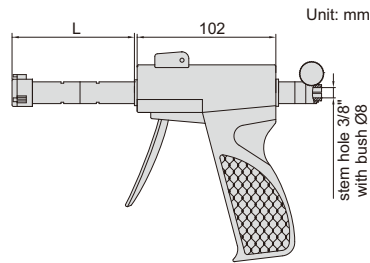
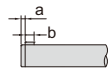
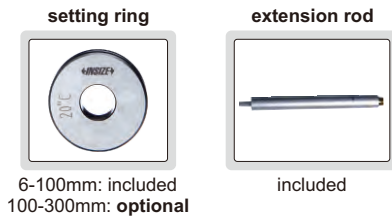




## PISTOL GRIP THREE POINTS BORE GAGES



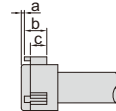
- Optional accessory:  
digital indicators (code **2108-101F**, resolution 0.001mm/0.00005"),  
setting rings (code **6312**)



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



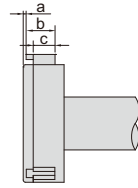
2124-8



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



2124-25



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



2124-125

### Individual

(mm)

| Code       | Range     | Type | Accuracy (without digital indicator) | Setting ring     | Extension rod (included) | L   | a   | b    | c    |
|------------|-----------|------|--------------------------------------|------------------|--------------------------|-----|-----|------|------|
| 2124-8 *   | 6-8mm     | A    | 4µm                                  | Ø6mm (included)  | 100mm                    | 50  | 1.5 | 2.5  | —    |
| 2124-10 *  | 8-10mm    | A    | 4µm                                  | Ø8mm (included)  | 100mm                    | 50  | 1.5 | 2.5  | —    |
| 2124-12 *  | 10-12mm   | A    | 4µm                                  | Ø10mm (included) | 100mm                    | 50  | 1.5 | 2.5  | —    |
| 2124-16 *  | 12-16mm   | B    | 4µm                                  | Ø16mm (included) | 150mm                    | 65  | 0.5 | 6    | 4.5  |
| 2124-20 *  | 16-20mm   | B    | 4µm                                  | Ø16mm (included) | 150mm                    | 65  | 0.5 | 6    | 4.5  |
| 2124-25 *  | 20-25mm   | B    | 4µm                                  | Ø25mm (included) | 150mm                    | 91  | 0.5 | 8    | 6    |
| 2124-30 *  | 25-30mm   | B    | 4µm                                  | Ø25mm (included) | 150mm                    | 91  | 0.5 | 8    | 6    |
| 2124-40 *  | 30-40mm   | B    | 4µm                                  | Ø40mm (included) | 150mm                    | 97  | 0.5 | 14   | 12   |
| 2124-50 *  | 40-50mm   | B    | 5µm                                  | Ø40mm (included) | 150mm                    | 97  | 0.5 | 14   | 12   |
| 2124-63 *  | 50-63mm   | C    | 5µm                                  | Ø62mm (included) | 150mm                    | 112 | 0.5 | 17.5 | 14.5 |
| 2124-75 *  | 62-75mm   | C    | 5µm                                  | Ø62mm (included) | 150mm                    | 112 | 0.5 | 17.5 | 14.5 |
| 2124-88 *  | 75-88mm   | C    | 5µm                                  | Ø87mm (included) | 150mm                    | 112 | 0.5 | 17.5 | 14.5 |
| 2124-100 * | 87-100mm  | C    | 5µm                                  | Ø87mm (included) | 150mm                    | 112 | 0.5 | 17.5 | 14.5 |
| 2124-125 * | 100-125mm | C    | 6µm                                  | optional         | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-150 * | 125-150mm | C    | 6µm                                  | optional         | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-175 * | 150-175mm | C    | 7µm                                  | optional         | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-200 * | 175-200mm | C    | 7µm                                  | optional         | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-225   | 200-225mm | C    | 8µm                                  | optional         | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-250   | 225-250mm | C    | 8µm                                  | optional         | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-275   | 250-275mm | C    | 9µm                                  | optional         | 150mm                    | 140 | 0.9 | 29   | 25   |
| 2124-300   | 275-300mm | C    | 9µm                                  | optional         | 150mm                    | 140 | 0.9 | 29   | 25   |

### Set

| Code         | Range    | Probes included                     | Setting ring (included) | Extension rod (included) |
|--------------|----------|-------------------------------------|-------------------------|--------------------------|
| 2124-S123 *  | 6-12mm   | 6-8mm, 8-10mm, 10-12mm              | Ø6mm, Ø8mm, Ø10mm       | 100mm                    |
| 2124-S202 *  | 12-20mm  | 12-16mm, 16-20mm                    | Ø16mm                   | 150mm                    |
| 2124-S504 *  | 20-50mm  | 20-25mm, 25-30mm, 30-40mm, 40-50mm  | Ø25mm, Ø40mm            | 150mm                    |
| 2124-S1004 * | 50-100mm | 50-63mm, 62-75mm, 75-88mm, 87-100mm | Ø62mm, Ø87mm            | 150mm                    |



