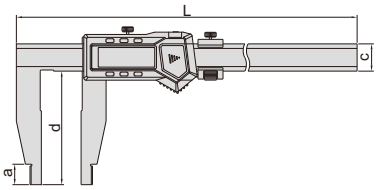

| Part No. | EDP No. | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1131-24** | 876221 | 0-24"/0-600mm | ±.0020" | .709" | .945" | 3.937" | .800" | 30.315" |
| **1131-40** | 876222 | 0-40"/0-1000mm | ±.0031" | .945" | 1.220" | 5.906" | .800" | 48.031" |
| **1131-60** | 816618 | 0-60"/0-1500mm | ±.0043" | .945" | 1.654" | 5.906" | .800" | 70.079" |
| **1131-80** | 280063 | 0-80"/0-2000mm | ±.0055" | .945" | 1.654" | 5.906" | .800" | 90.157" |

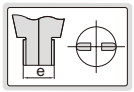
## ELECTRONIC CALIPER

"SPC

- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20**, **7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1106-1002**



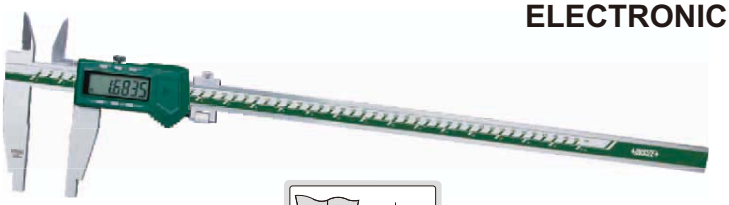

(mm)

| Part No. | EDP No. | Range | Accuracy | a | c | d | e | L |
|---|---|---|---|---|---|---|---|---|
| **1106-1002** | 280051 | 0-1000mm/0-40" | ±0.08mm | 24 | 31 | 150 | 20 | 1220 |

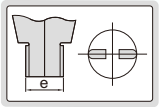
## ELECTRONIC CALIPERS

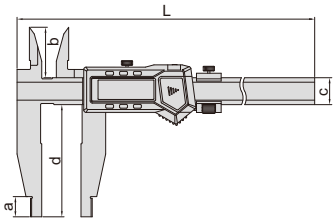
"SPC

- Resolution .0005"/0.01mm
- Button function: on/off, zero, inch/mm, ABS, data preset
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)



**1133-24**



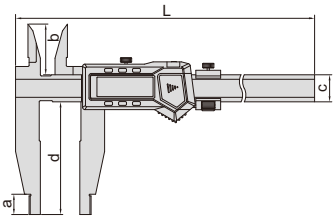

| Part No. | EDP No. | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|---|
| **1133-24** | 285061 | 0-24"/0-600mm | ±.0020" | .709" | 1.772" | .945" | 3.937" | .800" | 30.315" |
| **1133-40** | 285062 | 0-40"/0-1000mm | ±.0031" | .945" | 2.362" | 1.220" | 5.906" | .800" | 48.031" |

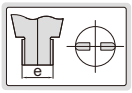
## ELECTRONIC CALIPERS

"SPC

- Resolution: 0.01mm/0.0005"
- Button function: on/off, zero, mm/inch, ABS, data preset
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20**, **7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1136-501**



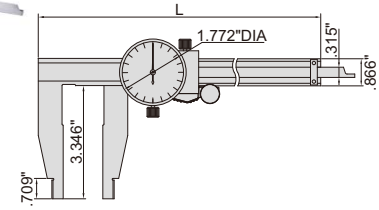

(mm)

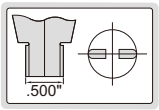
| Part No. | EDP No. | Range | Accuracy | a | b | c | d | e | L |
|---|---|---|---|---|---|---|---|---|---|
| **1136-501** | 280117 | 0-500mm/0-20" | ±0.05mm | 18 | 45 | 24 | 100 | 20 | 675 |
| **1136-1002** | 816022 | 0-1000mm/0-40" | ±0.08mm | 24 | 60 | 31 | 150 | 20 | 1220 |

## DIAL CALIPERS

**1316-18**

- Shockproof dial indicator
- Graduation .001"
- Made of stainless steel



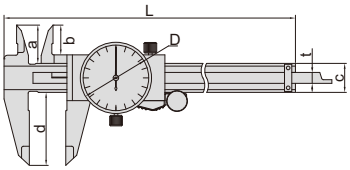

| Part No. | EDP No. | Range | Accuracy | L |
|---|---|---|---|---|
| **1316-18** | 877128 | 0-18" | ±.0020" | 22.835" |
| **1316-24** | 877129 | 0-24" | ±.0020" | 28.740" |

## DIAL CALIPERS

NIST CERTIFICATION

- Shockproof dial indicator
- Made of stainless steel

1311-6




**Dial indicator graduation .001"**

| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d | D | t |
|---|---|---|---|---|---|---|---|---|---|---|
| **1311-4** | 280462 | 0-4" | ±.0012" | 6.496" | .709" | .472" | .512" | 1.181" | 1.260" DIA | .228" |
| **1311-6** | 816028 | 0-6" | ±.0015" | 9.252" | .827" | .650" | .630" | 1.575" | 1.535" DIA | .256" |
| **1311-8** | 816030 | 0-8" | ±.0020" | 11.339" | .945" | .748" | .630" | 1.890" | 1.535" DIA | .256" |
| **1311-12** | 816032 | 0-12" | ±.0020" | 16.142" | 1.102" | .866" | .787" | 2.441" | 1.752" DIA | .295" |

**Dial indicator graduation 0.01mm**

| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d | D | t |
|---|---|---|---|---|---|---|---|---|---|---|
| **1311-150A** | 816034 | 0-150mm | ±0.03mm | 235mm | 21mm | 16.5mm | 16mm | 40mm | Ø39mm | 6.5mm |
| **1311-200A** | 816036 | 0-200mm | ±0.03mm | 288mm | 24mm | 19mm | 16mm | 48mm | Ø39mm | 6.5mm |
| **1311-300A** | 816038 | 0-300mm | ±0.03mm | 410mm | 28mm | 22mm | 20mm | 62mm | Ø44.5mm | 7.5mm |

## VERNIER CALIPERS

- Made of stainless steel
- Satin chrome plated reading surface

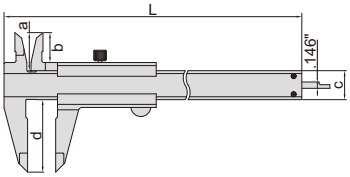
1205-1502E

**Graduation .001"/0.02mm**

| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1205-1502E** | 876750 | 0-6"/0-150mm | ±.0012" | 9.252" | .807" | .610" | .630" | 1.575" |
| **1205-2002E** | 876225 | 0-8"/0-200mm | ±.0012" | 11.417" | .925" | .748" | .669" | 1.969" |
| **1205-3002E** | 876232 | 0-12"/0-300mm | ±.0012" | 16.299" | 1.083" | .866" | .787" | 2.520" |

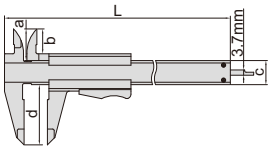
**Graduation 0.05mm/1/128"**

| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1205-150S** | 876224 | 0-150mm/0-6" | ±0.05mm | 235mm | 20.5mm | 15.5mm | 16mm | 40mm |




## VERNIER CALIPER WITH THUMB CLAMP

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



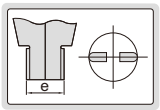
1223-150

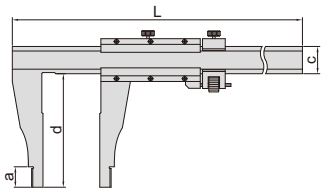
**Graduation 0.05mm/1/128"** (mm)

| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1223-150** | 280184 | 0-150mm/0-6" | ±0.05mm | 230 | 20.5 | 16.5 | 16 | 40 |

## VERNIER CALIPERS

1211-24



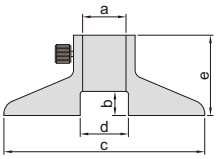

- With fine adjustment
- Made of stainless steel
- Satin chrome plated reading surface

| Part No. | EDP No. | Range | Graduation | Accuracy | Graduation on scale | a | c | d | e | L |
|---|---|---|---|---|---|---|---|---|---|---|
| **1211-24** | 280408 | 0-24"/0-600mm | .001"/0.02mm | ±.002" | inch on bottom, metric on top | .709" | .945" | 3.937" | .800" | 30.315" |
| **1211-40** | 280409 | 0-40"/0-1000mm | .001"/0.02mm | ±.0031" | inch on bottom, metric on top | .945" | 1.26" | 5.512" | .800" | 47.874" |

## DEPTH BASE ATTACHMENT

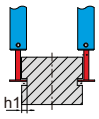
- To increase the stability of depth measurement
- Suitable for electronic calipers and dial calipers
- Made of stainless steel

6140

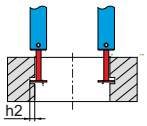


| Part No. | EDP No. | a | b | c | d | e | Application |
|---|---|---|---|---|---|---|---|
| **6140** | 816046 | .650" | .354" | 2.953" | .709" | 1.181" | Suitable for calipers with beam width (w) .630" |

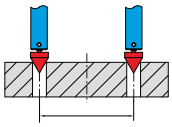
## ACCESSORY SET FOR ELECTRONIC CALIPERS PART NO. 6144



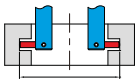

measuring external groove diameter (h1≤.138")



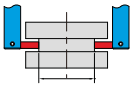

measuring internal groove diameter (h2≤.138")



measuring center distance

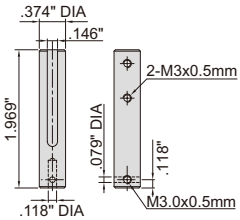


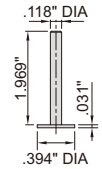
spherical points for groove diameter (inside hole) measurement



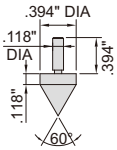
flat points for external groove diameter measurement

6144

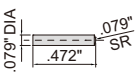



disk points (stainless steel)




conical points (stainless steel)




spherical/flat points (stainless steel)

- Suitable for 0-6"/0-150mm and 0-8"/0-200mm electronic calipers (thickness of lower jaws≤.146")

| Part No. | EDP No. |
|---|---|
| **6144** | 877188 |

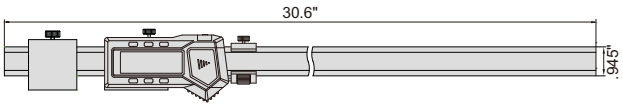
# UNIVERSAL CALIPER PART NO. 1125-600

SPC

1125-600

working with stands

working with measuring jaws

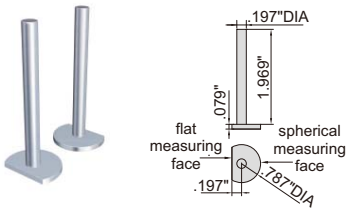


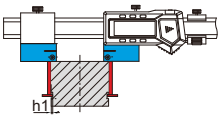

- Buttons: on/off, set, inch/mm, ABS, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20**, **7302-SPC5A/SPC5B**, **7305-SPC2A, 7305-A01/A02**)

| Part No. | EDP No. | Range* | Resolution | Accuracy |
|---|---|---|---|---|
| **1125-600** | 877100 | 0-24"/0-600mm | .0005"/0.01mm | ±.002" |

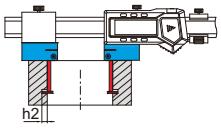
*The range changes according to different points

### Half disk points (included)



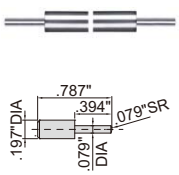



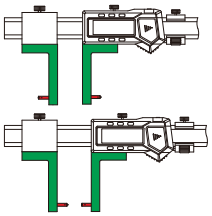

Measuring external groove diameter with flat measuring face (depth h1≤.098")



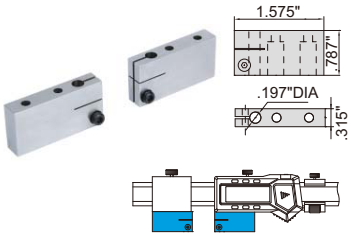

Measuring internal groove diameter with spherical measuring face (depth h2≤.295")

### Spherical points (included)

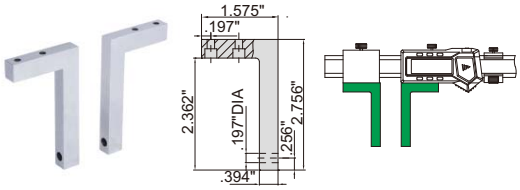


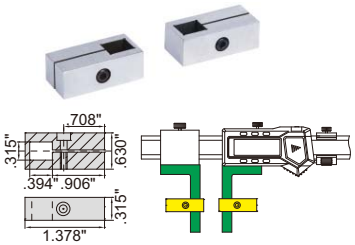
### Stands (included)



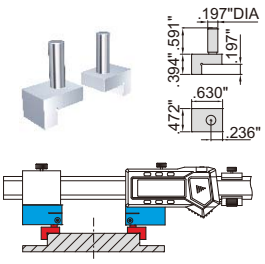

### Measuring jaws (included)




### Depth stop (included)




### Flat shoulder points (optional)

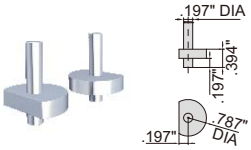


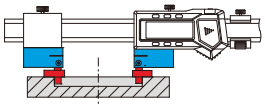



Measuring outside diameter

| Part No. | EDP No. |
|---|---|
| **1125-T103** | 877112 |

### Round shoulder points (optional)

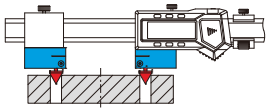


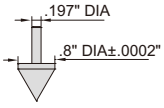
Measuring inside diameter

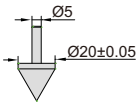
| Part No. | EDP No. |
|---|---|
| **1125-T102** | 877111 |

### Conical points (optional)



Measuring center distance



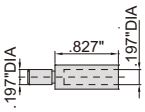

Unit: mm

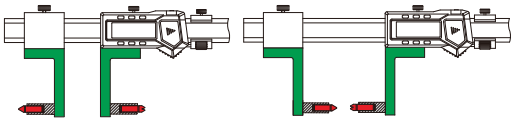
| Part No. | EDP No. |
|---|---|
| **1125-T101-1** | 877110 |

| Part No. | EDP No. |
|---|---|
| **1125-T101** | 877101 |

### Point sleeve (optional)

| Part No. | EDP No. |
|---|---|
| **1125-T104** | 877113 |



Working with multifunctional points, ball points and screw thread points

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

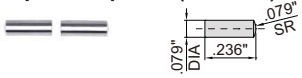
### Ball points 7391 (optional, next page)

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

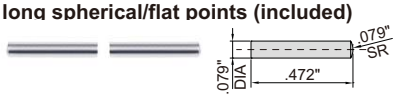
# ELECTRONIC CALIPER WITH INTERCHANGEABLE POINTS
## PART NO. 1526-200

SPC

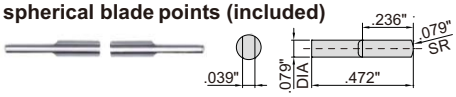
**short spherical points (included)**

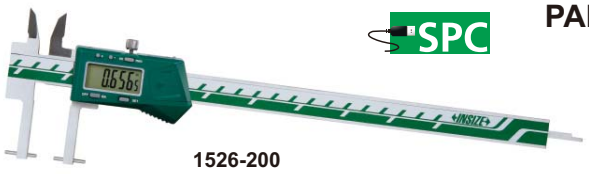



**long spherical/flat points (included)**



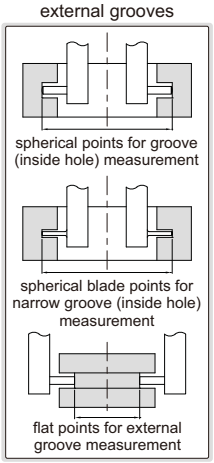

**spherical blade points (included)**



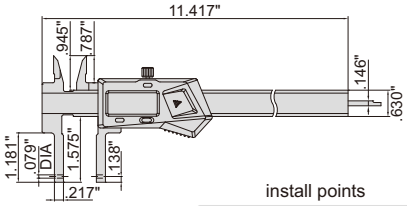



1526-200

measure internal and external grooves

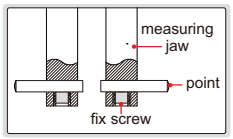



preset buttons




zero setting block for external measurement (included)

install points



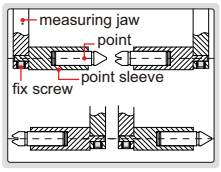

- Supplied with 3 pairs of points and zero setting block for external measurement
- Resolution .0005"/0.01mm
- Accuracy ±.0012"
- Buttons: on/off, set, inch/mm, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: points (part no. **1526-T101**, **7392**, **7391**, **7381**, **7321**), depth stop (part no. **6143**), data output cable (part no. **7306-20**, **7302-SPC5A/SPC5B**, **7305-SPC2A**, **7305-A01/A02**)

| Part No. | EDP No. |
|---|---|
| **1526-200** | 816620 |

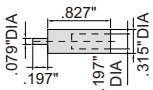
| Point | Range | Application |
|---|---|---|
| **short spherical points** | .5-8.5"/12-212mm (internal) | for grooves inside small hole |
| **long spherical/ flat points** | 1-8.8"/24-224mm (internal)<br>0-7.5"/0-187mm (external) | spherical points for grooves inside hole flat points for external grooves |
| **spherical blade points** | 1-8.8"/24-224mm (internal)<br>0-7.5"/0-187mm (external) | for narrow grooves inside hole |

**Point sleeve (optional)**

installation




1526-T101

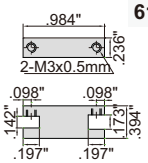


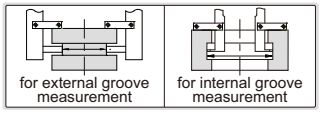

| Part No. | EDP No. |
|---|---|
| **1526-T101** | 816621 |

**Depth stop (optional)**

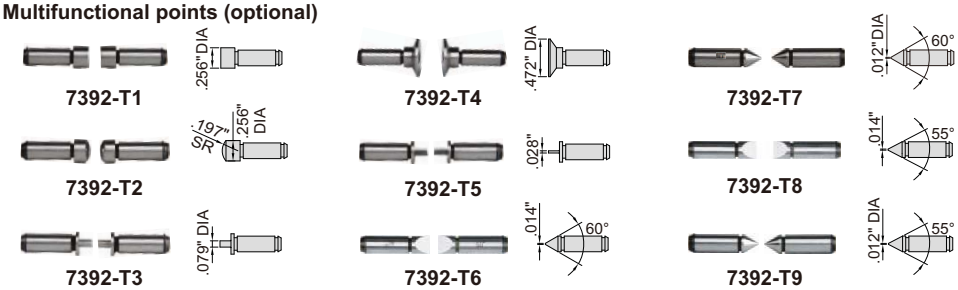
6143

| Part No. | EDP No. |
|---|---|
| **6143** | 816408 |






**Multifunctional points (optional)**



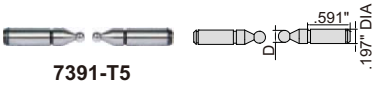

| Part No. | EDP No. | Type |
|---|---|---|
| **7392-T1*** | 816622 | flat |
| **7392-T2*** | 816623 | spherical |
| **7392-T3*** | 816624 | spline |

| Part No. | EDP No. | Type |
|---|---|---|
| **7392-T4*** | 816625 | disk |
| **7392-T5*** | 816626 | blade |
| **7392-T6*** | 816627 | knife-edge |

| Part No. | EDP No. | Type |
|---|---|---|
| **7392-T7*** | 816628 | point |
| **7392-T8*** | 816629 | knife-edge |
| **7392-T9*** | 816630 | point |

*It is necessary to use point sleeve (part no. **1526-T101**) for these points

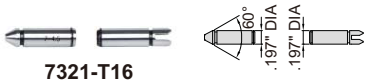
**Ball points (optional)**




7391-T5

| Part No. | EDP No. | Ball dia.(D) |
|---|---|---|
| **7391-T3*** | 282169 | .079" DIA |
| **7391-T4*** | 282170 | .098" DIA |
| **7391-T5*** | 282171 | .118" DIA |
| **7391-T6*** | 282172 | .138" DIA |
| **7391-T7*** | 282173 | .157" DIA |
| **7391-T8*** | 282174 | .177" DIA |
| **7391-T9*** | 282175 | .197" DIA |
| **7391-T10*** | 282176 | .236" DIA |

**Screw thread points (optional)**




7321-T16

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

| Part No. | EDP No. | Pitch |
|---|---|---|
| **7321-T11 *** | 282160 | 64-48TPI/0.4-0.5mm |
| **7321-T12 *** | 282161 | 44-28TPI/0.6-0.9mm |
| **7321-T13 *** | 282162 | 24-14TPI/1-1.75mm |
| **7321-T14 *** | 282163 | 13-9TPI/2-3mm |
| **7321-T15 *** | 282164 | 8-5TPI/3.5-5mm |
| **7321-T16 *** | 282165 | 4.5-3.5TPI/5.5-7mm |
| **7321-T1S *** | 282159 | 6 pairs/set, including all above points |

7381-T11

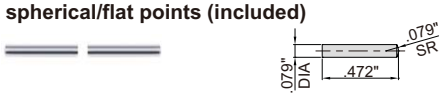
**External thread (60° thread angle)**

| Part No. | EDP No. | Pitch |
|---|---|---|
| **7381-T11*** | 281671 | 64-48TPI/0.4-0.5mm |
| **7381-T12*** | 281672 | 44-28TPI/0.6-0.9mm |
| **7381-T13*** | 281673 | 24-14TPI/1-1.75mm |
| **7381-T14*** | 281674 | 13-9TPI/2-3mm |
| **7381-T15*** | 281675 | 8-5TPI/3.5-5mm |
| **7381-T16*** | 281676 | 4.5-3.5TPI/5.5-7mm |
| **7381-TS *** | 281670 | 6 pairs/set, including all above points |

*It is necessary to use point sleeve (part no. **1526-T101**) for these points

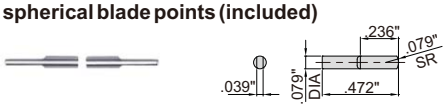
# ELECTRONIC CALIPER WITH INTERCHANGEABLE POINTS
# PART NO. 1124-300A

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

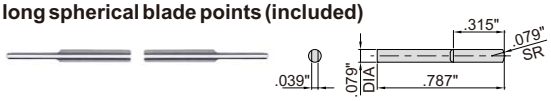


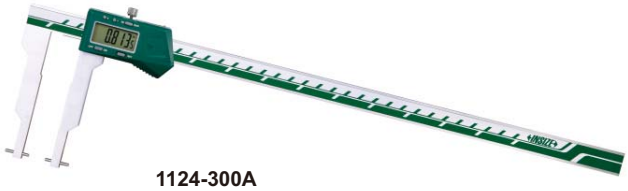

**long spherical/flat points (included)**

**short spherical blade points (included)**

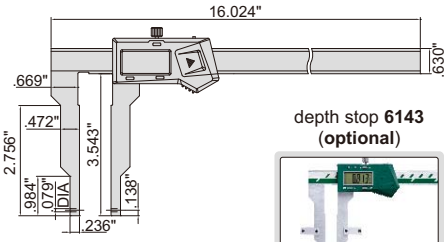



**long spherical blade points (included)**



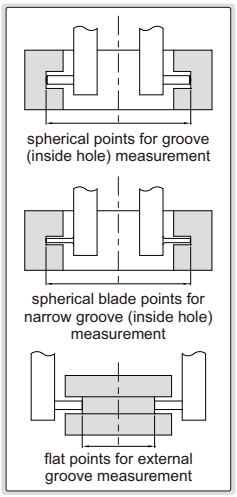
1124-300A




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

preset buttons

measure internal and external grooves




- Supplied with 4 pairs of points and zero setting block for external measurement
- Resolution .0005"/0.01mm
- Buttons: on/off, set, inch/mm, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: points (part no. **1526-T101, 7392, 7391, 7381, 7321**), depth stop (part no. **6143**), data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

| Part No. | EDP No. |
|---|---|
| **1124-300A** | 816619 |

| Point | Range | Accuracy | Application |
|---|---|---|---|
| **short spherical/ flat points** | 1-12.7"/24-324mm (internal)<br>0-11.3"/0-288mm (external) | ±.0016" | spherical points for grooves inside hole (small hole)<br>flat points for external grooves |
| **long spherical/ flat points** | 1.5-13.3"/40-340mm (internal)<br>0-10.7"/0-272mm (external) | ±.0016" | spherical points for grooves inside hole (large hole)<br>flat points for external grooves |
| **short spherical blade points** | 1-12.7"/24-324mm (internal)<br>0-11.3"/0-288mm (external) | ±.0016" | for narrow grooves inside hole (small hole) |
| **long spherical blade points** | 1.5-13.3"/40-340mm(internal)<br>0-10.7"/0-272mm(external) | ±.0016" | for narrow grooves inside hole (large hole) |

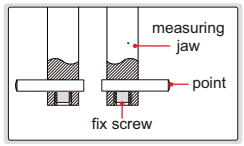
zero setting block for external measurement (included)

**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)**

install points



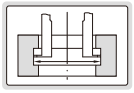

# ELECTRONIC INSIDE GROOVE CALIPER

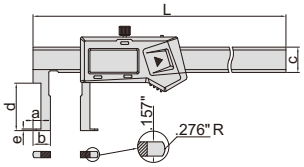
1120-150AE

- Measure groove diameter
- Resolution .0005"/0.01mm
- Buttons: on/off, set, inch/mm, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: depth stop (part no. **6143**), data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

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

preset buttons






| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d | e |
|---|---|---|---|---|---|---|---|---|---|
| **1120-150AE** | 280523 | 1-6"/25.4-150mm | ±.0016" | 9.843" | .197" | .5000" | .630" | 1.181" | .039" |

SPC

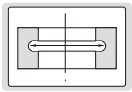
## ELECTRONIC INSIDE GROOVE CALIPER

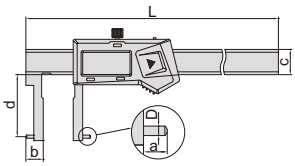
- Measure groove diameter
- Resolution .0005"/0.01mm
- Buttons: on/off, set, inch/mm, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: depth stop (part no. **6143**), data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1121-150A**

preset buttons

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





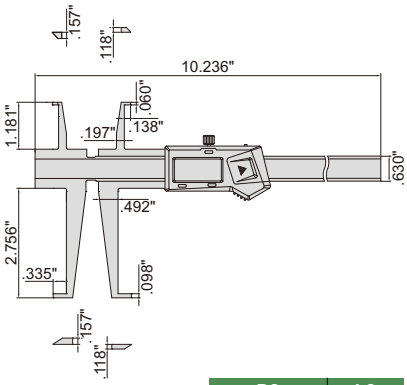

| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d | D |
|---|---|---|---|---|---|---|---|---|---|
| **1121-150A** | 280541 | .9-6"/24-150mm | ±.0016" | 9.843" | .197" | .4724" | .630" | 1.181" | .079" DIA |

SPC

## ELECTRONIC INSIDE GROOVE CALIPER

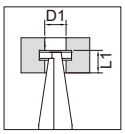
depth stop **6143** (**optional**)

**1176-150**




- Measure diameter of grooves inside bores
- Resolution .0005"/0.01mm
- Buttons: on/off, set, inch/mm, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: depth stop (part no. **6143**), data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

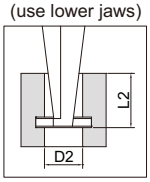
sizes to be measured (use upper jaws)




preset buttons

| D1 | L1 |
|---|---|
| .354" DIA | <.315" |
| .394" DIA | <.591" |
| .433"~6" DIA | <1.181" |

sizes to be measured (use lower jaws)



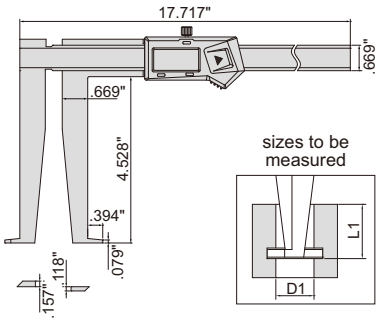

| D2 | L2 |
|---|---|
| .590" DIA | <.394" |
| .630" DIA | <.709" |
| .669" DIA | <1.024" |
| .709" DIA | <1.339" |
| .748" DIA | <1.654" |
| .787" DIA | <1.969" |
| .827" DIA | <2.283" |
| .866"~6" DIA | <2.756" |

| Part No. | EDP No. | Range of upper jaw | Range of lower jaw | Accuracy |
|---|---|---|---|---|
| **1176-150** | 817005 | .35-6"/9-150mm | .59-6"/15-150mm | ±.0016" |

SPC

## ELECTRONIC INSIDE GROOVE CALIPER

**1178-300**




- Measure diameter of grooves inside bores
- Resolution .0005"/0.01mm
- Buttons: on/off, set, inch/mm, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: depth stop (part no. **6143**), data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

preset buttons

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

sizes to be measured




| D1 | L1 |
|---|---|
| .984" DIA | <1.968" |
| 1.024" DIA | <2.362" |
| 1.063"~12" DIA | <4.331" |

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1178-300** | 816633 | 1.18-12"/25-300mm | ±.0020" |

## ELECTRONIC INSIDE GROOVE CALIPER

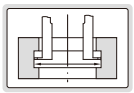
SPC

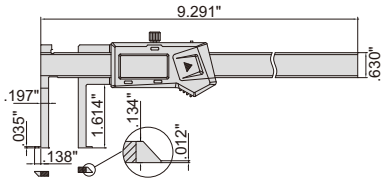
- Measure diameter of grooves inside small bores
- Resolution .0005"/0.01mm
- Buttons: on/off, set, inch/mm, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: depth stop (part no. **6143**), data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1520-150**

preset buttons

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






| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1520-150** | 877105 | .43-6"/11-150mm | ±.0016" |

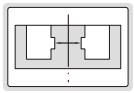
## ELECTRONIC OUTSIDE GROOVE CALIPER

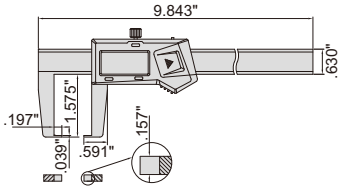
SPC

- Measure grooves and recesses
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: depth stop (part no. **6143**), data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1187-150A**

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






| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1187-150A** | 280505 | 0-6"/0-150mm | ±.0016" |

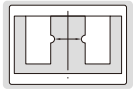
## ELECTRONIC OUTSIDE POINT CALIPER

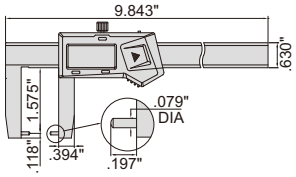
SPC

- Measure wall thickness inside bores and recesses
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: depth stop (part no. **6143**), data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1185-150A**

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





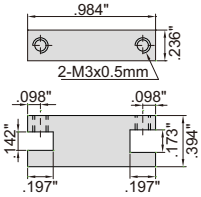

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1185-150A** | 280514 | 0-6"/0-150mm | ±.0016" |

## DEPTH STOP FOR CALIPERS

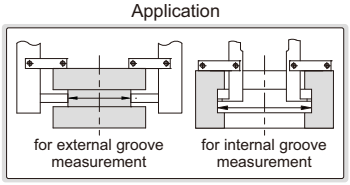
- Supplied in pair
- Made of stainless steel
- Suitable for caliper series **1124**, **1526**, **1520**, **1176**, **1178**, **1120**, **1121**, **1187** and **1185**

**6143**

| Part No. | EDP No. |
|---|---|
| **6143** | 816408 |



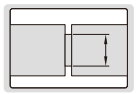

Application

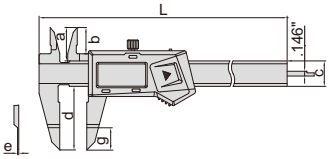


## ELECTRONIC BLADE CALIPER

- The blade jaws fit into small grooves
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1188-150A**



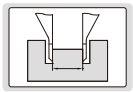


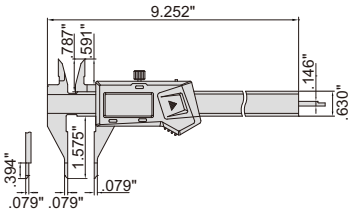

| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d | e | g |
|---|---|---|---|---|---|---|---|---|---|---|
| **1188-150A** | 280580 | 0-6"/0-150mm | ±.0012" | 9.291" | .827" | .630" | .630" | 1.575" | .030" | .669" |

## ELECTRONIC SMALL POINT CALIPER

- Small pointed jaws fit into small grooves and recesses
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1169-150**



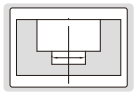


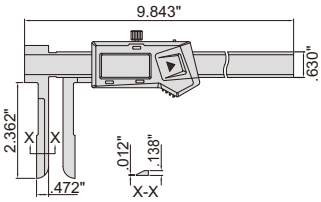

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1169-150** | 877119 | 0-6"/0-150mm | ±.0012" |

## ELECTRONIC INSIDE KNIFE-EDGE CALIPER

- Measure diameter of deep step holes
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1123-150A**



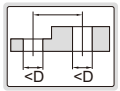


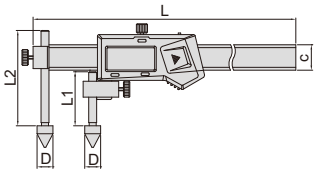

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1123-150A** | 280589 | .6-6"/15-150mm | ±.0020" |

## ELECTRONIC OFFSET CENTERLINE CALIPER

- Measure hole center distance in the same or offset planes
- Resolution .0005"/0.01mm
- Buttons: on/off, set, inch/mm, 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 (part no. **7306-20**, **7302-SPC5A/SPC5B**, **7305-SPC2A, 7305-A01/A02**)

**1192-300AE**



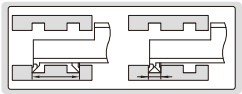



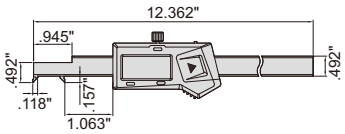

| Part No. | EDP No. | Range | Accuracy | c | D (DIA) | L1 | L2 | L |
|---|---|---|---|---|---|---|---|---|
| **1192-300AE** | 877123 | .4-12"/10.5-300mm | ±.0035" | .630" | .4" | 1.260" | 2.559" | 15.591" |

## ELECTRONIC HOOK CALIPER

- Measure width of groove inside bores
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1122-200A**



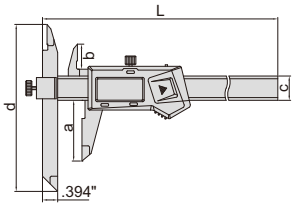


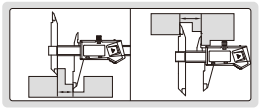

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1122-200A** | 280644 | .12-8"/3-200mm | ±.0012" |

## ELECTRONIC OFFSET CALIPER

- The left jaw can slide up and down to facilitate measurement of stepped sections
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1186-150A**



| Part No. | EDP No. | Range | Accuracy | L | a | b | c | d |
|---|---|---|---|---|---|---|---|---|
| **1186-150A** | 280625 | 0-6"/0-150mm | ±.0016" | 9.409" | 1.575" | .650" | .669" | 4.331" |

## ELECTRONIC RTJ RING GROOVE CALIPERS

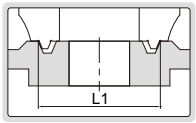
- Measure ring grooves of flange
- Resolution .0005"/0.01mm
- Button function: on/off, set, zero, inch/mm, data preset
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1179-300**

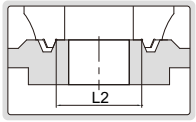
**1179-300**
preset buttons

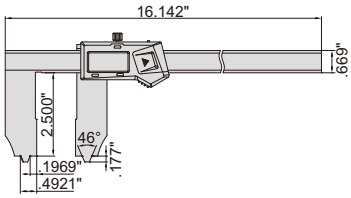
**1179-600**

measure outside diameter of RTJ ring groove

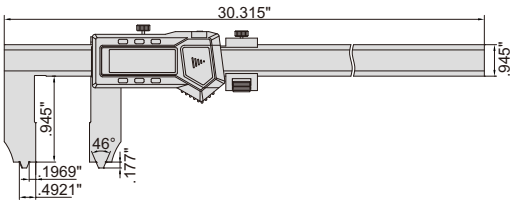



measure inside diameter of RTJ ring groove



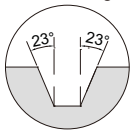




**1179-300**

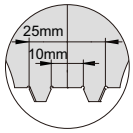



**1179-600**

applicable for RTJ ring grooves with angle 23°




10mm and 25mm need to be added on the reading

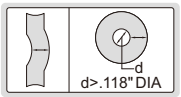


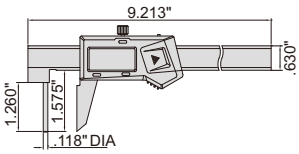

| Part No. | EDP No. | Range (inside diameter of RTJ ring groove) | Range (outside diameter of RTJ ring groove) | Angle of RTJ ring groove | Accuracy |
|---|---|---|---|---|---|
| **1179-300** | 877121 | .4-12"/10-300mm | 1-12"/25-300mm | 23° | ±.0024" |
| **1179-600** | 877122 | .4-24"/10-600mm | 1-24"/25-600mm | 23° | ±.0028" |

## ELECTRONIC TUBE THICKNESS CALIPER

- Measure wall thickness of tubes
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1161-150A**



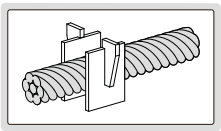

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1161-150A** | 280502 | 0-6"/0-150mm | ±.0020" |

## ELECTRONIC CALIPER WITH LARGE MEASURING FACE

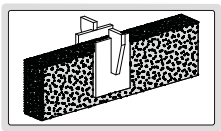
- Measure diameter of wire ropes, and thickness of soft materials like rubber, sponge, etc.
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

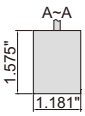
**1172-200**

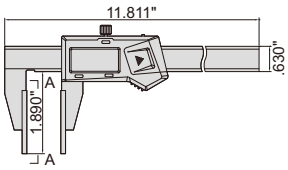
measure diameter of wire ropes



measure thickness of rubber, sponge, etc.



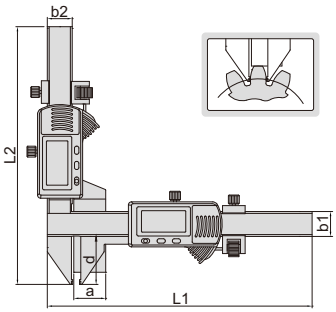



| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1172-200** | 877104 | 0-8"/0-200mm | ±.0028" |

## ELECTRONIC GEAR TOOTH CALIPERS

- Resolution .0005"/0.01mm
- Carbide tips
- Buttons: zero, on/off, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Made of stainless steel

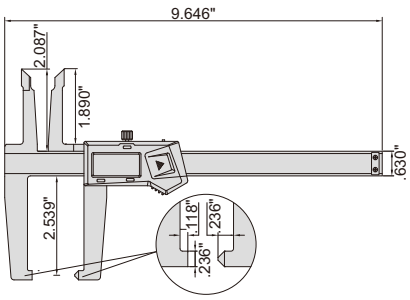


**1181-M25A**

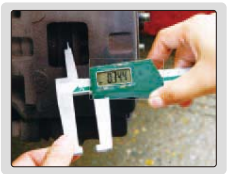
| Part No. | EDP No. | Range | Accuracy | L1 | L2 | a | b1 | b2 | d |
|---|---|---|---|---|---|---|---|---|---|
| **1181-M25A** | 280658 | P1-P24 | ±.0016" | 6.693" | 6.516" | .827" | .630" | .630" | 1.201" |
| **1181-M50A** | 280659 | P1/2-P5 | ±.0016" | 8.661" | 7.480" | 1.988" | .630" | .630" | 2.165" |

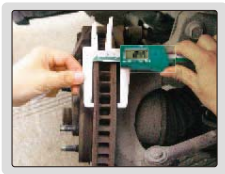
## ELECTRONIC DISK BRAKE AND PAD CALIPER

- Measure thickness of disk brakes and pad wear
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)



**1167-150A**





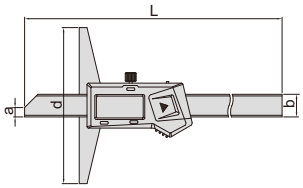
| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1167-150A** | 877118 | 0-6"/0-150mm | ±.0028" |

## ELECTRONIC DEPTH GAGES

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1141-150A**

| Part No. | EDP No. | Range | Accuracy | L | a | b | d |
|---|---|---|---|---|---|---|---|
| **1141-150A** | 816040 | 0-6"/0-150mm | ±.0012" | 9.055" | .236" | .571" | 3.937" |
| **1141-200A** | 816042 | 0-8"/0-200mm | ±.0012" | 11.024" | .236" | .571" | 3.937" |
| **1141-300A** | 816044 | 0-12"/0-300mm | ±.0012" | 14.961" | .236" | .571" | 5.906" |
| **1141-500A** | 280676 | 0-20"/0-500mm | ±.0020" | 23.031" | .276" | .591" | 5.906" |




## ELECTRONIC DEPTH GAGES WITH MOUNTING HOLES FOR EXTENSION BASE

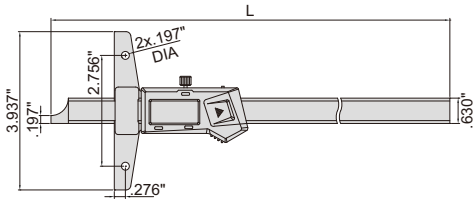
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**), extension base (part no. **6141**)

**1147-300**

extension base (**optional**)

**6141 series**

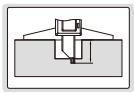
| Part No. | EDP No. | Range | Accuracy | L |
|---|---|---|---|---|
| **1147-150** | 285130 | 0-6"/0-150mm | ±.0012" | 9.331" |
| **1147-200** | 285131 | 0-8"/0-200mm | ±.0012" | 11.299" |
| **1147-300** | 285132 | 0-12"/0-300mm | ±.0012" | 15.866" |

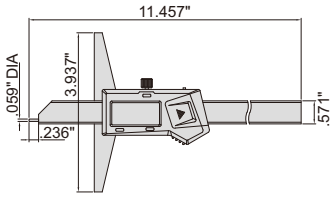


## ELECTRONIC POINT DEPTH GAGE

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1143-200A**



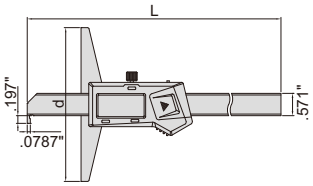



| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1143-200A** | 877004 | 0-8"/0-200mm | ±.0012" |

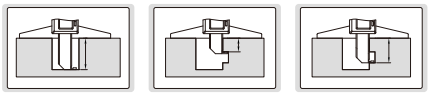
## ELECTRONIC HOOK DEPTH GAGES

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1142-150A**



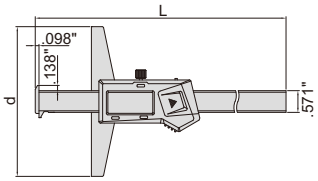

| Part No. | EDP No. | Range | Accuracy | L | d |
|---|---|---|---|---|---|
| **1142-150A** | 280677 | 0-6"/0-150mm | ±.0012" | 9.055" | 3.937" |
| **1142-200A** | 280678 | 0-8"/0-200mm | ±.0012" | 11.024" | 3.937" |
| **1142-300A** | 280679 | 0-12"/0-300mm | ±.0016" | 14.961" | 5.906" |



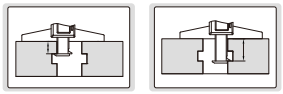
## ELECTRONIC DOUBLE HOOK DEPTH GAGES

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1144-150A**




| Part No. | EDP No. | Range | Accuracy | L | d |
|---|---|---|---|---|---|
| **1144-150A** | 280681 | 0-6"/0-150mm | ±.0012" | 9.173" | 3.937" |
| **1144-200A** | 280682 | 0-8"/0-200mm | ±.0012" | 11.142" | 3.937" |
| **1144-300A** | 280683 | 0-12"/0-300mm | ±.0012" | 15.079" | 5.906" |



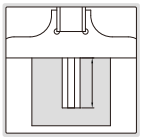
## ELECTRONIC DEPTH GAGE WITH ROUND DEPTH BAR

- Resolution .0005"/0.01mm
- Supplied with three interchangeable points (flat, spherical, disk)
- Buttons: on/off, set, inch/mm, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**), disk points (see below table), extension base (part no. **6141**)

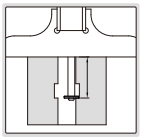
preset buttons

**1148-200E**

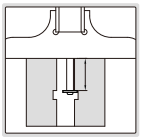
measure depth of small holes (>.157"DIA)



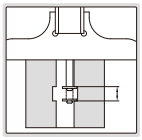
measure depth of grooves inside bore

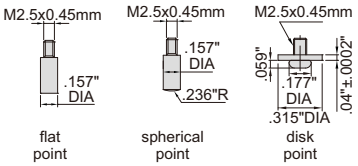


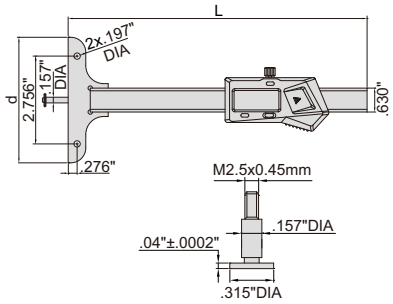
measure depth of grooves inside bore



measure width of grooves inside bore





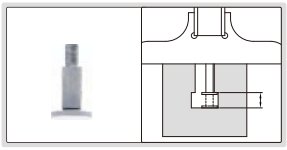




**1148-P103E**

| Part No. | EDP No. | Range* | Accuracy | L | d | Remark |
|---|---|---|---|---|---|---|
| **1148-200E** | 877103 | 0-8"/0-200mm | ±.0012" | 11.811" | 3.976" | with mounting holes for extension base |