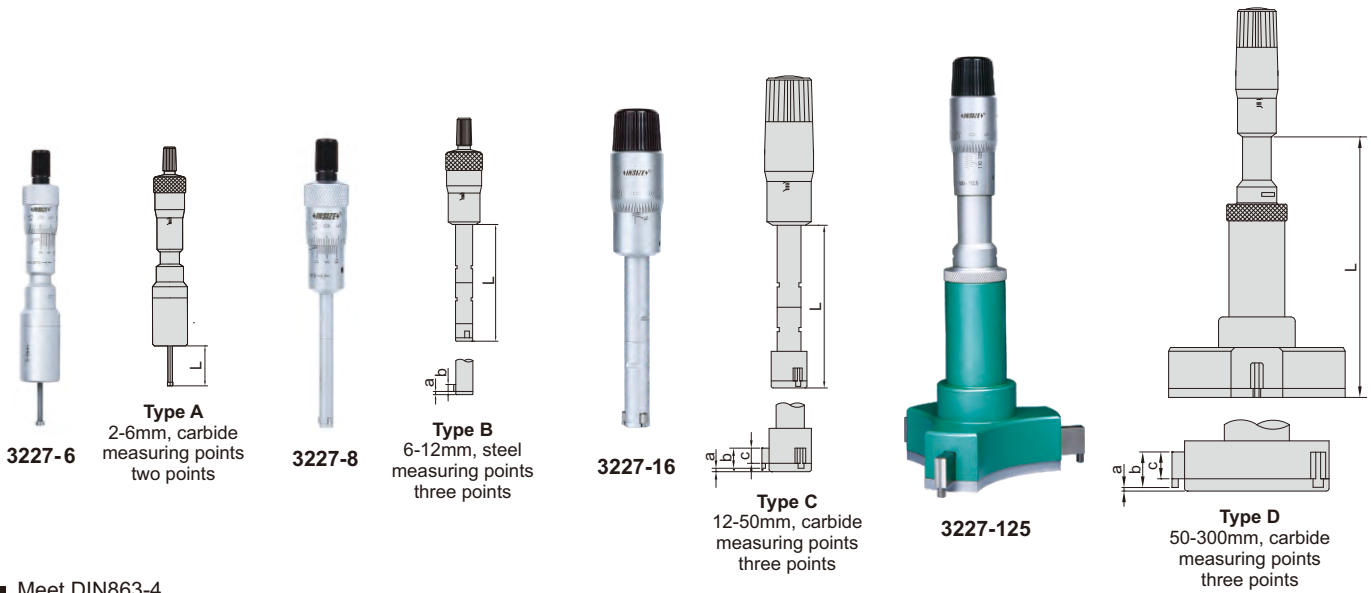
2124-S504

\* Supplied with manufacturer inspection certificate

TWO POINTS/THREE POINTS INTERNAL MICROMETERS



6



- Meet DIN863-4
- 2-12mm: graduation 0.001mm  
12-300mm: graduation 0.005mm
- Ratchet stop
- Optional accessory: setting rings (code **6312**),  
micrometer stand and clamp (code **6301** and **6301-2**)

Individual

(mm)

| Code       | Range     | Type             | Accuracy | Setting ring    | Extension rod (included) | L    | a   | b    | c    |
|------------|-----------|------------------|----------|-----------------|--------------------------|------|-----|------|------|
| 3227-2 *   | 2-2.5mm   | A (two points)   | 6µm      | Ø2.5 (included) | —                        | 12   | —   | —    | —    |
| 3227-3 *   | 2.5-3mm   | A (two points)   | 6µm      | Ø2.5 (included) | —                        | 12   | —   | —    | —    |
| 3227-4 *   | 3-4mm     | A (two points)   | 6µm      | Ø4 (included)   | —                        | 22   | —   | —    | —    |
| 3227-5 *   | 4-5mm     | A (two points)   | 6µm      | Ø5 (included)   | —                        | 22   | —   | —    | —    |
| 3227-6 *   | 5-6mm     | A (two points)   | 6µm      | Ø6 (included)   | —                        | 22   | —   | —    | —    |
| 3227-8 *   | 6-8mm     | B (three points) | 4µm      | Ø6 (included)   | 100                      | 54.5 | 1.5 | 2.5  | —    |
| 3227-10 *  | 8-10mm    | B (three points) | 4µm      | Ø8 (included)   | 100                      | 54.5 | 1.5 | 2.5  | —    |
| 3227-12 *  | 10-12mm   | B (three points) | 4µm      | Ø10 (included)  | 100                      | 54.5 | 1.5 | 2.5  | —    |
| 3227-16 *  | 12-16mm   | C (three points) | 4µm      | Ø16 (included)  | 150                      | 80   | 0.5 | 6    | 4.5  |
| 3227-20 *  | 16-20mm   | C (three points) | 4µm      | Ø16 (included)  | 150                      | 80   | 0.5 | 6    | 4.5  |
| 3227-25 *  | 20-25mm   | C (three points) | 4µm      | Ø25 (included)  | 150                      | 90   | 0.5 | 8    | 6    |
| 3227-30 *  | 25-30mm   | C (three points) | 4µm      | Ø25 (included)  | 150                      | 90   | 0.5 | 8    | 6    |
| 3227-40 *  | 30-40mm   | C (three points) | 4µm      | Ø40 (included)  | 150                      | 97   | 0.5 | 14   | 12   |
| 3227-50 *  | 40-50mm   | C (three points) | 5µm      | Ø40 (included)  | 150                      | 97   | 0.5 | 14   | 12   |
| 3227-63 *  | 50-63mm   | D (three points) | 5µm      | Ø62 (included)  | 150                      | 114  | 0.5 | 17.5 | 14.5 |
| 3227-75 *  | 62-75mm   | D (three points) | 5µm      | Ø62 (included)  | 150                      | 114  | 0.5 | 17.5 | 14.5 |
| 3227-88 *  | 75-88mm   | D (three points) | 5µm      | Ø87 (included)  | 150                      | 114  | 0.5 | 17.5 | 14.5 |
| 3227-100 * | 87-100mm  | D (three points) | 5µm      | Ø87 (included)  | 150                      | 114  | 0.5 | 17.5 | 14.5 |
| 3227-125 * | 100-125mm | D (three points) | 6µm      | optional        | 150                      | 140  | 0.9 | 29   | 25   |
| 3227-150 * | 125-150mm | D (three points) | 6µm      | optional        | 150                      | 140  | 0.9 | 29   | 25   |
| 3227-175 * | 150-175mm | D (three points) | 7µm      | optional        | 150                      | 140  | 0.9 | 29   | 25   |
| 3227-200 * | 175-200mm | D (three points) | 7µm      | optional        | 150                      | 140  | 0.9 | 29   | 25   |
| 3227-225   | 200-225mm | D (three points) | 8µm      | optional        | 150                      | 140  | 0.9 | 29   | 25   |
| 3227-250   | 225-250mm | D (three points) | 8µm      | optional        | 150                      | 140  | 0.9 | 29   | 25   |
| 3227-275   | 250-275mm | D (three points) | 9µm      | optional        | 150                      | 140  | 0.9 | 29   | 25   |
| 3227-300   | 275-300mm | D (three points) | 9µm      | optional        | 150                      | 140  | 0.9 | 29   | 25   |

To be continued

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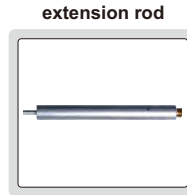


micrometer stand with clamp (optional)



setting ring

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



extension rod

included



3227-504

Set

| Code        | Range    | Micrometers included                | Setting ring (included) | Extension rod (included) |
|-------------|----------|-------------------------------------|-------------------------|--------------------------|
| 3227-232 *  | 2-3mm    | 2-2.5mm, 2.5-3mm                    | Ø2.5mm                  | —                        |
| 3227-363 *  | 3-6mm    | 3-4mm, 4-5mm, 5-6mm                 | Ø4mm, Ø5mm, Ø6mm        | —                        |
| 3227-123 *  | 6-12mm   | 6-8mm, 8-10mm, 10-12mm              | Ø6mm, Ø8mm, Ø10mm       | 100mm                    |
| 3227-202 *  | 12-20mm  | 12-16mm, 16-20mm                    | Ø16mm                   | 150mm                    |
| 3227-504 *  | 20-50mm  | 20-25mm, 25-30mm, 30-40mm, 40-50mm  | Ø25mm, Ø40mm            | 150mm                    |
| 3227-1004 * | 50-100mm | 50-63mm, 62-75mm, 75-88mm, 87-100mm | Ø62mm, Ø87mm            | 150mm                    |

\* Supplied with manufacturer inspection certificate

IP65  
WATERPROOF

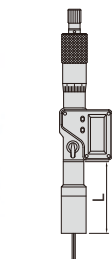
DATA  
OUTPUT

## DIGITAL TWO POINTS/THREE POINTS INTERNAL MICROMETERS

INSPECTION  
CERTIFICATE



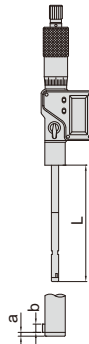
3127-5



**Type A**  
2-6mm, carbide  
measuring points  
two points



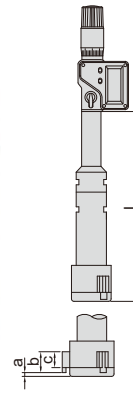
3127-12



**Type B**  
6-12mm, steel  
measuring points  
three points



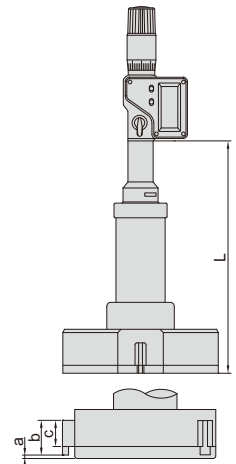
3127-40



**Type C**  
12-50mm, carbide  
measuring points  
three points



3127-125



**Type D**  
50-300mm, carbide  
measuring points  
three points

- Resolution 0.001mm/0.00005" (resolution of 3127-275 and 3127-300 is 0.001mm/0.0001")
- IP65 dust/waterproof
- Buttons: on/off, set, mm/inch, ABS/INC
- Data output
- Automatic power off
- Ratchet stop
- Optional accessory: data output cable (code 7315-30, 7302-30), setting ring (code 6312), micrometer stand and clamp (code 6301 and 6301-2)

To be continued

Continued from previous page

micrometer stand with clamp (optional)

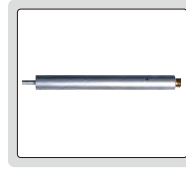


setting ring



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

extension rod



included



3127-202

Individual

(mm)