*When disk points are used, the range is reduced by .394"

**1148-P103E** (**optional**), measure width of bottom grooves inside blind hole



**OPTIONAL DISK POINT**

| Part No. | EDP No. | Description | Remark |
|---|---|---|---|
| **1148-P103E** | 877116 | .04" disk point | for grooves inside blind hole |

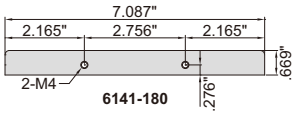
extension base (**optional**)

**6141 series**

## EXTENSION BASES

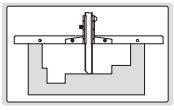
- Supplied with two screws
- Made of stainless steel
- Suitable for depth gages series **1147** and **1148**

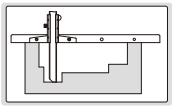
**6141-320**

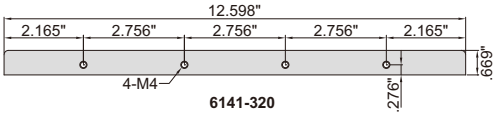



**6141-180**

| Part No. | EDP No. | Length |
|---|---|---|
| **6141-180** | 280750 | 7.087" |
| **6141-320** | 280752 | 12.598" |





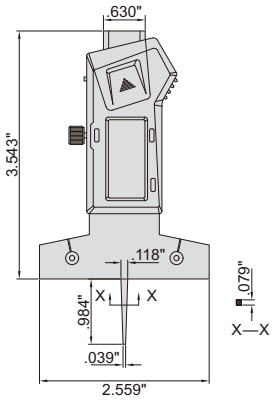



**6141-320**

## MINI ELECTRONIC DEPTH GAGE

- Measure depth of small groove and hole, also measure depth of tire tread
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Supplied with zero set surface
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

**1145-25A**



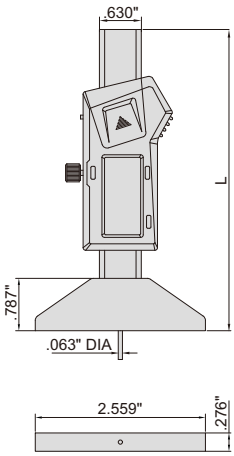

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1145-25A** | 284550 | 0-1"/0-25mm | ±.0012" |

SPC

## MINI ELECTRONIC DEPTH GAGES WITH ROUND BAR

- Measure depth of small groove and hole
- Resolution .0005"/0.01mm
- Accuracy ±.0008"
- Buttons: on/off, set, inch/mm, 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 (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

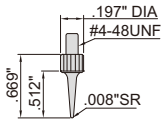
1140-25



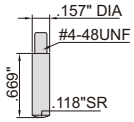

| Part No. | EDP No. | Range | L |
|---|---|---|---|
| **1140-25** | 877114 | 0-1"/0-25mm | 4.488" |
| **1140-50** | 877115 | 0-2"/0-50mm | 5.512" |

## DIAL DEPTH GAGE

- Accuracy ±.0012"
- Stainless steel base
- Supplied with pointed tip and ball tip

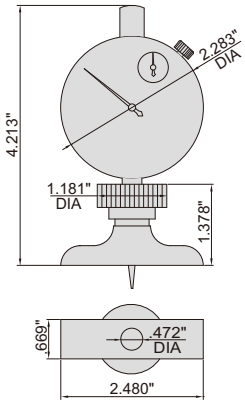



pointed tip




ball tip

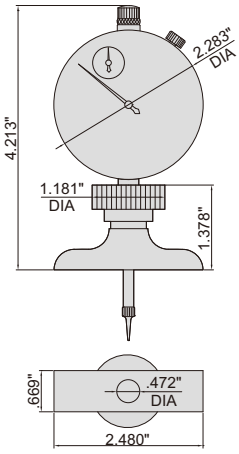
2341-E1



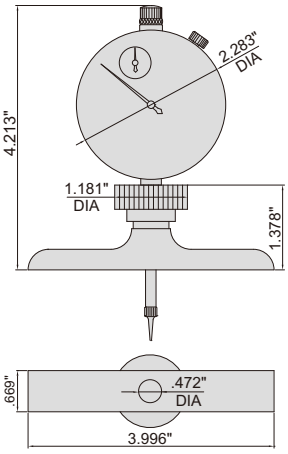

| Part No. | EDP No. | Range | Dial indicator stroke | Dial indicator graduation |
|---|---|---|---|---|
| **2341-E1** | 283207 | 0-1.2" | .5" | .001" |

## DIAL DEPTH GAGES

2341-2E2

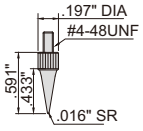



2341-2E1

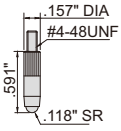



2341-2E2

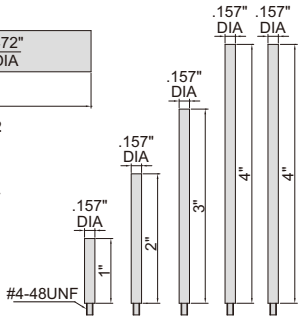
- Dial indicator graduation .001"
- Accuracy: ±.002"
- Stainless steel base
- Extension rods: 1" (1 pc), 2" (1 pc), 3" (1 pc), 4" (2 pcs)
- Supplied with pointed tip and ball tip




pointed tip




ball tip



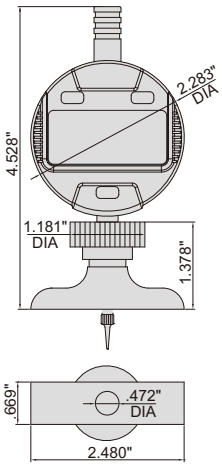

extension rods

| Part No. | EDP No. | Range | Dial indicator stroke | Base |
|---|---|---|---|---|
| **2341-2E1** | 876240 | 0-12" | 1" | 2.480 x .669" |
| **2341-2E2** | 876241 | 0-12" | 1" | 3.996 x .669" |

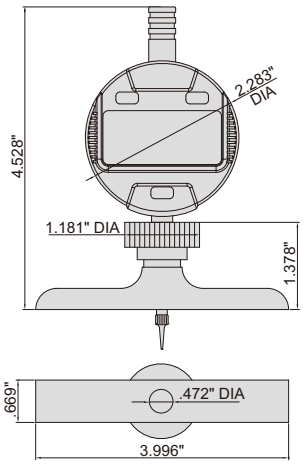
## ELECTRONIC DEPTH GAGES

SPC

2141-202A

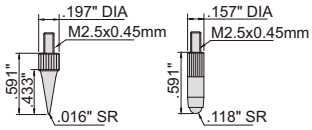



2141-201A

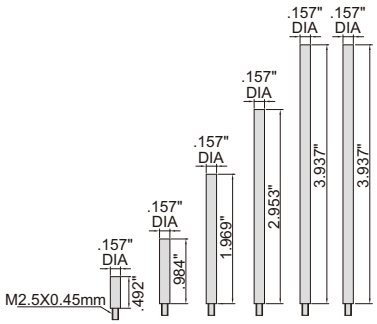



2141-202A

- Button function: on/off, zero, inch/mm, ABS, data preset, change measuring direction
- CR2032 battery, automatic power off
- Data ouput
- Stainless steel base
- Supplied with pointed tip and ball tip
- Optional accessory: data output cable (part no. **7306-40, 7302-SPC3A, 7305-SPC1A, 7305-C01**)




pointed tip ball tip



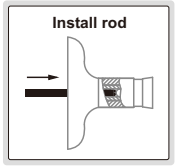

extension rods

| Part No. | EDP No. | Range | Digital indicator stroke | Digital indicator resolution | Accuracy | Base |
|---|---|---|---|---|---|---|
| **2141-201A** | 876242 | 0-12"/0-300mm | .5"/12.7mm | .0005"/0.01mm | ±.0008" | 2.480 x .669" |
| **2141-202A** | 876243 | 0-12"/0-300mm | .5"/12.7mm | .0005"/0.01mm | ±.0008" | 3.996 x .669" |

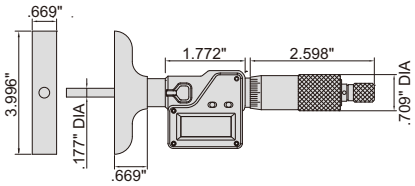
## ELECTRONIC DEPTH MICROMETERS

IP65 SPC

- Resolution .0005"/0.01mm
- Micrometer head accuracy: ±.00012"
- Rod accuracy: ±[.001+.0005(L/3)]", L is the measuring range in inch
- Button function: on/off, set, inch/mm, ABS/INC
- IP65 dust/coolant proof
- Data output
- LR44 battery, automatic power off
- Rods with flat end
- Ratchet stop
- Optional accessory: data output cable (part no. **7306-30A, 7302-SPC6, 7305-SPC3A, 7305-B01**)



3540-150E

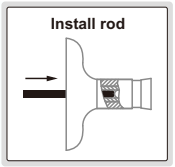



| Part No. | EDP No. | Range | Rods |
|---|---|---|---|
| **3540-150E** | 281945 | 0-6"/0-150mm | 6 pcs |
| **3540-300E** | 281947 | 0-12"/0-300mm | 12 pcs |

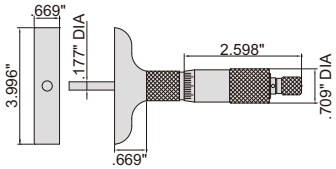
## DEPTH MICROMETER

- Graduation .001"
- Micrometer head accuracy: ±.00012"
- Rod accuracy: ±[.001+.0005(L/3)]", L is the measuring range in inch
- Rods with flat end
- Ratchet stop

| Part No. | EDP No. | Range | Rods |
|---|---|---|---|
| **3240-6** | 281939 | 0-6" | 6 pcs |

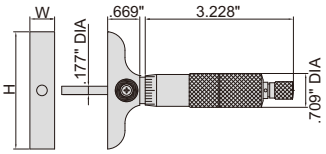



3240-6




## DEPTH MICROMETERS

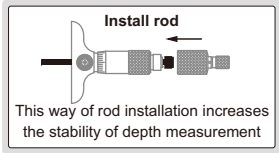
- Graduation .001"
- Micrometer head accuracy: ±.00012"
- Rod accuracy: ±[.001+.0005(L/3)]", L is the measuring range in inch
- Rods with flat end
- Ratchet stop




**Base: HxW=2.480x.669"**

| Part No. | EDP No. | Range | Rods |
|---|---|---|---|
| **3241-B1** | 281927 | 0-1" | 1 pc |
| **3241-B4** | 281929 | 0-4" | 4 pcs |

3241-4




**Base: HxW=3.996x.669"**

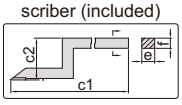
| Part No. | EDP No. | Range | Rods |
|---|---|---|---|
| **3241-1** | 281921 | 0-1" | 1 pc |
| **3241-4** | 281923 | 0-4" | 4 pcs |
| **3241-6** | 281924 | 0-6" | 6 pcs |
| **3241-12** | 281926 | 0-12" | 12 pcs |

SPC

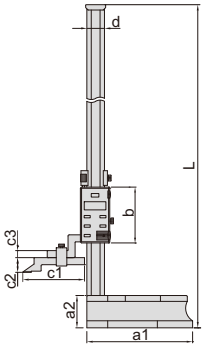
## ELECTRONIC HEIGHT GAGES

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm, 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
- Optional accessory: data output cable (part no. **7301-SPC5**)

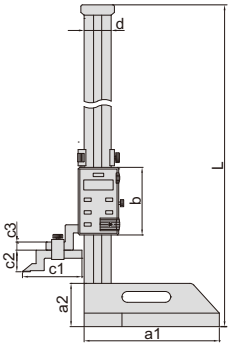
scriber (included)




dust cover (included)




type A

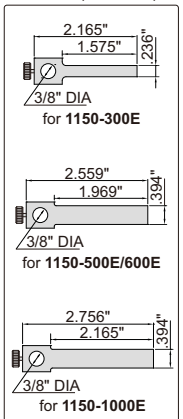



type B

1150-500E

1150-1000E

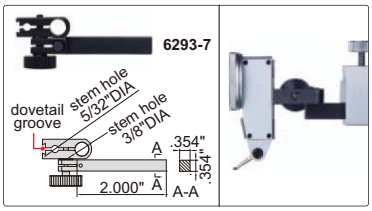
dial test indicator holder (included)



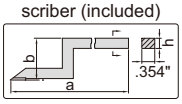
| Part No. | EDP No. | Range | Type | Accuracy | L | a1 | a2 | b | c1 | c2 | c3 | d | e | f |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1150-300E** | 280756 | 0-12"/0-300mm | A | ±.0020" | 18.504" | 5.315" | 1.772" | 3.150" | 2.992" | .984" | .394" | .906" | .236" | .315" |
| **1150-500E** | 280757 | 0-20"/0-500mm | A | ±.0024" | 28.346" | 7.087" | 2.165" | 3.740" | 4.055" | .984" | .472" | 1.181" | .394" | .472" |
| **1150-600E** | 280758 | 0-24"/0-600mm | B | ±.0024" | 32.283" | 7.087" | 2.165" | 3.740" | 4.055" | .984" | .472" | 1.181" | .394" | .472" |
| **1150-1000E** | 280759 | 0-40"/0-1000mm | B | ±.0031" | 50.197" | 9.843" | 3.150" | 4.921" | 4.331" | 1.535" | .591" | 1.969" | .394" | .591" |

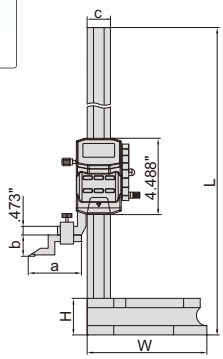
## ELECTRONIC HEIGHT GAGES WITH DRIVING WHEEL

dial test indicator holder (**optional**)



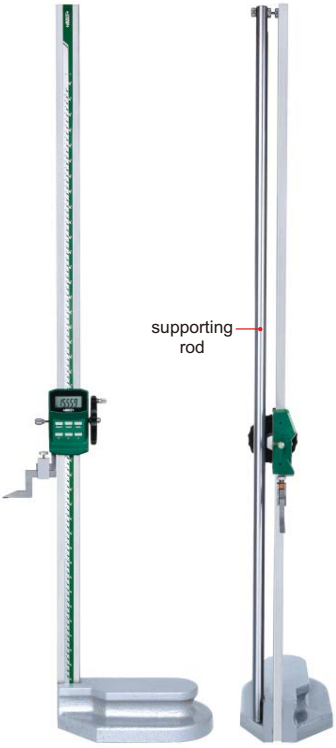

scriber (included)




dust cover (included)

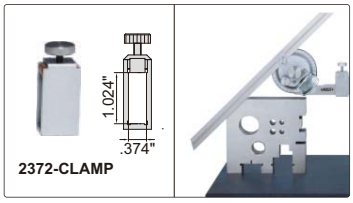
**1156-300**




**1156-1000**

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm, preset (+, -), hold
- 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
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**), dial test indicator holder (part no. **6293-7**), clamp for protractors (part no. **2372-CLAMP**)

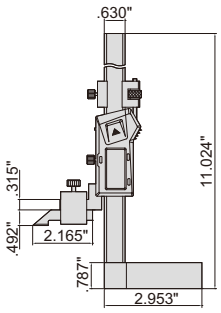
clamp for protractors (**optional**)



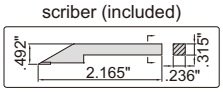

| Part No. | EDP No. | Range | Accuracy | L | W | H | a | b | c | h |
|---|---|---|---|---|---|---|---|---|---|---|
| **1156-300** | 816634 | 0-12"/0-300mm | ±.0012" | 20.276" | 7.087" | 2.165" | 3.150" | 1.181" | 1.378" | .354" |
| **1156-600** | 816635 | 0-24"/0-600mm | ±.0020" | 32.087" | 7.087" | 2.165" | 3.150" | 1.181" | 1.378" | .354" |
| **1156-1000** | 877117 | 0-40"/0-1000mm | ±.0028" | 48.031" | 10.433" | 2.756" | 3.622" | 1.890" | 1.575" | .472" |

## ELECTRONIC HEIGHT GAGE (LIGHT DUTY)

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Automatic power off, move the digital unit to turn on power
- Carbide tipped scriber
- With fine adjustment
- Made of stainless steel
- Battery CR2032, data output
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**), dial test indicator holder (part no. **7151-CL2**)
- Can not use clamp for protractors (part no. **2372-CLAMP**)

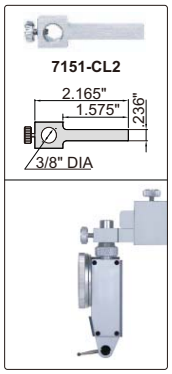



scriber (included)



**1154-150**

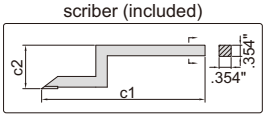
dial test indicator holder (**optional**)



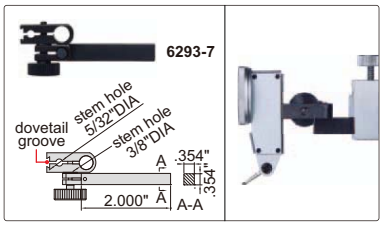

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1154-150** | 877102 | 0-6"/0-150mm | ±.0012" |

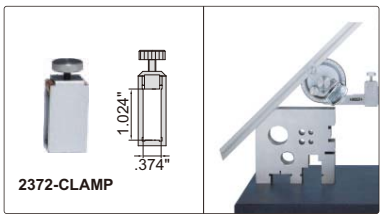
## VERNIER HEIGHT GAGES

scriber (included)



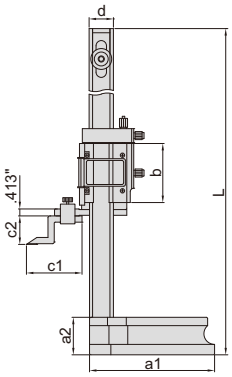

dial test indicator holder (**optional**)




- Graduation .001"/0.02mm
- 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 (part no. **6293-7**), clamp for protractors (part no. **2372-CLAMP**)

dust cover (included)



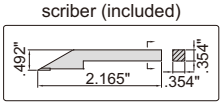
1250-300

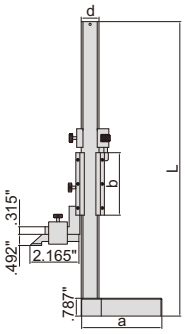
| Part No. | EDP No. | Range | Accuracy | L | a1 | a2 | b | c1 | c2 | d |
|---|---|---|---|---|---|---|---|---|---|---|
| **1250-300** | 280780 | 0-12"/0-300mm | ±.0016" | 21.457" | 5.315" | 1.693" | 2.953" | 3.150" | 1.181" | 1.102" |
| **1250-600** | 280783 | 0-24"/0-600mm | ±.0020" | 34.252" | 7.087" | 2.126" | 3.346" | 3.150" | 1.614" | 1.378" |

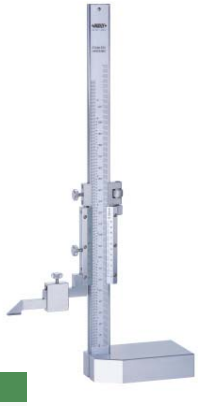
## VERNIER HEIGHT GAGES (LIGHT DUTY)

- Graduation .001"/0.02mm
- Carbide tipped scriber
- Made of stainless steel (except the base)
- Satin chrome plated scale
- Optional accessory: dial test indicator holder (part no. **7151-CL2**)
- Supplied in fitted storage case
- Can not use clamp for protractors (part no. **2372-CLAMP**)

scriber (included)

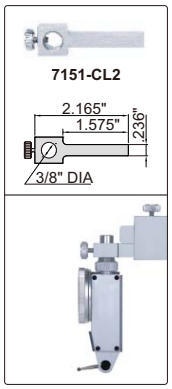


1253-200

dial test indicator holder (**optional**)




| Part No. | EDP No. | Range | Accuracy | L | a | b | d |
|---|---|---|---|---|---|---|---|
| **1253-200** | 877126 | 0-8"/0-200mm | ±.0012" | 12.795" | 3.543" | 2.756" | .787" |

## ELECTRONIC OUTSIDE MICROMETER (WITH DATA OUTPUT)

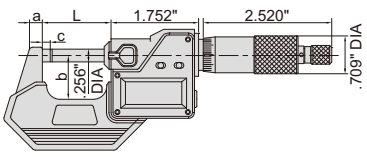
NIST CERTIFICATION

IP65 SPC

- IP65 dust/coolant proof
- Resolution .00005"/0.001mm
- Button function: on/off, set, inch/mm, ABS/INC
- Data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Supplied with spherical anvil
- Setting standards are included (except 0-1"/0-25mm)
- Optional accessory: data output cable (part no. **7306-30A, 7302-SPC6, 7305-SPC3A, 7305-B01**)

3101-25E

data output



ratchet stop

friction thimble for one hand operation

**Individual (ratchet stop type)**

| Part No. | EDP No. | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|---|
| **3101-25E** | 280838 | 0-1"/0-25mm | ±.00008" | 1.358" | .236" | .984" | .118" |
| **3101-50E** | 280839 | 1-2"/25-50mm | ±.00008" | 2.343" | .315" | 1.260" | .118" |
| **3101-75E** | 280840 | 2-3"/50-75mm | ±.00012" | 3.327" | .315" | 1.752" | .118" |
| **3101-100E** | 280841 | 3-4"/75-100mm | ±.00012" | 4.311" | .315" | 2.244" | .118" |

spherical anvil (included)



measure tube wall thickness

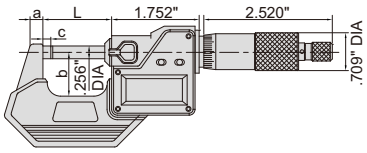
## ELECTRONIC OUTSIDE MICROMETERS (WITHOUT DATA OUTPUT)

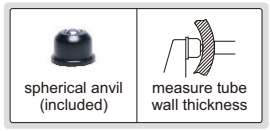
IP65

NIST CERTIFICATION

without data output

3108-1



- Resolution .00005"/0.001mm
- IP65 dust/coolant proof
- Button function: on/off, set, inch/mm, ABS/INC
- Without data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Supplied with spherical anvil
- Setting standards are included (except 0-1"/0-25mm)

**Ratchet stop type**

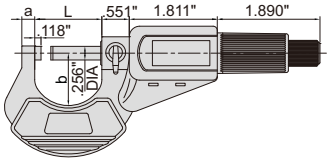
| Part No. | EDP No. | Range | Accuracy | L | a | b | c |
|---|---|---|---|---|---|---|---|
| **3108-1** | 280868 | 0-1"/0-25mm | ±.00008" | 1.358" | .236" | .984" | .118" |
| **3108-2** | 280869 | 1-2"/25-50mm | ±.00008" | 2.343" | .315" | 1.260" | .118" |

## ELECTRONIC OUTSIDE MICROMETERS

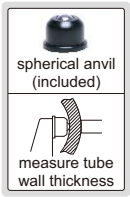
NIST CERTIFICATION

- Resolution .00005"/0.001mm
- Button functions: on/off, set, inch/mm, ABS/INC
- No data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Friction thimble
- Supplied with spherical anvil
- Setting standards are included (except 0-1"/0-25mm)

3109-25E




| Part No. | EDP No. | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|---|
| **3109-25E** | 816500 | 0-1"/0-25mm | ±.00010" | 1.260" | .236" | 1.083" |
| **3109-50E** | 816502 | 1-2"/25-50mm | ±.00015" | 2.244" | .315" | 1.457" |
| **3109-75E** | 816504 | 2-3"/50-75mm | ±.00015" | 3.228" | .315" | 1.969" |
| **3109-100E** | 816506 | 3-4"/75-100mm | ±.00015" | 4.213" | .394" | 2.402" |



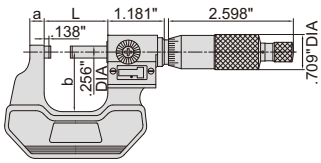
## OUTSIDE MICROMETERS WITH COUNTER

NIST CERTIFICATION

- Counter resolution .001"
- Thimble graduation .0001"
- Carbide measuring faces
- Ratchet stop
- Supplied with setting standards (except 0-1")

3400-1

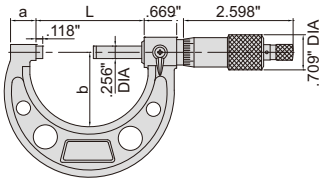
| Part No. | EDP No. | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|---|
| **3400-1** | 280933 | 0-1" | .00016" | 1.260" | .236" | 1.024" |
| **3400-2** | 280934 | 1-2" | .00016" | 2.244" | .315" | 1.260" |
| **3400-3** | 280935 | 2-3" | .00020" | 3.228" | .315" | 1.752" |
| **3400-4** | 280936 | 3-4" | .00020" | 4.213" | .315" | 2.244" |

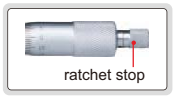


NIST CERTIFICATION

# OUTSIDE MICROMETERS

- Graduation: imperial .0001"
  metric 0.01mm
- Carbide measuring faces
- Supplied with setting standards (except 0-1" and 0-25mm)



3203-1A

3203-44A

3203-126A

3203-2A

**Imperial (ratchet stop type)**

| Part No. | EDP No. | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|---|
| **3203-1A*** | 816564 | 0-1" | .00016" | 1.260" | .354" | 1.102" |
| **3203-2A*** | 816566 | 1-2" | .00016" | 2.244" | .551" | 1.496" |
| **3203-3A*** | 816568 | 2-3" | .00020" | 3.228" | .591" | 1.929" |
| **3203-4A*** | 816570 | 3-4" | .00020" | 4.213" | .591" | 2.362" |
| **3203-5A*** | 816572 | 4-5" | .00024" | 5.236" | .650" | 2.874" |
| **3203-6A*** | 816574 | 5-6" | .00024" | 6.220" | .650" | 3.346" |
| **3203-7A** | 816576 | 6-7" | .00028" | 7.205" | .764" | 4.094" |
| **3203-8A** | 816578 | 7-8" | .00028" | 8.228" | .764" | 4.606" |
| **3203-9A** | 816580 | 8-9" | .00031" | 9.213" | .764" | 5.118" |
| **3203-10A** | 816582 | 9-10" | .00031" | 10.236" | .764" | 5.591" |
| **3203-11A** | 816584 | 10-11" | .00035" | 11.220" | .764" | 6.102" |
| **3203-12A** | 816586 | 11-12" | .00035" | 12.205" | .764" | 6.614" |

**Metric (ratchet stop type)**

| Part No. | EDP No. | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|---|
| **3203-25A*** | 816530 | 0-25mm | ±2μm | 32mm | 9mm | 28mm |
| **3203-50A*** | 816532 | 25-50mm | ±2μm | 57mm | 14mm | 38mm |
| **3203-75A*** | 816534 | 50-75mm | ±2μm | 82mm | 15mm | 49mm |
| **3203-100A*** | 816536 | 75-100mm | ±3μm | 107mm | 15mm | 60mm |
| **3203-125A** | 816538 | 100-125mm | ±3μm | 133mm | 16.5mm | 73mm |
| **3203-150A** | 816540 | 125-150mm | ±3μm | 158mm | 16.5mm | 85mm |
| **3203-175A** | 816542 | 150-175mm | ±4μm | 183mm | 19.4mm | 104mm |
| **3203-200A** | 816544 | 175-200mm | ±4μm | 209mm | 19.4mm | 117mm |
| **3203-225A** | 816546 | 200-225mm | ±4μm | 234mm | 19.4mm | 130mm |
| **3203-250A** | 816548 | 225-250mm | ±5μm | 260mm | 19.4mm | 142mm |
| **3203-275A** | 816550 | 250-275mm | ±5μm | 285mm | 19.4mm | 155mm |
| **3203-300A** | 816552 | 275-300mm | ±5μm | 310mm | 19.4mm | 168mm |

**Imperial micrometer set (ratchet stop type)**

| Part No. | EDP No. | Range | Micrometers included | Packaging |
|---|---|---|---|---|
| **3203-33A*** | 816588 | 0-3" | 3203-1A, 3203-2A, 3203-3A | blow mould case |
| **3203-44A*** | 816590 | 0-4" | 3203-1A, 3203-2A, 3203-3A, 3203-4A | blow mould case |
| **3203-66A*** | 816592 | 0-6" | 3203-1A, 3203-2A, 3203-3A, 3203-4A, 3203-5A, 3203-6A | blow mould case |
| **3203-126A** | 816594 | 6-12" | 3203-7A, 3203-8A, 3203-9A, 3203-10A, 3203-11A, 3203-12A | aluminum box |
| **3203-1212A** | 816596 | 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 |

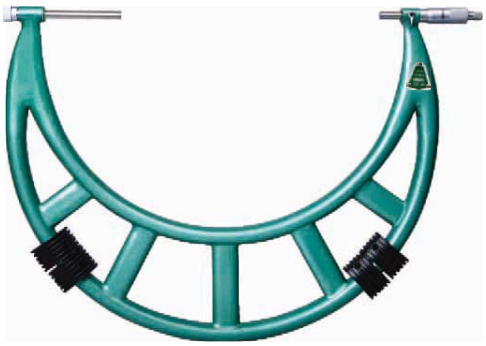
**Metric micrometer set (ratchet stop type)**

| Part No. | EDP No. | Range | Micrometers included | Packaging |
|---|---|---|---|---|
| **3203-753A*** | 816554 | 0-75mm | 3203-25A, 3203-50A, 3203-75A | blow mould case |
| **3203-1004A*** | 816556 | 0-100mm | 3203-25A, 3203-50A, 3203-75A, 3203-100A | blow mould case |
| **3203-1506A** | 816558 | 0-150mm | 3203-25A, 3203-50A, 3203-75A, 3203-100A, 3203-125A, 3203-150A | blow mould case |
| **3203-3006A** | 816560 | 150-300mm | 3203-175A, 3203-200A, 3203-225A, 3203-250A, 3203-275A, 3203-300A | aluminum box |
| **3203-3012A** | 816562 | 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 |

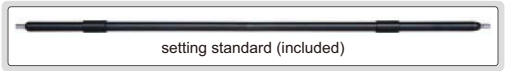
*Supplied with manufacturer inspection certificate traceable to NIST or DKD Germany

## OUTSIDE MICROMETERS WITH INTERCHANGEABLE ANVILS

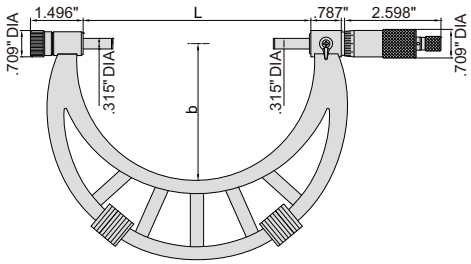
3206-6



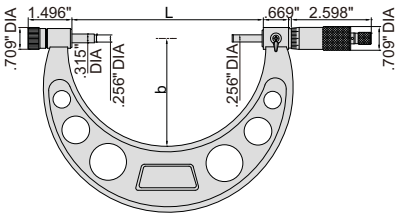
3206-16



setting standard (included)




type B




type A

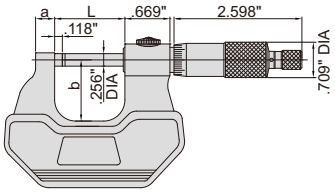
- Graduation .0001" (within 12")
  .001" (over 12")
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards

| Part No. | EDP No. | Range | Type | Accuracy | L | b | Setting standard (included) |
|---|---|---|---|---|---|---|---|
| **3206-2** | 281180 | 0-2" | A | .00016" | 2.283" | 1.378" | 1" |
| **3206-4** | 281181 | 0-4" | A | .00020" | 4.252" | 2.244" | 1", 2", 3" |
| **3206-6** | 281182 | 0-6" | A | .00024" | 6.220" | 3.228" | 1", 2", 3", 4", 5" |
| **3206-61** | 816406 | 2-6" | A | .00024" | 6.220" | 3.228" | 2", 3", 4", 5" |
| **3206-8** | 281183 | 4-8" | A | .00028" | 8.189" | 4.488" | 4", 5", 6", 7" |
| **3206-12** | 281186 | 6-12" | A | .00035" | 12.126" | 6.496" | 6", 7", 8", 9", 10", 11" |
| **3206-121** | 281187 | 8-12" | A | .00035" | 12.126" | 6.496" | 8", 9", 10", 11" |
| **3206-16** | 281188 | 12-16" | B | .00043" | 16.102" | 8.819" | 13", 15" |
| **3206-20** | 281189 | 16-20" | B | .00051" | 20.039" | 10.827" | 17", 19" |
| **3206-24** | 281190 | 20-24" | B | .00055" | 23.976" | 12.638" | 21", 23" |
| **3206-28** | 281191 | 24-28" | B | .00063" | 27.913" | 14.606" | 25", 27" |
| **3206-32** | 281192 | 28-32" | B | .00071" | 31.850" | 16.772" | 29", 31" |
| **3206-36** | 281193 | 32-36" | B | .00079" | 35.787" | 18.740" | 33", 35" |
| **3206-40** | 281194 | 36-40" | B | .00087" | 39.724" | 22.677" | 37", 39" |

interchangeable anvils (included) for different measuring ranges

## OUTSIDE MICROMETERS FOR LEFT OR RIGHT HAND

- Graduation .001"
- Graduations on two sides
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-1")



front

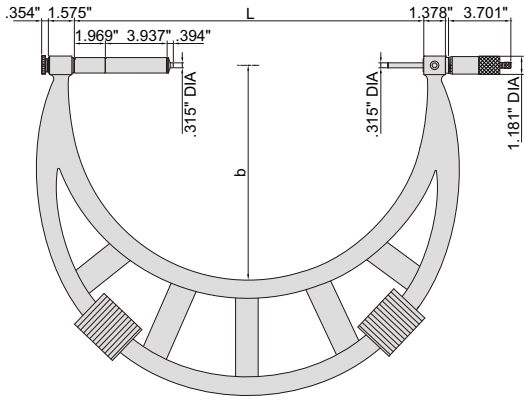
back

3236-1B

| Part No. | EDP No. | Range | Accuracy | L | a | b |
|---|---|---|---|---|---|---|
| **3236-1B** | 816636 | 0-1" | .00016" | 1.260" | .236" | .945" |
| **3236-2B** | 816637 | 1-2" | .00016" | 2.244" | .315" | 1.260" |

## OUTSIDE MICROMETERS WITH EXTENSION ANVIL COLLAR

3205-56



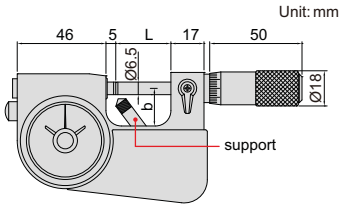
- Graduation .0005"
- Adjust collars for different measuring ranges
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards

| Part No. | EDP No. | Range | Accuracy | L | b | Setting standard (included) |
|---|---|---|---|---|---|---|
| **3205-48** | 281160 | 40-48" | .00087" | 47.638" | 25.394" | 42", 46" |
| **3205-56** | 281161 | 48-56" | .00094" | 55.512" | 29.331" | 50", 54" |
| **3205-64** | 281162 | 56-64" | .00110" | 63.386" | 33.268" | 58", 62" |
| **3205-72** | 281163 | 64-72" | .00122" | 71.260" | 37.205" | 66", 70" |
| **3205-80** | 281164 | 72-80" | .00134" | 79.134" | 41.142" | 74", 78" |

adjust collars for different measuring ranges

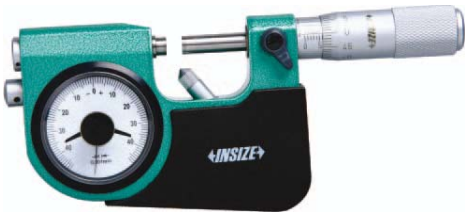
## INDICATING MICROMETERS

- Meet DIN863-3
- Micrometer head graduation: 0.002mm
- Dial indicator: range ±0.04mm, graduation 0.001mm, accuracy 0.001mm
- Carbide measuring faces
- Supplied with setting standards (except 0-25mm)




(mm)

| Part No. | EDP No. | Micrometer head range | Micrometer head accuracy | L | b | Remark |
|---|---|---|---|---|---|---|
| **3332-25** | 281840 | 0-25mm | 4μm | 28.5 | 19 | with support |
| **3332-50** | 281841 | 25-50mm | 4μm | 53.5 | 30 | with support |




3332-25

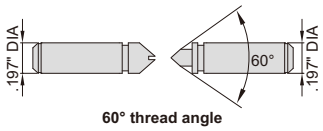
## MEASURING TIPS FOR SCREW THREAD MICROMETERS

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

**Unified and metric thread (60° thread angle)**

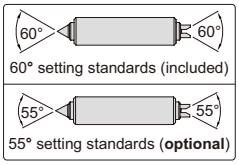
| Part No. | EDP No. | Pitch |
|---|---|---|
| **7381-T11** | 281671 | 64-48TPI/0.4-0.5mm |
| **7381-T12** | 281672 | 44-28TPI/0.6-0.9mm |
| **7381-T13** | 281673 | 24-14TPI/1-1.75mm |
| **7381-T14** | 281674 | 13-9TPI/2-3mm |
| **7381-T15** | 281675 | 8-5TPI/3.5-5mm |
| **7381-T16** | 281676 | 4.5-3.5TPI/5.5-7mm |
| **7381-TS** | 281670 | 6 pairs/set, including all above tips |

7381-T13



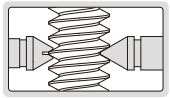

60° thread angle

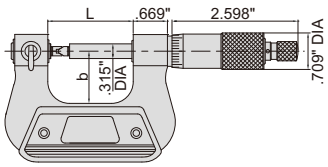
## SCREW THREAD MICROMETERS




measuring tips are not included

3281-1





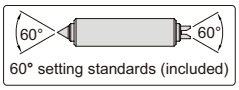

- Measure pitch diameter of screw threads
- Graduation .001"
- Non-rotating spindle
- Ratchet stop
- Supplied with 60° setting standards
- Optional accessory: 55° setting standards, measuring tips (part no. **7381**)

| Part No. | EDP No. | Range | L | b | 55° setting standard (optional) |
|---|---|---|---|---|---|
| **3281-1** | 281696 | 0-1" | 1.654" | 1.024" | – |
| **3281-2** | 281697 | 1-2" | 2.638" | 1.496" | **3281-SPE1** |
| **3281-3** | 281698 | 2-3" | 3.622" | 1.969" | **3281-SPE2** |
| **3281-4** | 281699 | 3-4" | 4.630" | 2.441" | **3281-SPE3** |
| **3281-5** | 281700 | 4-5" | 5.630" | 2.756" | **3281-SPE4** |
| **3281-6** | 281701 | 5-6" | 6.622" | 3.228" | **3281-SPE5** |

**accuracy of micrometers with tips**

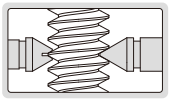
| Pitch | Range | | | | | |
|---|---|---|---|---|---|---|
| | 0-1" | 1-2" | 2-3" | 3-4" | 4-5" | 5-8" |
| **64~48TPI** | ±394µin | - | - | - | - | - |
| **44~32TPI** | ±394µin | ±512µin | - | - | - | - |
| **28~20TPI** | ±472µin | ±591µin | ±670µin | ±670µin | - | - |
| **18~13TPI** | ±551µin | ±670µin | ±748µin | ±748µin | ±787µin | ±906µin |
| **12~7TPI** | ±630µin | ±748µin | ±827µin | ±827µin | ±906µin | ±984µin |
| **6~3.5TPI** | - | ±827µin | ±906µin | ±906µin | ±984µin | ±1102µin |

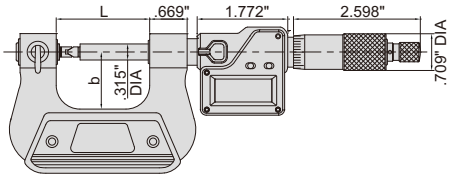
## ELECTRONIC SCREW THREAD MICROMETER




measuring tips are not included

3581-25E






- Measure pitch diameter of screw threads
- Resolution .00005"/0.001mm
- Button function: on/off, set, inch/mm, ABS/INC
- Data output
- LR44 battery, automatic power off
- Non-rotating spindle
- Ratchet stop
- Supplied with 60° setting standards
- Optional accessory: data output cable (part no. **7306-30A, 7302-SPC6, 7305-SPC3A, 7305-B01**)

**accuracy of micrometers with tips**

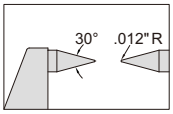
| Pitch | Range |
|---|---|
| | 0-1" |
| **64~48TPI** | ±394µin |
| **44~32TPI** | ±394µin |
| **28~20TPI** | ±472µin |
| **18~13TPI** | ±551µin |
| **12~7TPI** | ±630µin |
| **6~3.5TPI** | - |

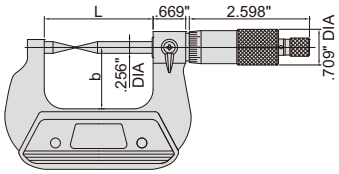
| Part No. | EDP No. | Range | L | b |
|---|---|---|---|---|
| **3581-25E** | 877166 | 0-1"/0-25mm | 1.654" | 1.024" |

## POINT MICROMETER

- Measure the web thickness of drills, small grooves and keyways
- Graduation .0001"
- Ratchet stop
- Carbide tips

3230-1



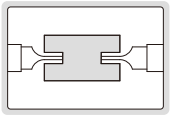




| Part No. | EDP No. | Range | Accuracy | L | b |
|---|---|---|---|---|---|
| **3230-1** | 281345 | 0-1" | .00016" | 2.244" | 1.260" |

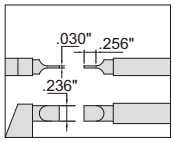
## BLADE MICROMETERS

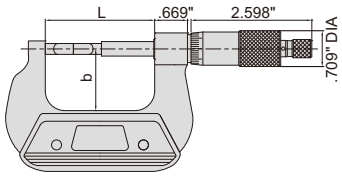
- Measure the groove diameter of shafts and keyways
- Graduation .0001"
- Non-rotating spindle
- Ratchet stop
- Supplied with setting standards (except 0-1")

3232-1



| Part No. | EDP No. | Range | Accuracy | L | b |
|---|---|---|---|---|---|
| **3232-1** | 281320 | 0-1" | .00016" | 2.244" | 1.260" |
| **3232-2** | 281321 | 1-2" | .00016" | 3.228" | 1.752" |
| **3232-3** | 281322 | 2-3" | .00020" | 4.213" | 2.244" |
| **3232-4** | 281323 | 3-4" | .00020" | 5.220" | 2.736" |
| **3232-5** | 281324 | 4-5" | .00024" | 6.220" | 3.228" |
| **3232-6** | 281325 | 5-6" | .00024" | 7.220" | 3.720" |
| **3232-7** | 281326 | 6-7" | .00028" | 8.220" | 4.213" |



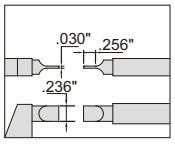



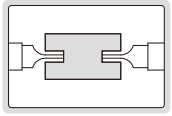

## ELECTRONIC BLADE MICROMETER

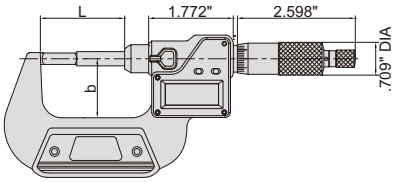
SPC

- Measure the groove diameter of shafts and keyways
- Resolution .00005"/0.001mm
- Non-rotating spindle
- Button function: on/off, set, inch/mm, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Optional accessory: data output cable (part no. **7306-30A, 7302-SPC6, 7305-SPC3A, 7305-B01**)

3532-50E



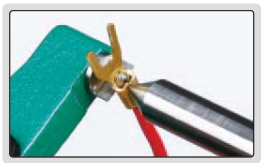


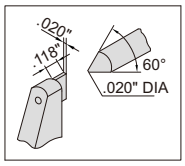

| Part No. | EDP No. | Range | Accuracy | L | b |
|---|---|---|---|---|---|
| **3532-50E** | 281328 | 2-3"/50-75mm | ±.00016" | 3.228" | 1.752" |

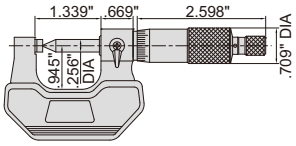
## CRIMP HEIGHT MICROMETER

3266-1B

- Measure the height of crimp contact
- Graduation .0001"
- Ratchet stop
- Optional product: electronic crimp height caliper (part no. **1165-150A**)





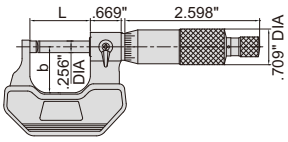



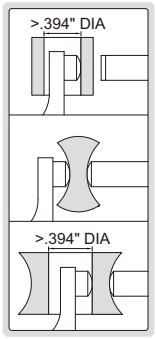

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **3266-1B** | 281395 | 0-1" | .00016" |