| Code      | Range                  | Type             | Accuracy | Setting ring    | Extension rod (included) | L   | a   | b    | c    |
|-----------|------------------------|------------------|----------|-----------------|--------------------------|-----|-----|------|------|
| 3127-2*   | 2-2.5mm/0.08-0.10"     | A (two points)   | 6µm      | Ø2.5 (included) | —                        | 12  | —   | —    | —    |
| 3127-3*   | 2.5-3mm/0.10-0.12"     | A (two points)   | 6µm      | Ø2.5 (included) | —                        | 12  | —   | —    | —    |
| 3127-4*   | 3-4mm/0.12-0.16"       | A (two points)   | 6µm      | Ø4 (included)   | —                        | 22  | —   | —    | —    |
| 3127-5*   | 4-5mm/0.16-0.20"       | A (two points)   | 6µm      | Ø5 (included)   | —                        | 22  | —   | —    | —    |
| 3127-6*   | 5-6mm/0.20-0.24"       | A (two points)   | 6µm      | Ø6 (included)   | —                        | 22  | —   | —    | —    |
| 3127-8*   | 6-8mm/0.24-0.31"       | B (three points) | 4µm      | Ø6 (included)   | 100                      | 57  | 1.5 | 2.5  | —    |
| 3127-10*  | 8-10mm/0.31-0.39"      | B (three points) | 4µm      | Ø8 (included)   | 100                      | 57  | 1.5 | 2.5  | —    |
| 3127-12*  | 10-12mm/0.39-0.47"     | B (three points) | 4µm      | Ø10 (included)  | 100                      | 57  | 1.5 | 2.5  | —    |
| 3127-16*  | 12-16mm/0.47-0.63"     | C (three points) | 4µm      | Ø16 (included)  | 150                      | 99  | 0.5 | 6    | 4.5  |
| 3127-20*  | 16-20mm/0.63-0.79"     | C (three points) | 4µm      | Ø16 (included)  | 150                      | 99  | 0.5 | 6    | 4.5  |
| 3127-25*  | 20-25mm/0.79-0.98"     | C (three points) | 4µm      | Ø25 (included)  | 150                      | 105 | 0.5 | 8    | 6    |
| 3127-30*  | 25-30mm/0.98-1.18"     | C (three points) | 4µm      | Ø25 (included)  | 150                      | 105 | 0.5 | 8    | 6    |
| 3127-40*  | 30-40mm/1.18-1.57"     | C (three points) | 4µm      | Ø40 (included)  | 150                      | 110 | 0.5 | 14   | 12   |
| 3127-50*  | 40-50mm/1.57-1.97"     | C (three points) | 5µm      | Ø40 (included)  | 150                      | 110 | 0.5 | 14   | 12   |
| 3127-63*  | 50-63mm/1.97-2.48"     | D (three points) | 5µm      | Ø62 (included)  | 150                      | 127 | 0.5 | 17.5 | 14.5 |
| 3127-75*  | 62-75mm/2.44-2.95"     | D (three points) | 5µm      | Ø62 (included)  | 150                      | 127 | 0.5 | 17.5 | 14.5 |
| 3127-88*  | 75-88mm/2.95-3.46"     | D (three points) | 5µm      | Ø87 (included)  | 150                      | 127 | 0.5 | 17.5 | 14.5 |
| 3127-100* | 87-100mm/3.43-3.94"    | D (three points) | 5µm      | Ø87 (included)  | 150                      | 127 | 0.5 | 17.5 | 14.5 |
| 3127-125* | 100-125mm/3.94-4.92"   | D (three points) | 6µm      | optional        | 150                      | 175 | 0.9 | 29   | 25   |
| 3127-150* | 125-150mm/4.92-5.91"   | D (three points) | 6µm      | optional        | 150                      | 175 | 0.9 | 29   | 25   |
| 3127-175* | 150-175mm/5.91-6.89"   | D (three points) | 7µm      | optional        | 150                      | 175 | 0.9 | 29   | 25   |
| 3127-200* | 175-200mm/6.89-7.87"   | D (three points) | 7µm      | optional        | 150                      | 175 | 0.9 | 29   | 25   |
| 3127-225  | 200-225mm/7.87-8.86"   | D (three points) | 8µm      | optional        | 150                      | 175 | 0.9 | 29   | 25   |
| 3127-250  | 225-250mm/8.86-9.84"   | D (three points) | 8µm      | optional        | 150                      | 175 | 0.9 | 29   | 25   |
| 3127-275  | 250-275mm/9.84-10.83"  | D (three points) | 9µm      | optional        | 150                      | 175 | 0.9 | 29   | 25   |
| 3127-300  | 275-300mm/10.83-11.81" | D (three points) | 9µm      | optional        | 150                      | 175 | 0.9 | 29   | 25   |

Set

| Code       | Range               | Micrometers included                | Setting ring (included) | Extension rod (included) |
|------------|---------------------|-------------------------------------|-------------------------|--------------------------|
| 3127-232*  | 2-3mm/0.08-0.12"    | 2-2.5mm, 2.5-3mm                    | Ø2.5mm                  | —                        |
| 3127-363*  | 3-6mm/0.12-0.24"    | 3-4mm, 4-5mm, 5-6mm                 | Ø4mm, Ø5mm, Ø6mm        | —                        |
| 3127-123*  | 6-12mm/0.24-0.47"   | 6-8mm, 8-10mm, 10-12mm              | Ø6mm, Ø8mm, Ø10mm       | 100mm                    |
| 3127-202*  | 12-20mm/0.47-0.79"  | 12-16mm, 16-20mm                    | Ø16mm                   | 150mm                    |
| 3127-504*  | 20-50mm/0.79-1.97"  | 20-25mm, 25-30mm, 30-40mm, 40-50mm  | Ø25mm, Ø40mm            | 150mm                    |
| 3127-1004* | 50-100mm/1.97-3.94" | 50-63mm, 62-75mm, 75-88mm, 87-100mm | Ø62mm, Ø87mm            | 150mm                    |

\*Supplied with manufacturer inspection certificate



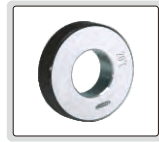


## WIDE RANGE THREE POINTS INTERNAL MICROMETERS

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

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

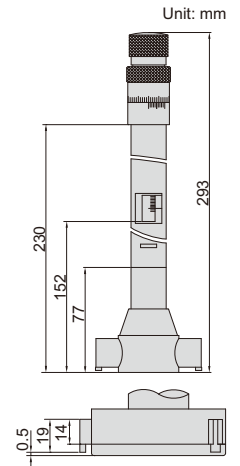
\*Supplied with manufacturer inspection certificate



setting ring

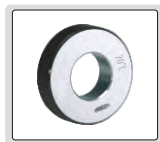


3228-70



## DIGITAL WIDE RANGE THREE POINTS INTERNAL MICROMETERS

- Meet DIN863-4
- Resolution 0.001mm/0.00005" (resolution of **3128-300** is 0.001mm/0.0001")
- IP54 dust/waterproof
- Buttons: on/off, set, mm/inch, ABS/INC
- Data output
- Automatic power off
- Carbide measuring faces
- Ratchet stop
- Supplied with extension rods
- Setting rings are included (except 200-300mm)
- Optional accessory: data output cable (code **7315-30**, **7302-30**)



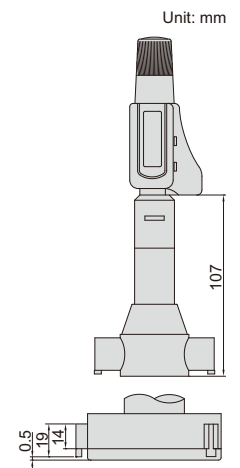
setting ring



extension rod (included)



3128-70



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

\*Supplied with manufacturer inspection certificate

ATTENTION: LOW PARALLELISM OF TWO MEASURING FACES

micrometer stand with clamp (optional)

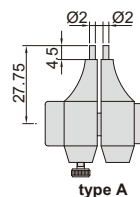


- Graduation 0.01mm
- Ratchet stop
- Carbide measuring faces
- Optional accessory: setting ring (code **6312**), micrometer stand and clamp (code **6301** and **6301-1**)