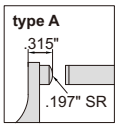
## SPHERICAL ANVIL TUBE MICROMETERS

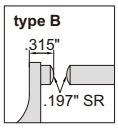
3260-1

- Measure wall thickness of tubes
- Graduation .0001"
- Ratchet stop
- Carbide measuring faces
- Supplied with setting standards (except 0-1")



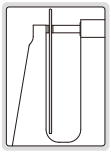



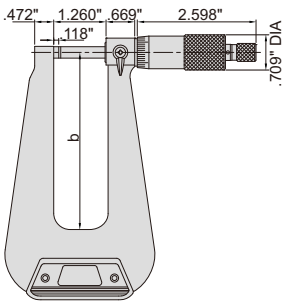

| Part No. | EDP No. | Range | Type | Accuracy | L | b |
|---|---|---|---|---|---|---|
| **3260-1** | 281457 | 0-1" | A | .00016" | 1.260" | .945" |
| **3260-2** | 281458 | 1-2" | A | .00016" | 2.244" | 1.260" |
| **3260-3** | 281459 | 2-3" | A | .00020" | 3.228" | 1.752" |
| **3260-1S** | 281461 | 0-1" | B | .00016" | 1.260" | .945" |

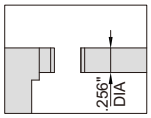
## DEEP THROAT MICROMETER

- Deep frame suitable for deep throat, paper and plastic
- Graduation .0001"
- Ratchet stop
- Carbide measuring faces



3239-13




| Part No. | EDP No. | Range | Accuracy | b |
|---|---|---|---|---|
| **3239-13** | 281235 | 0-1" | .00028" | 6.102" |

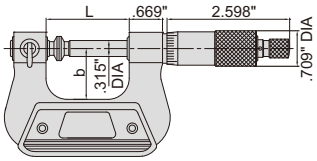
## NON-ROTATING SPINDLE UNIVERSAL MICROMETER

- Graduation .0001"
- Non-rotating spindle
- Ratchet stop
- Supplied with 7 pairs of anvil/spindle tip
- Optional accessory: 55° anvil/spindle tip (part no. **3280-SP1** and **3280-SP2**)

**3280-1**

55°anvil/spindle tip (**optional**)

| | | |
|---|---|---|
| Part No. **3280-SP1** Knife-edge | .014" 55° | |
| Part No. **3280-SP2** Point | .012" DIA 55° | |




Anvil/spindle tip (included)

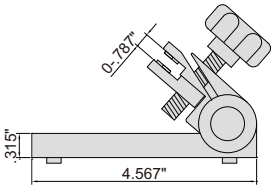
| | | |
|---|---|---|
| Flat | .256" DIA | |
| Spherical | .197" SR .256" DIA | |
| Spline | .079" DIA | |
| Disk | .472" DIA | |
| Blade | .028" | |
| Knife-edge | .014" 60° | |
| Point | .012" DIA 60° | |

| Part No. | EDP No. | Range | Accuracy | L | b |
|---|---|---|---|---|---|
| **3280-1** | 281607 | 0-1" | .00016" | 1.654" | 1.024" |

## MICROMETER STAND

- Suitable for micrometers up to 4"

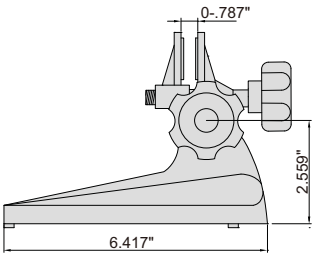
**6300**



| Part No. | EDP No. |
|---|---|
| **6300** | 282455 |

## MICROMETER STAND

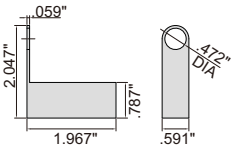
- Suitable for micrometers up to 4"



**6301**

| Part No. | EDP No. |
|---|---|
| **6301** | 282456 |

- Suitable for inside micrometers



**6301-1**

| Part No. | EDP No. | Description | Applicable products |
|---|---|---|---|
| **6301-1** | 877191 | clamp for inside micrometers | all sizes of **3220** series |

## MICROMETER SETTING STANDARDS

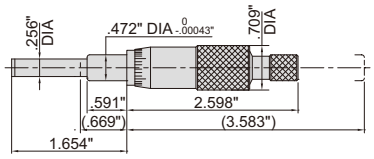
| Part No. | EDP No. | Length | Accuracy | D (DIA) |
|---|---|---|---|---|
| **6311-1** | 282508 | 1" | ±.00006" | .276" |
| **6311-2** | 282509 | 2" | ±.00008" | .276" |
| **6311-3** | 282510 | 3" | ±.00010" | .276" |
| **6311-4** | 282511 | 4" | ±.00012" | .315" |
| **6311-5** | 282512 | 5" | ±.00014" | .315" |
| **6311-6** | 282513 | 6" | ±.00016" | .315" |
| **6311-7** | 282514 | 7" | ±.00018" | .315" |
| **6311-9** | 282516 | 9" | ±.00022" | .315" |
| **6311-10** | 282517 | 10" | ±.00024" | .315" |

**6311-4**

## MICROMETER HEAD

- Ratchet stop

**6381-1W**



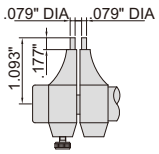

| Part No. | EDP No. | Range | Graduation | Spindle tip | Accuracy |
|---|---|---|---|---|---|
| **6381-1W** | 816688 | 0-1" | .001" | flat (carbide) | .00012" |

## INSIDE MICROMETERS

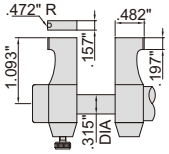
- Graduation .001"
- Ratchet stop
- Carbide measuring faces
- Optional accessary:
  setting ring (part no. **6313**),
  micrometer stand and clamp
  (part no. **6301** and **6301-1**)

micrometer stand with clamp (**optional**)

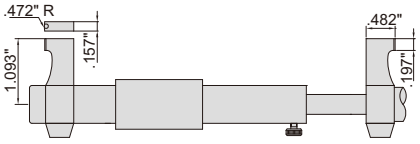
**3220-2**




**type A**




**type B**



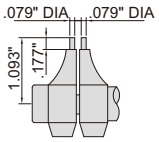

**type C**

| Part No. | EDP No. | Range | Type | Setting ring | Accuracy |
|---|---|---|---|---|---|
| **3220-1** | 281962 | .2-1.2" | A | .2" DIA (included) | .00028" |
| **3220-2** | 281963 | 1-2" | B | 1" DIA (included) | .00032" |
| **3220-3** | 281964 | 2-3" | B | 2" DIA **(optional)** | .00036" |
| **3220-4** | 281965 | 3-4" | C | 3" DIA **(optional)** | .00040" |

## ELECTRONIC INSIDE MICROMETER

- Resolution .00005"/0.001mm
- Button function: on/off, set, inch/mm, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Carbide measuring faces
- Optional accessory: data output cable
  (part no. **7306-30A, 7302-SPC6, 7305-SPC3A, 7305-B01**),
  setting ring (part no. **6313**)

**3520-30E**

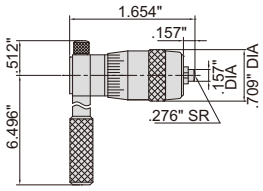



| Part No. | EDP No. | Range | Setting ring | Accuracy |
|---|---|---|---|---|
| **3520-30E** | 281970 | .2-1.2"/5-30mm | .2" DIA (included) | ±.00020" |

## INTERNAL MICROMETERS

- Graduation .001"
- Accuracy: [.0003+.00005(L/2)]"
  L=maximum measuring length (inch)
- Optional accessary: setting ring (part no. **6313**)

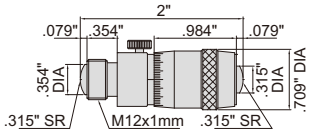
**3221-8**




| Part No. | EDP No. | Range | Travel of micrometer head | Extension rods |
|---|---|---|---|---|
| **3221-8** | 282039 | 2-8" | .5" | 6 pcs |
| **3221-12** | 282040 | 2-12" | .5" | 10 pcs |
| **3221-20** | 282042 | 8-20" | 1" | 3 pcs |
| **3221-40** | 282043 | 8-40" | 1" | 8 pcs |

## INTERNAL MICROMETERS

- Graduation .001"
- Accuracy: [.00005(3+n+L/2)]"
  n=number of rods,
  L=maximum measuring length (inch)
- Supplied with setting standards
- Carbide measuring faces



**3222-6**

| Part No. | EDP No. | Range | Travel of micrometer head | Extension rods |
|---|---|---|---|---|
| **3222-6** | 281999 | 2-6" | .5" | .5", 1", 2" |
| **3222-12** | 282000 | 2-12" | .5" | .5", 1", 2" (2 pcs), 4" |
| **3222-20** | 282001 | 2-20" | .5" | .5", 1", 2" (2 pcs), 4", 8" |
| **3222-40** | 282002 | 2-40" | .5" | .5", 1", 2" (2 pcs), 4", 8" (2 pcs), 12" |
| **3222-60** | 282003 | 2-60" | .5" | .5", 1", 2" (2 pcs), 4", 8" (3 pcs), 12" (2 pcs) |

INSPECTION CERTIFICATE

IP54 SPC

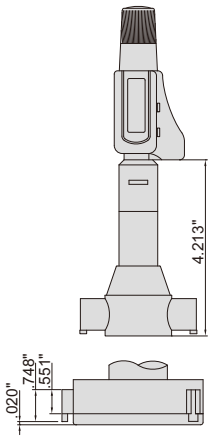
## ELECTRONIC WIDE RANGE THREE POINTS INTERNAL MICROMETERS

- Resolution .00005"/0.001mm
- IP54 dust/coolant proof
- Buttons: on/off, set, inch/mm, ABS/INC
- Data output
- LR44 battery, automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with extension rods
- Setting rings are included (except part no. **3128-12**)
- Optional accessary: data output cable (part no. **7306-30A, 7302-SPC6, 7305-SPC3A, 7305-B01**)

setting ring

extension rod (included)

**3128-28**




| Part No. | EDP No. | Range | Accuracy | Setting ring | Extension rod (included) |
|---|---|---|---|---|---|
| **3128-28** | 816640 | 2-2.8"/51-71mm | .00020" | 2" DIA (included) | 6" |
| **3128-4** | 816641 | 2.8-4"/71-101mm | .00020" | 2.8" DIA (included) | 6" |
| **3128-6** | 816642 | 4-6"/101-152mm | .00024" | 4" DIA (included) | 6" |
| **3128-10** | 816643 | 6-10"/152-254mm | .00032" | 6" DIA (included) | 6" |
| **3128-12** | 816644 | 8-12"/203-305mm | .00036" | 8" DIA (**optional**) | 6" |

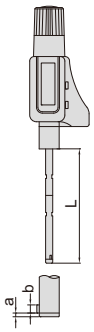
# ELECTRONIC THREE POINTS INTERNAL MICROMETERS

IP54 SPC

INSPECTION CERTIFICATE

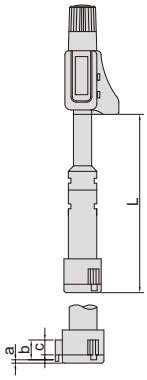
- Resolution .00005"/0.001mm
- IP54 dust/coolant proof
- Buttons: on/off, set, inch/mm, ABS/INC
- Data output
- LR44 battery, automatic power off
- Ratchet stop
- Optional accessory:
  data output cable (part no. **7306-30A, 7302-SPC6, 7305-SPC3A, 7305-B01**),
  setting ring (part no. **6313**),
  micrometer stand and clamp
  (part no. **6301** and **6301-2**)

**3127-E05**



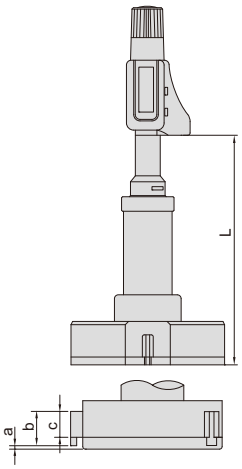

**Type A**
.35-.5",
steel points

**3127-E16**




**Type B**
.5-2", carbide points

**3127-E5**

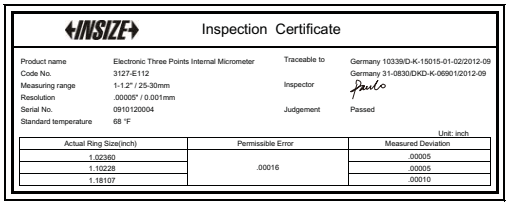



**Type C**
2-6", carbide points

**3127-E24**

micrometer stand
with clamp (**optional**)

**Manufacturer Inspection Certificate**



INSIZE Inspection Certificate

| | | | |
|---|---|---|---|
| Product name | Electronic Three Points Internal Micrometer | Traceable to | Germany 10339/D-K-15015-01-02/2012-09 |
| Code No. | 3127-E112 | | Germany 31-0830/DKD-K-06901/2012-09 |
| Measuring range | 1-1.2" / 25-30mm | Inspector | Paulo |
| Resolution | .00005" / 0.001mm | | |
| Serial No. | 0910120004 | Judgement | Passed |
| Standard temperature | 68 °F | | |

Unit: inch

| Actual Ring Size(inch) | Permissible Error | Measured Deviation |
|---|---|---|
| 1.02360 | .00016 | .00005 |
| 1.10228 | | .00005 |
| 1.18107 | | .00010 |

**setting ring**

.35-4": included
4-6": **optional**

**extension rod**

included

**Individual**

| Part No. | EDP No. | Range | Type | Accuracy | Setting ring | Extension rod (included) | L | a | b | c |
|---|---|---|---|---|---|---|---|---|---|---|
| **3127-E0425** | 816638 | .35-.425"/9-11mm | A | .00016" | .35" DIA (included) | 4" | 2.18" | .059" | .098" | — |
| **3127-E05** | 282305 | .425-.5"/11-13mm | A | .00016" | .5" DIA (included) | 4" | 2.18" | .059" | .098" | — |
| **3127-E065** | 282317 | .5-.65"/13-17mm | B | .00016" | .65" DIA (included) | 6" | 3.2" | .020" | .236" | .177" |
| **3127-E08** | 282318 | .65-.8"/17-20mm | B | .00016" | .65" DIA (included) | 6" | 3.2" | .020" | .236" | .177" |
| **3127-E1** | 282319 | .8-1"/20-25mm | B | .00016" | 1" DIA (included) | 6" | 3.6" | .020" | .315" | .236" |
| **3127-E112** | 282320 | 1-1.2"/25-30mm | B | .00016" | 1" DIA (included) | 6" | 3.6" | .020" | .315" | .236" |
| **3127-E16** | 282321 | 1.2-1.6"/30-40mm | B | .00016" | 1.6" DIA (included) | 6" | 3.88" | .020" | .551" | .472" |
| **3127-E2** | 282322 | 1.6-2"/40-51mm | B | .00020" | 1.6" DIA (included) | 6" | 3.88" | .020" | .551" | .472" |
| **3127-E25** | 282323 | 2-2.5"/51-63mm | C | .00020" | 2.5" DIA (included) | 6" | 4.56" | .020" | .689" | .571" |
| **3127-E3** | 282324 | 2.5-3"/63-76mm | C | .00020" | 2.5" DIA (included) | 6" | 4.56" | .020" | .689" | .571" |
| **3127-E35** | 282325 | 3-3.5"/76-89mm | C | .00020" | 3.5" DIA (included) | 6" | 4.56" | .020" | .689" | .571" |
| **3127-E4** | 282326 | 3.5-4"/89-101mm | C | .00020" | 3.5" DIA (included) | 6" | 4.56" | .020" | .689" | .571" |
| **3127-E5** | 282367 | 4-5"/101-127mm | C | .00024" | **optional** | 6" | 6" | .035" | 1.142" | .984" |
| **3127-E6** | 282368 | 5-6"/127-152mm | C | .00024" | **optional** | 6" | 6" | .035" | 1.142" | .984" |

**Set**

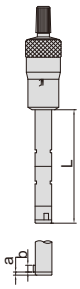
| Part No. | EDP No. | Range | Micrometers included | Setting ring (included) | Extension rod |
|---|---|---|---|---|---|
| **3127-E053** | 282306 | .275-.5"/7-13mm | .275-.35"/7-9mm, .35-.425"/9-11mm .425-.5"/11-13mm | .275" DIA, .35" DIA, .5" DIA | 4" (included) |
| **3127-E082** | 282330 | .5-.8"/13-20mm | .5-.65"/13-17mm, .65-.8"/17-20mm | .65" DIA | 6" (included) |
| **3127-E24** | 282331 | .8-2"/20-51mm | .8-1"/20-25mm, 1-1.2"/25-30mm 1.2-1.6"/30-40mm, 1.6-2"/40-51mm | 1" DIA, 1.6" DIA | 6" (included) |
| **3127-E44** | 282332 | 2-4"/51-101mm | 2-2.5"/51-63mm, 2.5-3"/63-76mm 3-3.5"/76-89mm, 3.5-4"/89-101mm | 2.5" DIA, 3.5" DIA | 6" (included) |

INSPECTION CERTIFICATE

# THREE POINTS INTERNAL MICROMETERS

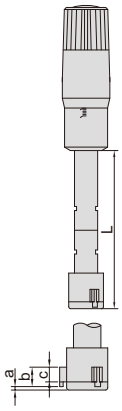
- .275-.5": graduation .0001"
  .5-12": graduation .0002"
- Ratchet stop
- Optional accessory:
  setting rings (part no. **6313**),
  micrometer stand and clamp
  (part no. **6301** and **6301-2**)

**3227-E035**



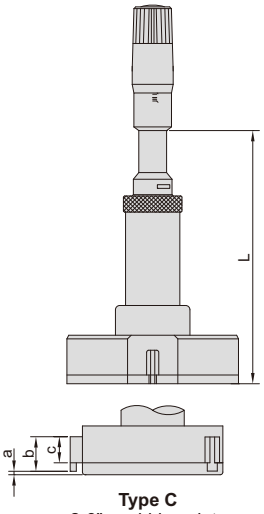

**Type A**
.275-.5",
steel points

**3227-E065**




**Type B**
.5-2", carbide points

**3227-E4**

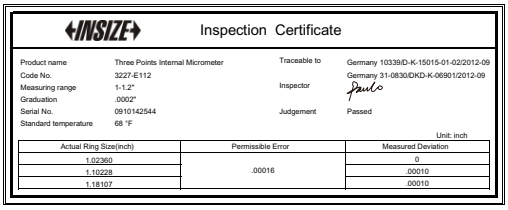



**Type C**
2-6", carbide points

**3227-E24**

micrometer stand
with clamp (**optional**)

**Manufacturer Inspection Certificate**



INSIZE Inspection Certificate

| | | | |
|---|---|---|---|
| Product name | Three Points Internal Micrometer | Traceable to | Germany 10339/D-K-15015-01-02/2012-09 |
| Code No. | 3227-E112 | | Germany 31-0830/DKD-K-06901/2012-09 |
| Measuring range | 1-1.2" | Inspector | Paulo |
| Graduation | .0002" | | |
| Serial No. | 091014254 | Judgement | Passed |
| Standard temperature | 68 °F | | |

Unit: inch

| Actual Ring Size(inch) | Permissible Error | Measured Deviation |
|---|---|---|
| 1.02360 | .00016 | 0 |
| 1.10228 | | .00010 |
| 1.18107 | | .00010 |

**setting ring**

.275-4": included
4-6": **optional**

**extension rod**

included

**Individual**

| Part No. | EDP No. | Range | Type | Accuracy | Setting ring | Extension rod (included) | L | a | b | c |
|---|---|---|---|---|---|---|---|---|---|---|
| **3227-E035** | 282196 | .275-.35" | A | .00016" | .275" DIA (included) | 4" | 2.146" | .059" | .098" | — |
| **3227-E0425** | 877165 | .35-.425" | A | .00016" | .35" DIA (included) | 4" | 2.146" | .059" | .098" | — |
| **3227-E05** | 282198 | .425-.5" | A | .00016" | .5" DIA (included) | 4" | 2.146" | .059" | .098" | — |
| **3227-E065** | 282213 | .5-.65" | B | .00016" | .65" DIA (included) | 6" | 3.150" | .020" | .236" | .177" |
| **3227-E08** | 282214 | .65-.8" | B | .00016" | .65" DIA (included) | 6" | 3.150" | .020" | .236" | .177" |
| **3227-E1** | 282215 | .8-1" | B | .00016" | 1" DIA (included) | 6" | 3.543" | .020" | .315" | .236" |
| **3227-E112** | 282216 | 1-1.2" | B | .00016" | 1" DIA (included) | 6" | 3.543" | .020" | .315" | .236" |
| **3227-E16** | 282217 | 1.2-1.6" | B | .00016" | 1.6" DIA (included) | 6" | 3.819" | .020" | .551" | .472" |
| **3227-E2** | 282218 | 1.6-2" | B | .00020" | 1.6" DIA (included) | 6" | 3.819" | .020" | .551" | .472" |
| **3227-E25** | 282219 | 2-2.5" | C | .00020" | 2.5" DIA (included) | 6" | 4.488" | .020" | .689" | .571" |
| **3227-E3** | 282220 | 2.5-3" | C | .00020" | 2.5" DIA (included) | 6" | 4.488" | .020" | .689" | .571" |
| **3227-E35** | 282221 | 3-3.5" | C | .00020" | 3.5" DIA (included) | 6" | 4.488" | .020" | .689" | .571" |
| **3227-E4** | 282222 | 3.5-4" | C | .00020" | 3.5" DIA (included) | 6" | 4.488" | .020" | .689" | .571" |

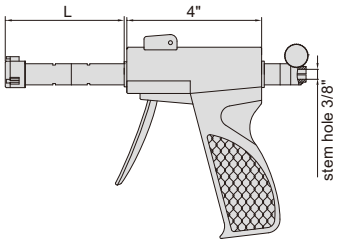
**Set**

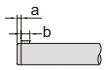
| Part No. | EDP No. | Range | Micrometers included | Setting ring (included) | Extension rod (included) |
|---|---|---|---|---|---|
| **3227-E053** | 282199 | .275-.5" | .275-.35", .35-.425", .425-.5" | .275" DIA, .35" DIA, .5" DIA | 4" |
| **3227-E082** | 282223 | .5-.8" | .5-.65", .65-.8" | .65" DIA | 6" |
| **3227-E24** | 282224 | .8-2" | .8-1", 1-1.2", 1.2-1.6", 1.6-2" | 1" DIA, 1.6" DIA | 6" |
| **3227-E44** | 282225 | 2-4" | 2-2.5", 2.5-3", 3-3.5", 3.5-4" | 2.5" DIA, 3.5" DIA | 6" |

# PISTOL GRIP THREE POINTS BORE GAGES

INSPECTION CERTIFICATE

- Optional accessory: electronic indicators (part no. **2103-10FE**, resolution .00005"/0.001mm), setting rings (part no. **6313**)




**Type A**
.275-.5", steel measuring points

**electronic indicator is not included**

**2124-E035**

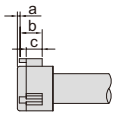
**2124- E24**

**extension rod**

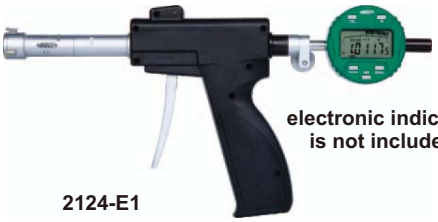
included

**setting ring**

.275-4": included
4-6": **optional**



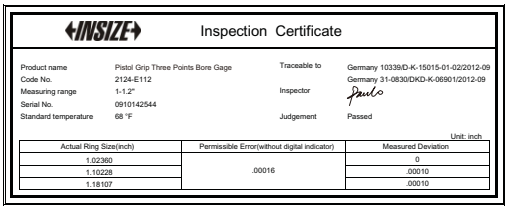

**Type B**
.5-2", carbide measuring points



**electronic indicator is not included**

**2124-E1**

**Manufacturer Inspection Certificate**

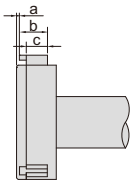


INSIZE Inspection Certificate

| | | | |
|---|---|---|---|
| Product name | Pistol Grip Three Points Bore Gage | Traceable to | Germany 10339/D-K-15015-01-02/2012-09 |
| Code No. | 2124-E112 | | Germany 31-0830/DKD-K-06901/2012-09 |
| Measuring range | 1-1.2" | Inspector | Paulo |
| Serial No. | 0910142544 | | |
| Standard temperature | 68 °F | Judgement | Passed |

Unit: inch

| Actual Ring Size(inch) | Permissible Error(without digital indicator) | Measured Deviation |
|---|---|---|
| 1.02360 | .00016 | 0 |
| 1.10228 | | .00010 |
| 1.18107 | | .00010 |




**Type C**
2-6", carbide measuring points

**electronic indicator is not included**

**2124-E5**

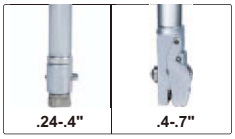
**Individual**

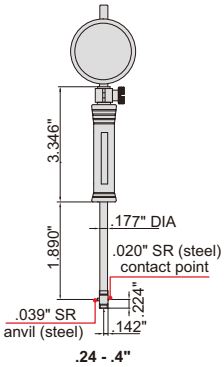
| Part No. | EDP No. | Range | Type | Accuracy (without electronic indicator) | Setting ring | Extension rod | L | a | b | c |
|---|---|---|---|---|---|---|---|---|---|---|
| **2124-E035** | 877133 | .275-.35" | A | .00016" | .275" DIA (included) | 4" (included) | 2" | .059" | .098" | — |
| **2124-E0425** | 877134 | .35-.425" | A | .00016" | .35" DIA (included) | 4" (included) | 2" | .059" | .098" | — |
| **2124-E05** | 877135 | .425-.5" | A | .00016" | .5" DIA (included) | 4" (included) | 2" | .059" | .098" | — |
| **2124-E065** | 877137 | .5-.65" | B | .00016" | .65" DIA (included) | 6" (included) | 2.6" | .020" | .236" | .177" |
| **2124-E08** | 877138 | .65-.8" | B | .00016" | .65" DIA (included) | 6" (included) | 2.6" | .020" | .236" | .177" |
| **2124-E1** | 877140 | .8-1" | B | .00016" | 1" DIA (included) | 6" (included) | 3.64" | .020" | .315" | .236" |
| **2124-E112** | 877141 | 1-1.2" | B | .00016" | 1" DIA (included) | 6" (included) | 3.64" | .020" | .315" | .236" |
| **2124-E16** | 877142 | 1.2-1.6" | B | .00016" | 1.6" DIA (included) | 6" (included) | 3.88" | .020" | .551" | .472" |
| **2124-E2** | 877143 | 1.6-2" | B | .00020" | 1.6" DIA (included) | 6" (included) | 3.88" | .020" | .551" | .472" |
| **2124-E25** | 877145 | 2-2.5" | C | .00020" | 2.5" DIA (included) | 6" (included) | 4.48" | .020" | .689" | .571" |
| **2124-E3** | 877146 | 2.5-3" | C | .00020" | 2.5" DIA (included) | 6" (included) | 4.48" | .020" | .689" | .571" |
| **2124-E35** | 877147 | 3-3.5" | C | .00020" | 3.5" DIA (included) | 6" (included) | 4.48" | .020" | .689" | .571" |
| **2124-E4** | 877148 | 3.5-4" | C | .00020" | 3.5" DIA (included) | 6" (included) | 4.48" | .020" | .689" | .571" |
| **2124-E5** | 877150 | 4-5" | C | .00024" | **optional** | 6" (included) | 5.51" | .035" | 1.142" | .984" |
| **2124-E6** | 877151 | 5-6" | C | .00024" | **optional** | 6" (included) | 5.51" | .035" | 1.142" | .984" |

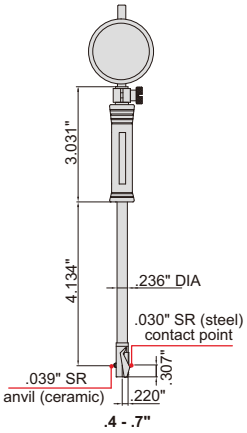
**Set**

| Part No. | EDP No. | Range | Probes included | Setting ring (included) | Extension rod (included) |
|---|---|---|---|---|---|
| **2124-E053** | 877136 | .275-.5" | .275-.35", .35-.425", .425-.5" | .275" DIA, .35" DIA, .5" DIA | 4" |
| **2124-E082** | 877139 | .5-.8" | .5-.65", .65-.8" | .65" DIA | 6" |
| **2124-E24** | 877144 | .8-2" | .8-1", 1-1.2", 1.2-1.6", 1.6-2" | 1" DIA, 1.6" DIA | 6" |
| **2124-E44** | 877149 | 2-4" | 2-2.5", 2.5-3", 3-3.5", 3.5-4" | 2.5" DIA, 3.5" DIA | 6" |

## BORE GAGES FOR SMALL HOLES



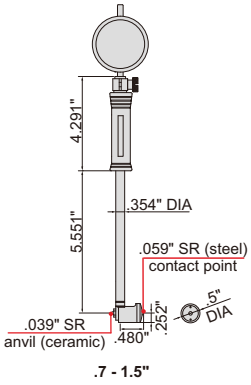
2323-04

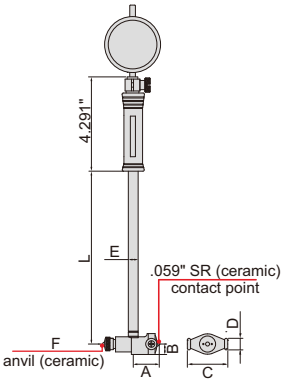
- Optional accessory: setting ring (part no. **6313**)
- Not compatible for . 00005" or .0001" dial indicators

**With dial indicator**

| Part No. | EDP No. | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|---|
| **2323-04** | 282928 | .24-.4" | dial indicator, range .25", graduation .0005" | ±.00075" | .00015" |
| **2323-07** | 282929 | .4-.7" | | ±.00075" | .00015" |

## BORE GAGES

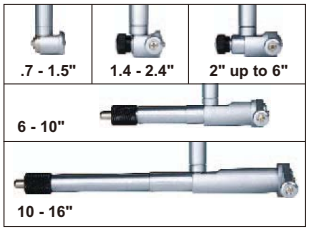


2323-6

- Optional accessory: setting ring (part no. **6313**), long handle (part no. **7351**)
- Not compatible for . 00005" or .0001" dial indicators

| Range | A | B | C | D | E | F | L |
|---|---|---|---|---|---|---|---|
| 1.4-2.4" | .866" | .354" | 1.063" | .512" DIA | .504" DIA | .079" R | 5.551" |
| 2-6" | 1.024" | .354" | 1.378" | .512" DIA | .504" DIA | .079" R | 5.551" |
| 6-10" | 2.224" | .512" | 2.933" | .591" DIA | .571" DIA | .079" R | 9.488" |
| 10-16" | 3.406" | .591" | 3.996" | .591" DIA | .571" DIA | .098" R | 9.488" |




**With dial indicator**

| Part No. | EDP No. | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|---|
| **2323-15** | 282930 | .7-1.5" | dial indicator, range .25", graduation .0005" | ±.00075" | .00015" |
| **2323-24** | 816188 | 1.4-2.4" | | ±.0009" | .00015" |
| **2323-6** | 816192 | 2-6" | | ±.0009" | .00015" |
| **2323-10** | 816184 | 6-10" | | ±.0009" | .00015" |
| **2323-16** | 816186 | 10-16" | | ±.0009" | .00015" |

## BORE GAGE SETS

- Optional accessory: setting ring (part no. **6313**)
- Not compatible for . 00005" or .0001" dial indicators

**2824-S2E**

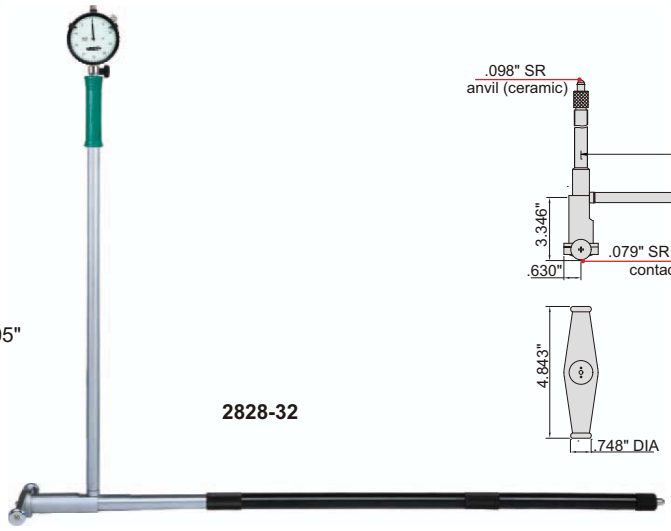
**2824-S3E**

packaging (part no. **2824-S3E**)

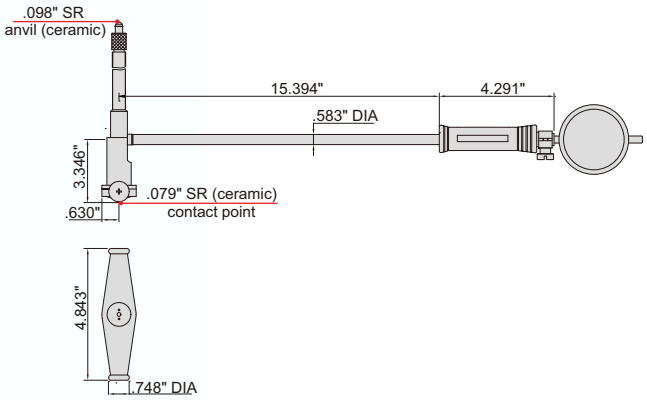
| Part No. | EDP No. | Range | Indicator | Bore gages included | Accuracy | Repeatability |
|---|---|---|---|---|---|---|
| **2824-S2E** | 877159 | 1.4-6" | dial indicator range .25", graduation .0005" | ① 1.4-2" (dial indicator and handle are not included)<br>② 2-6" | 1.4-2" ±.0009"<br>2-6" ±.0009" | .00015" |
| **2824-S3E** | 877160 | .7-6" | dial indicator range .25", graduation .0005" | ① .7-1.5"<br>② 1.4-2.4" (dial indicator is not included)<br>③ 2-6" (dial indicator is not included) | .7-1.5" ±.00075"<br>1.4-2.4" ±.0009"<br>2-6" ±.0009" | .00015" |

## BORE GAGE

- Not compatible for . 00005" or .0001" dial indicators



**2828-32**

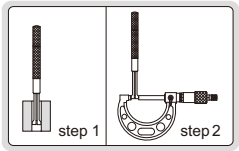



| Part No. | EDP No. | Range | Indicator | Accuracy | Repeatability |
|---|---|---|---|---|---|
| **2828-32** | 877161 | 16-32" | dial indicator, range .25", graduation .0005" | ±.001" | .00015" |

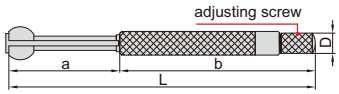
## SMALL HOLE GAGE SET

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

**4208-1**



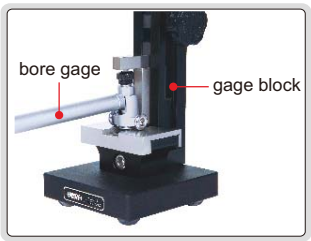

| Part No. | EDP No. | Total range | Gages included |
|---|---|---|---|
| **4208-1** | 816204 | .125~.5" | .125~.2", .2~.3", .3~.4", .4~.5" |




| Range | L | a | b | D |
|---|---|---|---|---|
| .125~.2" | 2.992" | .945" | 2.047" | .197" DIA |
| .2~.3" | 3.110" | 1.063" | 2.047" | .197" DIA |
| .3~.4" | 3.465" | 1.181" | 2.283" | .236" DIA |
| .4~.5" | 3.583" | 1.339" | 2.283" | .236" DIA |

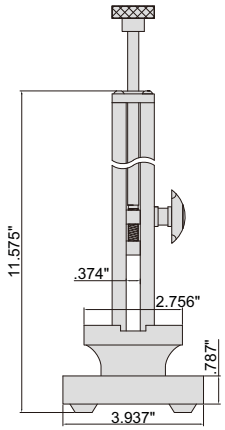
## BORE GAGE SETTER

application




gage blocks for **7353-6**

**7353-6**



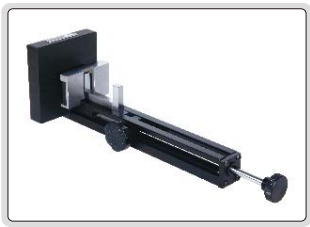

- Vertical and horizontal use
- To be used with gage blocks

| Part No. | EDP No. | Range | Repeatability | Remark |
|---|---|---|---|---|
| **7353-6** | 877262 | 0-6" | .00005" | with gage block set |
| **7353-160W** | 877213 | 0-6" | .00005" | without gage block set |

**Gage block set for 7353-6**

| Blocks per set | Size (inch) | Step (inch) | Quantity (pcs) | Remark |
|---|---|---|---|---|
| 36 | .05 | | 1 | grade AS-2 (ASME B89.1.9) |
| | .1001-.1009 | .0001 | 9 | |
| | .101-.109 | .001 | 9 | |
| | .11-.19 | .01 | 9 | |
| | .1-.5 | .1 | 5 | |
| | 1 | | 1 | |
| | 2 | | 1 | |
| | 4 | | 1 | |

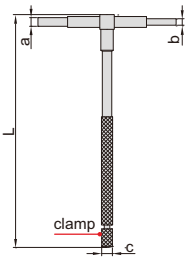
horizontal use



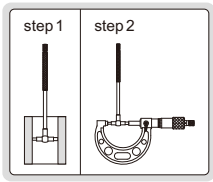
## TELESCOPING GAGE SET

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

**4206-1**

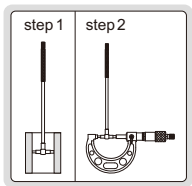


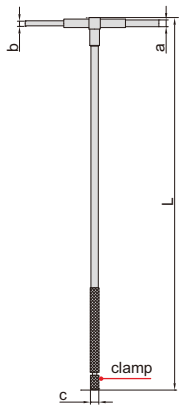

| Range | L | a (DIA) | b (DIA) | c (DIA) |
|---|---|---|---|---|
| 5/16~1/2" | 4.528" | .154" | .114" | .244" |
| 1/2~3/4" | 4.528" | .209" | .150" | .244" |
| 3/4~1-1/4" | 4.528" | .209" | .150" | .244" |
| 1-1/4~2-1/8" | 5.394" | .299" | .240" | .283" |
| 2-1/8~3-1/2" | 5.394" | .299" | .240" | .283" |
| 3-1/2~6" | 5.394" | .299" | .240" | .283" |




| Part No. | EDP No. | Total range | Gages included |
|---|---|---|---|
| **4206-1** | 816202 | 5/16~6" | 5/16~1/2", 1/2~3/4", 3/4~1-1/4", 1-1/4~2-1/8", 2-1/8~3-1/2", 3-1/2~6" |

## LONG HANDLE TELESCOPING GAGES



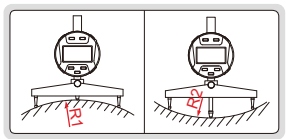



4209-6

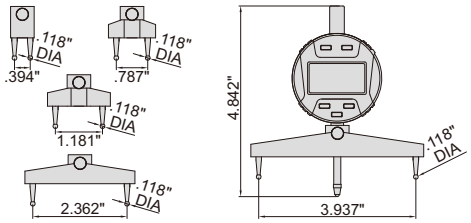
- For quick measurement of inside diameter of deep holes and width of slots
- Satin chrome finish

| Part No. | EDP No. | Range | L | a (DIA) | b (DIA) | c (DIA) |
|---|---|---|---|---|---|---|
| **4209-1** | 283589 | 5/16~1/2" | 9.843" | .154" | .114" | .244" |
| **4209-2** | 283590 | 1/2~3/4" | 9.843" | .209" | .150" | .244" |
| **4209-3** | 283591 | 3/4~1-1/4" | 9.843" | .209" | .150" | .244" |
| **4209-4** | 283592 | 1-1/4~2-1/8" | 11.811" | .299" | .240" | .283" |
| **4209-5** | 283593 | 2-1/8~3-1/2" | 11.811" | .299" | .240" | .283" |
| **4209-6** | 283594 | 3-1/2~6" | 11.811" | .299" | .240" | .283" |

## ELECTRONIC RADIUS GAGE



2183




- Resolution .00005"/0.005mm
- Buttons: on/off, hold, inch/mm, s (select jaws), zero
- Measure radius of internal or external arcs
- Display can be rotated by 320º
- Supplied with 5 jaws for different sizes of arc
- Battery CR2032, automatic power off

| Part No. | EDP No. | Range of external radius (R1) | Range of internal radius (R2) | Accuracy (inch) |
|---|---|---|---|---|
| **2183** | 283213 | .2-35.83"/5-910mm | .3-35.83"/7-910mm | ±0.01R* |

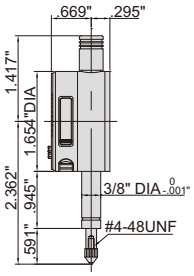
*R is the radius to be measured

## COMPACT ELECTRONIC INDICATORS

SPC

NIST CERTIFICATION

2114-51FE




- Meet ASME B89.1.10M-2001
- 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
- With flat back
- Optional accessory: data output cable (part no. **7306-40, 7302-SPC3A, 7305-SPC1A, 7305-C01**), contact points (page 45)

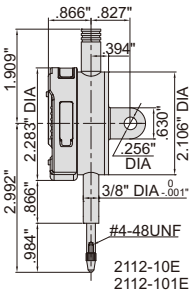
| Part No. | EDP No. | Range | Resolution | Accuracy | Hysteresis |
|---|---|---|---|---|---|
| **2114-5FE** | 877131 | .2"/5mm | .0005"/0.01mm | ±.0015" | .0005" |
| **2114-51FE** | 877130 | .2"/5mm | .00005"/0.001mm | ±.00015" | .00005" |

NIST CERTIFICATION

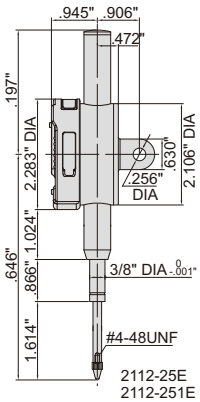
SPC

## PRECISION ELECTRONIC INDICATORS

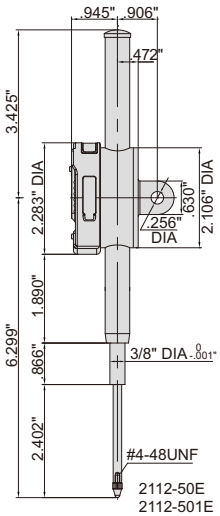
spindle lift knob is included



2112-10E



2112-251E



2112-501E

**Resolution .0005"/0.01mm**

| Part No. | EDP No. | Range | Accuracy | Hysteresis |
|---|---|---|---|---|
| **2112-10E** | 877010 | .5"/12.7mm | ±.0015" | .0005" |
| **2112-25E** | 816393 | 1"/25.4mm | ±.0015" | .0005" |
| **2112-50E** | 816395 | 2"/50.8mm | ±.0015" | .0005" |

**Resolution .00005"/0.001mm**

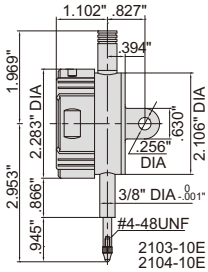
| Part No. | EDP No. | Range | Accuracy | Hysteresis |
|---|---|---|---|---|
| **2112-101E** | 877008 | .5"/12.7mm | ±.00015" | .00005" |
| **2112-251E** | 816392 | 1"/25.4mm | ±.00015" | .00005" |
| **2112-501E** | 816394 | 2"/50.8mm | ±.00015" | .00005" |

- Meet ASME B89.1.10M-2001
- Button function: on/off, inch/mm, zero
- CR2032 battery, automatic power off
- Data output
- With lug back
- Optional accessory: data output cable (part no. **7306-40**, **7302-SPC3A**, **7305-SPC1A, 7305-C01**), backs (page 46), contact points (page 45)

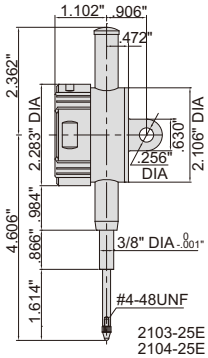
6

NIST CERTIFICATION

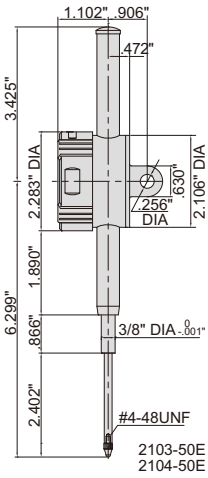
## PRECISION ELECTRONIC INDICATORS



2103-10E



2104-25E



2103-50E

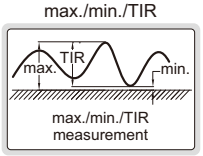
SPC

- Meet ASME B89.1.10M-2001
- Reading in digit and analog
- Display can be rotated by 320º
- Button function: tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (part no. **7306-40, 7302-SPC3A, 7305-SPC1A, 7305-C01**), backs (page 46), contact points (page 45)

analog pointer

spindle lift knob is included

max./min./TIR




warning when over tolerance

**Resolution .00005"/0.001mm**

| Part No. | EDP No. | Range | Accuracy | Hysteresis | Remark |
|---|---|---|---|---|---|
| **2103-10E** | 285053 | .5"/12.7mm | ±.00015" | .00005" | lug back |
| **2103-25E** | 285052 | 1"/25.4mm | ±.00015" | .00005" | lug back |
| **2103-50E** | 285051 | 2"/50.8mm | ±.00015" | .00005" | lug back |

**Resolution .0005"/0.01mm**

| Part No. | EDP No. | Range | Accuracy | Hysteresis | Remark |
|---|---|---|---|---|---|
| **2104-10E** | 877006 | .5"/12.7mm | ±.0015" | .0005" | lug back |
| **2104-25E** | 876700 | 1"/25.4mm | ±.0015" | .0005" | lug back |
| **2104-50E** | 876272 | 2"/50.8mm | ±.0015" | .0005" | lug back |

## BACK PLUNGER TYPE ELECTRONIC INDICATOR

SPC

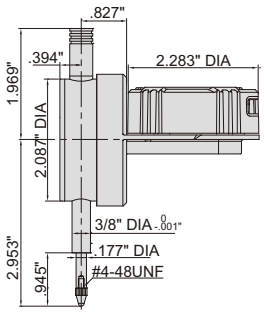
NIST CERTIFICATION

analog pointer

warning when over tolerance

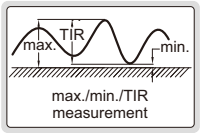
spindle lift knob is included

2118-10E

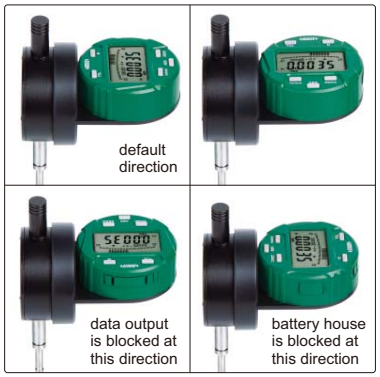



- Display can rotate 320º, display direction is changeable
- Reading in digit and analog
- Meet ASME B89.1.10-2001
- Button function: tolerance Go and No-Go display, data preset, measuring direction change, max./min./TIR measurement, inch/metric conversion, absolute/incremental measurement
- Keep preset data and tolerance data in memory after restart
- CR2032 battery, automatic power off
- Data output
- Optional accessory: data output cable (part no. **7306-40, 7302-SPC3A, 7305-SPC1A, 7305-C01**), backs (page 46), contact points (page 45)

max./min./TIR




display direction is changeable




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

display can rotate 320º

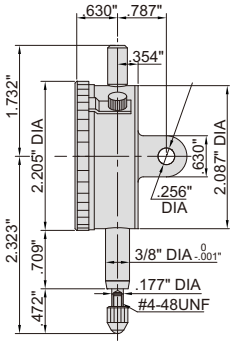
| Part No. | EDP No. | Range | Resolution | Accuracy | Hysteresis | Remark |
|---|---|---|---|---|---|---|
| **2118-10E** | 877132 | .5"/12.7mm | .0005"/0.01mm | ±.0015" | .0005" | flat back |

## PRECISION DIAL INDICATOR

NIST CERTIFICATION

- Meet ASME B89.1.10M-2001
- Shockproof
- Jeweled bearing
- With lug back
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 46), contact points (page 45)

2315-05



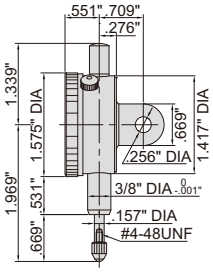

| Part No. | EDP No. | Range | Graduation | Accuracy | | Range/rev | Dial reading |
|---|---|---|---|---|---|---|---|
| | | | | First 2.5 rev | Overall | | |
| **2315-05** | 282719 | .05" | .0001" | ±.0001" | ±.0003" | .01" | 0-100 |

NIST CERTIFICATION

## COMPACT DIAL INDICATORS

- Meet ASME B89.1.10M-2001
- With lug back
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 46), contact points (page 45)

2304-01




| Part No. | EDP No. | Range | Graduation | Accuracy | | Range/rev | Dial reading |
|---|---|---|---|---|---|---|---|
| | | | | First 2.5 rev | Overall | | |
| **2304-01** | 282699 | .1" | .001" | — | ±.001" | .1" | 0-100 |
| **2304-02** | 282700 | .2" | .001" | — | ±.001" | .1" | 0-100 |
| **2304-025** | 282701 | .25" | .001" | ±.001" | ±.001" | .1" | 0-100 |
| **2304-015** | 282702 | .1" | .0005" | — | ±.0005" | .05" | 0-50 |
| **2304-0205** | 282703 | .2" | .0005" | ±.0005" | ±.0015" | .05" | 0-50 |
| **2304-0255** | 282704 | .25" | .0005" | ±.0005" | ±.0015" | .05" | 0-50 |

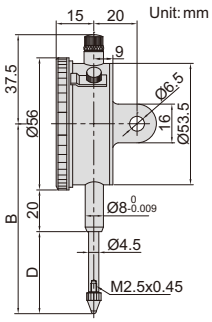
6

NIST CERTIFICATION

## METRIC DIAL INDICATORS (LONG STROKE)

- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 46), contact points (page 45)

2310-30A



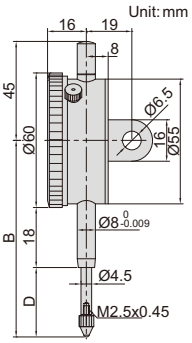

(mm)

| Part No. | EDP No. | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark | B | D |
|---|---|---|---|---|---|---|---|---|---|---|
| **2310-30FA** | 282664 | 30mm | 0.01mm | 35μm | 7μm | 1mm | 0-100 | flat back | 88 | 40 |
| **2310-30A** | 282665 | 30mm | 0.01mm | 35μm | 7μm | 1mm | 0-100 | lug back | 88 | 40 |

## METRIC DIAL INDICATOR (GRADUATION 0.1mm)

- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 46), contact points (page 45)

2318-25




(mm)

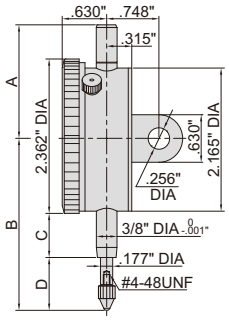
| Part No. | EDP No. | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading | Remark | B | D |
|---|---|---|---|---|---|---|---|---|---|---|
| **2318-25** | 816164 | 25mm | 0.1mm | 60μm | 20μm | 10mm | 0-10 | lug back | 85 | 35 |

## DIAL INDICATORS

NIST CERTIFICATION

- Meet ASME B89.1.10M-2001
- With lug back
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 46), contact points (page 45)

2307-1




| Part No. | EDP No. | Range | Graduation | Accuracy | | Range/rev | Dial reading |
|---|---|---|---|---|---|---|---|
| | | | | First 2.5 rev | Overall | | |
| **2307-025** | 282705 | .25" | .001" | ±.001" | ±.001" | .1" | 0-100 |
| **2307-05** | 816156 | .5" | .001" | ±.001" | ±.002" | .1" | 0-100 |
| **2307-1** | 816158 | 1" | .001" | ±.001" | ±.002" | .1" | 0-100 |
| **2307-2** | 816160 | 2" | .001" | ±.001" | ±.004" | .1" | 0-100 |
| **2307-0255** | 282707 | .25" | .0005" | ±.0005" | ±.0015" | .05" | 0-50 |
| **2307-055** | 282708 | .5" | .0005" | ±.0005" | ±.0015" | .05" | 0-50 |
| **2307-105** | 282709 | 1" | .0005" | ±.0005" | ±.002" | .05" | 0-50 |
| **2307-205** | 282710 | 2" | .0005" | ±.0005" | ±.002" | .05" | 0-50 |

| Range | A | B | C | D |
|---|---|---|---|---|
| .25" | 1.811" | 2.953" | .787" | .984" |
| .5" | 1.811" | 2.953" | .787" | .984" |
| 1" | 1.811" | 3.346" | .787" | 1.378" |
| 2" | 4.370" | 5.472" | 1.969" | 2.323" |

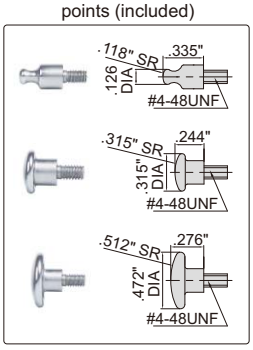
6

## BACK PLUNGER TYPE DIAL INDICATOR

NIST CERTIFICATION

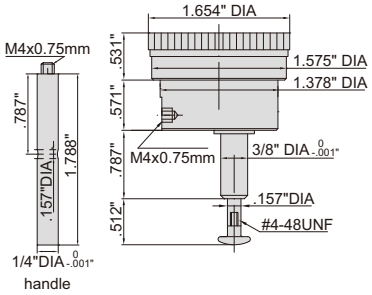
handle can be removed

points (included)




- Supplied with handle
- Optional accessory: contact points (page 45)

2320-02



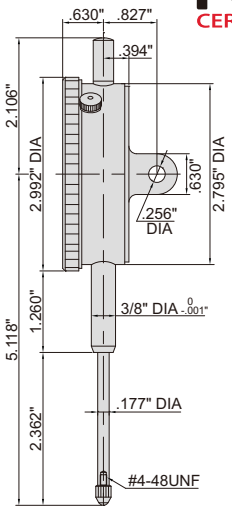

| Part No. | EDP No. | Range | Graduation | Accuracy | Hysteresis | Range/rev | Dial reading |
|---|---|---|---|---|---|---|---|
| **2320-02** | 816371 | .2 " | .001" | ±.001" | .00033" | .1" | 0-100 |

## LARGE FACE DIAL INDICATORS

NIST CERTIFICATION

- Meet ASME B89.1.10M-2001
- With lug back
- Supplied with limit pointers and bezel clamp
- Optional accessory: contact points (page 45)

2312-15




| Part No. | EDP No. | Range | Graduation | Accuracy | | Range/rev | Dial reading |
|---|---|---|---|---|---|---|---|
| | | | | First 2.5 rev | Overall | | |
| **2312-15** * | 282711 | 1.5" | .001" | ±.001" | ±.004" | .1" | 0-100 |
| **2312-2** | 282712 | 2" | .001" | ±.001" | ±.004" | .1" | 0-100 |

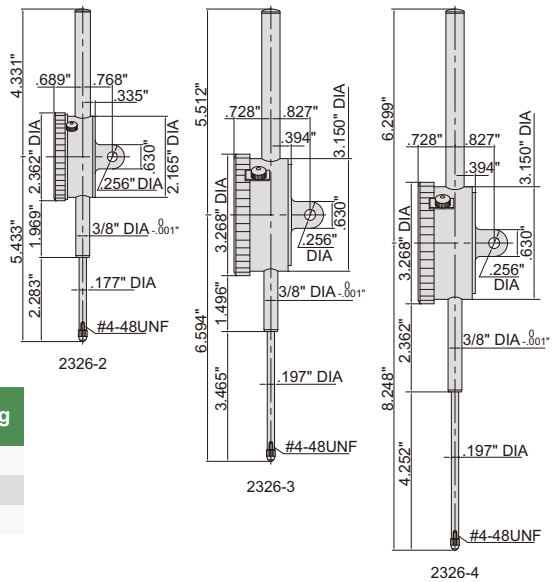
*Supplied with manufacturer inspection certificate traceable to NIST

NIST CERTIFICATION

## LONG STROKE DIAL INDICATORS

2326-2

- Graduation .001"
- With lug back
- Supplied with limit pointers and bezel clamp
- Optional accessory: backs (page 46), contact points (page 45)




| Part No. | EDP No. | Range | Accuracy | | Range/rev | Dial reading |
|---|---|---|---|---|---|---|
| | | | First 2.5 rev | Overall | | |
| **2326-2** | 282715 | 2" | ±.001" | ±.004" | .1" | 0-100 |
| **2326-3** * | 282717 | 3" | ±.001" | ±.005" | .1" | 0-100 |
| **2326-4** * | 282718 | 4" | ±.001" | ±.005" | .1" | 0-100 |

*__2326-3__ and __2326-4__ can only be used vertically

## DIAL INDICATOR ACCESSORIES

### BALL POINT

6282-0102 6282-0304

| Part No. | EDP No. | Material of measuring face |
|---|---|---|
| **6282-0102** | 282737 | carbide |
| **6282-0304** | 282769 | carbide |

### SHELL TYPE POINT

**6282-0201**

| Part No. | EDP No. | Material of measuring face |
|---|---|---|
| **6282-0201** | 282753 | steel |

### FLAT POINT

**6282-1207**

| Part No. | EDP No. | Material of measuring face |
|---|---|---|
| **6282-1207** | 282795 | steel |

### SPHERICAL POINT

**6282-0402**

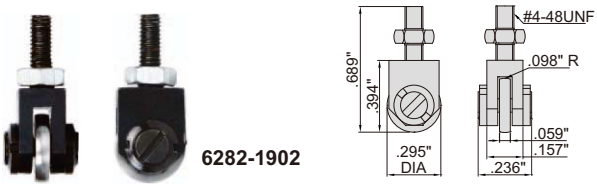
| Part No. | EDP No. | Material of measuring face |
|---|---|---|
| **6282-0402** | 282764 | steel |

### CONICAL POINT

**6282-0702**

| Part No. | EDP No. | Material of measuring face |
|---|---|---|
| **6282-0702** | 282778 | steel |

### ROLLER POINT

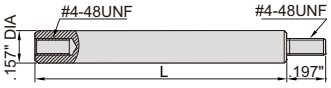



**6282-1902**

| Part No. | EDP No. | Material of measuring face |
|---|---|---|
| **6282-1902** | 282827 | steel |

## EXTENSION RODS

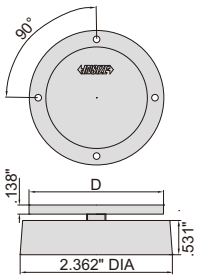
| Part No. | EDPNo. | Material | L |
|---|---|---|---|
| **6282-2018** | 282823 | steel | 1" |
| **6282-2019** | 282824 | steel | 2" |
| **6282-2020** | 282825 | steel | 4" |



**6282-2018**

## MAGNETIC BACKS

| Part No. | EDP No. | D (DIA) | For electronic/ dial indicators |
|---|---|---|---|
| 7331-M1 | 877211 | 2.028" | 2103 |
| | | | 2104 |
| | | | 2109 |
| | | | 2112 |
| | | | 2113 |
| | | | 2115 |
| | | | 2117 |
| | | | 2118 |
| 7331-M2 | 877212 | 2.126" | 2307 |



front

back

7331-M2

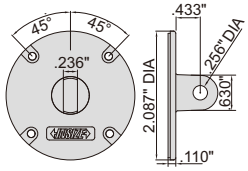
6

## LUG BACKS

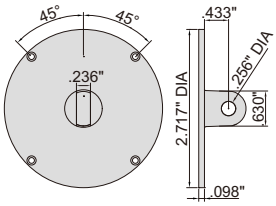
| Part No. | EDP No. | For electronic/ dial indicators |
|---|---|---|
| 7330-L2 | 282850 | 2324 |
| | | 2315 |
| 7330-L3 | 282851 | 2326-3 |
| | | 2326-4 |
| 7330-L4 | 816645 | 2304 |
| 7330-L5 | 816431 | 2103 |
| | | 2104 |
| | | 2109 |
| | | 2112 |
| | | 2113 |
| | | 2115 |
| | | 2117 |
| | | 2118 |
| 7330-L6 | 877058 | 2307 |
| | | 2326-2 |
| 7330-L7 | 816646 | 2837 |
| 7330-L8 | 816647 | 2832 |

7330-L2

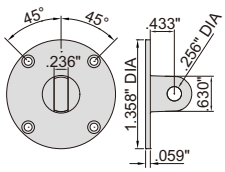
7330-L8



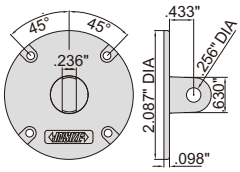

7330-L2



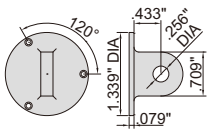

7330-L3



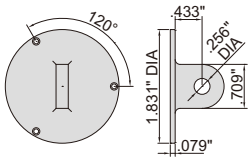

7330-L4



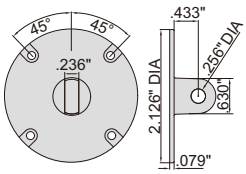

7330-L5




7330-L8




7330-L7



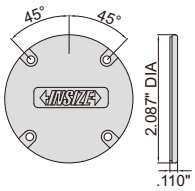

7330-L6

## FLAT BACKS

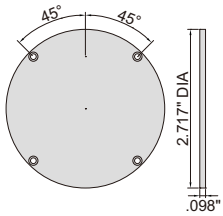
| Part No. | EDP No. | For electronic/ dial indicators |
|---|---|---|
| 7330-F1 | 282852 | 2311 |
| 7330-F2 | 282853 | 2324 |
| | | 2315 |
| 7330-F3 | 282854 | 2326-3 |
| | | 2326-4 |
| 7330-F4 | 889333 | 2304 |
| 7330-F5 | 877054 | 2103 |
| | | 2104 |
| | | 2109 |
| | | 2112 |
| | | 2113 |
| | | 2115 |
| | | 2117 |
| | | 2118 |
| 7330-F6 | 877056 | 2307 |
| | | 2326-2 |
| 7330-F7 | 816648 | 2837 |
| 7330-F8 | 816649 | 2832 |

7330-F8

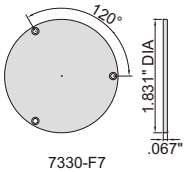
7330-F2



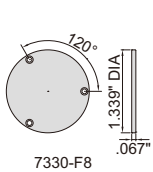

7330-F2



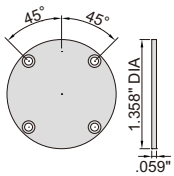

7330-F3



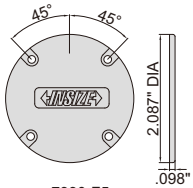

7330-F7



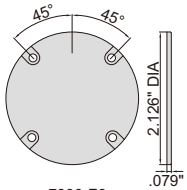

7330-F8




7330-F4




7330-F5



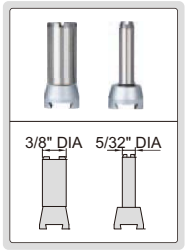

7330-F6

## DIAL TEST INDICATORS

NIST CERTIFICATION

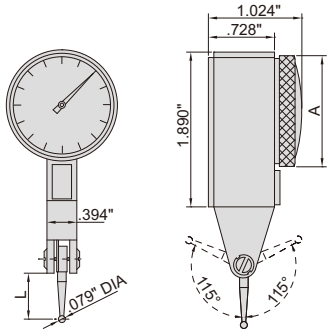
2380-31

clamp (included)




- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: 5/32" DIA and 3/8" DIA
- Optional accessory: styli (page 49)

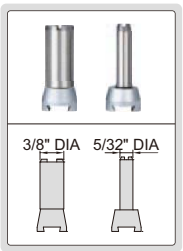
| Part No. | EDP No. | Range | Graduation | Accuracy | Dial reading | A | L |
|---|---|---|---|---|---|---|---|
| **2380-31** | 282858 | .03" | .001" | ±.001" | 0-15-0 | 1.181" DIA | .50" |
| **2380-35** | 816170 | .03" | .0005" | ±.0005" | 0-15-0 | 1.181" DIA | .50" |
| **2380-301** | 816172 | .008" | .0001" | ±.0001" | 0-40-0 | 1.181" DIA | .563" |
| **2381-31** | 282859 | .03" | .001" | ±.001" | 0-15-0 | 1.457" DIA | .50" |
| **2381-35** | 282860 | .03" | .0005" | ±.0005" | 0-15-0 | 1.457" DIA | .50" |
| **2381-301** | 282861 | .008" | .0001" | ±.0001" | 0-40-0 | 1.457" DIA | .563" |




## BACK PLUNGER TYPE DIAL TEST INDICATOR

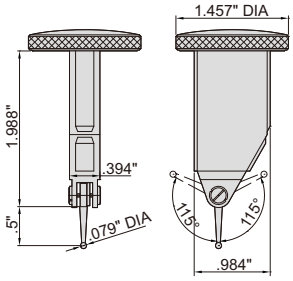
NIST CERTIFICATION

clamp (included)



2398-03

- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: 5/32" DIA and 3/8" DIA
- Optional accessory: styli (page 49)



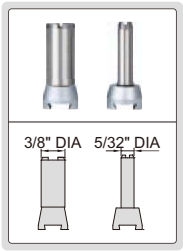

| Part No. | EDP No. | Range | Graduation | Accuracy | Dial reading |
|---|---|---|---|---|---|
| **2398-03** | 877156 | .03" | .0005" | ±.0005" | 0-15-0 |

## TILTED FACE TYPE DIAL TEST INDICATOR

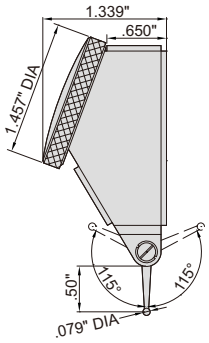
NIST CERTIFICATION

2399-03

clamp (included)




- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: 5/32" DIA and 3/8" DIA
- Optional accessory: styli (page 49)




| Part No. | EDP No. | Range | Graduation | Accuracy | Dial reading |
|---|---|---|---|---|---|
| **2399-03** | 877157 | .03" | .0005" | ±.0005" | 0-15-0 |

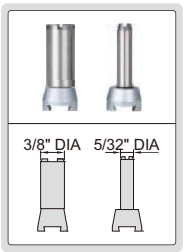
## LONG STYLI DIAL TEST INDICATOR

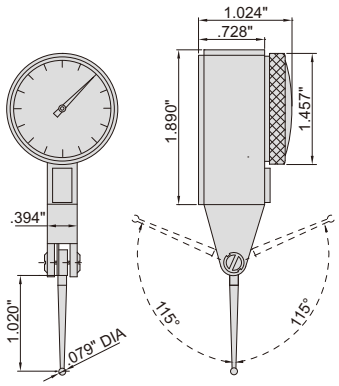
NIST CERTIFICATION

2383-35A

- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: 5/32" DIA and 3/8" DIA
- Optional accessory: styli (page 49)

clamp (included)




| Part No. | EDP No. | Range | Graduation | Accuracy | Dial reading |
|---|---|---|---|---|---|
| **2383-35A** | 816372 | .03" | .0005" | ±.0005" | 0-15-0 |

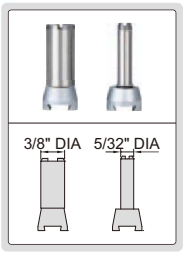
## LONG RANGE DIAL TEST INDICATOR

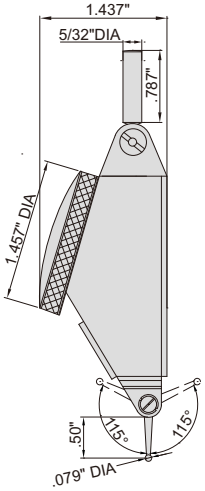
NIST CERTIFICATION

2386-006A

- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: 5/32" DIA and 3/8" DIA
- Optional accessory: styli (page 49)

clamp (included)



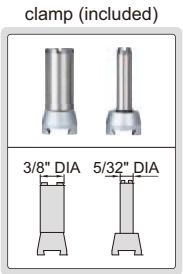

| Part No. | EDP No. | Range | Graduation | Accuracy | Dial reading |
|---|---|---|---|---|---|
| **2386-006A** | 816174 | .06" | .0005" | ±.0008" | 0-15-0 |

## LARGE RANGE BACK PLUNGER TYPE DIAL TEST INDICATOR

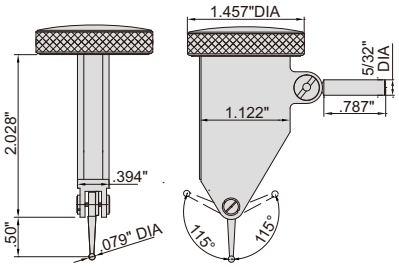
NIST CERTIFICATION

- Jeweled bearing
- Carbide contact point
- Two measuring directions
- Anti magnetic body
- Supplied with two clamps: 5/32" DIA and 3/8" DIA
- Optional accessory: styli (page 49)

clamp (included)



2480-06

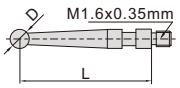



| Part No. | EDP No. | Range | Graduation | Accuracy | Dial reading |
|---|---|---|---|---|---|
| **2480-06** | 877158 | .06" | .0005" | ±.0008" | 0-15-0 |

## CONTACT POINTS FOR DIAL TEST INDICATORS

| Part No. | EDP No. | For dial test indicator | Material of contact point | L | D |
|---|---|---|---|---|---|
| **6284-9** | 876268 | 2380-31,2380-35, 2381-31, 2381-35, 2398-03, 2399-03 | steel | .50" | .039" DIA |
| **6284-10** | 285265 | | carbide | .50" | .079" DIA |
| **6284-11** | 816409 | | ruby | .50" | .079" DIA |
| **6284-12** | 816410 | | carbide | .50" | .118" DIA |
| **6284-13** | 816411 | 2380-301, 2381-301 | steel | .563" | .039" DIA |
| **6284-14** | 816412 | | carbide | .563" | .079" DIA |
| **6284-15** | 816413 | | ruby | .563" | .079" DIA |
| **6284-16** | 816414 | | carbide | .563" | .118" DIA |
| **6284-17** | 816373 | 2383-35A | steel | 1.020" | .039" DIA |
| **6284-18** | 816374 | | carbide | 1.020" | .079" DIA |
| **6284-19** | 816375 | | ruby | 1.020" | .079" DIA |
| **6284-20** | 816376 | | carbide | 1.020" | .118" DIA |
| **6284-65** | 816377 | 2386-006A, 2480-06 | steel | .50" | .039" DIA |
| **6284-66** | 816378 | | carbide | .50" | .079" DIA |
| **6284-67** | 816379 | | ruby | .50" | .079" DIA |
| **6284-68** | 816380 | | carbide | .50" | .118" DIA |

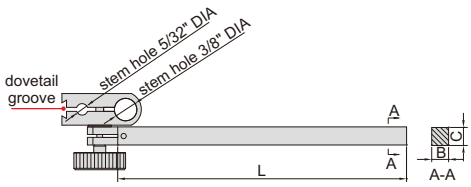
**6284-10**




## DIAL TEST INDICATOR HOLDERS

**6293-7**

**6293-3**



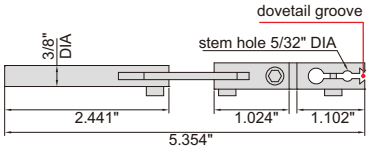

| Part No. | EDP No. | Stem section (BxC) | Stem length (L) |
|---|---|---|---|
| **6293-7** | 816416 | .354x.354" | 2" |
| **6293-3** | 282878 | .25x.5" | 4" |

## DIAL TEST INDICATOR HOLDER

- Supplied with hex key

| Part No. | EDP No. |
|---|---|
| **6296-2** | 877030 |

**6296-2**

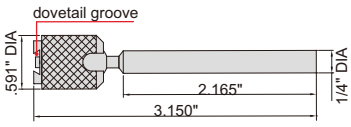


## DIAL TEST INDICATOR UNIVERSAL HOLDER

- Set the indicators at the desired attitude to the workpiece

| Part No. | EDP No. |
|---|---|
| **6293-5** | 282880 |

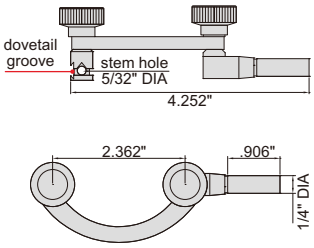
**6293-5**



## DIAL TEST INDICATOR CENTERING HOLDER

- Center cylinders or holes on machine tools

6291-2



| Part No. | EDP No. |
|---|---|
| 6291-2 | 282875 |

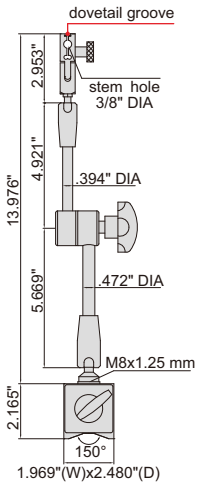


## UNIVERSAL MAGNETIC STAND (LIGHT DUTY)

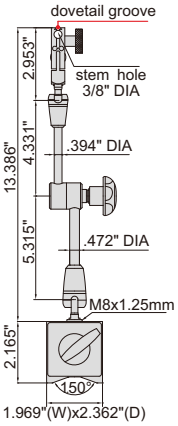
- For electronic/dial indicators and dial test indicators

| Part No. | EDP No. | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|---|
| 6208-80E | 816256 | 176lbf | 3/8" DIA | with fine adjustment and dovetail groove |

6208-80E




## UNIVERSAL MAGNETIC STAND




6210-80E

6210-80E

- For electronic/dial indicators and dial test indicators

| Part No. | EDP No. | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|---|
| 6210-80E | 877028 | 176lbf | 3/8" DIA | with fine adjustment and dovetail groove |

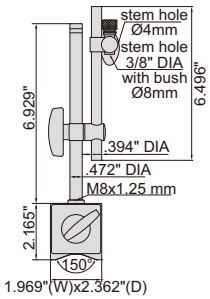
## MAGNETIC STANDS

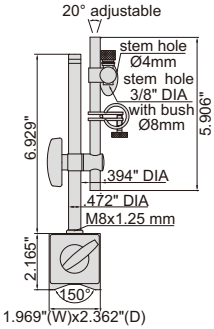
6200-60

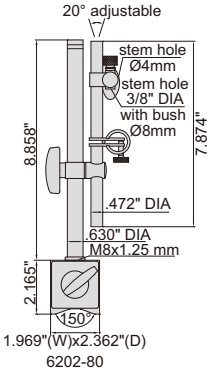
6201-60

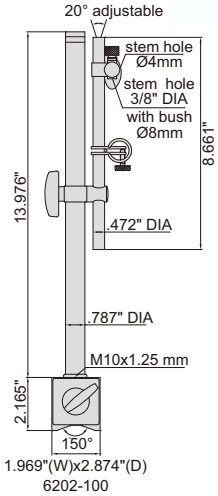
6202-80

6202-100



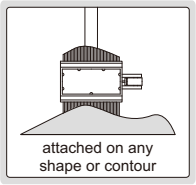




- For electronic/dial indicators and dial test indicators

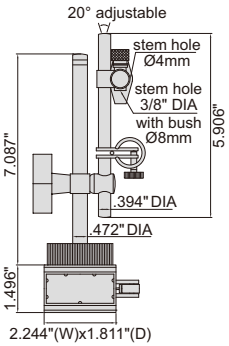
| Part No. | EDP No. | Magnetic force | Applicable holding stem | Remark |
|---|---|---|---|---|
| **6200-60** | 816250 | 132lbf | 3/8" DIA, Ø8mm, Ø4mm | without fine adjustment |
| **6201-60** | 816252 | 132lbf | 3/8" DIA, Ø8mm, Ø4mm | with fine adjustment |
| **6202-80** | 282886 | 176lbf | 3/8" DIA, Ø8mm, Ø4mm | with fine adjustment |
| **6202-100** | 816254 | 220lbf | 3/8" DIA, Ø8mm, Ø4mm | with fine adjustment |

## MAGNETIC STAND FOR UNEVEN SURFACE

- For electronic/dial indicators and dial test indicators
- With fine adjustment



6215-60



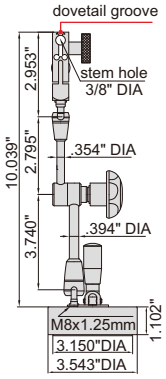

| Part No. | EDP No. | Magnetic force | Applicable holding stem |
|---|---|---|---|
| **6215-60** | 282893 | 132lbf | 3/8" DIA, Ø8mm, Ø4mm |

## VACUUM STAND

- Suitable for granite surface plates or cast iron surface plates
- For electronic/dial indicators and dial test indicators

| Part No. | EDP No. | Diameter of vacuum disc | Vacuum force | Applicable holding stem | Remark |
|---|---|---|---|---|---|
| **6217-BE** | 877190 | 3.150" DIA | 176lbf | 3/8" DIA | with fine adjustment and dovetail groove |

**6217-BE**



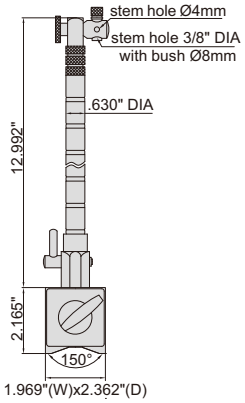

6

## FLEX ARM MAGNETIC STAND

- For dial test indicators

| Part No. | EDP No. | Magnetic force | Applicable holding stem |
|---|---|---|---|
| **6207-80A** | 282892 | 176lbf | 3/8" DIA, Ø8mm, Ø4mm |

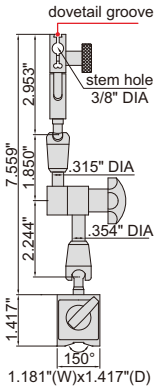
**6207-80A**




## MINI MAGNETIC STAND

- For dial test indicators
- With fine adjustment and dovetail groove

| Part No. | EDP No. | Magnetic force | Applicable holding stem |
|---|---|---|---|
| **6224-40E** | 816650 | 88lbf | 3/8" DIA |

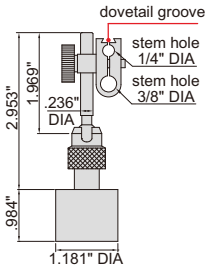


**6224-40E**

## MINI MAGNETIC STAND

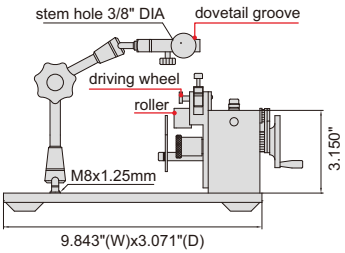
- For dial test indicators
- With dovetail groove

| Part No. | EDP No. | Magnetic force | Applicable holding stem |
|---|---|---|---|
| **6211-10E** | 877189 | 22lbf | 1/4" DIA, 3/8" DIA |



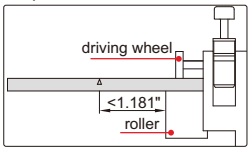
**6211-10E**

## CONCENTRICITY GAGE




- Accuracy .00008"
- Optional accessory: dial test indicator, mini magnetic stand (part no. **6224-40E**)

distance between measuring point and roller <1.181"



| Part No. | EDP No. | Applicable diameter |
|---|---|---|
| **4789-1E** | 877169 | .138" DIA~.984" DIA |

## SPC KEYBOARD OUTPUT CABLES

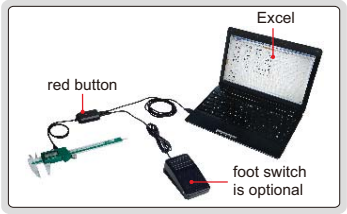
VIDEO

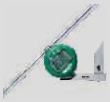
**7302-SPC3A**

**7304-2**

**7302-HUB**

without software, data can be input as keyboard signal to Excel, Word, etc.




| Part No. | EDP No. | Description | Plug to product | Socket on product | Plug to computer | Applicable products |
|---|---|---|---|---|---|---|
| **7302-SPC5A** | 816385 | cable for electronic calipers (length 100") | | | USB | for electronic calipers for electronic depth gages for electronic height gages |
| **7302-SPC6** | 877207 | cable for electronic micrometers (length 100") | | | | for electronic micrometers for electronic three points internal micrometers  |
| **7302-SPC3A** | 877042 | cable for electronic indicators (length 100") | | | | for electronic indicators  for electronic protractors |
| **7304-2** | 877046 | foot switch with cable (length 60") | | | | |
| **7302-HUB** | 877261 | HUB converter (length 12", four USB ports to computer) | | | | |

# MEASURING DATA MANAGEMENT SOFTWARE

VIDEO

**DATABASE COMPUTER**
1. Make measurement program of inspection computers (set the dimension and tolerance to be measured of each inspection computer)
2. Receive data from inspection computers and make statistics

INSPECTION COMPUTER

send program
send data

send program
send data

INSPECTION COMPUTER

send program
send data

send program
send data

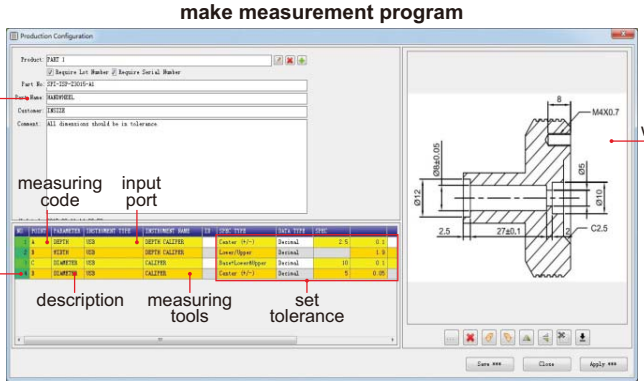
INSPECTION COMPUTER

**INSPECTION COMPUTER**
1. Inspection computers are connected with database computer by wire or wireless LAN (Local Area Network). Maximum 128 inspection computers can be connected with one database computer.
2. Measuring tools are connected by data output cable or wireless data transfer system to USB port of inspection computers. Several measuring tools can be connected to one inspection computer.

## SOFTWARE FOR DATABASE COMPUTER PART NO. 7311-1

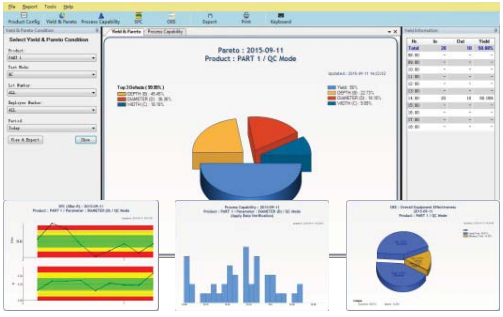
| Part No. | EDP No. |
|---|---|
| 7311-1 | 877209 |

### make measurement program



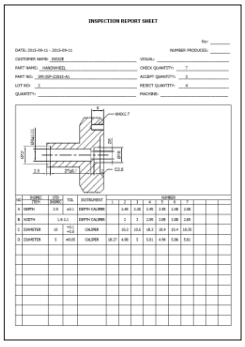

Make measurement program for each one inspection computer.
Maximum 200 dimensions can be measured by one inspection computer.

### make data statistics



process control analysis | CPK analysis | overall equipment effectiveness analysis

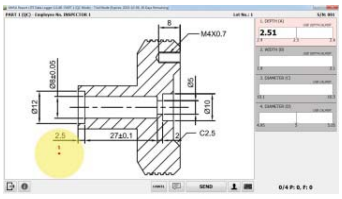
### report



## SOFTWARE FOR INSPECTION COMPUTER PART NO. 7311-2

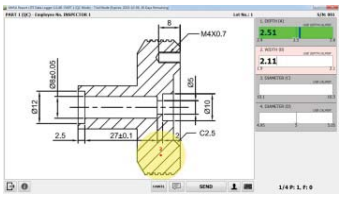
| Part No. | EDP No. |
|---|---|
| 7311-2 | 877210 |

**step 1**



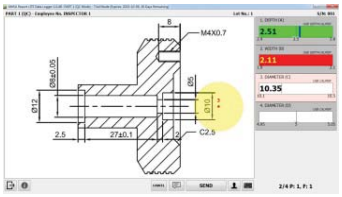
Measure the 1st dimension by following the yellow position indication.

**step 2**



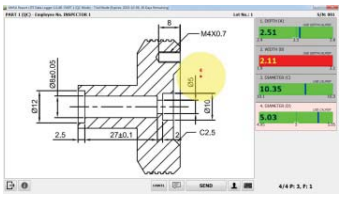
Measure the 2nd dimension by following the yellow position indication.
The 1st data will be shown in red or green according its tolerance.

**step 3**



Measure the 3rd dimension by following the yellow position indication.
The 2nd data will be shown in red or green according its tolerance.

**step 4**

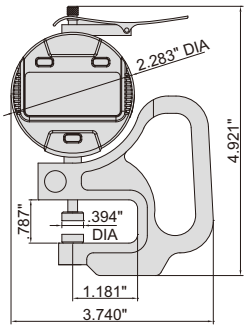


Measure the 4th dimension by following the yellow position indication.
The 3rd data will be shown in red or green according its tolerance.
The data of four measurements will be sent to the database computer.