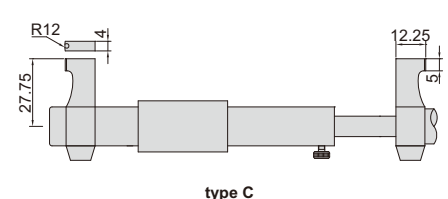
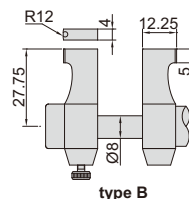
| Code            | Range    | Type | Setting ring    | Accuracy |
|-----------------|----------|------|-----------------|----------|
| <b>3220-30</b>  | 5-30mm   | A    | 5mm (included)  | 7µm      |
| <b>3220-50</b>  | 25-50mm  | B    | 25mm (included) | 8µm      |
| <b>3220-75</b>  | 50-75mm  | B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

## INSIDE MICROMETERS (ECONOMIC TYPE)

Unit: mm



3220-50



DIGITAL INSIDE MICROMETERS (ECONOMIC TYPE)

DATA OUTPUT

ATTENTION: LOW PARALLELISM OF TWO MEASURING FACES

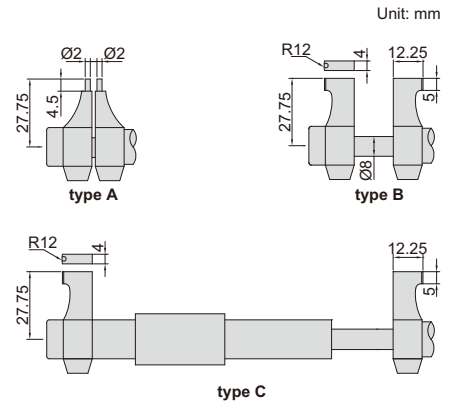


3520-30

6

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

| Code     | Range           | Type | Setting ring    | Accuracy |
|----------|-----------------|------|-----------------|----------|
| 3520-30  | 5-30mm/0.2-1.2" | A    | 5mm (included)  | ±5μm     |
| 3520-50  | 25-50mm/1-2"    | B    | 25mm (included) | ±6μm     |
| 3520-75  | 50-75mm/2-3"    | B    | 50mm (optional) | ±7μm     |
| 3520-100 | 75-100mm/3-4"   | C    | 75mm (optional) | ±8μm     |



DIGITAL TUBULAR INSIDE MICROMETERS

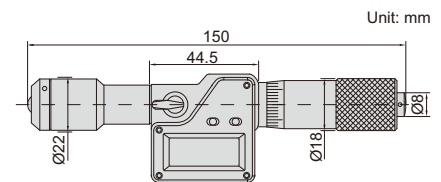
IP65 WATERPROOF

DATA OUTPUT



3521-1000

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



| Code      | Range      | Travel of micrometer head | Extension rods  |
|-----------|------------|---------------------------|---|
| 3521-175  | 150-175mm  | 25mm                      | —   |
| 3521-1000 | 150-1000mm | 25mm                      | 25mm, 50mm (2 pcs), 100mm, 200mm, 400mm                 |
| 3521-1500 | 150-1500mm | 25mm                      | 25mm, 50mm (2 pcs), 100mm (2 pcs), 200mm, 400mm (2 pcs) |
| 3521-2000 | 150-2000mm | 25mm                      | 25mm, 50mm (2 pcs), 100mm, 200mm (2 pcs), 400mm (3 pcs) |

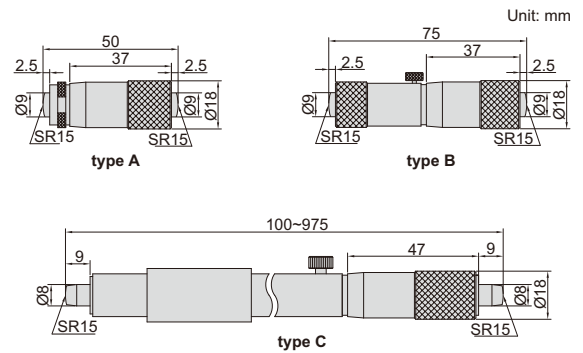
## TUBULAR INSIDE MICROMETERS

- Micrometers up to 500mm meet DIN863-4
- Graduation 0.01mm
- Carbide measuring faces
- Optional accessory: gage block accessory (code **6881**), cylinder gage block (code **4001**), caliper/height gage checker (code **6884**)



3229-225

| Code     | Range     | Type | Accuracy |
|----------|-----------|------|----------|
| 3229-75  | 50-75mm   | A    | 5μm      |
| 3229-100 | 75-100mm  | B    | 5μm      |
| 3229-125 | 100-125mm | C    | 6μm      |
| 3229-150 | 125-150mm | C    | 6μm      |
| 3229-175 | 150-175mm | C    | 7μm      |
| 3229-200 | 175-200mm | C    | 7μm      |
| 3229-225 | 200-225mm | C    | 8μm      |
| 3229-250 | 225-250mm | C    | 8μm      |
| 3229-275 | 250-275mm | C    | 9μm      |
| 3229-300 | 275-300mm | C    | 9μm      |
| 3229-325 | 300-325mm | C    | 9μm      |
| 3229-350 | 325-350mm | C    | 9μm      |
| 3229-375 | 350-375mm | C    | 10μm     |
| 3229-400 | 375-400mm | C    | 10μm     |
| 3229-425 | 400-425mm | C    | 10μm     |
| 3229-450 | 425-450mm | C    | 10μm     |
| 3229-475 | 450-475mm | C    | 11μm     |
| 3229-500 | 475-500mm | C    | 11μm     |
| 3229-525 | 500-525mm | C    | 11μm     |
| 3229-550 | 525-550mm | C    | 11μm     |
| 3229-575 | 550-575mm | C    | 11μm     |
| 3229-600 | 575-600mm | C    | 12μm     |
| 3229-625 | 600-625mm | C    | 12μm     |
| 3229-650 | 625-650mm | C    | 12μm     |
| 3229-675 | 650-675mm | C    | 13μm     |
| 3229-700 | 675-700mm | C    | 13μm     |



| Code      | Range      | Type | Accuracy |
|-----------|------------|------|----------|
| 3229-725  | 700-725mm  | C    | 13μm     |
| 3229-750  | 725-750mm  | C    | 14μm     |
| 3229-775  | 750-775mm  | C    | 14μm     |
| 3229-800  | 775-800mm  | C    | 14μm     |
| 3229-825  | 800-825mm  | C    | 15μm     |
| 3229-850  | 825-850mm  | C    | 15μm     |
| 3229-875  | 850-875mm  | C    | 15μm     |
| 3229-900  | 875-900mm  | C    | 16μm     |
| 3229-925  | 900-925mm  | C    | 16μm     |
| 3229-950  | 925-950mm  | C    | 16μm     |
| 3229-975  | 950-975mm  | C    | 17μm     |
| 3229-1000 | 975-1000mm | C    | 17μm     |

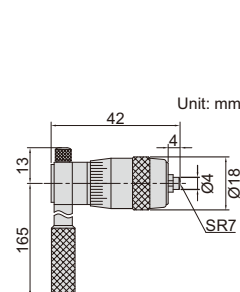
## TUBULAR INSIDE MICROMETERS

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



3221-200

| Code      | Range      | Travel of micrometer head | Extension rods |
|-----------|------------|---------------------------|----------------|
| 3221-32   | 25-32mm    | 7mm                       | —              |
| 3221-50   | 25-50mm    | 7mm                       | 2 pcs          |
| 3221-63   | 50-63mm    | 13mm                      | —              |
| 3221-200  | 50-200mm   | 13mm                      | 6 pcs          |
| 3221-300  | 50-300mm   | 13mm                      | 10 pcs         |
| 3221-225  | 200-225mm  | 25mm                      | —              |
| 3221-500  | 200-500mm  | 25mm                      | 3 pcs          |
| 3221-1000 | 200-1000mm | 25mm                      | 8 pcs          |

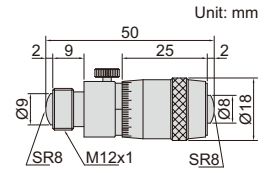


application



## TUBULAR INSIDE MICROMETERS

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



3222-150

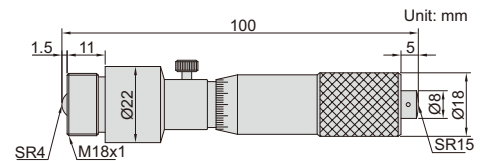
| Code      | Range     | Travel of micrometer head | Extension rods  |
|-----------|-----------|---------------------------|---|
| 3222-63   | 50-63mm   | 13mm                      | —   |
| 3222-150  | 50-150mm  | 13mm                      | 13mm, 25mm, 50mm  |
| 3222-300  | 50-300mm  | 13mm                      | 13mm, 25mm, 50mm (2 pcs), 100mm                               |
| 3222-500  | 50-500mm  | 13mm                      | 13mm, 25mm, 50mm (2 pcs), 100mm, 200mm                        |
| 3222-600  | 50-600mm  | 13mm                      | 13mm, 25mm, 50mm, 100mm, 150mm, 200mm                         |
| 3222-1000 | 50-1000mm | 13mm                      | 13mm, 25mm, 50mm (2 pcs), 100mm, 200mm (2 pcs), 300mm         |
| 3222-1500 | 50-1500mm | 13mm                      | 13mm, 25mm, 50mm (2 pcs), 100mm, 200mm (3 pcs), 300mm (2 pcs) |

## TUBULAR INSIDE MICROMETERS

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



3225-500

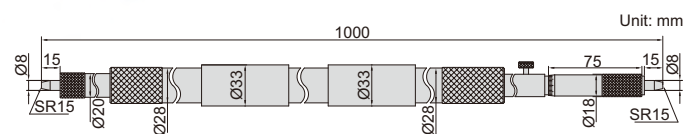


| Code      | Range      | Extension rods                          |
|-----------|------------|---|
| 3225-125  | 100-125mm  | —                                       |
| 3225-500  | 100-500mm  | 25mm, 50mm, 100mm, 200mm                |
| 3225-900  | 100-900mm  | 25mm, 50mm, 100mm, 200mm, 400mm         |
| 3225-1300 | 100-1300mm | 25mm, 50mm, 100mm, 200mm, 400mm (2 pcs) |
| 3225-1700 | 100-1700mm | 25mm, 50mm, 100mm, 200mm, 400mm (3 pcs) |
| 3225-2100 | 100-2100mm | 25mm, 50mm, 100mm, 200mm, 400mm (4 pcs) |

## TUBULAR INSIDE MICROMETERS



3224-2000



| Code      | Range       | Extension rods                                    |
|-----------|-------------|---|
| 3224-2000 | 1000-2000mm | 50mm, 100mm (2 pcs), 200mm, 500mm                 |
| 3224-3000 | 1000-3000mm | 50mm, 100mm (2 pcs), 200mm, 500mm, 1000mm         |
| 3224-4000 | 1000-4000mm | 50mm, 100mm (2 pcs), 200mm, 500mm, 1000mm (2 pcs) |
| 3224-5000 | 1000-5000mm | 50mm, 100mm (2 pcs), 200mm, 500mm, 1000mm (3 pcs) |

- Micrometer head: 1000-1050mm
- Graduation 0.01mm
- Accuracy:  $(7+n+L/50)\mu\text{m}$   
n=number of rods  
L=maximum measuring length (mm)
- Travel of micrometer head 50mm
- Carbide measuring faces