## ELECTRONIC THICKNESS GAGES

SPC

- Ceramic spindle tip and anvil
- Buttons: on/off, zero, inch/mm
- Battery CR2032, automatic power off
- Data output
- Optional accessory: data output cable (part no. **7306-40, 7302-SPC3A, 7305-SPC1A, 7305-C01**)

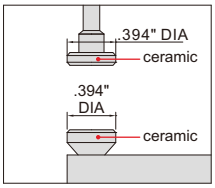


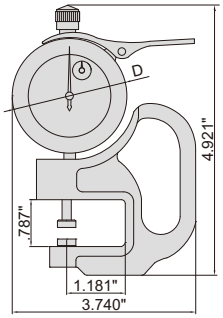
**2871-101**

| Part No. | EDP No. | Range | Resolution | Accuracy |
|---|---|---|---|---|
| **2871-10** | 877162 | 0-.4"/0-10mm | .0005"/0.01mm | ±.0008" |
| **2871-101** | 877163 | 0-.4"/0-10mm | .00005"/0.001mm | ±.0002" |

8

## THICKNESS GAGE



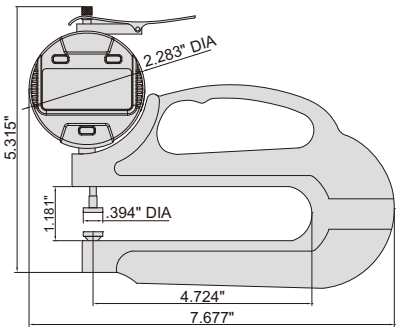
**2364-055**

| Part No. | EDP No. | Range | Graduation | Accuracy | D |
|---|---|---|---|---|---|
| **2364-055** | 876312 | 0-.5" | .0005" | ±.0008" | 2.283" DIA |

## ELECTRONIC THICKNESS GAGE

SPC

- Ceramic spindle tip and anvil
- Buttons: on/off, zero, inch/mm
- Battery CR2032
- Automatic power off
- Data output
- Optional accessory: data output cable (part no. **7306-40**, **7302-SPC3A**, **7305-SPC1A, 7305-C01**)



**2872-10**

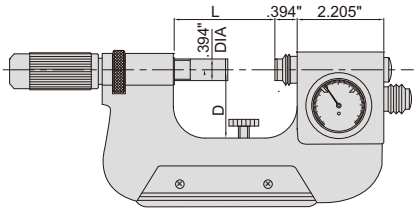
| Part No. | EDP No. | Range | Resolution | Accuracy |
|---|---|---|---|---|
| **2872-10** | 877164 | 0-.4"/0-10mm | .0005"/0.01mm | ±.0008" |

## DIAL SNAP GAGE

IP54

- Go/No-Go judgement for mass production
- Dial indicator: range ±.0015", graduation .00005", accuracy .00004"
- IP54 dust/coolant proof
- Measuring force: 1.125-2.25lbf
- Carbide measuring faces
- Supplied with setting standard

3334-4



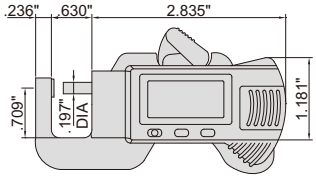

| Part No. | EDP No. | Range | L | D |
|---|---|---|---|---|
| **3334-4** | 281839 | 3-4" | 4.075" | 2.362" |

## ELECTRONIC SNAP GAGE

SPC

- Optional accessory: data output cable (part no. **7306-20, 7302-SPC1A/SPC1B, 7305-SPC2**)

2166-12




| Part No. | EDP No. | Range | Resolution | Accuracy |
|---|---|---|---|---|
| **2166-12** | 283197 | 0-.5"/0-12mm | .0005"/0.01mm | ±.0012" |

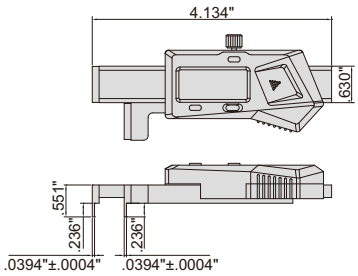
## STEP AND GAP GAGE

SPC

front

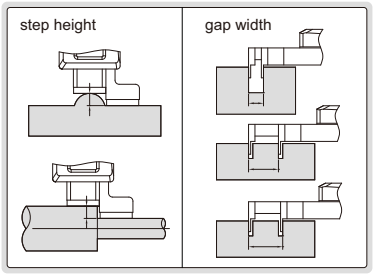
back

2168-12




- Measure step height and gap width
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Supplied with zero setting block
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

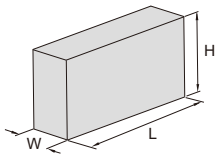
zero setting block (included)




| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **2168-12** | 877152 | 0-.5"/0-12.7mm | ±.0012" |

## STEEL GAGE BLOCK SETS

INSPECTION CERTIFICATE




**Dimension:**

| Size (L) | W | H |
|---|---|---|
| .02≤L≤.394" | .354" | 1.181" |
| L>.394" | .354" | 1.378" |

| Blocks per set | Gage blocks included in set | | | Grade 0 | | Grade AS-2 | |
|---|---|---|---|---|---|---|---|
| | Size (inch) | Step (inch) | Quantity | Part No. | EDP No. | Part No. | EDP No. |
| 36 | .05 | | 1 | **4102-36** | 283257 | **4102-236** | 283259 |
| | .1001-.1009 | .0001 | 9 | | | | |
| | .101-.109 | .001 | 9 | | | | |
| | .11-.19 | .01 | 9 | | | | |
| | .1-.5 | .1 | 5 | | | | |
| | 1 | | 1 | | | | |
| | 2 | | 1 | | | | |
| | 4 | | 1 | | | | |
| 81 | .1001-.1009 | .0001 | 9 | **4102-81** | 283260 | **4102-281** | 283262 |
| | .101-.149 | .001 | 49 | | | | |
| | .05-.95 | .05 | 19 | | | | |
| | 1-4 | 1 | 4 | | | | |

**4102-81**

- Made of alloy steel
- Meet ASME B89.1.9
- Supplied with manufacturer inspection certificate



## METRIC THREAD PLUG GAGES

INSPECTION CERTIFICATE

- Supplied with Go and No-Go end
- Class 6H
- Standard ISO1502

**4130-10**

(mm)

| Part No. | EDP No. | Size |
|---|---|---|
| **4130-2** | 284053 | M2x0.4 |
| **4130-2D2** | 284054 | M2.2x0.45 |
| **4130-2D5** | 284055 | M2.5x0.45 |
| **4130-3** | 284056 | M3x0.5 |
| **4130-3D5** | 284057 | M3.5x0.6 |
| **4130-4** | 284058 | M4x0.7 |
| **4130-5** | 284059 | M5x0.8 |
| **4130-6** | 284060 | M6x1 |

(mm)

| Part No. | EDP No. | Size |
|---|---|---|
| **4130-7** | 816680 | M7x1 |
| **4130-8** | 284061 | M8x1.25 |
| **4130-9** | 816681 | M9x1.25 |
| **4130-10** | 284062 | M10x1.5 |
| **4130-11** | 816682 | M11x1.5 |
| **4130-12** | 284063 | M12x1.75 |
| **4130-14** | 284064 | M14x2 |
| **4130-16** | 284065 | M16x2 |

(mm)

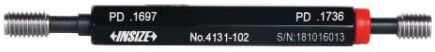
| Part No. | EDP No. | Size |
|---|---|---|
| **4130-18** | 284066 | M18x2.5 |
| **4130-20** | 284067 | M20x2.5 |
| **4130-22** | 284068 | M22x2.5 |
| **4130-24** | 284069 | M24x3 |
| **4130-27** | 284070 | M27x3 |
| **4130-30** | 284071 | M30x3.5 |
| **4130-33** | 284072 | M33x3.5 |
| **4130-36** | 284073 | M36x4 |

(mm)

| Part No. | EDP No. | Size |
|---|---|---|
| **4130-39** | 284074 | M39x4 |
| **4130-42** | 284075 | M42x4.5 |
| **4130-45** | 284076 | M45x4.5 |
| **4130-48** | 284077 | M48x5 |
| **4130-52** | 284078 | M52x5 |
| **4130-56** | 284079 | M56x5.5 |
| **4130-60** | 284080 | M60x5.5 |

## AMERICAN STANDARD THREAD PLUG GAGES

INSPECTION CERTIFICATE




**4131-102**

- Supplied with Go and No-Go end
- Class 2B
- Standard ANSI B1.2

| Part No. | EDP No. | Size |
|---|---|---|
| **4131-41** | 816651 | 4-40UNC |
| **4131-61** | 816652 | 6-32UNC |
| **4131-81** | 816653 | 8-32UNC |
| **4131-102** | 816654 | 10-32UNF |
| **4131-1B1** | 816655 | 1/4-20UNC |
| **4131-1B2** | 816656 | 1/4-28UNF |
| **4131-5D1** | 816657 | 5/16-18UNC |
| **4131-5D2** | 816658 | 5/16-24UNF |
| **4131-3C1** | 816659 | 3/8-16UNC |

| Part No. | EDP No. | Size |
|---|---|---|
| **4131-1A2** | 816663 | 1/2-20UNF |
| **4131-9D2** | 816664 | 9/16-18UNF |
| **4131-5C1** | 816665 | 5/8-11UNC |
| **4131-5C2** | 816666 | 5/8-18UNF |
| **4131-3B1** | 816667 | 3/4-10UNC |
| **4131-3B2** | 816668 | 3/4-16UNF |
| **4131-3C2** | 816660 | 3/8-24UNF |
| **4131-7D2** | 816661 | 7/16-20UNF |
| **4131-1A1** | 816662 | 1/2-13UNC |

## NPT THREAD PLUG GAGES

INSPECTION CERTIFICATE

4644-1B18

- American tapered pipe thread for threads with sealant
- Standard ANSI/ASME B1.20.1
- Taper 1:16
- Material: OHNS (Oil Hardened Non-shrinking Steel), stable dimension and wear resistance
- Hardness HRC60-62

| Part No. | EDP No. | Size |
|---|---|---|
| **4644-3B14** | 816674 | ¾-14NPT |
| **4644-112** | 816675 | 1-11.5NPT |
| **4644-1G12** | 816676 | 1 ¼-11.5NPT |
| **4644-1H12** | 816677 | 1 ½-11.5NPT |
| **4644-212** | 816678 | 2-11.5NPT |
| **4644-1J8** | 816679 | 2 ½-8NPT |

| Part No. | EDP No. | Size |
|---|---|---|
| **4644-1D27** | 816669 | 1/16-27NPT |
| **4644-1C27** | 816670 | ⅛-27NPT |
| **4644-1B18** | 816671 | ¼-18NPT |
| **4644-3C18** | 816672 | ⅜-18NPT |
| **4644-1A14** | 816673 | ½-14NPT |

## AMERICAN STANDARD THREAD RING GAGES

INSPECTION CERTIFICATE

9

10

| Part No. (GO) | EDP No. | Part No. (NOGO) | EDP No. | Size |
|---|---|---|---|---|
| **4121-41** | 284272 | **4121-41N** | 284340 | 4-40UNC |
| **4121-61** | 284276 | **4121-61N** | 284344 | 6-32UNC |
| **4121-81** | 284278 | **4121-81N** | 284346 | 8-32UNC |
| **4121-102** | 284281 | **4121-102N** | 284349 | 10-32UNF |
| **4121-1B1** | 284285 | **4121-1B1N** | 284353 | 1/4-20UNC |
| **4121-1B2** | 284286 | **4121-1B2N** | 284354 | 1/4-28UNF |
| **4121-5D1** | 284288 | **4121-5D1N** | 284356 | 5/16-18UNC |
| **4121-5D2** | 284289 | **4121-5D2N** | 284357 | 5/16-24UNF |
| **4121-3C1** | 284291 | **4121-3C1N** | 284359 | 3/8-16UNC |

| Part No. (GO) | EDP No. | Part No. (NOGO) | EDP No. | Size |
|---|---|---|---|---|
| **4121-3C2** | 284292 | **4121-3C2N** | 284360 | 3/8-24UNF |
| **4121-7D2** | 284295 | **4121-7D2N** | 284363 | 7/16-20UNF |
| **4121-1A1** | 284297 | **4121-1A1N** | 284365 | 1/2-13UNC |
| **4121-1A2** | 284298 | **4121-1A2N** | 284366 | 1/2-20UNF |
| **4121-9D2** | 284301 | **4121-9D2N** | 284369 | 9/16-18UNF |
| **4121-5C1** | 284303 | **4121-5C1N** | 284371 | 5/8-11UNC |
| **4121-5C2** | 284304 | **4121-5C2N** | 284372 | 5/8-18UNF |
| **4121-3B1** | 284307 | **4121-3B1N** | 284375 | 3/4-10UNC |
| **4121-3B2** | 284308 | **4121-3B2N** | 284376 | 3/4-16UNF |

front

back

4121-1B1N

front

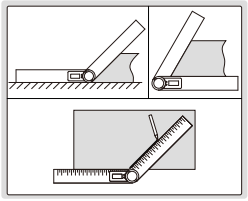
back

4121-1B1

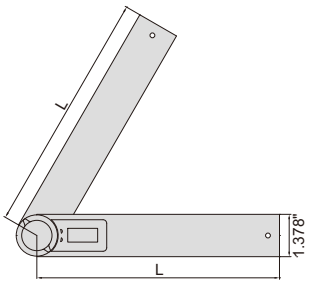
- Class 2A
- Standard ANSI B1.2

## ELECTRONIC 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

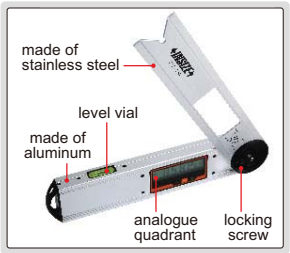


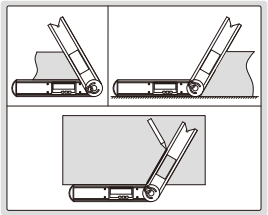
2176-300

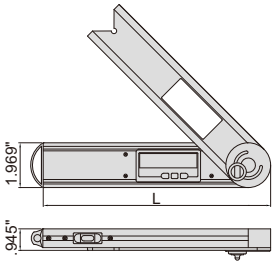



| Part No. | EDP No. | Size (L) | Range | Resolution | Accuracy |
|---|---|---|---|---|---|
| **2176-200** | 877018 | 8" | 0-360° | 0.1° | ±0.3° |
| **2176-300** | 877107 | 12" | 0-360° | 0.1° | ±0.3° |

## ELECTRONIC PROTRACTOR






**2171-250**

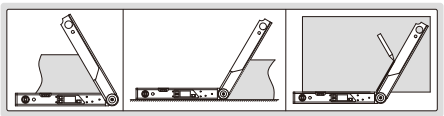
- Buttons: on/off, hold (keep the reading), zero, ABS (absolute and incremental measurement)
- Fix the locking screw at 4 positions for different measuring ranges: 0°~225°, -225°~0°, -45°~180°, -180°~45°
- Remove the locking screw for 360° range
- With level vial
- Battery CR2032, automatic power off

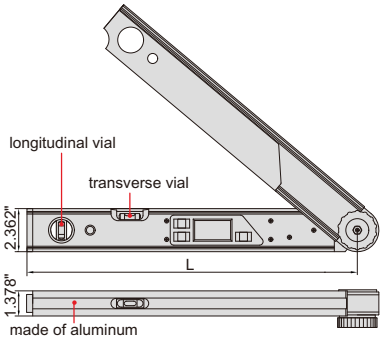
| Part No. | EDP No. | Size (L) | Range | Resolution | Accuracy |
|---|---|---|---|---|---|
| **2171-250** | 877106 | 10" | 0-360° | 0.05° | ±0.15° |

IP54

## COOLANT PROOF ELECTRONIC PROTRACTOR (HEAVY DUTY)

10



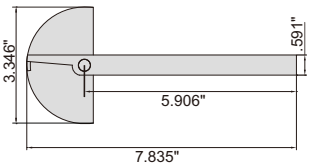



**2174-225**

- Suitable for setting horizontal and vertical mitre angles of cutting machine
- Buttons: ON/OFF, HOLD/SUP, SPR/CNR/MTR/BVL
- IP54 dust/coolant proof
- With transverse and longitudinal vials
- 2xAAA batteries
- Automatic backlight
- Absolute level, zero setting is not needed when batteries are replaced
- Backlight turns off in one minute after no data changing, automatic power off in 5 minutes

| Part No. | EDP No. | Size (L) | Range | Resolution | Accuracy |
|---|---|---|---|---|---|
| **2174-225** | 877153 | 18.11" | 0-225° | 0.05° | ±0.10° |

## PROTRACTOR



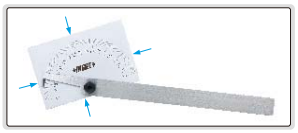

**4780-85**

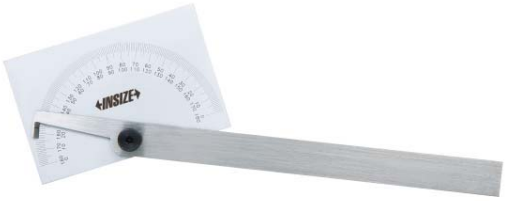
- Made of stainless steel
- Satin chrome plated scale
- With clamping screw

| Part No. | EDP No. | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **4780-85** | 283328 | 0-180° | 1° | ±0.3° |

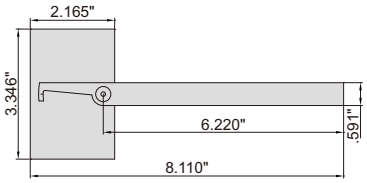
## PROTRACTOR

4 working edges





4781-85



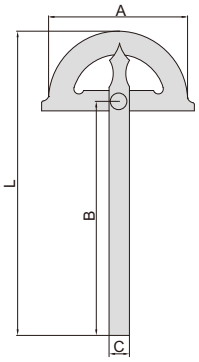

- Made of stainless steel
- Satin chrome plated scale
- With clamping screw

| Part No. | EDP No. | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **4781-85** | 877168 | 0-180° | 1° | ±0.3° |

## PROTRACTORS

- Graduation: 1°
- Made of stainless steel (**4799-1300** is made of carbon steel)
- Satin chrome plated scale
- With clamping screw

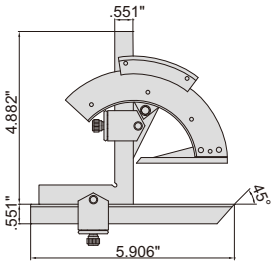
4799-180



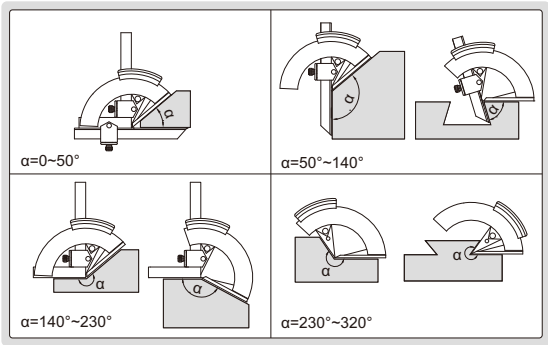

| Part No. | EDP No. | Size (AxB) | Range | Accuracy | L | C |
|---|---|---|---|---|---|---|
| **4799-180** | 283329 | 3.1x4.7" | 0-180° | ±0.3° | 6.614" | . 433" |
| **4799-1120** | 283330 | 4.7x5.9" | 0-180° | ±0.3° | 8.661" | .551" |
| **4799-1150** | 283331 | 5.9x7.9" | 0-180° | ±0.3° | 11.220" | .630" |
| **4799-1200** | 283332 | 7.9x11.8" | 0-180° | ±0.3° | 16.260" | .787" |
| **4799-1300** | 283333 | 11.8x19.7" | 0-180° | ±0.3° | 26.575" | 1.181" |

10

## PROTRACTOR



2374-320

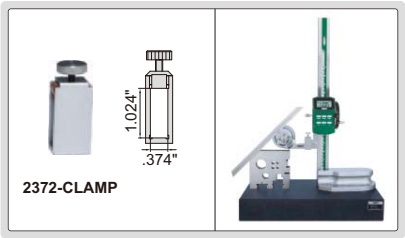


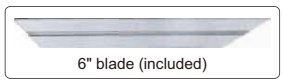

- Made of stainless steel
- Satin chrome plated scale

| Part No. | EDP No. | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **2374-320** | 283340 | 0-320° | 2' | ±2' |

## UNIVERSAL PROTRACTOR

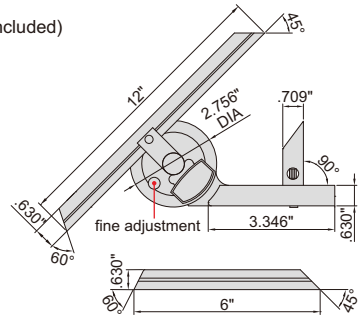
clamp for height gages (**optional**)



6" blade (included)

2372-360

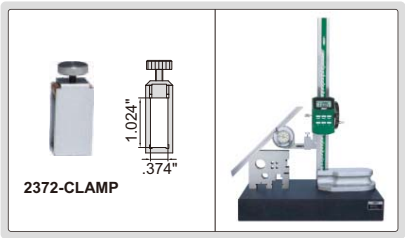


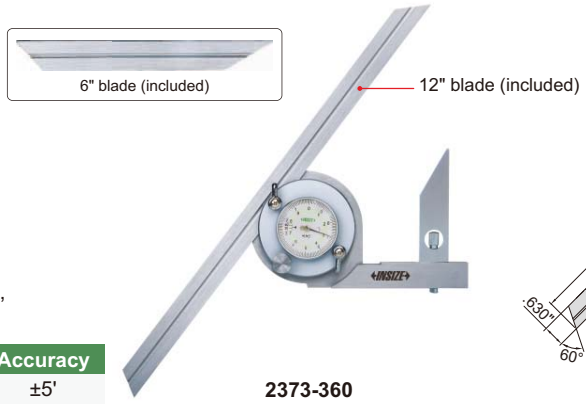

- Parallax-free reading
- Made of stainless steel
- Optional accessory: clamp (part no. **2372-CLAMP**), suitable for height gages **1156**, **1351** and **1250**

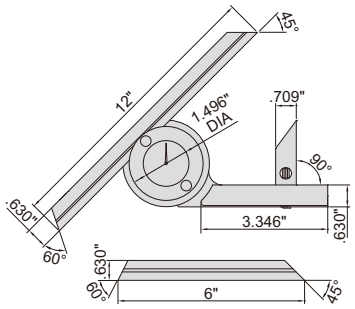
| Part No. | EDP No. | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **2372-360** | 283341 | 0-360° | 5' | ±5' |

## DIAL PROTRACTOR

clamp for height gages (**optional**)



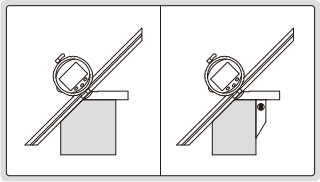



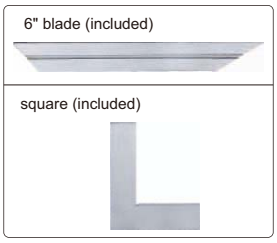

- Made of stainless steel
- Optional accessory: clamp (part no. **2372-CLAMP**), suitable for height gages **1156**, **1351** and **1250**

| Part No. | EDP No. | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **2373-360** | 283342 | 0-360° | 5' | ±5' |

## ELECTRONIC PROTRACTOR

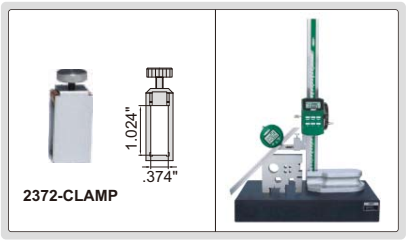
SPC

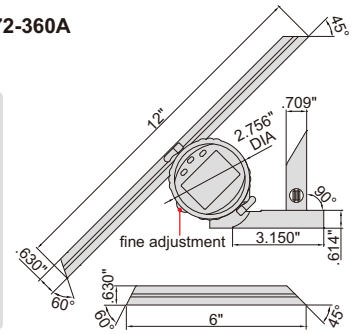




- Display in degree (for example 32.655°) and degree/minute/second (for example 32°39'30")
- SET button: preset the reading, change measuring direction
- MODE button: choose 0~90°, 0~180° or 0~360° display
- ZERO/ON/OFF button: zero and power on/off
- Battery CR2032, automatic power off
- Data output
- Supplied with square to set 90°
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-40, 7302-SPC3A, 7305-SPC1A, 7305-C01**), clamp (part no. **2372-CLAMP**), suitable for height gages **1156**, **1351** and **1250**

clamp for height gages (**optional**)



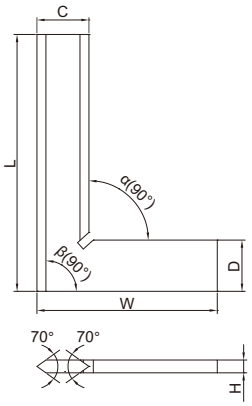




| Part No. | EDP No. | Range | Resolution | Accuracy |
|---|---|---|---|---|
| **2172-360A** | 283343 | 0-360° | 10"/0.005° | ±5' |

## 90° BEVELED EDGE SQUARES

- DIN875 grade 00
- Satin chrome plating
- Beveled edges for inside and outside measurement
- Made of hardened stainless steel

**4790-0100**



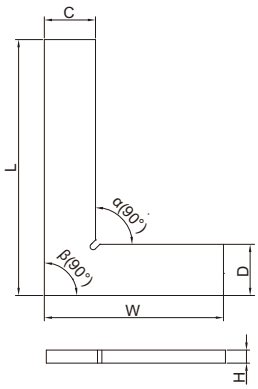

| Part No. | EDP No. | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|---|
| | | | Inside (α) | Outside (β) | | | |
| **4790-050** | 816300 | 2.0x1.6" | 94μin | 98μin | . 512" | . 512" | . 157" |
| **4790-075** | 816302 | 3.0x2.0" | 102μin | 110μin | .591" | .591" | .157" |
| **4790-0100** | 816304 | 3.9x2.8" | 110μin | 118μin | .787" | .787" | .197" |
| **4790-0150** | 816306 | 5.9x3.9" | 126μin | 138μin | 1.181" | 1.181" | .236" |
| **4790-0200** | 816308 | 7.9x5.1" | 146μin | 157μin | 1.339" | 1.339" | .276" |
| **4790-0300** | 816310 | 11.8x7.9" | 181μin | 197μin | 1.575" | 1.575" | .315" |

## 90° FLAT EDGE SQUARES

- DIN875 grade 0
- Made of hardened stainless steel

| Part No. | EDP No. | Size (LxW) | Squareness | | C | D | H |
|---|---|---|---|---|---|---|---|
| | | | Inside (α) | Outside (β) | | | |
| **4791-50** | 816312 | 2.0x1.6" | 236µin | 236µin | .591" | .591" | .157" |
| **4791-75** | 816314 | 3.0x2.0" | 236µin | 276µin | .591" | .591" | .157" |
| **4791-100** | 816316 | 3.9x2.8" | 276µin | 276µin | .787" | .787" | .197" |
| **4791-150** | 816318 | 5.9x3.9" | 276µin | 315µin | 1.181" | 1.181" | .236" |
| **4791-200** | 816320 | 7.9x5.1" | 315µin | 354µin | 1.181" | 1.181" | .276" |
| **4791-250** | 283375 | 9.8x6.5" | 354µin | 394µin | 1.378" | 1.378" | .276" |
| **4791-300** | 816322 | 11.8x7.9" | 394µin | 433µin | 1.575" | 1.575" | .315" |

**4791-100**

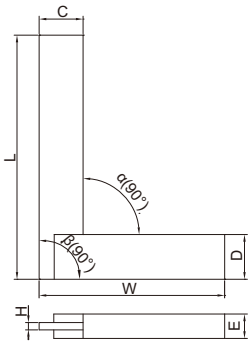



## 90° FLAT EDGE SQUARES WITH WIDE BASE

- DIN875 grade 0
- Made of hardened stainless steel

| Part No. | EDP No. | Size (LxW) | Squareness | | C | D | H | E |
|---|---|---|---|---|---|---|---|---|
| | | | Inside (α) | Outside (β) | | | | |
| **4792-150** | 283391 | 5.9x3.9" | 315µin | 315µin | .866" | .866" | .157" | .472" |

**4792-150**

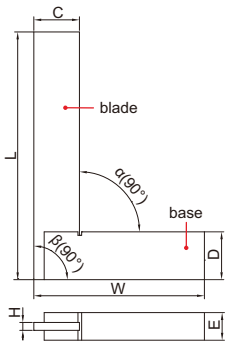



## MACHINIST SQUARES WITH WIDE BASE

- Economic model
- DIN875 grade 2
- Made of carbon steel,
  no anti-rust treatment, not hardend

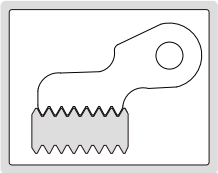
| Part No. | EDP No. | Size (LxW) | Squareness | | C | D | H | E |
|---|---|---|---|---|---|---|---|---|
| | | | Inside (α) | Outside (β) | | | | |
| **4707-50** | 283490 | 2.0x1.6" | .95mil | .98mil | .630" | .472" | .118" | .354" |
| **4707-75** | 283491 | 3.0x2.0" | 1.02mil | 1.10mil | .630" | .630" | .118" | .354" |
| **4707-100** | 283492 | 3.9x2.8" | 1.10mil | 1.18mil | .748" | .748" | .118" | .472" |
| **4707-150** | 283493 | 6x4" | 1.30mil | 1.38mil | .984" | .984" | .118" | .630" |
| **4707-200** | 283494 | 8x5" | 1.46mil | 1.58mil | 1.181" | 1.260" | .157" | .630" |
| **4707-250** | 283495 | 10x6" | 1.65mil | 1.77mil | 1.181" | 1.260" | .157" | .748" |
| **4707-300** | 283496 | 12x8" | 1.85mil | 1.97mil | 1.260" | 1.260" | .157" | .748" |
| **4707-400** | 283497 | 16x10" | 2.21mil | 2.36mil | 1.496" | 1.496" | .197" | .866" |
| **4707-500** | 283498 | 20x12" | 2.56mil | 2.76mil | 1.772" | 1.969" | .236" | .984" |
| **4707-600** | 877026 | 24x14" | 2.95mil | 3.15mil | 1.969" | 1.969" | .236" | 1.181" |

**4707-100**



## PITCH GAGES

- Check the pitch of screw thread
- Accuracy: ±0.07mm
- Made of medium carbon steel



**4820-122**

**Metric 60° and Whitworth 55° screw**

| Part No. | EDP No. | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|---|
| **4820-452** | 283556 | 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 | |

**Metric 60° and Unified 60° screw**

| Part No. | EDP No. | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|---|
| **4820-552** | 816695 | 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 | |

**Unified 60° screw**

| Part No. | EDP No. | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|---|
| **4820-230** | 283552 | 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 |

**Metric 60° screw**

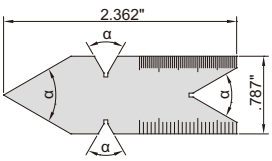
| Part No. | EDP No. | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|---|
| **4820-122** | 283550 | 0.4-7.0mm | 0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7mm | 22 |
| **4820-124** | 283551 | 0.25-7.0mm | 0.25, 0.3, 0.35, 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, 7mm | 24 |

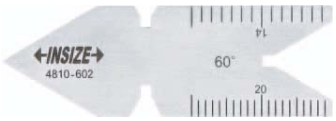
**Whitworth 55° screw**

| Part No. | EDP No. | Range | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|---|
| **4820-330** | 283554 | 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 |

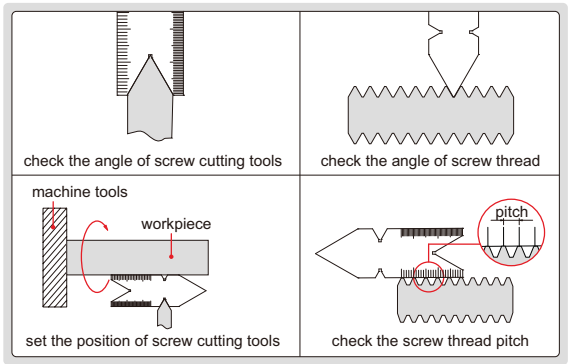


## CENTER GAGES



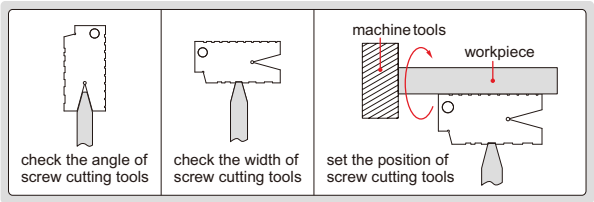

**4810-602**




- To check and set screw cutting tools, and check the angle and pitch of screw thread
- Angle accuracy: ±30min.
- Made of stainless steel

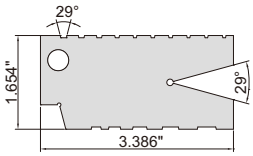
| Part No. | EDP No. | Thread type | Angle (α) | Graduation |
|---|---|---|---|---|
| **4810-602** | 283560 | UNIFIED 60° | 60° | 14ths and 20ths on front side, 24ths and 32ths on back side |
| **4810-601** | 283559 | METRIC 60° | 60° | 0.5mm and 1mm |
| **4810-55** | 283561 | WHITWORTH 55° | 55° | 14ths and 20ths on front side, 24ths and 32ths on back side |

## THREAD GAGE



**4812-E**

- To check and set screw cutting tools
- Angle accuracy: ±10min.
- Made of medium carbon steel

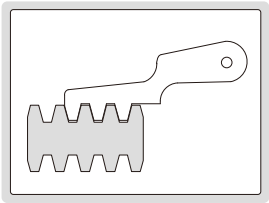



| Part No. | EDP No. | Range | Thread type | Pitch |
|---|---|---|---|---|
| **4812-E** | 283557 | 1-10TPI | ACME 29° | 1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 4, 5, 6, 7, 8, 9, 10TPI |

## PITCH GAGES

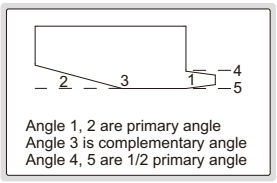
- Check the pitch of screw thread
- Accuracy: ±.0028"
- Made of medium carbon steel

**4824-12**

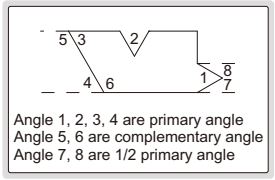


| Part No. | EDP No. | Range | Thread type | Pitch of leaves included | Quantity of leaves |
|---|---|---|---|---|---|
| **4824-16** | 283549 | 1-12TPI | ACME 29° | 1, 1-1/3, 1-1/2, 1-3/4, 2, 2-1/2, 3, 3-1/2, 4, 5, 6, 7, 8, 9, 10, 12TPI | 16 |
| **4824-12** | 283548 | 2-20mm | Tr 30° | 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 16, 20mm | 12 |

## ANGLE GAGE SET




**type A**




**type B**

**4807**

- Each blade checks primary, 1/2 primary and complementary angles
- Made of medium carbon steel

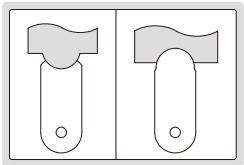
| Part No. | EDP No. | Quantity of leaves | Accuracy |
|---|---|---|---|
| **4807** | 816602 | 18 | ±10' |

| Primary angle | ½ primary angle | Complementary angle | Type |
|---|---|---|---|
| 5° | 2°30' | 175° | A |
| 10° | 5° | 170° | A |
| 15° | 7°30' | 165° | A |
| 20° | 10° | 160° | B |
| 25° | 12°30' | 155° | B |
| 30° | 15° | 150° | B |
| 35° | 17°30' | 145° | B |
| 40° | 20° | 140° | B |
| 45° | 22°30' | 135° | B |
| 50° | 25° | 130° | B |
| 55° | 27°30' | 125° | B |
| 60° | 30° | 120° | B |
| 65° | 32°30' | 115° | B |
| 70° | 35° | 110° | B |
| 75° | 37°30' | 105° | B |
| 80° | 40° | 100° | B |
| 85° | 42°30' | 95° | B |
| 90° | 45° | 90° | B |

## RADIUS GAGES

- Made of medium carbon steel

4801-15E

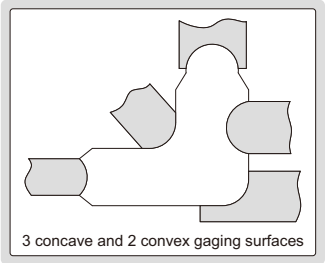


| Part No. | EDP No. | Range | Radius of leaves included | Quantity of leaves (internal+external) | Accuracy |
|---|---|---|---|---|---|
| **4801-15E** | 283567 | 1/32"-1/4" | 1/32", 3/64", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32",15/64", 1/4" | 15+15 | ±.0012" |
| **4801-16E** | 283568 | 17/64"-1/2" | 17/64", 9/32", 19/64", 5/16", 21/64", 11/32", 23/64", 3/8", 25/64", 13/32", 27/64", 7/16", 29/64",15/32", 31/64",1/2" | 16+16 | ±.0014" |

## RADIUS GAGE SETS

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

use of handle

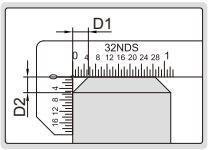


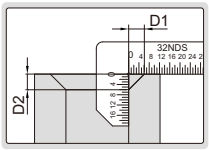
3 concave and 2 convex gaging surfaces

| Part No. | EDP No. | Range | Radius of leaves included | Quantity of leaves | Accuracy | Handle |
|---|---|---|---|---|---|---|
| **4804-25E** | 816198 | 1/64"~1/2" | 1/64", 1/32", 3/64", 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32", 15/64", 1/4", 17/64", 9/32", 5/16", 11/32", 3/8", 13/32", 7/16", 15/32", 1/2" | 25 | ±.002" | with |
| **4804-8E** | 816200 | 9/16"~1" | 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1" | 8 | ±.0025" | without |
| **4804-26** | 816196 | 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, 13mm | 26 | ±0.05mm | with |

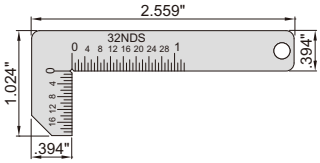
4804-26

## CHAMFER GAGE



4844-1E




- To measure internal and external chamfers
- Made of stainless steel

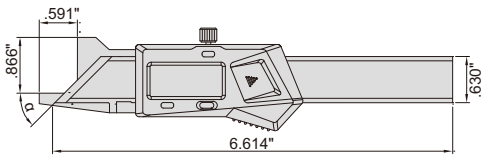
| Part No. | EDP No. | Graduation | Accuracy |
|---|---|---|---|
| **4844-1E** | 877174 | 1/32" | ±.01" |

## ELECTRONIC CHAMFER GAGE

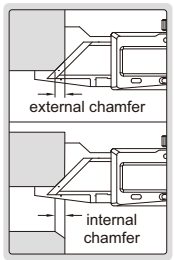
- Measure 45º chamfer dimension
- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

| Part No. | EDP No. | Range | Accuracy | Chamfer (α) |
|---|---|---|---|---|
| **1180-6** | 816370 | 0-.39"/0-10mm | ±.0025" | 45º |

**1180-6**




measure chamfer dimension

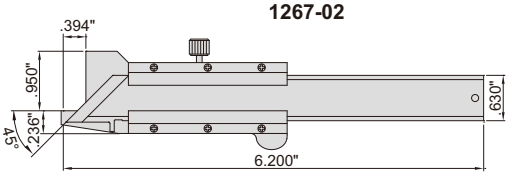



## CHAMFER GAGE

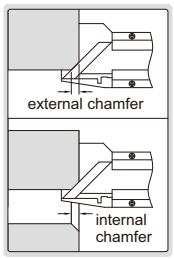
- Measure 45º chamfer dimension
- Graduation .001"
- Made of stainless steel
- Satin chrome plated reading surface

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| **1267-02** | 877127 | 0-.2" | ±.003" |

**1267-02**

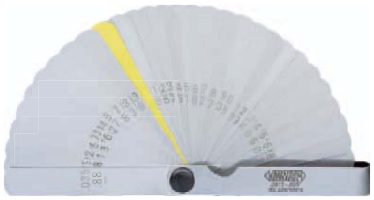



measure 45º chamfer dimension

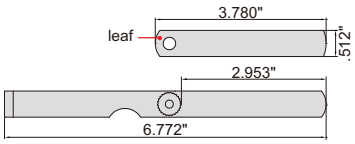



11

## FEELER GAGE



**4608-31**



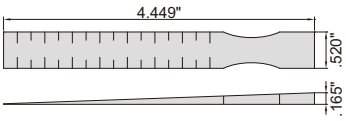

- .010" is made of brass, others are made of hardened alloy steel
- Each blade is marked with inch/metric size

| Part No. | EDP No. | Range | Quantity of Leaves |
|---|---|---|---|
| **4608-31** | 283543 | .0015"~.035" | 32 |

| Thickness of leaves included | Accuracy |
|---|---|
| .010" (brass) | ±.00039" |
| .0015", .002" | ±.0002" |
| .0025", .003", .004", .005", .006", .007" | ±.00028" |
| .008", .009" | ±.00035" |
| .010", .011" | ±.00039" |
| .012", .013" | ±.00047" |
| .014", .015" | ±.00051" |

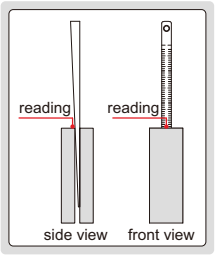
| Thickness of leaves included | Accuracy |
|---|---|
| .016", .017" | ±.00055" |
| .018", .019" | ±.00059" |
| .020", .021" | ±.00067" |
| .022", .023" | ±.00071" |
| .024", .025", .026" | ±.00075" |
| .028" | ±.00091" |
| .030" | ±.00094" |
| .032", .035" | ±.00102" |

## TAPER GAGE




- For quick measurement of slot width
- Stain chrome plated reading surface
- Made of stainless steel

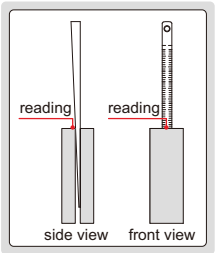
| Part No. | EDP No. | Range | Graduation | Accuracy |
|---|---|---|---|---|
| **4630-1E** | 283577 | .01-.15" | .001" | ±.003" |



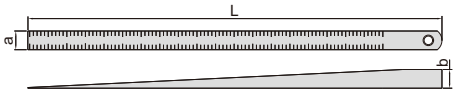
**4630-1E**

## TAPER GAGE

- For quick measurement of slot width
- Stain chrome plated reading surface
- Made of stainless steel



4630-1



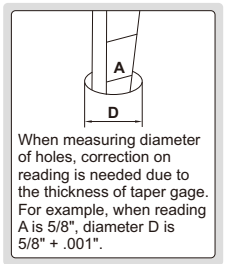

(mm)

| Part No. | EDP No. | Range | Graduation | Accuracy | L | a | b |
|---|---|---|---|---|---|---|---|
| 4630-1 | 283576 | 0.5-10mm | 0.05mm | ±0.07mm | 220 | 10 | 10.5 |

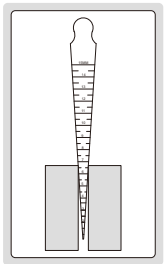
## TAPER GAGES

- Measure opening, slot width, hole diameter, etc.
- Diameter correction table on the back
- Made of stainless steel

measure diameter of hole

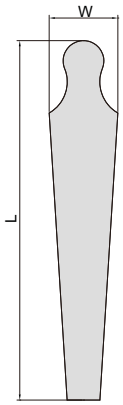



measure slot width



front

back




4833-1E

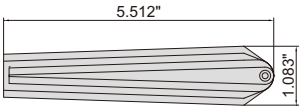
| Part No. | EDP No. | Range | Graduation | Accuracy | L | W |
|---|---|---|---|---|---|---|
| 4833-1E | 877263 | 1/32~5/8" | 1/64" | ±.004" | 5.748" | .669" |

(mm)

| Part No. | EDP No. | Range | Graduation | Accuracy | L | W |
|---|---|---|---|---|---|---|
| 4833-1 | 285112 | 0.8-15mm | 0.1mm | ±0.1mm | 146 | 17 |

## TAPER GAGE SET

- Graduation: 1/64"
- Include 4 pcs (1/16~5/16", 21/64~9/16", 37/64~13/16", 53/64~1-1/16")
- Measure opening, slot width, hole diameter, etc.
- Diameter correction table on the back
- Made of stainless steel



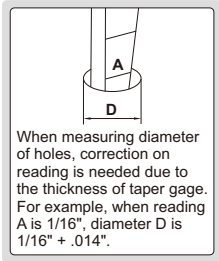
front

back

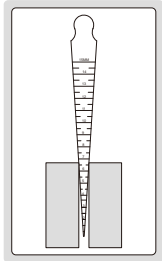
4837-1E

| Part No. | EDP No. | Range | Accuracy |
|---|---|---|---|
| 4837-1E | 877172 | 1/16~1-1/16" | ±.004" |

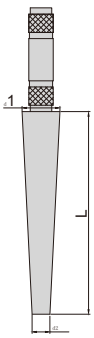
measure diameter of hole




measure slot width



## TAPER BORE GAGES



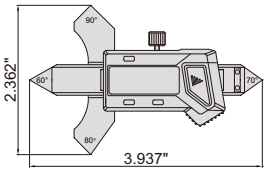
4852-E15

- Quick measurement of bore diameter
- Hardened steel, HRC50-58
- Satin chrome plated surface
- Aluminium oxided handle

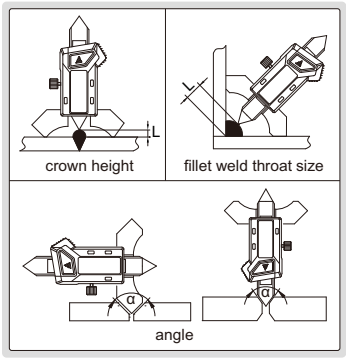
| Part No. | EDP No. | Range | Graduation | Accuracy | L | d1 | d2 |
|---|---|---|---|---|---|---|---|
| 4852-E15 | 877175 | .6-1.2" | .005" | ±.0025" | 6.496" | 1.220" DIA | .579" DIA |
| 4852-E30 | 877176 | 1.2-1.8" | .005" | ±.0025" | 6.496" | 1.811" DIA | 1.165" DIA |

## ELECTRONIC WELDING GAGE

- Buttons: zero, inch/mm, on/off
- Battery LR44
- Made of stainless steel



4831-20A

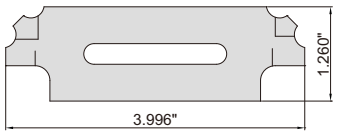


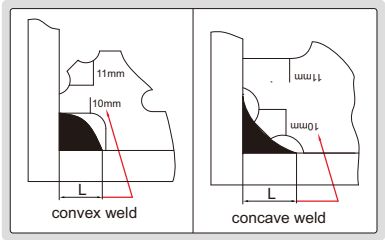

| Part No. | EDP No. | Measurement | Range | Resolution | Accuracy |
|---|---|---|---|---|---|
| 4831-20A | 877170 | crown height | 0-.4"/0-7mm | .0005"/0.01mm | ±.0012" |
| | | fillet weld throat size | 0-.8"/0-20mm | .0005"/0.01mm | ±.0039" |
| | | angle | 60°, 70°, 80°, 90° | — | ±1° |

## FILLET WELDING GAGES

- Measure concave and convex weld sizes
- 7 blades are included
- Made of stainless steel

4836-2

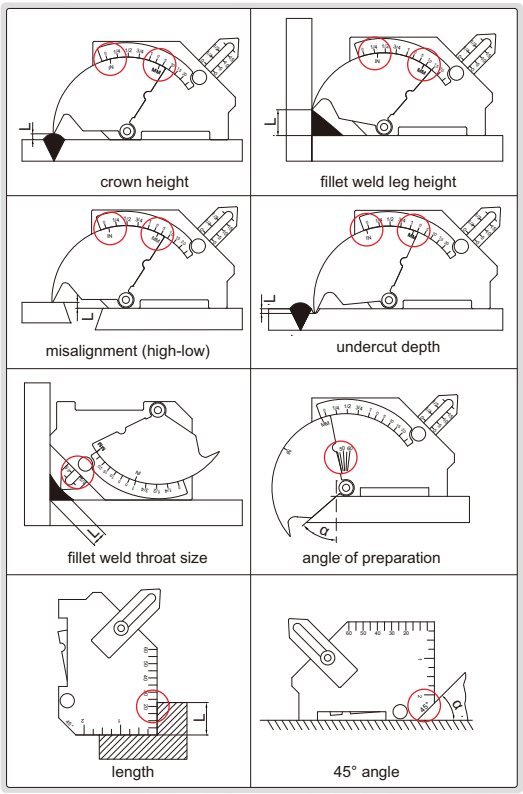



| Part No. | EDP No. | Size | Accuracy |
|---|---|---|---|
| 4836-2 | 877171 | 1/8" (3.2mm), 3/16" (4.8mm), 1/4" (6.4mm), 5/16" (7.9mm), 3/8" (9.5mm), 7/16" (11.1mm), 1/2" (12.7mm), 5/8" (15.9mm), 3/4" (19.1mm), 7/8" (22.2mm), 1" (25.4mm) | ±.02" (0.5mm) |