DATA  
OUTPUT

SPRING LOADED  
MEASURING POINT

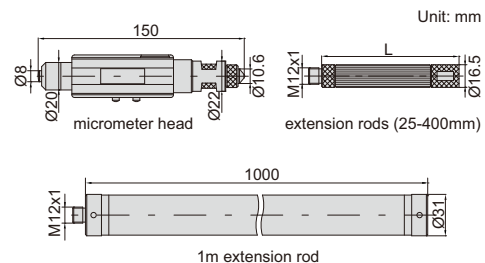
NON-ROTATING  
SPINDLE

## DIGITAL NON-ROTATING SPINDLE TUBULAR INSIDE MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE

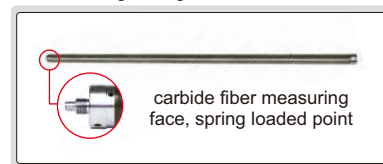


3635-950

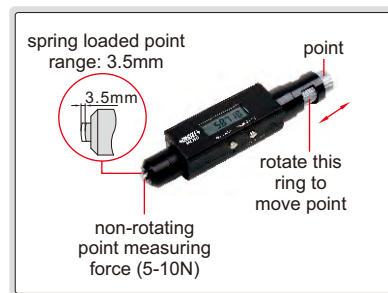


- Carbide measuring faces for micrometer head and extension rods
- Points of extension rods are spring loaded
- Data output
- Button function: mm/inch, max./min. value tracking, tolerance measurement, hold, on/off, zero
- CR2032 battery, automatic power off
- Optional accessory: gage block accessory (code **6881**), cylinder gage block (code **4001**), caliper/height gage checker (code **6884**)

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



non-rotating spindle, spring loaded point  
and max./min. value tracking make it  
easy to find the right measuring position



### Extension rods

| Length (L) | Accuracy | Weight | Material     |
|------------|----------|--------|--------------|
| 25mm       | ±1.25µm  | 37g    | steel        |
| 50mm       | ±1.25µm  | 65g    | steel        |
| 100mm      | ±2µm     | 113g   | steel        |
| 200mm      | ±3.5µm   | 208g   | steel        |
| 400mm      | ±4.5µm   | 402g   | steel        |
| 1000mm     | ±7.5µm   | 909g   | carbon fiber |

### Micrometer head

| Range     | Resolution                                      | Accuracy | Repeatability | Measuring force | Weight |
|-----------|---|----------|---------------|-----------------|--------|
| 150-175mm | 0.001mm/0.00005"<br>0.01mm/0.0005" (switchable) | ±4µm     | 1µm           | 5-10N           | 275g   |

| Code      | Range      | Extension rods  |
|-----------|------------|---|
| 3635-350  | 150-350mm  | 25mm, 50mm, 100mm                                       |
| 3635-550  | 150-550mm  | 25mm, 50mm, 100mm, 200mm                                |
| 3635-950  | 150-950mm  | 25mm, 50mm, 100mm, 200mm, 400mm                         |
| 3635-1550 | 150-1550mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm (2 pcs)         |
| 3635-2150 | 150-2150mm | 25mm, 50mm, 100mm, 200mm, 400mm (4 pcs)                 |
| 3635-3150 | 150-3150mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (2 pcs) |
| 3635-4150 | 150-4150mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (3 pcs) |
| 3635-5150 | 150-5150mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (4 pcs) |
| 3635-6150 | 150-6150mm | 25mm, 50mm, 100mm, 200mm (2 pcs), 400mm, 1000mm (5 pcs) |

**TUBULAR INSIDE MICROMETERS**

**INSIZE PLUS**  
MADE IN EUROPE

- Carbide measuring faces for micrometer head and extension rods
- Points of extension rods are spring loaded
- Optional accessory: gage block accessory (code **6881**), cylinder gage block (code **4001**), caliper/height gage checker (code **6884**)



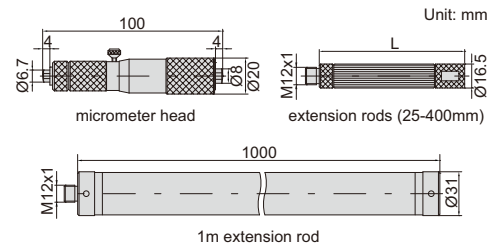
**3634-1300**

**Micrometer head**

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

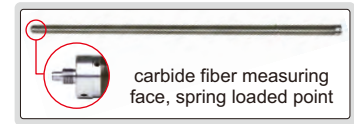
**Extension rods**

| Length (L) | Accuracy | Weight | Material     |
|------------|----------|--------|--------------|
| 25mm       | ±1.25µm  | 37g    | steel        |
| 50mm       | ±1.25µm  | 65g    | steel        |
| 100mm      | ±2µm     | 113g   | steel        |
| 200mm      | ±3.5µm   | 208g   | steel        |
| 400mm      | ±4.5µm   | 402g   | steel        |
| 1000mm     | ±7.5µm   | 909g   | carbon fiber |



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

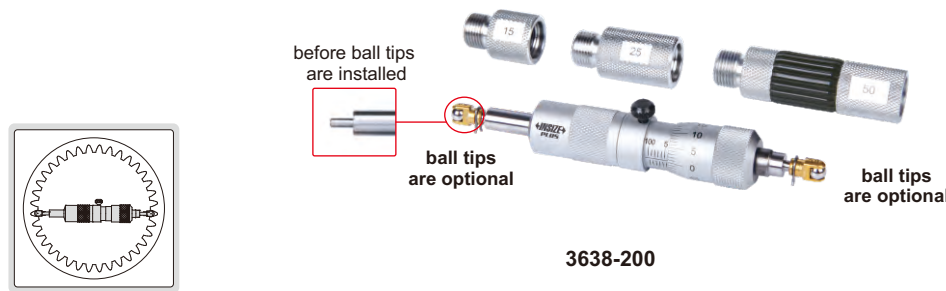
1m carbon fiber extension rod, light weight, no deform



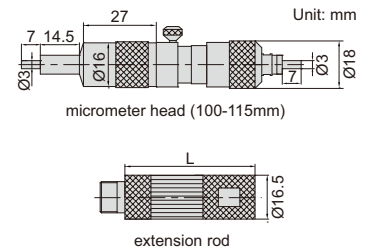
**INTERNAL GEAR TOOTH MICROMETERS**

**INSIZE PLUS**  
MADE IN EUROPE

RELATIVE PRODUCT:  
GEAR BORE GAGE (CODE 2428)