11

## WELDING GAGE

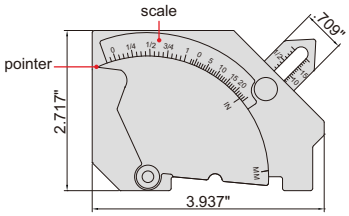


front

back

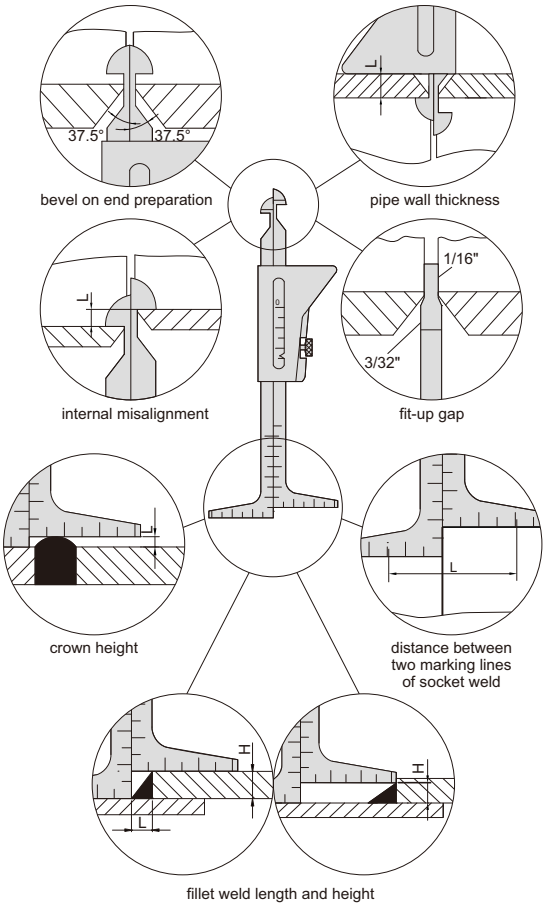
4835-1

- Adjustable scale to compensate pointer wear
- Made of stainless steel

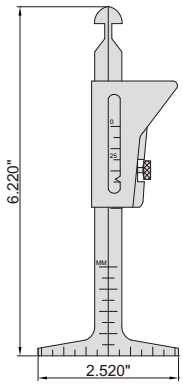



| Part No. | EDP No. | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|---|
| 4835-1 | 877031 | crown height | 0-1" (0-25mm) | 1/16" (1mm) | ±.02" |
| | | fillet weld leg height | 0-1" (0-25mm) | 1/16" (1mm) | ±.02" |
| | | misalignment (high-low) | 0-1" (0-25mm) | 1/16" (1mm) | ±.02" |
| | | undercut depth | 0-1/8" (0-2mm) | 1/16" (1mm) | ±.02" |
| | | fillet weld throat size | 0-3/4" (0-20mm) | 1/16" (1mm) | ±.02" |
| | | angle of preparation | 0-60° | 5° | ±1° |
| | | length | 0-2" (0-60mm) | 1/16" (1mm) | ±.02" |
| | | 45° angle | — | — | ±1° |

## PIPE WELDING GAGE



**4839-1**



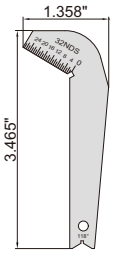

- Made of stainless steel

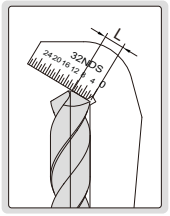
| Part No. | EDP No. | Measurement | Range | Graduation | Accuracy |
|---|---|---|---|---|---|
| **4839-1** | 877032 | bevel on end preparation | 37.5° | — | ±1° |
| | | pipe wall thickness | 0~1-3/4" (0-45mm) | 1/16" (1mm) | ±.02" |
| | | internal misalignment | 0~1-3/8" (0-35mm) | 1/32" (1mm) | ±.02" |
| | | fit-up gap | 1/16", 3/32" | — | ±.004" |
| | | crown height | 0~1-3/8" (0-35mm) | 1/32" (1mm) | ±.02" |
| | | distance between two marking lines of socket weld | 0~2-3/8" (0-60mm) | 1/16" (1mm) | ±.02" |
| | | fillet weld length | 0~1-1/4" (0-30mm) | 1/16" (1mm) | ±.02" |
| | | fillet weld height | 0~1-3/8" (0-35mm) | 1/32" (1mm) | ±.02" |

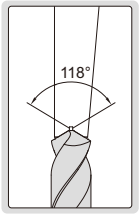
## DRILL POINT GAGE

- For twist drills with 118° angle, to check if the center of tip is concentric with the drill body
- Made of stainless steel

**4843-1E**



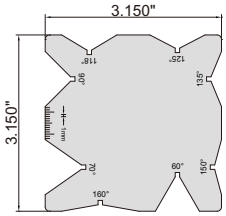



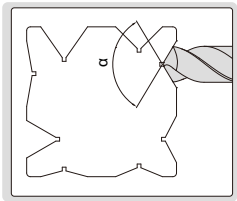




| Part No. | EDP No. | Accuracy | |
|---|---|---|---|
| | | Angle | Length |
| **4843-1E** | 877173 | ±0.5° | ±.02" |

## DRILL ANGLE GAGE

4842-1

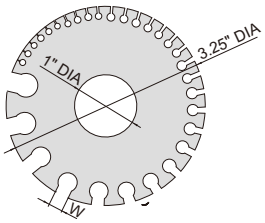



- Check drills with angle 60°, 70°, 90°, 118°, 125°, 135°, 150° or 160°
- Made of stainless steel

| Part No. | EDP No. | Accuracy |
|---|---|---|
| **4842-1** | 816683 | ±0.5° |

## AMERICAN STANDARD WIRE GAGE



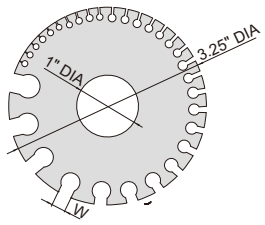
4808

- For gaging non-ferrous wire and metals such as copper, brass and aluminum
- Hardened and satin chrome finish

| Part No. | EDP No. | Range |
|---|---|---|
| **4808** | 283574 | 0-36 (.3249-.0050") |

| No. | W | No. | W | No. | W |
|---|---|---|---|---|---|
| 0 | .3249" | 13 | .0720" | 26 | .0159" |
| 1 | .2893" | 14 | .0641" | 27 | .0142" |
| 2 | .2576" | 15 | .0571" | 28 | .0126" |
| 3 | .2294" | 16 | .0508" | 29 | .0113" |
| 4 | .2043" | 17 | .0453" | 30 | .0100" |
| 5 | .1819" | 18 | .0403" | 31 | .0089" |
| 6 | .1620" | 19 | .0359" | 32 | .0080" |
| 7 | .1443" | 20 | .0320" | 33 | .0071" |
| 8 | .1285" | 21 | .0285" | 34 | .0063" |
| 9 | .1144" | 22 | .0253" | 35 | .0056" |
| 10 | .1019" | 23 | .0226" | 36 | .0050" |
| 11 | .0907" | 24 | .0201" | | |
| 12 | .0808" | 25 | .0179" | | |

## AMERICAN STANDARD SHEET METAL GAGE



4809

- For gaging sheet metal, plate iron and steel
- Hardened and satin chrome finish

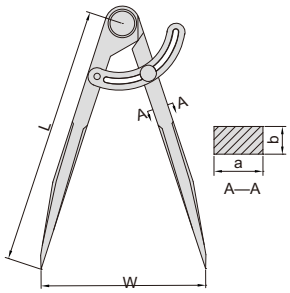
| Part No. | EDP No. | Range |
|---|---|---|
| **4809** | 283575 | 0-36 (.3125-.0070") |

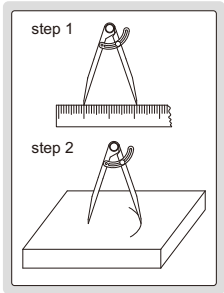
| No. | W | No. | W | No. | W |
|---|---|---|---|---|---|
| 0 | .3125" | 13 | .0938" | 26 | .0188" |
| 1 | .2813" | 14 | .0781" | 27 | .0172" |
| 2 | .2656" | 15 | .0703" | 28 | .0156" |
| 3 | .2500" | 16 | .0625" | 29 | .0141" |
| 4 | .2344" | 17 | .0563" | 30 | .0125" |
| 5 | .2188" | 18 | .0500" | 31 | .0109" |
| 6 | .2031" | 19 | .0438" | 32 | .0102" |
| 7 | .1875" | 20 | .0375" | 33 | .0094" |
| 8 | .1719" | 21 | .0344" | 34 | .0086" |
| 9 | .1563" | 22 | .0313" | 35 | .0078" |
| 10 | .1406" | 23 | .0281" | 36 | .0070" |
| 11 | .1250" | 24 | .0250" | | |
| 12 | .1094" | 25 | .0219" | | |

## DIVIDERS

- Made of carbon steel
- Hardened points

7247-150

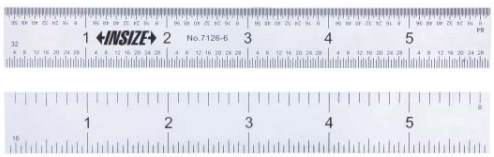



| Part No. | EDP No. | Size (L) | Range (W) | a | b |
|---|---|---|---|---|---|
| **7247-150** | 283917 | 6" | 0-5.51" | .33" | .28" |
| **7247-200** | 283919 | 8" | 0-7.48" | .39" | .28" |
| **7247-300** | 283921 | 12" | 0-11.42" | .47" | .28" |

## RIGID RULES

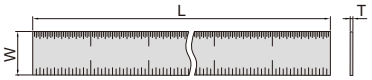
- 4R graduation
- Made of stainless steel
- Non-glare surface




front

back

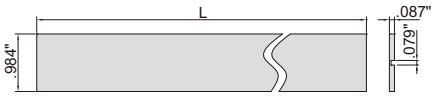
7126-6




| Part No. | EDP No. | Range (L) | Graduation | Accuracy | W | T |
|---|---|---|---|---|---|---|
| **7126-6** | 877203 | 6" | 1/64" and 1/32" on front face, 1/16" and 1/8" on back face | ±.003" | .748" | .039" |
| **7126-12** | 877201 | 12" | 1/64" and 1/32" on front face, 1/16" and 1/8" on back face | ±.004" | .984" | .039" |
| **7126-24** | 877202 | 24" | 1/64" and 1/32" on front face, 1/16" and 1/8" on back face | ±.006" | 1.102" | .047" |

## RIGID RULE

7113-300A




- Rigid rules
- With groove on the back, suitable for combination square set (**2278** series)
- Satin chrome plated

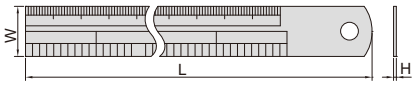
groove on the back

| Part No. | EDP No. | Range | Graduation | | Accuracy | L |
|---|---|---|---|---|---|---|
| | | | front | back | | |
| **7113-300A** | 283606 | 12"/300mm | 1/32" and 0.5mm | 1/64" and 1mm | ±.006" | 12" |

## STEEL RULES

7110-300

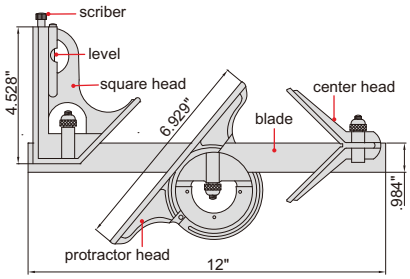
- Graduation: 1/64", 1/32", 1/16", 0.5mm, 1mm
- Semi-flexible rules
- Made of stainless steel
- Non-glare surface

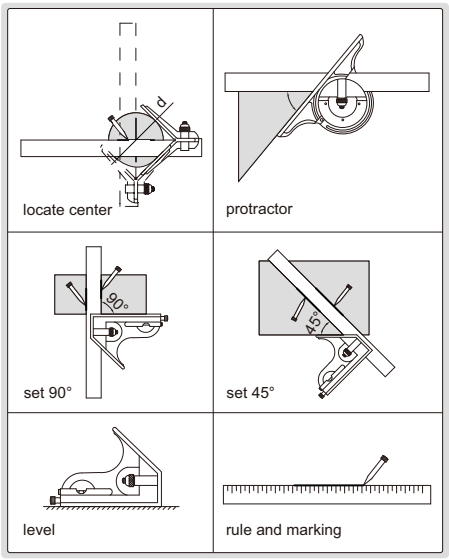



| Part No. | EDP No. | Range | Accuracy | L | W | H | Remark |
|---|---|---|---|---|---|---|---|
| **7110-150** | 283596 | 6"/150mm | ±.006" | 6.693" | .709" | .039" | graduation on front and back |
| **7110-200** | 283597 | 8"/200mm | ±.006" | 8.661" | .709" | .039" | graduation on front and back |
| **7110-300** | 283598 | 12"/300mm | ±.006" | 12.992" | .984" | .039" | graduation on front and back |
| **7110-3001** | 816384 | 12"/300mm | ±.006" | 12.795" | 1.181" | .039" | graduation on front and back |
| **7110-500** | 283599 | 20"/500mm | ±.006" | 20.866" | 1.181" | .047" | graduation on front and back |
| **7110-600** | 283600 | 24"/600mm | ±.008" | 24.803" | 1.181" | .047" | graduation on front and back |
| **7110-1000** | 283601 | 40"/1000mm | ±.008" | 40.945" | 1.260" | .059" | graduation on front and back |
| **7110-1200** | 283603 | 48"/1200mm | ±.009" | 48.819" | 1.378" | .071" | graduation on front |
| **7110-1500** | 283604 | 60"/1500mm | ±.010" | 61.024" | 1.496" | .071" | graduation on front |
| **7110-2000** | 283605 | 80"/2000mm | ±.012" | 81.299" | 1. 575" | .079" | graduation on front |

## COMBINATION SQUARE SETS





2278-2E

2278-3E

2278-180

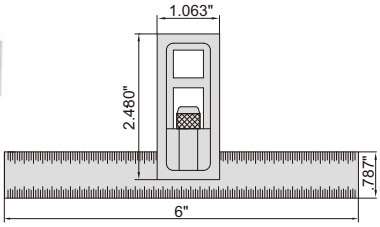
- Center head (made of cast iron):
  To locate center of cylinder with diameter (d): 1.181" DIA-3.937" DIA
  Accuracy: ±.006"
- Protractor head (made of cast iron):
  To set the blade at desired angle to an edge of a workpiece, and can be used to measure angles
  Range: 0-180°, accuracy: ±7min.
- Square head (made of cast iron):
  To set the blade at 90° or 45° to an edge of a workpiece
  Accuracy: ±8min for 90° square,
  ±10min for 45° square
- Optional accessory: rigid rule (part no. **7113**)

| Part No. | EDP No. | Remark | Blade range | Blade graduation |
|---|---|---|---|---|
| **2278-2E** | 877154 | 2-piece set | 12" | 1/8" and 1/16" on front face, 1/32" and 1/64" on back face |
| **2278-3E** | 877155 | 3-piece set | 12" | 1/8" and 1/16" on front face, 1/32" and 1/64" on back face |
| **2278-180** | 816324 | 4-piece set | 12"/300mm | 1/32" and 0.5mm on front face, 1/64" and 1mm on back face |
| **2278-180E** | 283344 | 4-piece set | 12" | 1/8" and 1/16" on front face, 1/32" and 1/64" on back face |

## DOUBLE SQUARE

- Accuracy: ±2min for 90° square
- Hardened and chrome plated blade

2277-2




| Part No. | EDP No. | Blade length | Graduation |
|---|---|---|---|
| **2277-2** | 283348 | 6" | 1/8", 1/16", 1/32", 1/64" |

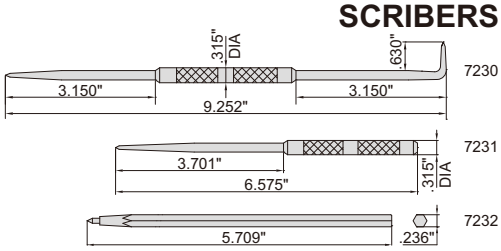
## SCRIBERS

7230

7231

7232

- Nickel plated




| Part No. | EDP No. | Tip |
|---|---|---|
| **7230** | 283972 | hardened tips |
| **7231** | 283973 | hardened tip |
| **7232** | 283974 | carbide tip |

## LONG DRIVE PIN PUNCH

- Made of tool steel, black oxide finish
- Hardened and tempered both ends
- Knurled finger grip for ease of use
- 5 pcs set
- 8" length, drive pin section 3-1/2" long

7253

| Part No. | EDP No. | Point size (DIA) |
|---|---|---|
| **7253** | 283975 | 1/8", 3/16", 1/4", 5/16", 3/8" |

## DRIVE PIN PUNCH

- Made of tool steel, black oxide finish
- Hardened and tempered both ends
- Knurled finger grip for ease of use
- 8 pcs set
- 4" length

7252

| Part No. | EDP No. | Point size (DIA) |
|---|---|---|
| **7252** | 283976 | 1/16", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4", 5/16" |

## 2-PIECE MEASURING TOOL SET

- Includes:
  1) Digital caliper, range 0-150mm/0-6", resolution 0.01mm/0.0005" (part no. **1108-150**)
  2) Digital outside micrometer, range 0-25mm/0-1", resolution 0.001mm/0.00005" (part no. **3109-25A**)

5022

| Part No. | EDP No. |
|---|---|
| **5022** | 816345 |

## 2-PIECE MEASURING TOOL SET

- Includes:
  1) Dial test indicator, range .03", graduation .0005" (part no. **2380-35**)
  2) Magnetic stand

5023-E

| Part No. | EDP No. |
|---|---|
| **5023-E** | 284501 |

## 2-PIECE MEASURING TOOL SET

- Includes:
  1) Dial indicator, range 1", graduation .001" (part no. **2307-1**)
  2) Magnetic stand (part no. **6201-60**)

5002-4E



| Part No. | EDP No. |
|---|---|
| **5002-4E** | 284505 |

## 3-PIECE MEASURING TOOL SET

- Includes:
  1) Dial caliper, range 0-6", graduation .001" (part no. **1311-6**)
  2) Outside micrometer, range 0-1", graduation .0001" (part no. **3202-1**)
  3) Steel rule, 6"/150mm (part no. **7110-150**)

5003-1

| Part No. | EDP No. |
|---|---|
| **5003-1** | 284512 |

## 3-PIECE MEASURING TOOL SET

- Includes:
  1) Electronic caliper, range 0-6"/0-150mm, resolution .0005"/0.01mm (part no. **1108-150**)
  2) Outside micrometer, range 0-1", graduation .0001" (part no. **3202-1**)
  3) Steel rule, 6"/150mm (part no. **7110-150**)

5003-1E

| Part No. | EDP No. |
|---|---|
| **5003-1E** | 284514 |

## 13-PIECE MEASURING TOOL SET

- Includes:
  1) Electronic caliper, range 0-6"/0-150mm, resolution .0005"/0.01mm, (part no. **1108-150**)
  2) Outside micrometer, range 0-1", graduation .0001" (part no. **3202-1**)
  3) Dial indicator, range 1", graduation .001" (part no. **2307-1**)
  4) Magnetic stand (part no. **6201-60**)
  5) Protractor, range 0-180°, graduation 1° (part no. **4799-180**)
  6) Pitch gauge, range 4-42TPI, 30 pcs, unified 60° thread (part no. **4820-230**)
  7) Radius gauge, range 1/32"-1/4" (part no. **4801-15E**)
  8) Feeler gauge, range .0015-.035", 31 pcs (part no. **4608-31**)
  9) 90° beveled edge square, 3.937x2.756", grade 0 (part no. **4790-1000**)
  10) Scriber (part no. **7230**)
  11) Steel rule, 6"/150mm (part no. **7110-150**)
  12) Depth base attachment (part no. **6140**)
  13) Zero setting bar for depth base attachment

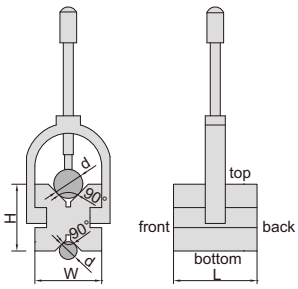
| Part No. | EDP No. |
|---|---|
| **5013-E** | 816407 |

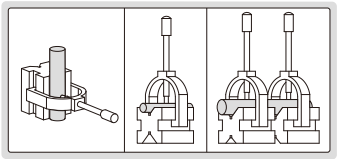
**5013-E**

## V-BLOCK SET

- 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

**6896-11**



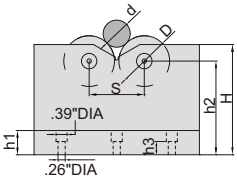



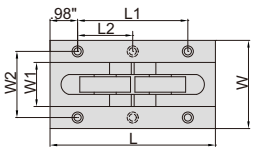
| Part No. | EDP No. | Size (LxWxH) | Range of shafts (d) | Parallelism of both V grooves to top and bottom sides | Squareness of both V grooves to front and back sides | Height difference of a matched pair |
|---|---|---|---|---|---|---|
| **6896-11** | 889455 | 2.0x1.6x1.6" | .20-1.18" DIA | 197µin | 197µin | 197µin |
| **6896-12** | 889456 | 3.1x2.5x2.5" | .28-2.48" DIA | 197µin | 197µin | 197µin |
| **6896-13** | 889457 | 3.9x3.1x3.1" | .28-3.15" DIA | 197µin | 197µin | 197µin |

## ROLLER BEARING V-BLOCK SETS

- Runout accuracy: 197µin
- Parallelism of bearings to bottom: 472µin
- Two V-blocks per set
- Workpieces don't get damaged due to bearings
- Suitable for heavy workpieces

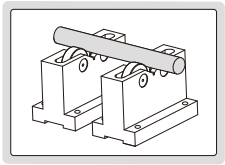
**6888-1**



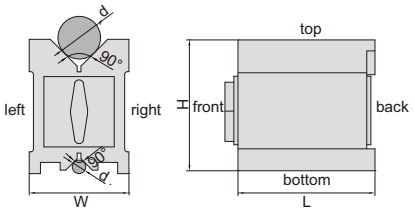



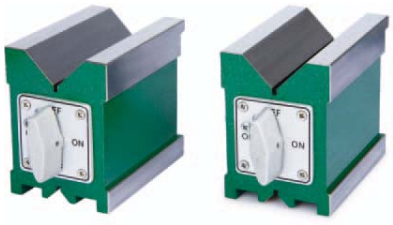

| Part No. | W1 | W2 | h1 | h2 | h3 | L1 | L2 | S |
|---|---|---|---|---|---|---|---|---|
| **6888-1** | .87" | 1.73" | .79" | 3.35" | .47" | 3.94" | – | 2.36" |
| **6888-2** | 1.57" | 2.36" | .87" | 3.35" | .47" | 3.94" | – | 1.97" |
| **6888-3** | 2.36" | 3.15" | 1.18" | 4.88" | .79" | 7.09" | 3.54" | 4.72" |

| Part No. | EDP No. | Size (LxWxH) | Part No. of bearings | Diameter of bearings (D) | Range of shafts (d) | Load capacity |
|---|---|---|---|---|---|---|
| **6888-1** | 877034 | 5.9x2.4x3.9" | 6303 ZZ | 1.65" DIA | .98-2.76" DIA | 1100lb |
| **6888-2** | 877198 | 5.9x3.1x3.9" | 16004 ZZ | 1.85" DIA | .20-2.17" DIA | 2200lb |
| **6888-3** | 877199 | 9.1x3.9x5.9" | 6306 ZZ | 2.83" DIA | 2.76-7.87" DIA | 2200lb |

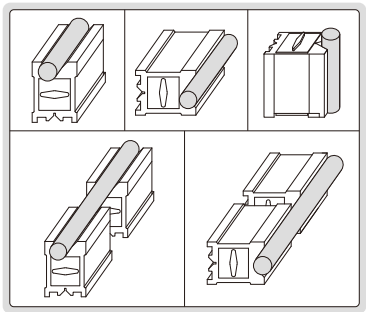


## MAGNETIC V-BLOCK



6889-1



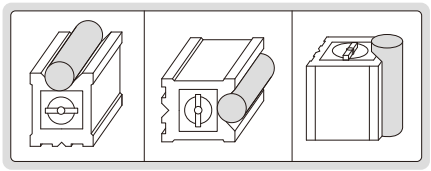
- Hardened, high accuracy, strong magnetic force, for grinding, light milling, drilling and inspection of round and square jobs
- All working surfaces are hardened to HRC60±2
- Magnetic force on top, bottom and two V grooves
- V groove on the top for large shafts
- V groove on the bottom for small shafts
- Suitable for cast iron surface plates and granite surface plates

**Matched pair**

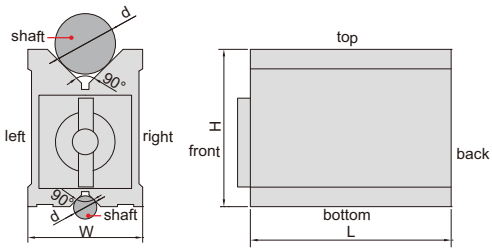
| Part No. | EDP No. | Size (LxWxH) | Range of shafts (d) | Magnetic force | Parallelism of V grooves to top, bottom, left, right sides | Squareness of V grooves to back side | Height difference of a matched pair |
|---|---|---|---|---|---|---|---|
| **6889-1** | 877036 | 3.0x2.2x3.0" | .20-1.57"DIA | 165lbf | 197µin | 197µin | 197µin |

## MAGNETIC V-BLOCK

- 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 surface



6801-1201

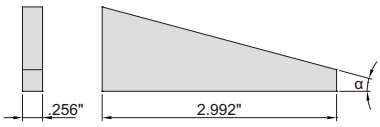



| Part No. | EDP No. | Size (LxWxH) | Range of shafts (d) | Magnetic force | Parallelism of V grooves to top, bottom, left, right side | Squareness of V grooves to back side |
|---|---|---|---|---|---|---|
| **6801-1201** | 877035 | 3.1x2.8x3.7" | .24-2.64" DIA | 141lbf | 394µin | 394µin |

## ANGLE PLATE SET

- For angle set-up in tooling, production and inspection
- Made of tool steel
- Hardness HRC55

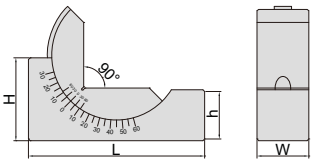
4003-12




| Part No. | EDP No. | Angle plates included | Angle α | Accuracy |
|---|---|---|---|---|
| **4003-12** | 877167 | 12 pcs | 1/4°, 1/2°, 1°, 2°, 3°, 4°, 5°, 10°, 15°, 20°, 25°, 30° | ±9" |

## ADJUSTABLE ANGLE BLOCKS

- Made of hardened tool steel
- With locking screw
- Accuracy of angle: 10'



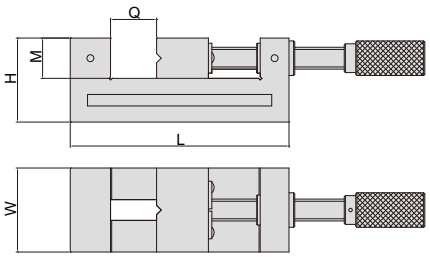
6535-30

| Part No. | EDP No. | Size (LxWxH) | h | Adjustable angle | Graduation of angle |
|---|---|---|---|---|---|
| **6535-25** | 877195 | 3.0x1.0x1.4" | .98" | 30°~0°~60° | 10' |
| **6535-30** | 877196 | 4.0x1.2x1.9" | 1.18" | 30°~0°~60° | 10' |

## PRECISION VISES

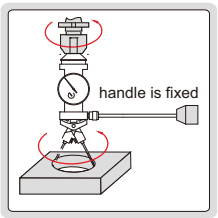
- Parallelism: 40μin/per inch
- Squareness: 60μin/per inch
- Made of alloy steel
- Hardness HRC56-58

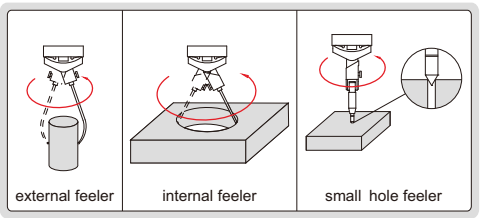
6525-76




| Part No. | EDP No. | Jaw opening (Q) | Jaw width (W) | L | H | M |
|---|---|---|---|---|---|---|
| **6525-73** | 877193 | 0-2.9" | 2.480" | 6.929" | 2.480" | 1.181" |
| **6525-76** | 877194 | 0-3.0" | 2.874" | 7.480" | 2.874" | 1.378" |
| **6525-120** | 877192 | 0-4.7" | 3.858" | 10.039" | 3.228" | 1.575" |

## CENTERING INDICATOR



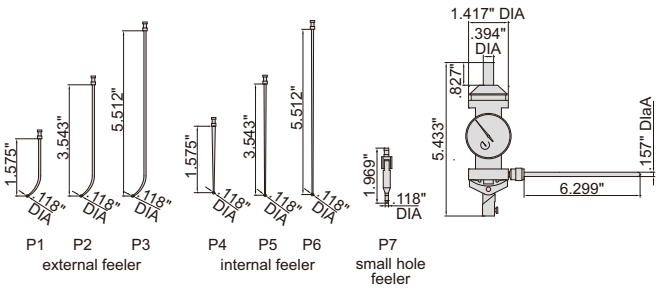



2385-3

- Provides quick and accurate centering in boring and milling set-up

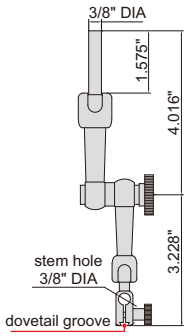
| Part No. | EDP No. |
|---|---|
| **2385-3** | 284450 |

| Feeler | Measuring diameter | Accuracy |
|---|---|---|
| P1 | 0-2.362" DIA | ±.0015" |
| P2 | 0-6.299" DIA | ±.0023" |
| P3 | 0-9.843" DIA | ±.0031" |
| P4 | .126-3.150" DIA | ±.0015" |
| P5 | .126-7.087" DIA | ±.0023" |
| P6 | .126-11.024" DIA | ±.0031" |
| P7 | 0- .110" DIA | ±.0015" |



## DIAL TEST INDICATOR CENTERING HOLDER

- Center cylinders or holes on machine tools
- Can be used with dial test indicators

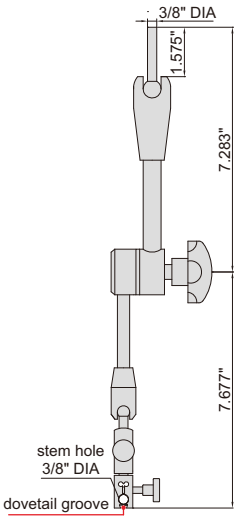


6295-1AE

| Part No. | EDP No. |
|---|---|
| 6295-1AE | 284452 |

## INDICATOR CENTERING HOLDER

- Center cylinders or holes on machine tools
- Can be used with dial test indicators or dial indicators

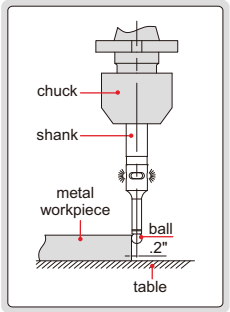


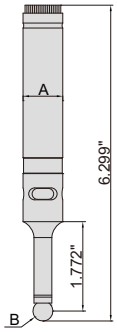
6294-1AE

| Part No. | EDP No. |
|---|---|
| 6294-1AE | 284453 |

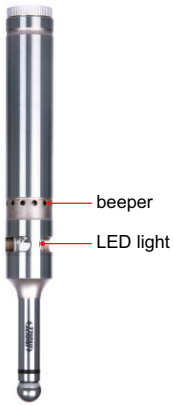
## ELECTRONIC EDGE FINDERS

- The shank is electrically conducted to the metal workpiece through the chuck and table, the LED lights up and the beeper sounds (only for **6566-3E**), when the ball touches the workpiece
- Not suitable for rotary use
- Hardened shank and contact ball



6566-2E

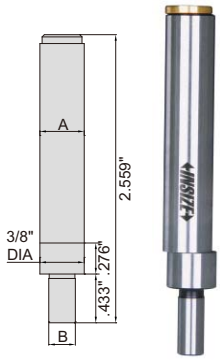



6566-3E

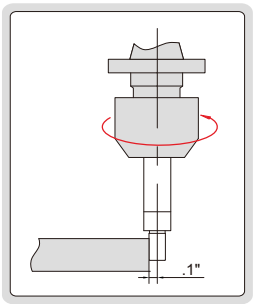
| Part No. | EDP No. | Shank (A) | Contact ball (B) | Accuracy | Beeper | Battery |
|---|---|---|---|---|---|---|
| 6566-2E | 816381 | 3/4" DIA | .4" DIA | .0002" | without | 23AE, 12Vx1 pc |
| 6566-3E | 816382 | 3/4" DIA | .4" DIA | .0002" | with | 23AE, 12Vx1 pc |

## EDGE FINDER

- Hardened shank and contact point




6567-1E

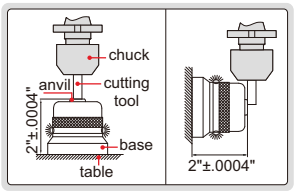


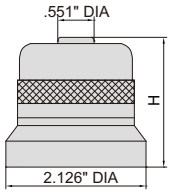

| Part No. | EDP No. | Shank (A) | Contact point (B) | Accuracy |
|---|---|---|---|---|
| **6567-1E** | 816383 | 3/8" DIA | .2" DIA | .0003" |

## ELECTRONIC ZERO SETTER

- 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
- Battery Lr44
- High test force

6550-2A



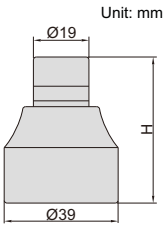



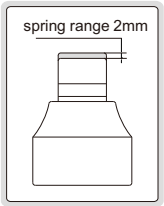

| Part No. | EDP No. | Height (H) | Accuracy | Test force |
|---|---|---|---|---|
| **6550-2A** | 816684 | 2" | ±.0004" | 6lbf (at 2") |
| **6550-50A** | 876730 | 50mm | ±10μm | 27N (at 49mm) |

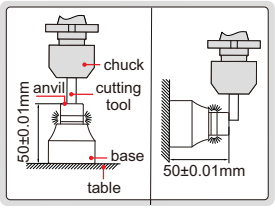
## ELECTRONIC ZERO SETTER

- 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
- Low test force

6553-50



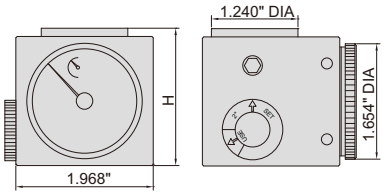



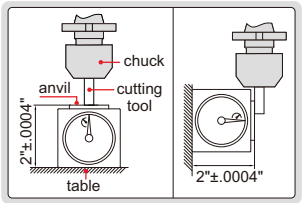

| Part No. | EDP No. | Height (H) | Accuracy | Test force |
|---|---|---|---|---|
| **6553-50** | 877197 | 50mm | ±10μm | 7N (at 49mm) |

## ZERO SETTER

- Magnetic base



2397-25A

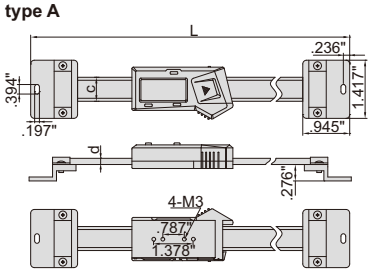



| Part No. | EDP No. | Height (H) | Accuracy | Test force |
|---|---|---|---|---|
| **2397-25A** | 284447 | 2" | ±.0004" | 2lbf (at 2") |

## ELECTRONIC HORIZONTAL SCALES

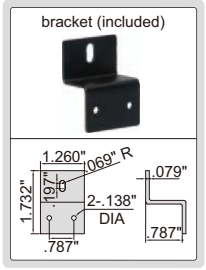
7101-400A

type A

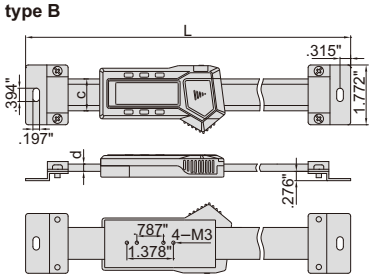



- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm
- Automatic power off, move the digital unit to turn on power
- Battery CR2032, data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

bracket (included)

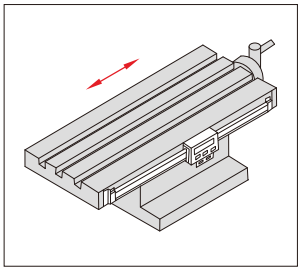



type B




- Resolution .0005"/0.01mm
- Button function: on/off, zero, inch/mm, ABS, data preset
- Absolute and incremental measurement
- Battery CR2032, data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back
- Optional accessory: data output cable (part no. **7306-20, 7302-SPC5A/SPC5B, 7305-SPC2A, 7305-A01/A02**)

example of application



| Part No. | EDP No. | Range | Type | Accuracy | L | c | d |
|---|---|---|---|---|---|---|---|
| **7101-200A** | 284456 | 8"/200mm | A | ±.0012" | 12.402" | .630" | .157" |
| **7101-400A** | 284458 | 16"/400mm | B | ±.0020" | 23.228" | .945" | .217" |
| **7101-800A** | 284462 | 32"/800mm | B | ±.0039" | 38.976" | .945" | .217" |
| **7101-1000A** | 877200 | 40"/1000mm | B | ±.0039" | 46.850" | 1.220" | .413" |

## ELECTRONIC VERTICAL SCALES

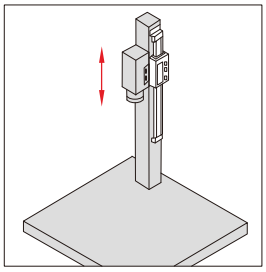
14

data output cable

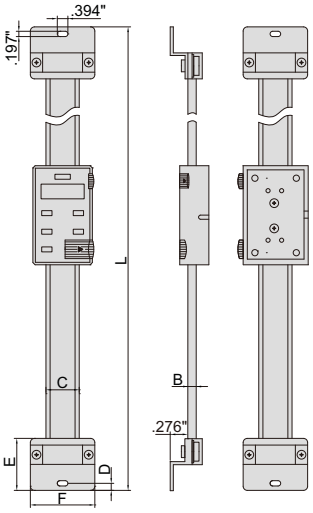
7301-SPC5

- Resolution .0005"/0.01mm
- Buttons: on/off, zero, inch/mm, ABS/INC, data hold, TOL, set
- ABS/INC is for absolute and incremental measurement
- TOL is for tolerance measurement
- Battery LR44
- Made of stainless steel
- Data output
- Supplied with bracket to be mounted on the back
- Optional accessory: data output cable (part no. **7301-SPC5**)

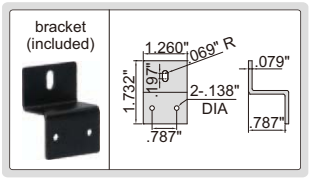
example of application



7102-200




bracket (included)




| Part No. | EDP No. | Range | Accuracy | B | C | D | E | F | L |
|---|---|---|---|---|---|---|---|---|---|
| **7102-200** | 284470 | 8"/200mm | ±.0012" | .157" | .787" | .236" | .945" | 1.575" | 13.583" |
| **7102-400** | 284472 | 16"/400mm | ±.0020" | .157" | .787" | .236" | .945" | 1.575" | 21.457" |
| **7102-800** | 284476 | 32"/800mm | ±.0039" | .217" | .945" | .315" | 1.260" | 1.772" | 38.780" |
| **7102-1000** | 284478 | 40"/1000mm | ±.0039" | .413" | 1.220" | .984" | 1.575" | 2.362" | 49.016" |

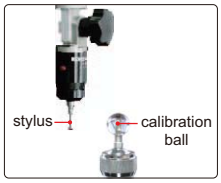
# VISION MEASURING SYSTEM

INSPECTION CERTIFICATE

software CD (included)

ISD-V250 computer is not included

lens with coaxial light (**optional**, must be installed in factory)




probe (**optional**), includes Ø2mm/.079" DIA and Ø3mm/.118" DIA styli, Ø25mm/.984" calibration ball, measuring accuracy is .0004"

## SPECIFICATION

| Part No. | ISD-V150 | ISD-V250 | ISD-V300 |
|---|---|---|---|
| EDP No. | 219183 | 219184 | 219185 |
| Measuring range (X×Y×Z) | 6×4×8" | 10×6×8" | 12×8×8" |
| Stage size | 13.94×8.98" | 17.72×11.02" | 19.69×12.99" |
| Glass stage size | 8.27×6.30" | 12.05×7.72" | 13.78×9.84" |
| Resolutionof X/Y/Z axis | .00002" | | |
| Accuracy of X/Y axis | ≤(98.4+10L)μin L is the measuring length in inch | | |
| Repeatability of X/Y axis | .00008" | | |
| Objective | 0.7X~4.5X (zoom) | | |
| Working distance | 3.62" | | |
| 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 | 6.30" | | |
| Max. weight of workpiece | 44lb | | |
| Operation system | Windows 7/8/10 | | |
| Drive method | manual | | |
| Power supply | 110/220V, 50/60Hz | | |
| Dimension (L×W×H) | 22.05×21.26×33.46" | 29.92×23.62×35.43" | 29.92×23.62×35.43" |
| Weight | 220lb | 264lb | 308lb |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Video card with dongle | 1 pc |
| Software disc | 1 pc |
| Calibration glass chart | 1 pc |
| Laser positioner | 1 pc |
| Clay | 1 pc |
| Foot switch | 1 pc |
| Anti-dust cover | 1 pc |

## OPTIONAL ACCESSORY

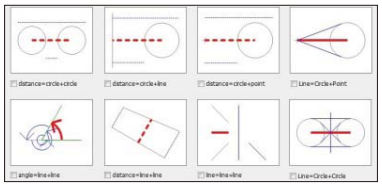
| | |
|---|---|
| 0.5X auxiliary objective | Part No. **ISD-V-OB05X**<br>Working distance: 6.89"<br>Magnification: 16.5~97.5X<br>(on 19" monitor) |
| 2X auxiliary objective | Part No. **ISD-V-OB2X**<br>Working distance: 1.42"<br>Magnification: 66~390X<br>(on 19" monitor) |
| Probe | Part No. **ISD-V-PROBE**<br>includes Ø2mm/.079" DIA and Ø3mm/.118" DIA styli, Ø25mm/.984" calibration ball |
| Lens with coaxial light | Part No. **ISD-V-LENS**<br>(must be installed in factory) |
| Vision measuring system with computer | Part No. **ISD-V150A, ISD-V250A, ISD-V300A** |

## SOFTWARE

- **Operation system:** Windows 7/8/10
- **Language:** English
- **Single measuring tools:**

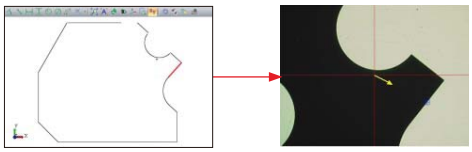
measure distance between two points; measure length, width and diameter of key slot; measure coordinate of point; measure length and diameter of arc; measure width and diameter of ring; measure focus distance of surface; measure center coordinate and axis length of ellipse; measure angle of two lines; measure length and area of closed curve; measure distance of two elements; measure length of open curve; measure length, width and area of rectangle; measure center coordinate, diameter and area of circle

- **Combined measuring tools:**



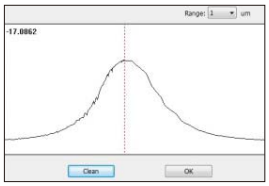
measure distance and angle of two elements

- **CAD measuring:**



Input CAD drawing and set reference, move the stage to make the target box in the center of crosshair, then the software will do automatic measurement

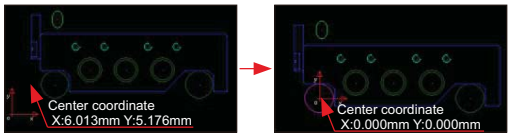
- **Focus indicator:**



To be continued

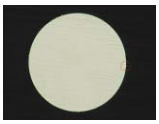
Continued from previous page

- **Coordinate transfer:**

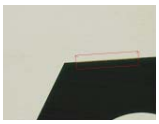



- **Edge-detection:**

Point tool

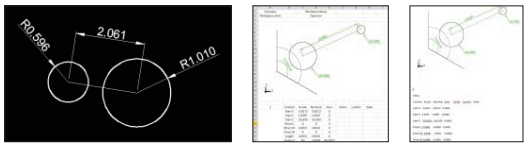


Box tool



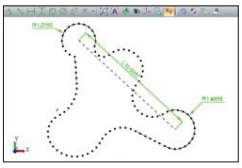
Circle tool

- **Data export to CAD, EXCEL and WORD:**

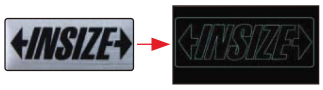



CAD EXCEL WORD

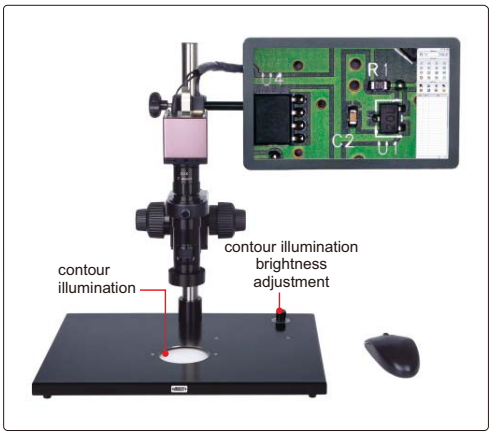
- **Contour scanning:**



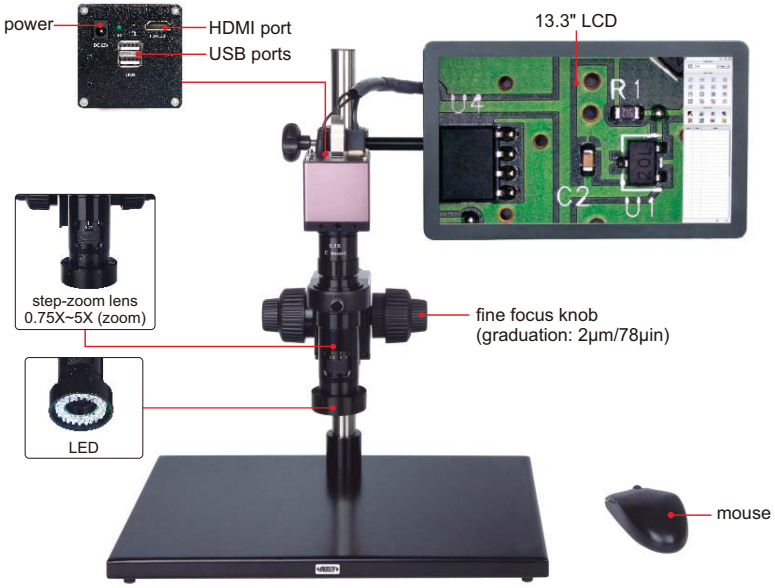
- **Profile detection:**




## DIGITAL MEASURING MICROSCOPE (WITH DISPLAY)




**ISM-DL301-U (with contour illumination)**




**ISM-DL300 (without contour illumination)**

- 1080P high-definition image
- Built-in software without computer, operation by mouse
- Take pictures, saved to USB flash disk
- Measurement results can be output to Excel
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable

calibration plate (included)

16G USB flash disk (included)

1X auxiliary objective (included)

X-Y glass stage **(optional)**
(X-Y travel: 2.91×2.36")

0.5X camera adapter (included)

1X camera adapter (**optional**)

2X auxiliary objective (**optional**)

To be continued

Continued from previous page

## SPECIFICATION

| Part No. | ISM-DL300 (without contour illumination) | ISM-DL301-U (with contour illumination) |
|---|---|---|
| EDP No. | 877229 | 877230 |
| Magnification | 15X~100X | |
| Sensor | 1/2" CMOS | |
| Pixel | 2M | |
| Resolution | 1920×1080 | |
| Frame rate | 60fps | |
| Output | HDMI | |
| Power supply | power adapter | power adapter and 110V, 50/60Hz |
| Dimension (L×W×H) | 22.44×11.81×16.93" | |
| Weight | 14.44lb | |

## OPTIONAL ACCESSORY

| | |
|---|---|
| 1X camera adapter | ISM-DL-CA1X |
| 2X auxiliary objective | ISM-DL-OB2X |
| X-Y glass stage (travel: 2.91×2.36") | ISM-DL-STAGE |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 0.5X camera adapter | 1 pc |
| 1X auxiliary objective | 1 pc |
| Calibration plate | 1 pc |
| 16G USB flash disk | 1 pc |
| White/black plate | 1 pc |
| Mouse | 1 pc |
| HDMI cable | 1 pc |
| Power adapter | 2 pc |

## 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 | 2.76±.08" | 2.76±.08" |
| | View field | .63×.43~.1×.06" | .31×.21~.05×.03" |
| 2X (optional) | Magnification | 30~200X | 60~400X |
| | Focus distance | 1.14±.08" | 1.14±.08" |
| | View field | .31×.21~.05×.03" | .15×.11~.024×.016" |

## MEASURING ACCURACY

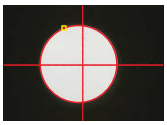
| Magnification | Measuring accuracy* |
|---|---|
| 15X | ±.00031" |
| 30X | ±.00024" |
| 50X | ±.00024" |
| 80X | ±.00016" |
| 100X | ±.00016" |
| >100X | ±.00016" |

*When measuring the contour of workpieces, please select **ISM-DL301-U** to ensure accuracy.

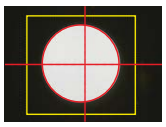
## SOFTWARE

- **Language**: English
- **Output to Excel**
- **Edge-detection:**

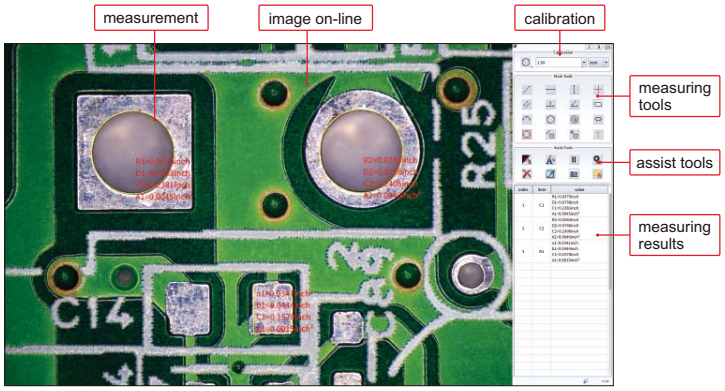
Point tool



Box tool



Click tool




- **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 three 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

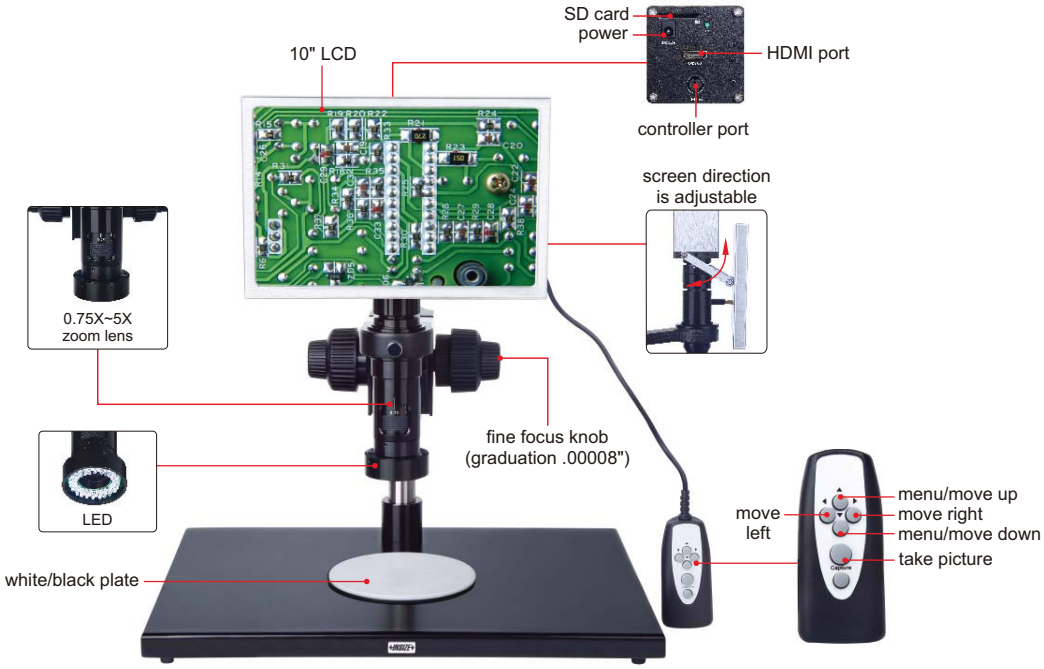
cross hair

# DIGITAL MICROSCOPE (WITH DISPLAY)
# PART NO. ISM-DL200

0.5X camera adapter (included)

1X auxiliary objective (included)

4G memory card and holder (included)




- Take pictures, saved to memory card
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable

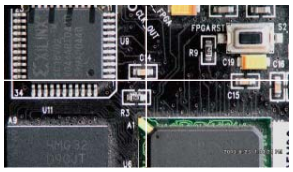
X-Y glass stage **(optional)**
(X-Y travel: 2.91×2.36")

## SPECIFICATION

| | |
|---|---|
| **Part No.** | **ISM-DL200** |
| **EDP No.** | 877228 |
| **Magnification** | 18X~112X |
| **Sensor** | 1/3" CMOS |
| **Pixel** | 1.3M |
| **Resolution** | 1280×800 |
| **Frame rate** | 60fps |
| **Output** | HDMI |
| **Power supply** | power adapter |
| **Dimension (L×W×H)** | 15.75×11.81×16.93" |
| **Weight** | 13.33lb |

1X camera adapter (**optional**)

2X auxiliary objective (**optional**)



crosshair (white/black)

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **0.5X camera adapter** | 1 pc |
| **1X auxiliary objective** | 1 pc |
| **4G memory card and holder** | 1 pc |
| **White/black plate** | 1 pc |
| **HDMI cable** | 1 pc |
| **Power adapter** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **1X camera adapter** | **ISM-DL-CA1X** |
| **2X auxiliary objective** | **ISM-DL-OB2X** |
| **X-Y glass stage (travel: 2.91×2.36")** | **ISM-DL-STAGE** |

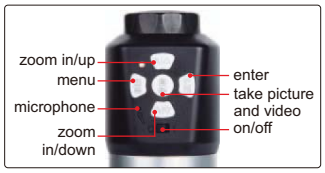
## MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

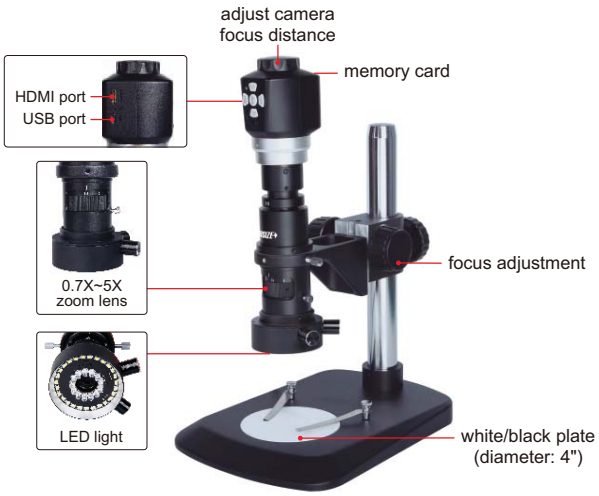
| Auxiliary Objective | Specification | Camera adapter | |
|---|---|---|---|
| | | 0.5X (included) | 1X (optional) |
| 1X (included) | Magnification | 18~112X | 36~224X |
| | Focus distance | 2.76±.08" | 2.76±.08" |
| | View field | .5×.33~.08×.05" | .25×.17~.04×.03" |
| 2X (optional) | Magnification | 36~224X | 72~448X |
| | Focus distance | 1.14±.08" | 1.14±.08" |
| | View field | .25×.17~.04×.03" | .13×.08~.02×.01" |

# DIGITAL MEASURING MICROSCOPE
# PART NO. ISM-DM40

software CD
(included)

operation panel




- Connected to TV and computer
- Take pictures and videos, saved to memory card
- Measurement on computer with accuracy ±.0004"
- Large working distance because focus distance of camera is adjustable
- Automatic white balance and exposure, white-black display mode
- Automatic power off

## SPECIFICATION

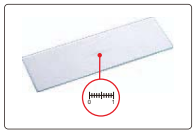
| | | |
|---|---|---|
| Part No. | | ISM-DM40 |
| EDP No. | | 877231 |
| Magnification | | 15X~205X (on 19" monitor) |
| Pixel | | 1.3M |
| Sensor | | 1/3" CMOS |
| Resolution | HDMI output | 1920×1080, 1280×720, 640×480 |
| | picture | 2304×1536, 2304×1296, 1920×1080, 1280×720, 800×480 |
| | video | 1920×1080, 1280×720, 800×480 |
| Output | | USB/HDMI |
| Power supply | | 5V (>500mA) |
| Dimension (L×W×H) | | 10.75×8.07×12.2" |
| Weight | | 7.78lb |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| 8G memory card and holder | 1 pc |
| HDMI cable (for TV) | 1 pc |
| USB cable and software (for computer) | 1 pc |
| Plastic calibration rule (graduation 1mm/.039") | 1 pc |
| Glass calibration rule (graduation 0.1mm/.004") | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Measuring stage | ISM-DM40-STAGE |



glass calibration rule
(included,
graduation 0.1mm/.004")

plastic calibration rule
(included,
graduation 1mm/.039")

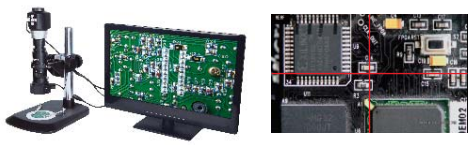
8G memory card
and holder (included)

## LENS SCALE, MAGNIFICATION AND FOCUS DISTANCE

| Lens scale | Magnification (on 19" monitor) | Focus distance |
|---|---|---|
| 0.7X | 15~40X | .94~9.92" |
| 1X | 30~50X | 1.06~6.1" |
| 2X | 70~80X | 3.19~4.61" |
| 3X | 110~120X | 3.7~4.37" |
| 4X | 140~160X | 3.97~4.33" |
| 5X | 180~205X | 4.05~4.29" |

## MAGNIFICATION, VIEW FIELD AND FOCUS DISTANCE

| Magnification (on 19" monitor) | View field | Focus distance |
|---|---|---|
| 15X | 1.1×.63" | 9.92" |
| 30X | .53×.32" | 6.1" |
| 50X | .31×.19" | 4.88" |
| 100X | .16×.09" | 4.33" |
| 150X | .11×.06" | 4.25" |
| 200X | .08×.05" | 4.13" |



connected to TV by HDMI cable,
take pictures and videos, display cross hair

connected to computer by USB cable, take pictures and videos, make measurement

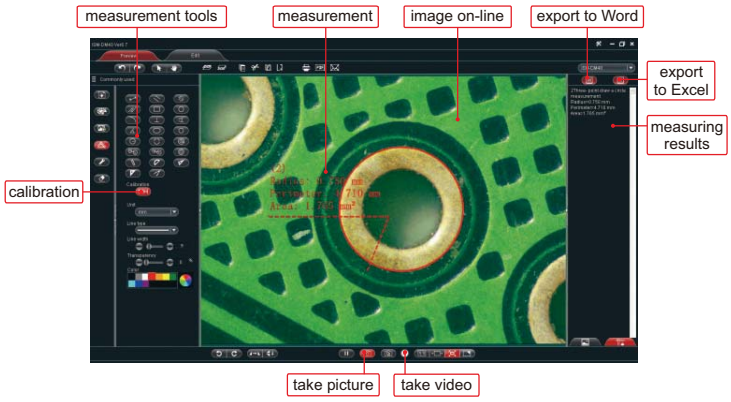
measuring stage (**optional**) measure with micrometers by referring to the cross hair on TV screen (X-Y travel: 1×1", accuracy: ±.00008", resolution .00005")

To be continued

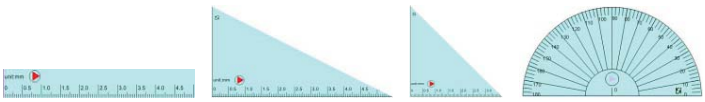
Continued from previous page

## SOFTWARE FOR COMPUTER

- **Language**: Chinese, English, Japanese, German, French
- **Operation system**: Windows XP/7/8/10
- **Measurement tools:**
  - measure length of continuous line
  - measure radius, length and angle of arc
  - measure angle with three points
  - measure distance between two circles
  - measure distance between point and line
  - measure angle with two lines
  - measure radius, girth and area of circle
  - measure length of line or distance between two points
  - measure distance between two parallel lines
  - measure length, width, girth and area of rectangle
  - measure center distance between parallel lines
  - measure axis lengths, girth and area of ellipse
  - measure circumference and area of polygon

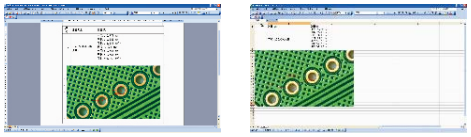



- **Comparison tools:**
  Create rule, angle or protractor, to compare with workpieces.



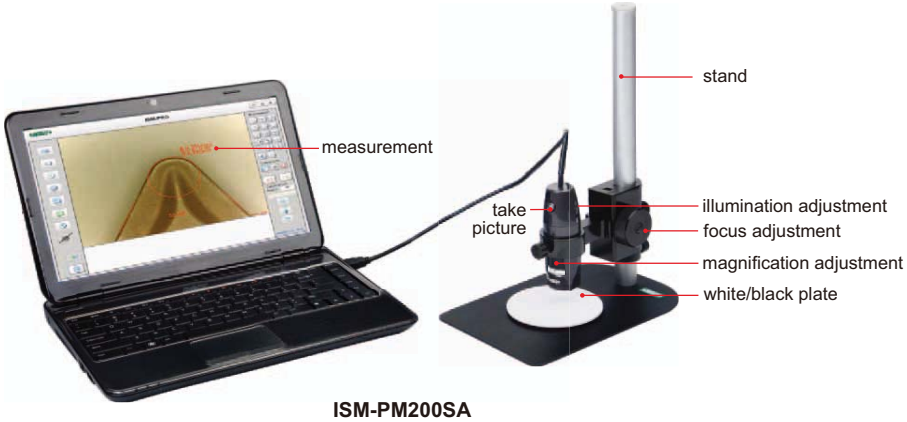
rule | 30°angle | 45°angle | protractor

- **Data export to Word or Excel:**



Word | Excel

## DIGITAL MEASURING MICROSCOPES




**ISM-PM200SA**
**computer is not included**

- Can take pictures and videos
- Supplied with software

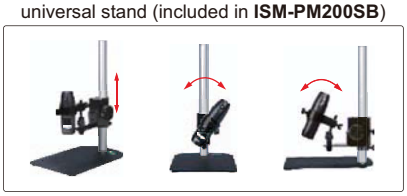
**SPECIFICATION**

| Part No. | ISM-PM200SA | ISM-PM200SB |
|---|---|---|
| EDP No. | 285000 | 285007 |
| Magnification | 10X~200X | 10X~200X |
| Focus distance | short focus distance | short focus distance |
| Stand | standard | universal |
| Focus support | included | included |
| Calibration rule | graduation 0.1mm/.004" and 1mm/.039" | graduation 0.1mm/.004" and 1mm/.039" |
| Pixel | 2M (resolution: 1600×1200) | |
| Ilumination | built-in adjustable LED | |
| Power supply | USB 2.0 cable (voltage required: 5±0.1V) | |

To be continued

Continued from previous page

universal stand (included in **ISM-PM200SB**)



filter (**optional**)

software CD (included)

**MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY**

| ISM-PM200SA/ISM-PM200SB | | | |
|---|---|---|---|
| **Magnification** | **Focus distance** | **View field** | **Accuracy** |
| 50X | .83" | .32×.25" | 1.2mil |
| 100X | .51" | .15×.12" | 0.6mil |
| 150X | .63" | .10×.08" | 0.4mil |
| 200X | .75" | .07×.06" | 0.3mil |

**OPTIONAL ACCESSORY**

| | |
|---|---|
| **Green filter** | **ISM-PM-GREEN** |
| **Yellow filter** | **ISM-PM-YELLOW** |
| **Blue filter** | **ISM-PM-BLUE** |

## SOFTWARE

- **Language**: English, Japanese, Korean, German, Turkey, Portuguese, Chinese
- **Operation system**: Windows XP/7/8/10/Vista
- **Measuring tools:**

measure length of line or distance between two points

measure radius, length and angle of arc

measure distance between two parallel lines

measure distance between two circles

measure distance between point and line

measure length of continuous line

measure angle with three points

measure radius, girth and area of circle

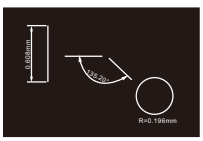
measure area of rectangle

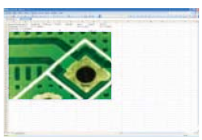
measure angle with two lines

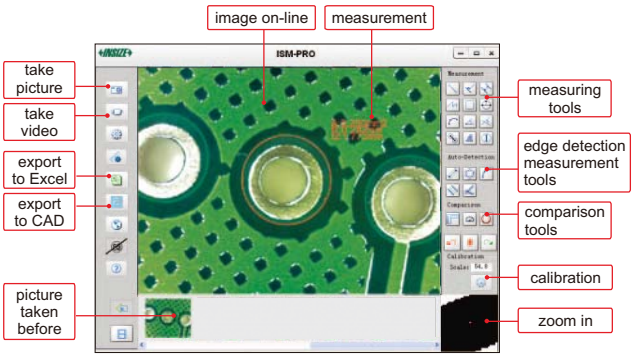
add number with circle

add text

- **Data export to CAD or Excel:**








- **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 line automatically, and calculate length

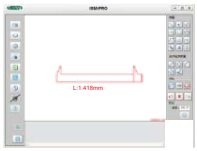
detect two lines automatically, and calculate angle

- **Comparison tools:**
Create line, angle or circle with desired size, to compare with workpieces

create line

create angle

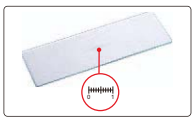
create circle with tolerance



# WiFi DIGITAL MEASURING MICROSCOPE
# PART NO. ISM-WF200

- Maximum working distance is 200" under WiFi mode
- Can be connected to multiple iPads, Android devices or computers at the same time under WiFi mode
- Take pictures and videos
- Supplied with software

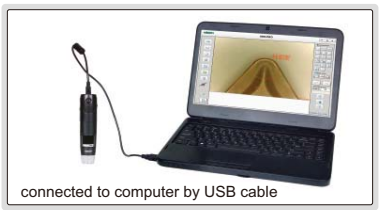
plastic calibration rule (included, graduation 1mm/.039")


glass calibration rule (included, graduation 0.1mm/.004")

connected to iPad by WiFi

connected to Android device by WiFi

connected to computer by WiFi


connected to computer by USB cable

## SPECIFICATION

| | |
|---|---|
| Part No. | ISM-WF200 |
| EDP No. | 816685 |
| 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 |
| Base support | 1 pc |
| Focus support ring for 80X/150X | 1 pc |
| Focus support ring for 60X/200X | 1 pc |
| Glass calibration rule (graduation 0.1mm/.004") | 1 pc |
| Plastic calibration rule (graduation 1mm/.039") | 1 pc |
| USB cable and software | 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 |

stand (part no. **ISM-PM-STAND**, **optional**)

filter (**optional**)

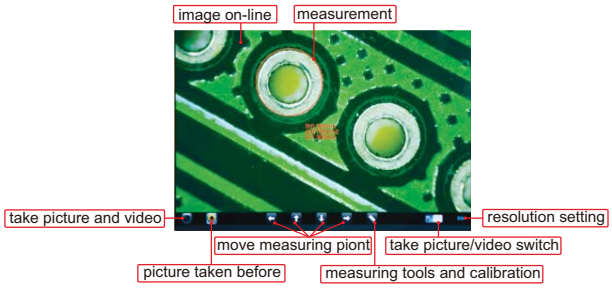
## MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

| Magnification | Focus distance | View field | Accuracy |
|---|---|---|---|
| 50X | .83" | .32×.25" | 1.2mil |
| 100X | .51" | .15×.12" | 0.6mil |
| 150X | .63" | .10×.08" | 0.4mil |
| 200X | .75" | .07×.06" | 0.3mil |

software CD (included)

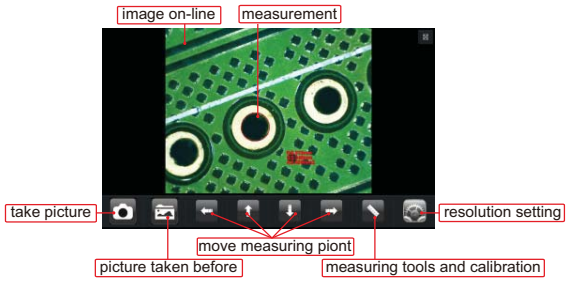
## ❶ Software ISM-PAD (for iPad by WiFi)

- measure length of line or distance between two points
- measure angle
- measure radius, girth and area of circle with three points



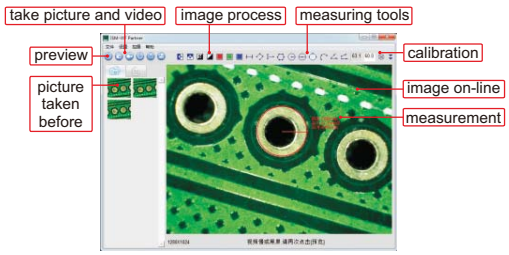

## ❷ Software ISM-APK (for Android devices by WiFi)

- measure length of line or distance between two points
- measure angle
- measure radius, girth and area of circle with three points




## ❸ 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



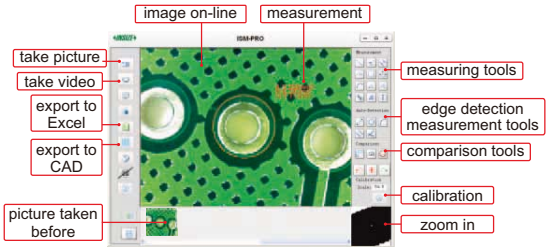

To be continued

Continued from previous page

## ❹ Software ISM-PRO (for computer by USB cable)

- **Measuring tools:**

measure length of line or distance between two points
measure length of continuous line
measure radius, length and angle of arc
measure distance between two circles
measure distance between two parallel lines
measure radius, girth and area of circle
measure distance between point and line
measure area of rectangle
measure angle with three points
add text
measure angle with two lines
add number with circle



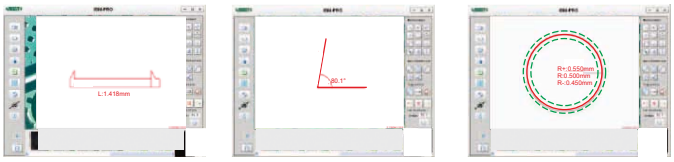

- **Edge detection measurement tools:**

detect line automatically, and calculate length
detect arc automatically, and calculate radius, angle and arc length
detect circle automatically, and calculate radius, girth and area
detect two parallel lines automatically and calculate distance
detect two lines automatically, and calculate angle

- **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:**

## ZOOM STEREO MICROSCOPE

### SPECIFICATION

| | |
|---|---|
| **Part No.** | **ISM-ZS50** |
| **EDP No.** | 877232 |
| **Optical tube** | binocular |
| **Eyepiece (wide field)** | 10X (view field .87" DIA) |
| **Objective** | 0.8X~5X (zoom) |
| **Zoom ratio** | 1:6.3 |
| **Pupil distance** | 2.17~2.95" (adjustable) |
| **Diopter adjustment** | ±5 diopter (two eyepieces) |
| **Working distance of objective** | 4.53" |
| **Max. workpiece height** | 8.46" |
| **Illumination** | adjustable reflected and transmitted LED light |
| **Power supply** | 110/220V, 50/60Hz |
| **Dimension (L×W×H)** | 11.42×10.24×18.90" |
| **Weight** | 10.80lb |

### STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **WF 10X eyepiece** | 2 pcs |
| **3.94" DIA glass plate** | 1 pc |
| **3.94" DIA white/black plate** | 1 pc |
| **Anti-dust cover** | 1 pc |

LED ring light (**optional**)

### OPTIONAL ACCESSORY

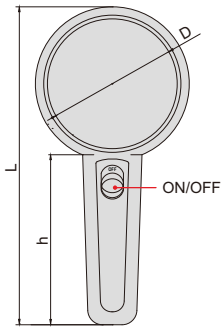
| | | |
|---|---|---|
| **Auxiliary objective** | **0.5X** | **ISM-ZS50-OB05X** |
| | **2X** | **ISM-ZS50-OB2X** |
| **Eyepiece** | **10X dividing eyepiece (graduation 0.1mm/.004")** | **ISM-ZS50-EPD10X** |
| | **WF15X (view field .63" DIA)** | **ISM-ZS50-EP15X** |
| | **WF20X (view field .47" DIA)** | **ISM-ZS50-EP20X** |
| **Digital camera** | | **ISM-D500** |
| **LED ring light** | | **ISM-ZS-RL** |

## MAGNIFIERS WITH ILLUMINATION

- Glass lens
- Powered by 3xAAA batteries (included)

7513-2

7513-4

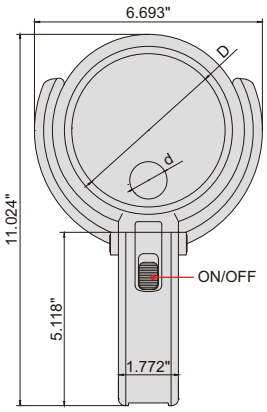



| Part No. | EDP No. | Magnification | Lens diameter (D) | L | h |
|---|---|---|---|---|---|
| **7513-2** | 816388 | 2X | 2.953" DIA | 6.693" | 3.543" |
| **7513-4** | 816389 | 4X | 1.969" DIA | 5.709" | 3.543" |

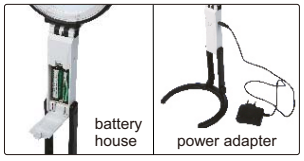
## THREE WAYS MAGNIFIER WITH ILLUMINATION

- Plastic lens
- Powered by 2xAA batteries (included) or power adapter (110~240V, 50~60Hz)

7512-1




three ways use




| Part No. | EDP No. | Magnification | Lens diameter (D) | Lens diameter (d) |
|---|---|---|---|---|
| **7512-1** | 816387 | 2X/4X | 4.724" DIA | 1.102" DIA |

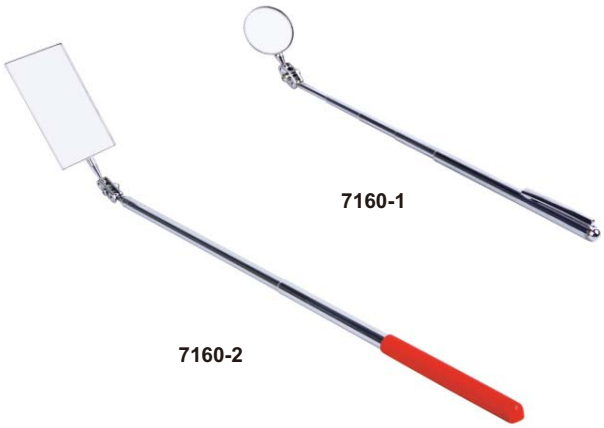
## TABLE MAGNIFIER WITH ILLUMINATION PART NO. 7516-5D-U

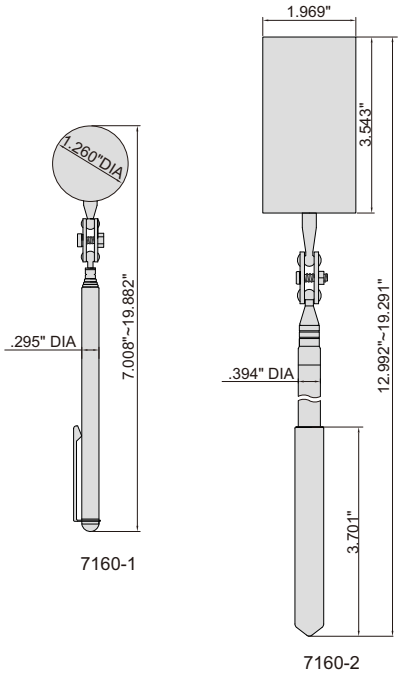
- LED illumination, working life 20000h

**SPECIFICATION**

| | |
|---|---|
| **Part No.** | **7516-5D-U** |
| **EDP No.** | 877214 |
| **Magnification** | 2.25X |
| **Diopter** | 5D |
| **Lens diameter** | 4.803" DIA |
| **Illumination** | power: 7W, illuminance: 420lm |
| **Power supply** | 100~240V, 50~60Hz |

## TELESCOPING INSPECTION MIRRORS



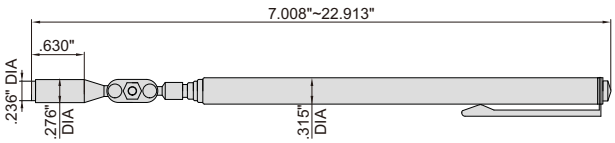




- Inspect hidden areas
- Rotation of the mirror: 360°
- Length of the handle is adjustable, the handle is made of brass and chrome plated

| Part No. | EDP No. | Size of mirror | Length |
|---|---|---|---|
| **7160-1** | 877204 | 1.260" DIA | 7.008"~19.882" |
| **7160-2** | 877205 | 1.969"x3.543" | 12.992"~19.291" |

## TELESCOPING MAGNETIC PICK-UP

- Pick up metal parts from hidden areas
- Rotation of the magnetic head: 360°
- Length of the handle is adjustable, the handle is made of brass and chrome plated

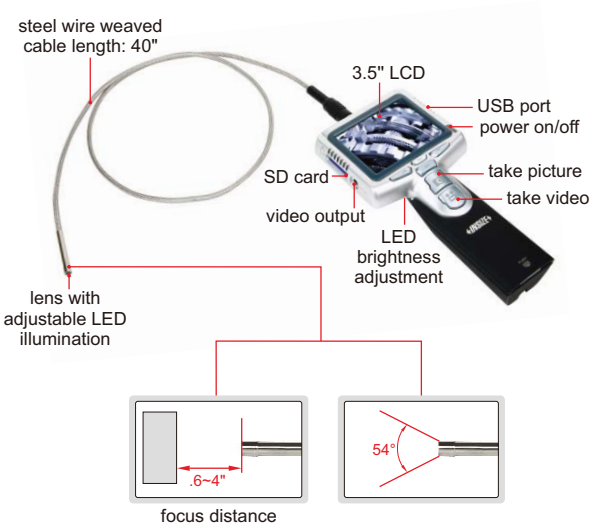


| Part No. | EDP No. | Size of magnetic tip | Magnetic force | Length |
|---|---|---|---|---|
| **7161-1** | 877206 | .236" DIA | 0.99lbf | 7.008"~22.913" |

## VIDEOSCOPE

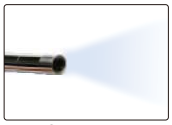
IP65

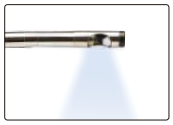
- IP65 dust/coolant proof
- Optional cable length 3m, 5m and 10m
- The cable can be bent but can't be set at a fixed shape




### SPECIFICATION

| | | |
|---|---|---|
| Part No. | | ISV-E10 |
| EDP No. | | 816397 |
| Lens | diameter | .22" |
| | pixel | 0.3M |
| | resolution | 640×480 |
| | frame rate | 30fps |
| Cable | length | 40" |
| | 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 | | .99lb |


front view

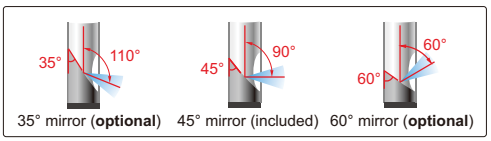

side view (with mirror)

### 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

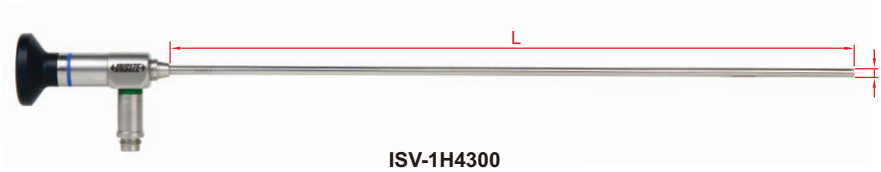
| | |
|---|---|
| 35° mirror | ISV-E55-M35 |
| 60° mirror | ISV-E55-M60 |



35° mirror (**optional**) 45° mirror (included) 60° mirror (**optional**)

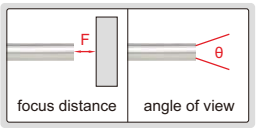
## RIGID BORESCOPE

IP67



**ISV-1H4300**

- Focus distance .08", depth of view .2~4"
- IP67 dust/coolant proof
- Can be used in the liquid with temperature: 14°F~185°F



view direction 0°

LED light handle (**optional**)

adjustable LED light source (**optional**)

camera (**optional**)

### SPECIFICATION

| Part No. | EDP No. | Length (L) | View direction (α) | Diameter (D) | Angle of view (θ) |
|---|---|---|---|---|---|
| ISV-1H4300 | 877260 | 11.89" | 0° | .16" | ≥60° |

### OPTIONAL ACCESSORY

| | |
|---|---|
| LED light handle | ISV-1HLED |
| Adjustable LED light source | ISV-1LED1 |
| Camera | ISV-2CAM |

# ROUGHNESS TESTER

- 21 roughness parameters
- Display roughness values, profile and curve
- Memory of maximum 100 results
- Automatic power off
- Can be controlled by computer
- Data output

software CD (included)

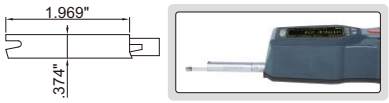
printer (**optional**)

probe cover (included)

put the small workpieces directly under the probe for measurement

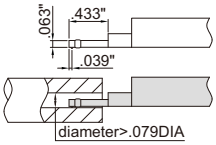
adjustable stand (included)

**extension rod (optional), Part No. ISR-C002-ER**

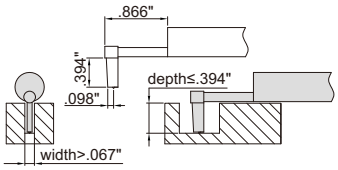



**transverse rod (optional), Part No. ISR-C002-TR**

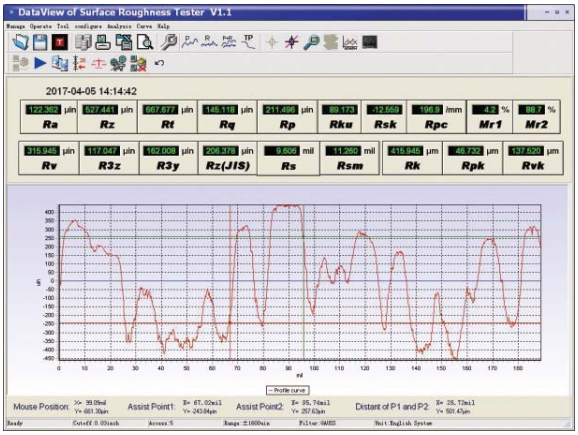
**small hole probe (optional), Part No. ISR-C002-SBP**




**deep groove probe (optional), Part No. ISR-C002-DGP**



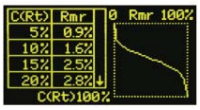

software (included)



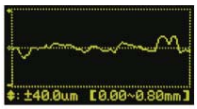

control the roughness tester by computer, display roughness values, profile and curve

screen display

measurement result




Rmr analysis



roughness profile

light duty test stand (**optional**)

the maximum workpiece height is 8.66"

heavy duty test stand (**optional**)

the maximum workpiece height is 12.20"

## SPECIFICATION

| | | |
|---|---|---|
| **Part No.** | | **ISR-C002** |
| **EDP No.** | | 219180 |
| **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** | | 6299µin |
| **Accuracy** | | ±10% |
| **Resolution (Ra)** | | 0.01µin |
| **Probe** | **type** | inductive |
| | **stylus radius/angle** | 196µin/90° |
| | **stylus material** | diamond |
| **Measuring force** | | .01ozf |
| **Measuring unit** | | µm/µin |
| **Cut off** | | .01/.03/.1" |
| **Number of cut-offs** | | 1 to 5 |
| **Traverse speed** | | .02"/s, .04"/s |
| **Memory** | | 100 measurement results |
| **Output** | | USB |
| **Power** | | built-in rechargeable battery |
| **Dimension (L×W×H)** | | 5.55×2.16×1.57" |
| **Weight** | | .89lb |

## 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** |

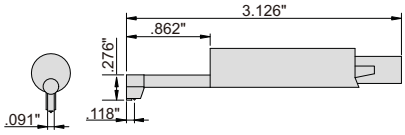
# ROUGHNESS TESTER (SEPARABLE TYPE)
# PART NO. ISR-C300

CAN BE OPERATED BY COMPUTER OR MOBILE PHONE

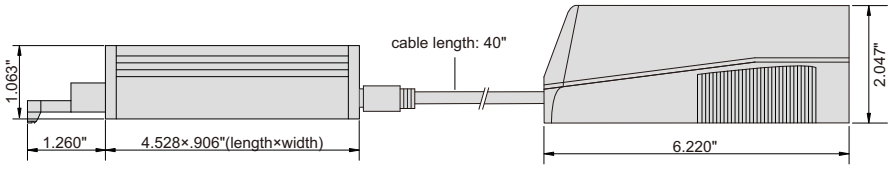
BLUETOOTH

software CD
(included)

- Roughness tester can be operated by mobile phone (only android system) or computer
- Data can be output to Excel by connecting with computer 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
- Automatic power off




probe and main unit can be combined together




## SPECIFICATION

| | | |
|---|---|---|
| Part No. | | ISR-C300 |
| EDP No. | | 877234 |
| 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 | .689" |
| | Z axis | 12598µin(-6299µin~6299µin) |
| Accuracy | | ±10% |
| Resolution (Ra) | | 0.01µin |
| Probe | type | inductive |
| | stylus radius/angle | 196µin/90° |
| | stylus material | diamond |
| Measuring force | | .01ozf |
| Measuring unit | | µm/µin |
| Cut off | | .01/.03/.1" |
| Number of cut-offs | | 1 to 5 |
| Traverse speed | | .005"/s, .02"/s, .04"/s |
| Memory | | 100 measurement results |
| Output | | USB and bluetooth |
| Power | | built-in rechargeable battery |
| Dimension (L×W×H) | | 6.22×2.52×2.05" |
| Weight | | .89lb |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1pc |
| Standard probe | 1pc |
| Calibration block and support | 1pc of each |
| Connecting cable (long and short) | 1pc of each |
| Magnetic stand adapter | 1pc |
| Adjustable stand | 1pc |
| Touch pen | 1pc |
| USB cable and software | 1pc |
| AC/DC adapter | 1pc |

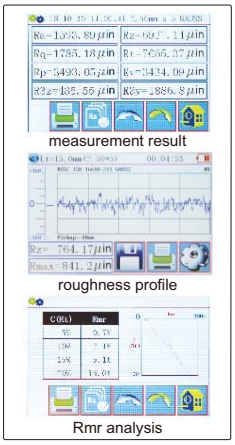
## OPTIONAL ACCESSORY

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

To be continued

Continued from pevious page

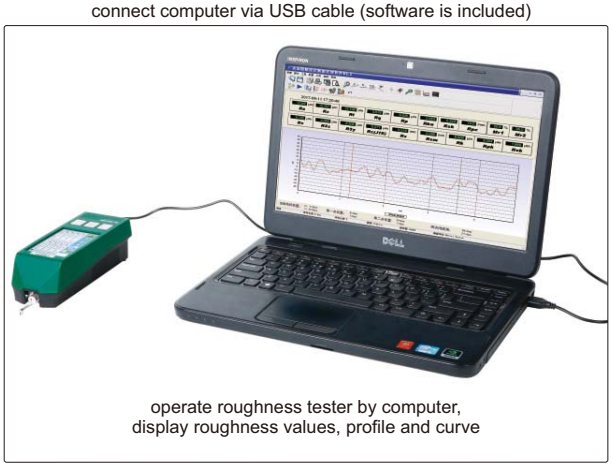
roughness tester screen display




connect mobile phone via bluetooth (only android system)

operate roughness tester by mobile phone, display roughness values, profile and curve

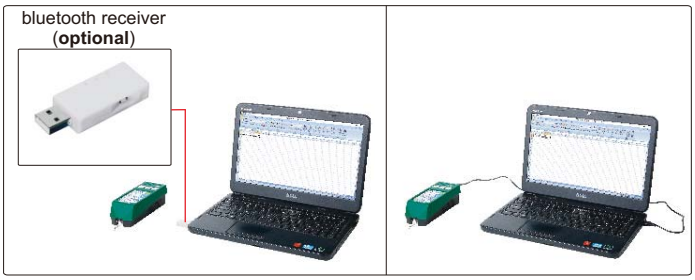
connect computer via USB cable (software is included)



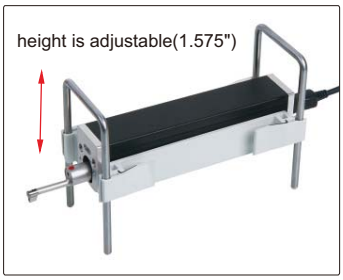
operate roughness tester by computer, display roughness values, profile and curve

data can be output to Excel by connecting computer via bluetooth or USB cable

bluetooth receiver (**optional**)



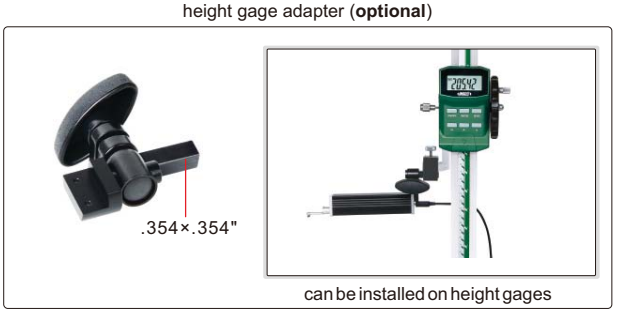
adjustable stand (included)




bluetooth printer (**optional**)

magnetic stand adapter (included)

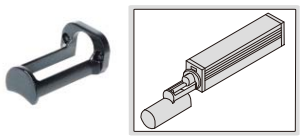
height gage adapter (**optional**)



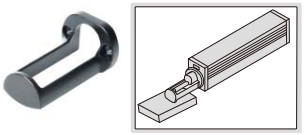

**NOTE**: Please confirm whether the adapter can fit your height gages. When using **INSIZE** height gages, please use the dial test indicator holder of height gages

probe support (**optional**)

support for flat surface

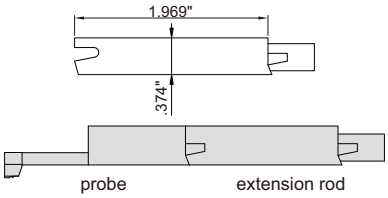


support for cylindrical surface

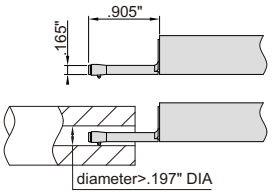


optional probes

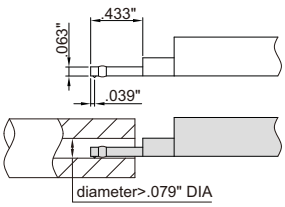
extension rod (**optional**), part no. **ISR-C002-ER**



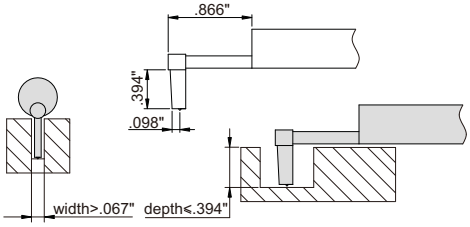

small hole probe (**optional**), part no. **ISR-C002-PROBE**




tiny hole probe (**optional**), part no. **ISR-C002-SBP**




deep groove probe (**optional**), part no. **ISR-C002-DGP**



# ROUGHNESS TESTER
# PART NO. ISR-S400

CUSTOM-MADE PROBES ARE AVAILABLE

software CD (included)

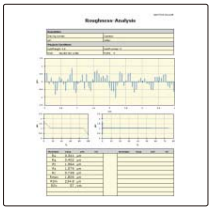
VIDEO

adjustable stand (included)

transverse measurement

- Automatic probe leveling
- Language: English, French, German, Italian, Spanish, Portuguese
- 12 roughness parameters
- Can set tolerance
- Measuring range up to 15748µin, can measure grit and shot blasting
- Traverse length up to .63"
- The probe can be set at 90°or 270°, for transverse measurement
- Memory of maximum 100 results
- Data output
- Probe can be replaced

probe cover (included), can put the small workpieces directly on the probe for measurement



output software (included), output data and graphic to Excel, make report, print

measuring software (**optional**), can control the roughness tester, display roughness values, profile and curve, data statistics

heavy duty test stand (**optional**)

light duty test stand (**optional**)

## SPECIFICATION

| | | |
|---|---|---|
| Part No. | | ISR-S400 |
| EDP No. | | 877235 |
| Parameters | | Ra, Rq, Rt, Rz, Rc, Rmax, Rsm, Rpc, Rmr, R, AR, Rx |
| Range | | Ra: 0~3937µin, Rt: 1.97~15748µin |
| Accuracy | | ±3% |
| Resolution (Ra) | | .01µin |
| Probe | type | inductive |
| | stylus radius/angle | 196µin/90° |
| | stylus material | diamond |
| Measuring force | | .003ozf |
| Measuring unit | | µin/µm |
| Cut off | | .01/.03/.1" |
| Number of cut-offs | | 1 to 5 |
| Traverse speed | | .04"/s |
| Memory | | 100 measurement results |
| Output | | USB |
| Power | | built-in rechargeable battery |
| Dimension (L×W×H) | | 4.80×2.05×2.68" |
| Weight | | 1.43lb |

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Standard probe | 1 pc |
| Calibration block | 1 pc |
| Adjustable stand | 1 pc |
| AC/DC adapter | 1 pc |
| Probe cover | 1 pc |
| USB cable and output software | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Extension rod | ISR-S400-ER100 |
| Probe | see details |
| Measuring software | ISR-S-SOFTWARE |
| Heavy duty test stand | ISR-S400-DK |
| Light duty test stand | ISR-S400-STAND |

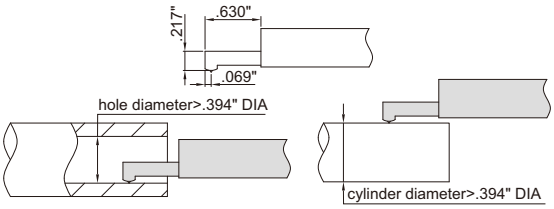
To be continued

Continued from previous page



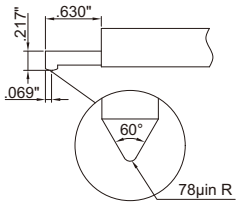
## SPECIFICATION OF PROBES

### standard probe (included)



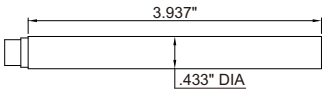

measure plane surfaces, holes and cylinders with diameter>.394" DIA

### small roughness probe (optional), part no. ISR-S400-SB10R2



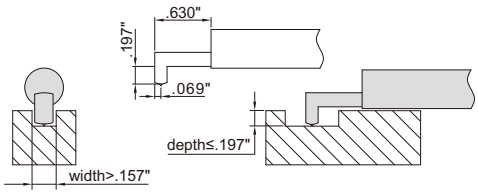

measure surfaces with small roughness

### extension rod (optional), part no. ISR-S400-ER100



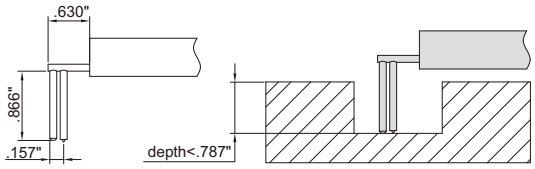

for long holes

### groove probe (optional), part no. ISR-S400-SB20



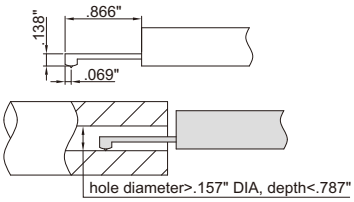

measure plane surfaces and grooves

### deep groove probe ( optional), part no. ISR-S400-SB120



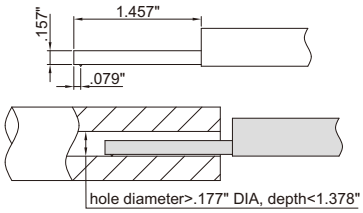

measure grooves with depth<.787"

### small hole probe (optional), part no. ISR-S400-SB30



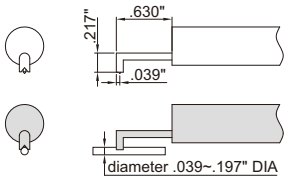

measure plane surfaces and holes with diameter>.157" DIA and depth<.787"

### deep hole probe (optional), part no. ISR-S400-SB80



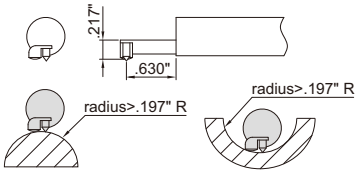

measure holes with diameter>.177" DIA and depth<1.378"

### small rod probe (optional), part no. ISR-S400-SB40



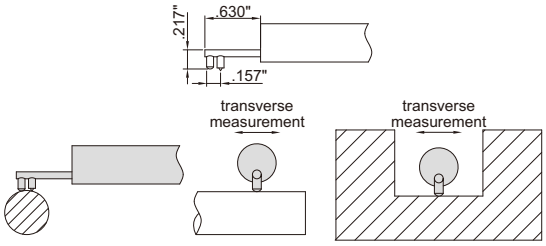

measure small rods with diameter .039~.197" DIA

### cylinder/hole probe (optional), part no. ISR-S400-SB110



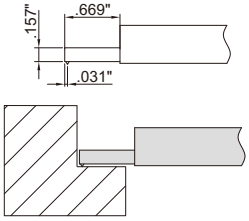

measure cylinders and holes with radius>.197" R

### transverse probe (optional), part no. ISR-S400-SB50




transverse measurement for plane surfaces, cylinders and grooves

### internal angle probe(optional), part no. ISR-S400-SB140




measure internal angles

## ROUGHNESS TESTER

- Unit: µm, µin
- Automatic power off

### SPECIFICATION

| | | |
|---|---|---|
| Part No. | | ISR-C003 |
| EDP No. | | 219181 |
| Parameters | | Ra, Rz, Rq, Rt |
| Range | | Ra, Rq: 2~590µin<br>Rz, Rt: 4~1968µin |
| Accuracy | | ±10% |
| Resolution (Ra) | | 0.01µin |
| Probe | type | piezoelectric |
| | stylus radius/angle | 393µin/90° |
| | stylus material | diamond |
| Measuring force | | .012ozf |
| Measuring unit | | µm/µin |
| Cut off | | .01/.03/.1" |
| Evaluation length | | .05" for cut off .01"<br>.15" for cut off .03"<br>.2" for cut off .1" |
| Traverse speed | | .03"/s |
| Power | | built-in rechargeable battery |
| Dimension (L×W×H) | | 4.17×2.75×.94" |
| Weight | | .44lb |

calibration block
(included)

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Calibration block | 1 pc |
| AC/DC adapter | 1 pc |

## SURFACE ROUGHNESS SPECIMEN SET

- For checking, identifying and specifying the roughness by symbol
- Made of carbon steel
- For mantenace apply anti-rust oil after use

| Part No. | EDP No. | Machining method | Roughness (Ra) | Roughness (Rz) | Quantity |
|---|---|---|---|---|---|
| ISR-CS2E | 877233 | Horizontal milling | 16, 32, 63, 125, 250, 500µin | 100, 160, 320, 640, 1280, 2000µin | 6 pcs |
| | | | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 1.6, 3.2, 6.3, 12.5, 25, 50µm | |
| | | Vertical milling | 16, 32, 63, 125, 250, 500µin | 100, 160, 320, 640, 1280, 2000µin | 6 pcs |
| | | | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 1.6, 3.2, 6.3, 12.5, 25, 50µm | |
| | | Turning | 16, 32, 63, 125, 250, 500µin | 100, 160, 320, 640, 1280, 2000µIn | 6 pcs |
| | | | 0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm | 1.6, 3.2, 6.3, 12.5, 25, 50µm | |
| | | Plain grinding | 2, 4, 8, 16, 32, 63µin | 22.1, 40, 63, 120, 240, 400µin | 6 pcs |
| | | | 0.05, 0.1, 0.2, 0.4, 0.8, 1.6µm | 0.2, 0.4, 0.8, 1.6, 3.2, 6.3µm | |
| | | Flat lapping | 2, 4µin | 22.1, 40µin | 2 pcs |
| | | | 0.05, 0.1µm | 0.2, 0.4µm | |
| | | External grinding | 8, 16, 32, 63µin | 63, 120, 240, 400µin | 4 pcs |
| | | | 0.2, 0.4, 0.8, 1.6µm | 0.8, 1.6, 3.2, 6.3µm | |

# COATING THICKNESS GAGE

calibration foils (included)

zero calibration block for Fe (included)

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**)

magnetic induction probe Fe (included)

software CD (included)

- Magnetic induction probe (Fe) is to measure the thickness of non-magnetic coating on magnetic substrate
  Substrate: iron, steel, magnetic stainless steel (does not include non-magnetic stainless steel)
  Coating: zinc, copper, chrome, tin, plastic, powder, paint (nickel is not included)
- Eddy current probe (NFe) is to measure the thickness of non-conductive coating on non-magnetic substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing
- Low and high limits with judgement
- Automatic power off
- For magnetic and non-magnetic substrates
- Data output

## SPECIFICATION

| Part No. | 9501-1200 | | | |
|---|---|---|---|---|
| EDP No. | 877217 | | | |
| Probe type | **FE (included)** magnetic induction probe | **NFE (optional)** eddy current probe | **FE90 (optional)** magnetic induction probe for bores and grooves | **FE10 (optional)** magnetic induction probe with big range |
| Measuring range | 0~50mils | 0~50mils | 0~50mils | 20~400mils |
| Accuracy | ±(3%L+.04)mils (range≤50mils)<br>±(3%L+.4)mils (range>50mils) L is measuring thickness in mils | | | |
| Resolution | .01mils | | | .1mils |
| Measuring mode | continuous and single | | | |
| Minimum substrate thickness | .02" | .012" | .02" | .08" |
| Minimum measuring area | .28" DIA | .2" DIA | .28" DIA | 1.57" DIA |
| Minimum curvature radius of convex workpiece | .06" | .12" | – | .4" |
| Memory | 500 | | | |
| Power supply | 2×1.5V AA batteries | | | |
| Dimension | 5.04×2.68×1.26" | | | |
| Weight | .75lb | | | |

## STANDARD DELIVERY

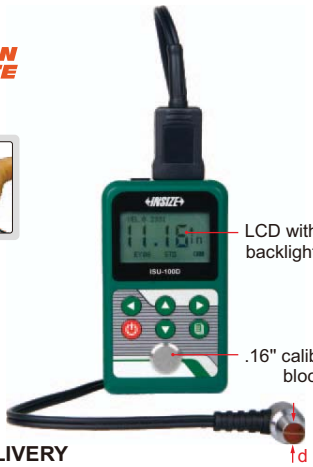
| | |
|---|---|
| Main unit | 1 pc |
| Magnetic induction probe (Fe) | 1 pc |
| Zero calibration block for Fe probe | 1 pc |
| Calibration foils (50μm/2mils, 100μm/4mils, 250μm/10mils, 500μm/20mils, 1000μm/40mils) | 1 set |
| 1.5V AA battery | 2 pcs |
| USB cable and software | 1 pc |

## OPTIONAL ACCESSORY

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

## ULTRASONIC THICKNESS GAGE

INSPECTION CERTIFICATE




- Measure the thickness from one side of object, suitable for pipe, tank, etc.
- Applicable material: metal, plastic, glass, nylon, resin, ceramic, ice
- Not recomended for casting workpieces

### SPECIFICATION

| Part No. | | ISU-100D |
|---|---|---|
| EDP No. | | 816694 |
| Measuring range | | .03~11.81" |
| Resolution | | .001" (range<10") |
| | | .01" (range≥10") |
| Accuracy | | ±.002" (range<.4")<br>±(.002+H/1000)" (range .4~4")<br>±H/333" (range≥4")<br>H is the thickness to be measured in inch |
| Transducer | frequency | 5MHz |
| | diameter (d) | .43" DIA |
| Minimum size of pipe for measurement | | .79×.05" (diameter × wall thickness) |
| Applicable temperature | | <140°F |
| Velocity | | .039~.394 inch/μs |
| Power supply | | 2×AAA batteries |
| Dimension | | 4.49×2.52×1.1" |
| Weight | | .49lb |

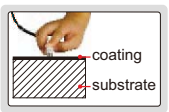
### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Transducer | 1 pc |
| Couplant | 1 bottle |
| Battery (AAA) | 2 pcs |

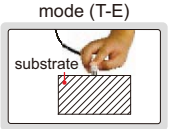
## ULTRASONIC THICKNESS GAGE (THROUGH COATING)

INSPECTION CERTIFICATE

Echo-Echo mode (E-E)

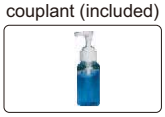



Transmit-Echo mode (T-E)



- 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 substrate, can penetrate coating and measure the thickness of substrate
  - T-E is to measure the thickness of material without coating, such as metal, plastic, glass, nylon, resin, ceramics, ice, etc.
- Low and high limits with judgment
- Average calculation of maximum 9 readings
- Memory of maximum 500 readings
- Data output

couplant (included)



transducer ISU-T04 (**optional**)

transducer ISU-T06 (**optional**)

transducer ISU-T12 (**optional**)

transducer ISU-T13 (**optional**)

### SPECIFICATION

| Part No. | ISU-300D |
|---|---|
| EDP No. | 877259 |
| Measuring range | E-E mode: coating thickness 0~.04", substrate thickness .16~.98" |
| | T-E mode: substrate thickness .06~7.87" |
| Resolution | .001" (range<10")<br>.01" (range≥10") |
| Repeatability | .001" (range<4")<br>.004" (range 4~10")<br>.01" (range≥10") |
| Accuracy | ±.002" (range<.4")<br>±(.002+H/1000)" (range .4~4")<br>±H/333" (range≥4")<br>H is the thickness to be measured in inch |
| Velocity | .039~.394inch/μs |
| Power supply | 2×1.5V AAA batteries |
| Dimension | 4.57×2.52×1.06" |
| Weight | .49lb |

### 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 ACCESSARY

| | |
|---|---|
| Transducer | ISU-T04, ISU-T06, ISU-T12, ISU-T13 |
| Couplant (for ISU-T13) | ISU-HT5-COUPLANT |

### SPECIFICATION OF TRANSDUCERS

| Part No. | Mode | Frenquency | Diameter (d) | Measuring range | Minimum size of pipe for measurement (diameter × wall thickness) | Applicable temperature | Application |
|---|---|---|---|---|---|---|---|
| ISU-T07 | T-E<br>E-E | 5.0MHz | .43" DIA | T-E mode .06~7.87"<br>E-E mode .16~.98" | T-E mode .79×.05"<br>E-E mode .79×.16" | <140°F | general use |
| ISU-T04 | T-E | 10.0MHz | .24" DIA | .03~0.79" | .39×.04" | <140°F | for small tube |
| ISU-T06 | T-E | 7.5MHz | .33" DIA | .03~1.97" | .59×.05" | <140°F | for thin material |
| ISU-T12 | T-E | 2.0MHz | .64" DIA | .08~15.75" | 1.18×.16" | <140°F | for casting iron |
| ISU-T13 | T-E | 5.0MHz | .51" DIA | .08~7.87" | .98×.12" | <662°F | for high temperature |

## INFRARED THERMOMETER

- Fast measurement with infrared or k-type sensor
- Maximum, minimum, average and difference modes
- Low and high limits with judgement
- Automatic power off

### SPECIFICATION

| | | |
|---|---|---|
| Part No. | | 9110-500 |
| EDP No. | | 877215 |
| Measuring range | infrared | -76~932°F |
| | k-type sensor | -40~1976°F |
| Accuracy | infrared | ±(1.5%+4)°F |
| | k-type sensor | ±(1%+4)°F |
| Resolution | | .1°F (range<199.9°F), 1°F (range>199.9°F) |
| Distance to spot ratio (D:S) | | 12:1 |
| Emissivity | | 0.1~1 (adjustable) |
| Laser type | | 630~670nm, Class II, <1mW |
| Response time | | <500ms |
| Power supply | | 9V battery |
| Dimension | | 6.93×5.19×1.93" |
| Weight | | .5lb |

k-type sensor (included)

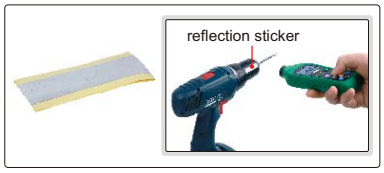
### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| K-type sensor | 1 pc |
| 9V battery | 1 pc |

## NON-CONTACT DIGITAL TACHOMETER

- Maximum and minimum modes
- Memory 100 measurement values
- Automatic power off

reflection sticker (included)




### SPECIFICATION

| | |
|---|---|
| Part No. | 9221-999 |
| EDP No. | 877216 |
| Measuring range | 50~99999RPM |
| Accuracy | ±(.03%+2)RPM |
| Resolution | .01RPM (range 50~99.99RPM) |
| | .1RPM (range 100~9999.9RPM) |
| | 1RPM (range 10000~99999RPM) |
| Measuring distance | 2~10" |
| Power supply | 4×AAA batteries |
| Dimension | 6.1×2.36×1.06" |
| Weight | .26lb |

### STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Reflection sticker | 1 roll |
| Battery (AAA) | 4 pcs |

## PORTABLE REFRACTOMETER

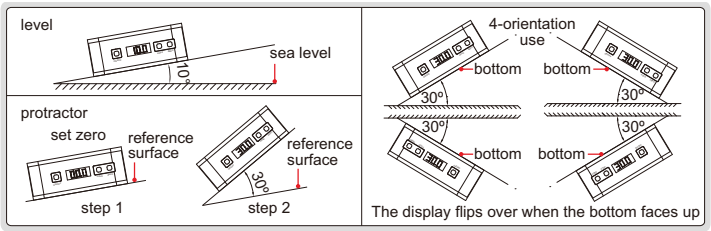
- Quickly measure the concentration of coolant
- Refer to the refraction factor of coolant, for example:
  the refraction factor of grinding emulsion is 2.1,
  the reading value is 6%, so the actual concentration is (2.1×6%)=12.6%
- Suitable for water based coolant

### SPECIFICATION

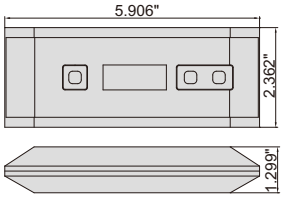
| Part No. | ISQ-RM30 |
|---|---|
| EDP No. | 219182 |
| Measuring range | 0~32% |
| Graduation | 0.2% |
| Dimension | 1.06×1.57×6.3" |
| Weight | .39lb |

## ELECTRONIC LEVEL AND PROTRACTOR

- Aluminum frame
- Magnetic bottom with V-groove for shafts
- Zero setting can be made on any plain surfaces
- Buttons: ON/OFF, ZERO, HOLD (keep the reading)
- CR2032 battery
- Automatic power off



**2173-360**



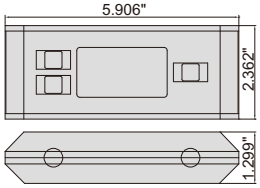

| Part No. | EDP No. | Range | Resolution | Accuracy |
|---|---|---|---|---|
| **2173-360** | 816340 | 0-360° (90°x4) | 0.1° (= 1.745 mm/m) | at 0° and 90°: ±0.1°; others: ±0.2° |

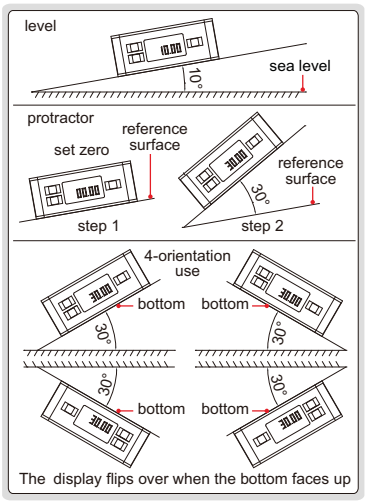
## ELECTRONIC LEVEL AND PROTRACTOR

IP54

- IP54 dust/coolant proof
- Aluminum frame
- 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, absolute and incremental measurement, keep the reading, buzzer alarm (at 0° and 90°), unit (in/ft, %, mm/m), backlight
- Two AAA batteries
- Automatic power off
- Absolute level

**2179-360**



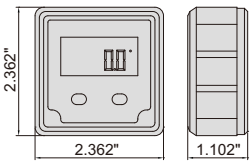



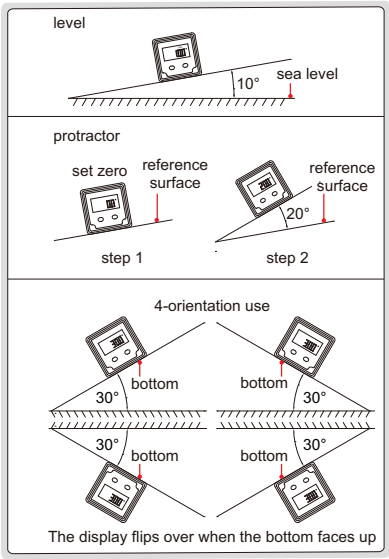

| Part No. | EDP No. | Range | Resolution | Accuracy |
|---|---|---|---|---|
| **2179-360** | 877108 | 0-360° (90°x4) | 0.05°/.125in/ft | at 0° and 90°: ±0.1°; others: ±0.2° |

## ELECTRONIC LEVEL AND PROTRACTOR

- 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 minutes 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
- Absolute level

**2170-1**



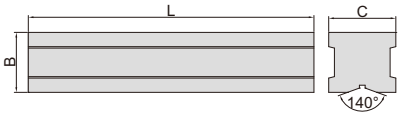




| Part No. | EDP No. | Range | Resolution | Accuracy |
|---|---|---|---|---|
| **2170-1** | 816396 | 4x90° | 0.1°(=.021in/ft) | at 0°and 90°: ±0.1°; others: ±0.2° |

## BLOCK LEVELS

- V-groove on bottom for shafts (shafts diameter .63~2.76")
- With transverse vial
- Supplied with adjusting wrench

**4901-8**



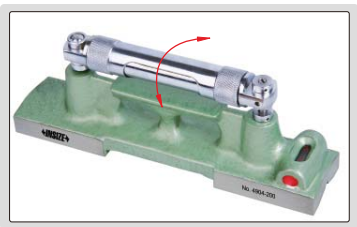

| Part No. | EDP No. | Length (L) | B | C | Sensitivity |
|---|---|---|---|---|---|
| **4901-6** | 816326 | 6" | 1.575" | 1.772" | .00024in/ft (=0.001°) |
| **4901-8** | 816328 | 8" | 1.654" | 1.850" | .00024in/ft (=0.001°) |
| **4901-12** | 816330 | 12" | 1.772" | 1.969" | .00024in/ft (=0.001°) |

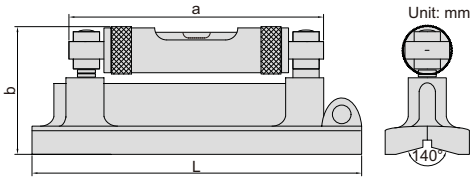
## MACHINISTS' LEVELS

- 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

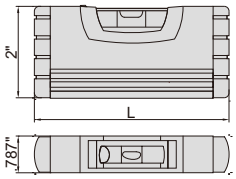





**(mm)**

| Part No. | EDP No. | Sensitivity | Size (L) | a | b |
|---|---|---|---|---|---|
| **4904-150** | 877177 | 0.3mm/m(=0.017°) | 150mm | 150 | 58 |
| **4904-200** | 877178 | 0.3mm/m(=0.017°) | 200mm | 135 | 73 |
| **4904-300** | 877179 | 0.3mm/m(=0.017°) | 300mm | 216 | 73 |

## PORTABLE LEVEL



**4912-100**

packaging

- Shockproof vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: 5°F~131°F
- Vials made in israel lifetime warranty

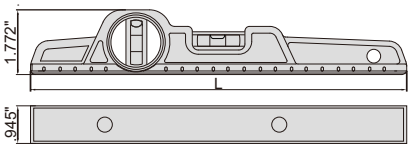
| Part No. | EDP No. | Size (L) | Accuracy |
|---|---|---|---|
| **4912-100** | 877180 | 4" | .006in/ft |

## CAST ALUMINUM LEVEL

**4913-250**

packaging

- Shockproof horizontal and vertical vials
- Magnetic base
- Working temperature: 5°F~131°F
- Cast aluminum body
- Vials made in israel lifetime warranty




| Part No. | EDP No. | Size (L) | Accuracy |
|---|---|---|---|
| **4913-250** | 877182 | 10" | .006in/ft |

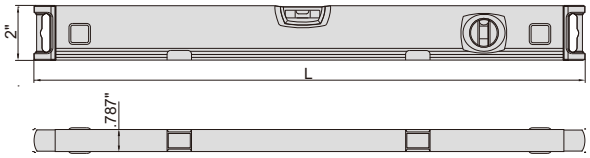
## ALUMINUM LEVELS

**4914-600**

- Shockproof horizontal and vertical vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: 5°F~131°F
- Vials made in israel lifetime warranty



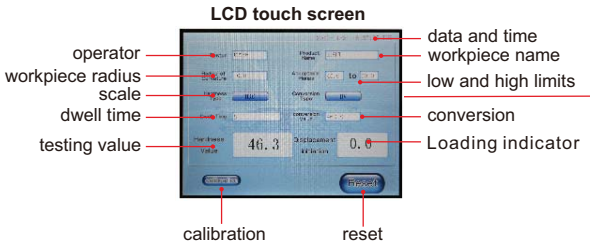
| Part No. | EDP No. | Size (L) | Accuracy |
|---|---|---|---|
| **4914-600** | 877185 | 24" | .006in/ft |
| **4914-800** | 877186 | 32" | .006in/ft |
| **4914-1000** | 877183 | 40" | .006in/ft |
| **4914-1200** | 877184 | 48" | .006in/ft |



INSPECTION CERTIFICATE

SPC

# AUTOMATIC ELECTRONIC ROCKWELL HARDNESS TESTER (DOLPHIN-NOSE MODEL) PART NO. ISHR-T100-U**



measure interior of pipe and groove, the minimum internal diameter is .98" DIA

- Dolphin-nose indenter for easy reach interior of pipe and groove
- Automatic testing after preliminary test force is loaded by hand
- LCD touch screen, easy operation
- Convert to other Rockwell scales, HV or HB automatically
- Low and high limits
- Insert USB flash disk, save the testing results as Excel
- Self-compensation of the hardness value for curved workpiece
- Force loading by electric motor (without weights)
- The test force is selected automatically according to hardness scale

2.48" DIA flat anvil (included)

5.91" DIA flat anvil (included)

level (included)

touch pen (included)

V-type anvil (included) for cylinders with diameter .16~2.36" DIA

small V-type anvil (**optional**) for cylinders with diameter .08~.16" DIA

## SPECIFICATION

| | |
|---|---|
| **Part No.** | **ISHR-T100-U** |
| **EDP No.** | 877227 |
| **Hardness scale** | HRA, HRB, HRC, HRD, HRF, HRG (with standard indenters) |
| | HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV (with optional indenter) |
| **Preliminary test force** | 98N/10kgf |
| **Test force** | 588N/60kgf, 980N/100kgf, 1471N/150kgf |
| **Stage elevation** | manual |
| **Load control** | automatic (load/dwell/unload) |
| **Load dwell time** | 0~60 second |
| **Resolution** | .1HR |
| **Output** | USB |
| **Max. workpiece height** | 11.81" |
| **Max. workpiece depth** | 9.84" (from the center of indenter) |
| **Power supply** | 110V, 50/60Hz ** |
| **Dimension** | 27.95×10.24×33.07" |
| **Weight** | 177lb |

## STANDARD DELIVERY

| | |
|---|---|
| **Main unit** | 1 pc |
| **2.48" DIA flat anvil** | 1 pc |
| **5.91" DIA flat anvil** | 1 pc |
| **V-type anvil** | 1 pc |
| **Diamond indenter** | 1 pc |
| **1/16" 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 |
| **USB flash disk (8G)** | 1 pc |
| **Level** | 1 pc |
| **Touch pen** | 1 pc |
| **Anti-dust cover** | 1 pc |

## OPTIONAL ACCESSORY

| | |
|---|---|
| **Hardness test block HRB88~95** | **ISH-BHRB** |
| **Hardness test block HRC60~65** | **ISH-BHRC3** |
| **Hardness test block HRC20~30** | **ISH-BHRC1** |
| **Small V-type anvil** | **ISH-SMALL ANVIL** |

## PORTABLE LEEB HARDNESS TESTER

INSPECTION CERTIFICATE

wireless printer (**optional**)

hardness test block D (included)

small support ring (included)

- Accuracy: ±6HLD (when HLD=800)
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Memory of 99 measurement values for browsing
- Set measurement times (1~9) to have average value
- Connected with printer via bluetooth
- Automatic power off, according to ASTM A 956

### SPECIFICATION

| | | |
|---|---|---|
| Part No. | ISH-PHB | |
| EDP No. | 816432 | |
| Min. reading | 1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa | |
| Display | Leeb (HLD), converted hardness, material, impact direction, test times, average value, date | |
| Output | bluetooth | |
| Applicable workpiece | minimum weight | 11.02lb |
| | | 4.41lb (on solid support) |
| | | 0.22lb (coupled on plate) |
| | minimum thickness .20" | |
| | minimum radius of curved surface: 1.18" | |
| | maximum roughness (Ra): 63μin | |
| Power supply | 3×AAA batteries | |
| Dimension | 5.91×3.31×1.10" | |
| Weight | 0.44lb | |

### 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

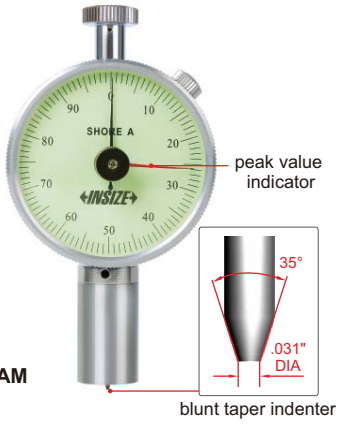
| | |
|---|---|
| Wireless printer | ISH-DS-PRINTER |
| Couplant | ISH-COUPLANT |
| Support rings | see details |
| Hardness test block D | ISH-BHLD |

### APPLICABLE MATERIAL AND HARDNESS RANGE FOR IMPACT DEVICE D

| Material | HLD | HV | HB | HRC | HRB | HS | Tensile strength (MPa) |
|---|---|---|---|---|---|---|---|
| Steel & cast steel | 300-900 | 81-955 | 81-654 | 20-68 | 38-100 | 32-100 | 375-2639 |
| Tool steel | 300-840 | 80-898 | | 20-67 | | | |
| Stainless steel | 300-800 | 85-802 | 85-655 | | 46-101 | | |
| Cast iron | 360-650 | | 93-334 | | | | |
| Cast aluminum alloy | 170-570 | | 19-164 | | 23-84 | | |
| Brass | 200-550 | | 40-173 | | 13-95 | | |
| Bronze | 300-700 | | 60-290 | | | | |
| Copper | 200-690 | | 45-315 | | | | |

## SHORE DUROMETERS

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




**ISH-SAM**

### SPECIFICATION

| | |
|---|---|
| Part No. | ISH-SAM |
| EDP No. | 816696 |
| Scale | Shore A |
| Application | nature rubber, soft elastomer, etc. |
| Measuring range * | 10~90HA |
| Graduation | 1HA |
| Indenter protrusion | .10" |
| Dimension | 4.53×2.36×.98" |
| Weight | .35lb |

* Use **ISH-SAM** when measuring result is lower than 20HD

## TEST STAND FOR DIGITAL FORCE GAGES

- For digital force gages (part no. **ISF-1DFxx** and **ISF-DFxx**)
- To be used in vertical and horizontal orientation

horizontal orientation test

digital scale (**optional**)

**force gages are not included**

### OPTIONAL ACCESSORY

| | |
|---|---|
| Digital scale (range: 8", resolution .0005"/0.01mm) | ISF-MT1K-SCALE |

### SPECIFICATION

| | |
|---|---|
| Part No. | ISF-MT1K |
| EDP No. | 877226 |
| Load capacity | 220lbf |
| Travel | 7.87" (.12" vertical movement per revolution of handwheel) |
| Dimension | 7.72×9.84×17.56" |
| Weight | 28.67lb |

INSPECTION CERTIFICATE

# ELECTRONIC FORCE GAGES (HIGH ACCURACY)

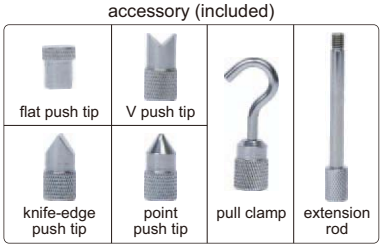
- Push and pull test
- Peak (max.) and tracking mode
- Units: lbf, ozf, mN, N, gf, kgf,
- Low and high limits with judgement
- 1000 memories
- Automatic power off
- Metal case, touch buttons
- LCD display with backlight
- The display flips over when the bottom faces up
- Overload alarm
- Data output

ISF-DF100A

printer (**optional**)

software CD (included)

accessory (included)




## SPECIFICATION

| Part No. | ISF-DF50A | ISF-DF100A | ISF-DF200A | ISF-DF500A | ISF-DF1KA |
|---|---|---|---|---|---|
| EDP No. | 877225 | 877221 | 877223 | 877224 | 877222 |
| Load capacity (lbf) | 11 | 22 | 44 | 110 | 220 |
| Resolution (lbf) | 0.001 | 0.005 | 0.01 | 0.01 | 0.05 |
| Accuracy | ±0.2% (of load capacity ) | | | | |
| Power supply | built-in rechargeable battery | | | | |

## STANDARD DELIVERY

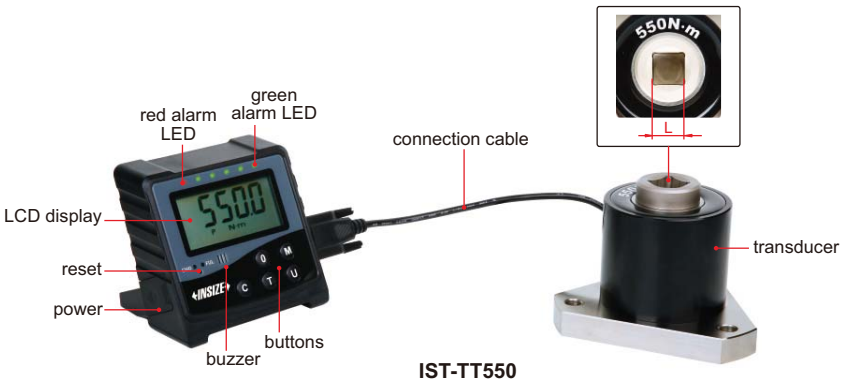
| Part No. | ISF-DF50A | ISF-DF100A | ISF-DF200A | ISF-DF500A | ISF-DF1KA |
|---|---|---|---|---|---|
| Main unit | 1 pc | | | | |
| AC/DC adapter | 1 pc | | | | |
| USB cable and software | 1 pc | | | | |
| Push/pull accessory | 6 pcs (flat push tip, V push tip, knife-edge push tip, point push tip, pull clamp, extension rod) | | | | |

## OPTIONAL ACCESSORY

| | |
|---|---|
| Printer | ISF-DF-PRINTER |
| Test stand | ISF-MT1K |

# ELECTRONIC 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
- Low and high limits with judgement
- Target torque value can be set, with audible and visible alarm:
  - Green LED light on and buzzer sounds when the value is 80%~100% of target torque
  - Both green and red LED light on and buzzer sounds when the target torque value is reached
- Automatic power off
- Not recommended for electric wrenches, impact wrenches or pneumatic wrenches




IST-TT550

## SPECIFICATION

| Part No. | IST-TT5 | IST-TT50 | IST-TT220 | IST-TT550 | IST-TT2200 |
|---|---|---|---|---|---|
| EDP No. | 877256 | 877257 | 877254 | 877258 | 877255 |
| Range | 4.42~44.24in.lb | 44.2~442.4in.lb | 195~1946in.lb | 487~4867in.lb | — |
| | 0.369~3.687ft.lb | 3.69~36.87ft.lb | 16.2~162.2ft.lb | 40.6~405.6ft.lb | 162~1622ft.lb |
| Accuracy | ±1% (clockwise and counter-clockwise) | | | | |
| Resolution | 0.01in.lb | 0.1in.lb | 1in.lb | 1in.lb | — |
| | 0.001ft.lb | 0.01ft.lb | 0.1ft.lb | 0.1ft.lb | 1ft.lb |
| Square socket (L) | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| Power supply | DC | | | | |
| Adaptor | no | 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" |
| Transducer dimension | 2.36×2.36×1.85" | 3.50×3.50×2.56" | 4.29×4.29×2.87" | 5.51×5.51×3.82" | 6.30×6.30×4.57" |
| Weight | 1.54lb | 2.43lb | 3.09lb | 6.17lb | 10.36lb |

adaptor (included)

with 3 mounting holes on the bottom

## STANDARD DELIVERY

| | |
|---|---|
| Main unit | 1 pc |
| Transducer with 40" cable | 1 pc |

| | |
|---|---|
| AC/DC adapter | 1 pc |
| Adaptor | refer to the left |

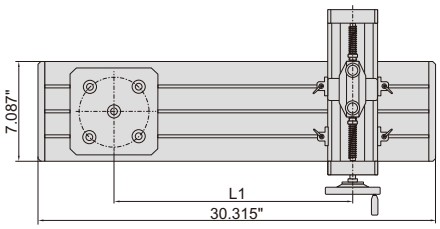
## TORQUE WRENCH TEST STAND

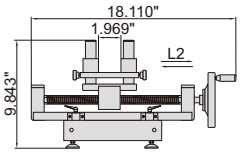
- Work with digital torque testers (**IST-TT5, IST-TT50, IST-TT220, IST-TT550**)

digital torque tester (**optional**)

adaptor (**optional**, for digital torque tester **IST-TT5**, **IST-TT50**, **IST-TT220**)

application example




| Part No. | EDP No. |
|---|---|
| IST-TS500 | 877253 |

### SPECIFICATION

| Digital torque tester | IST-TT5 (optional) | IST-TT50 (optional) | IST-TT220 (optional) | IST-TT550 (optional) |
|---|---|---|---|---|
| Applicable torque wrenches | 4.42~44.24in.lb | 44.2~442.4in.lb | 195~1946in.lb | 487~4867in.lb |
| | 0.369~3.687ft.lb | 3.69~36.87ft.lb | 16.2~162.2ft.lb | 40.6~405.6ft.lb |
| Arm length (L1) | 5.91~24.41", adjustable | | | |
| Maximum travel (L2) | 7.87" | | | |
| Weight | 28.17lb | | | |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Digital torque tester | IST-TT5, IST-TT50, IST-TT220, IST-TT550 |
| Adaptor | IST-TS500-BLOCK (necessary for **IST-TT5**, **IST-TT50** and **IST-TT220**, not needed for **IST-TT550**) |

## ELECTRONIC TORQUE SCREWDRIVERS

INSPECTION CERTIFICATE

- Clockwise and counter-clockwise operation
- Unit: in.lb, cN.m, kg.cm
- Peak and track working mode
- Target torque value can be set, with audible and visible alarm:
  - Green LED light on and buzzer sounds when target torque value is 90%~100% of target torque
  - Red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations

IST-SD200

### SPECIFICATION

| Part No. | | IST-SD50 | IST-SD200 | IST-SD400 |
|---|---|---|---|---|
| EDP No. | | 877252 | 877250 | 877251 |
| Range | | 0.88~4.42in.lb | 3.54~17.7in.lb | 7.08~35.39in.lb |
| Accuracy | clockwise | ±3% | ±2.5% | ±2.5% |
| | counter-clockwise | ±4% | ±3.5% | ±3.5% |
| Resolution | | 0.01in.lb | | |
| Size of hex socket (L) | | 1/4" | | |
| Power supply | | 1×AAA battery | | |
| Length | | 7.60" | 7.99" | 7.99" |
| Weight | | 0.42lb | 0.44lb | 0.44lb |

### OPTIONAL ACCESSORY

| | |
|---|---|
| Calibration cable | IST-SD-CABLE |

INSPECTION CERTIFICATE

## CLASSIC TORQUE WRENCHES

IST-7WM135

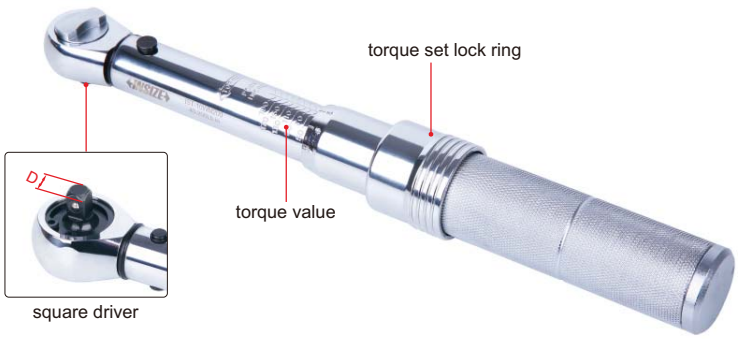
- Accuracy ±4%
- Clockwise and counter-clockwise operation
- Unit: lbf.in, lbf.ft, N.m, kgf.m
- Loud click sound when target torque value is reached
- According to DIN ISO 6789, ASME B107.300-2010

**SPECIFICATION**

| Part No. | | IST-7WM33 | IST-7WM68 | IST-7WM135 | IST-7WM225 | IST-7WM330 | IST-7WM560 | IST-7WM800 | IST-7WM1000 |
|---|---|---|---|---|---|---|---|---|---|
| EDP No. | | 877245 | 877248 | 877243 | 877244 | 877246 | 877247 | 877249 | 877242 |
| Range | lbf.in | 40~300 | 100~600 | 200~1200 | 400~2000 | 60~3000 | 120~5000 | 1800~7200 | 1800~8850 |
| | lbf.ft | 4~24 | 10~50 | 20~100 | 40~160 | 50~250 | 100~410 | 140~600 | 140~740 |
| | N.m | 5~33 | 12~68 | 25~135 | 50~225 | 70~330 | 140~560 | 200~800 | 200~1000 |
| | kgf.m | .5~3.4 | 1.2~7 | 3~14 | 5~23 | 7~35 | 14~57 | 22~82 | 22~100 |
| Accuracy | | ±4% | | | | | | | |
| Graduation | lbf.in | 10 | 20 | 50 | 50 | 100 | 100 | 200 | 200 |
| | lbf.ft | 1 | 2 | 2 | 5 | 10 | 10 | 20 | 20 |
| | N.m | 1 | 2 | 5 | 5 | 10 | 10 | 20 | 20 |
| | kgf.m | .1 | .2 | 1 | 1 | 1 | 1 | 2 | 2 |
| Square driver (D) | | 1/4" | 3/8" | 1/2" | 1/2" | 1/2" | 3/4" | 3/4" | 1" |
| Length | | 16.73" | 19.68" | 21.89" | 23.62" | 31.69" | 39.21" | 42.12" | 55.12" |
| Weight | | 1.6lb | 2.33lb | 3.55lb | 5.11lb | 5.77lb | 16.46lb | 16.84lb | 28.44lb |

INSPECTION CERTIFICATE

## TORQUE WRENCHES




IST-10WM200

- According to DIN ISO 6789, ASME B107.300-2010
- All-metal construction
- Clockwise operation only

**SPECIFICATION**

| Part No. | IST-10WM200 | IST-10WM250 | IST-10WM100 | IST-10WM150 | IST-10WM250A | IST-10WM600 |
|---|---|---|---|---|---|---|
| EDP No. | 877238 | 877239 | 877236 | 877237 | 877240 | 877241 |
| Range (clockwise) | 40~200lb.in | 50~250lb.in | 20~100lb.ft | 30~150lb.ft | 50~250lb.ft | 100~600lb.ft |
| Accuracy | ±6% (<89lb.in)<br>±4% (≥89lb.in) | ±6% (<89lb.in)<br>±4% (≥89lb.in) | ±4% | ±4% | ±4% | ±4% |
| Graduation | 1lb.in | 1lb.in | 0.5lb.ft | 0.5lb.ft | 1lb.ft | 2.5lb.ft |
| Square driver (D) | 1/4" | 3/8" | 3/8" | 1/2" | 1/2" | 3/4" |
| Length | 11.02" | 12.40" | 16.73" | 19.88" | 20.67" | 41.54" |
| Weight | 1.50lb | 1.81lb | 2.29lb | 2.56lb | 2.87lb | 13.01lb |

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