**3638-200**



- Measure over-pin diameter of gears
- Points of extension rods are spring loaded
- Optional accessory: ball tips (code **7383**)

**Micrometer head**

| Range     | Graduation | Accuracy |
|-----------|------------|----------|
| 100-115mm | 0.01mm     | ±4µm     |
| 150-175mm | 0.01mm     | ±4µm     |

**Extension rod**

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

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

## BALL TIPS FOR GEAR TOOTH MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE

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



7383-8

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

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

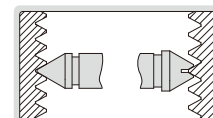
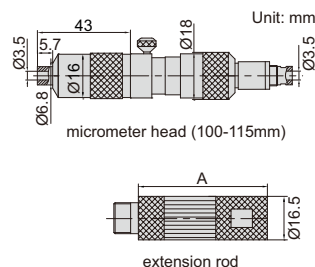
6

## INTERNAL SCREW THREAD MICROMETERS

**INSIZE PLUS**  
MADE IN EUROPE



3641-200



- Measure pitch diameter of screw thread
- Points of extension rods are spring loaded
- Optional accessory: measuring tips for internal screw thread micrometer (code 7385, L=13.5mm)

### Micrometer head

| Range     | Graduation | Accuracy |
|-----------|------------|----------|
| 100-115mm | 0.01mm     | ±4µm     |
| 150-175mm | 0.01mm     | ±4µm     |

### Extension rod

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

| Code      | Range      | Micrometer head | Extension rod (A)                      | Applicable tips      |
|-----------|------------|-----------------|--|----------------------|
| 3641-200  | 100-205mm  | 100-115mm       | 15mm, 25mm, 50mm                       | stem length L=13.5mm |
| 3641-500  | 100-505mm  | 100-115mm       | 15mm, 25mm, 50mm, 100mm, 200mm         | stem length L=13.5mm |
| 3641-900  | 100-905mm  | 100-115mm       | 15mm, 25mm, 50mm, 100mm, 200mm, 400mm  | stem length L=13.5mm |
| 3641-1100 | 150-1150mm | 150-175mm       | 25mm, 50mm, 100mm, 200mm, 200mm, 400mm | stem length L=13.5mm |

**MEASURING TIPS FOR INTERNAL SCREW THREAD MICROMETERS**

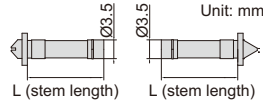
**INSIZE PLUS**  
MADE IN EUROPE

TIPS FOR TRAPEZOIDAL, ACME  
THREAD ARE ALSO AVAILABLE

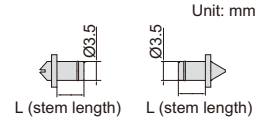
- Supplied in pair
- Made of hardened steel
- Suitable for **3641** series micrometers



**7385-T106A**



**7385-T106B**



6

**60° thread angle**

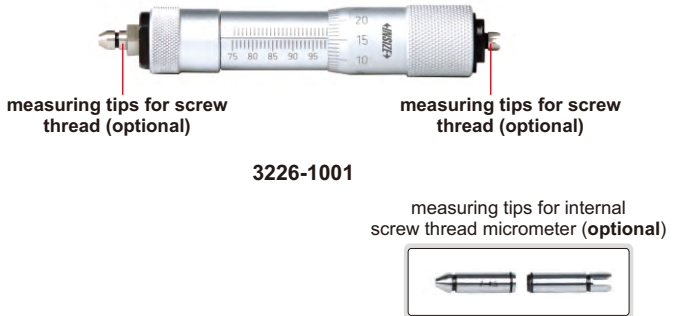
| Code       |            | Applicable pitch (mm) |
|------------|------------|-----------------------|
| L=13.5mm   | L=5mm      |                       |
| 7385-T101A | 7385-T101B | 0.35                  |
| 7385-T102A | 7385-T102B | 0.4/0.45              |
| 7385-T103A | 7385-T103B | 0.5/0.6               |
| 7385-T104A | 7385-T104B | 0.7/0.75/0.8          |
| 7385-T105A | 7385-T105B | 1/1.25                |
| 7385-T106A | 7385-T106B | 1.5/1.75              |
| 7385-T107A | 7385-T107B | 2.0/2.5               |
| 7385-T108A | 7385-T108B | 3.0/3.5               |
| 7385-T109A | 7385-T109B | 4.0/4.5/5.0           |
| 7385-T110A | 7385-T110B | 5.5/6.0               |

**55° thread angle**

| Code       |            | Applicable pitch (TPI) |
|------------|------------|------------------------|
| L=13.5mm   | L=5mm      |                        |
| 7385-T201A | 7385-T201B | 60/48                  |
| 7385-T202A | 7385-T202B | 40/32                  |
| 7385-T203A | 7385-T203B | 28/26/24/22            |
| 7385-T204A | 7385-T204B | 20/19/18/16            |
| 7385-T205A | 7385-T205B | 14/12/11               |
| 7385-T206A | 7385-T206B | 10/9/8                 |
| 7385-T207A | 7385-T207B | 7/6                    |
| 7385-T208A | 7385-T208B | 5/4.5/4                |
| 7385-T209A | 7385-T209B | 3.5/3.25/3/2.875/2.75  |
| 7385-T210A | 7385-T210B | 2.625/2.5/2            |

**INTERNAL SCREW THREAD MICROMETERS**

- Graduation: 0.01mm
- Optional accessory: measuring tips for internal screw thread micrometer (code **7321**)



| Code      | Range     |
|-----------|-----------|
| 3226-1001 | 75-100mm  |
| 3226-1251 | 100-125mm |
| 3226-1501 | 125-150mm |
| 3226-1751 | 150-175mm |
| 3226-2001 | 175-200mm |

| Code      | Range     |
|-----------|-----------|
| 3226-2251 | 200-225mm |
| 3226-2501 | 225-250mm |
| 3226-2751 | 250-275mm |
| 3226-3001 | 275-300mm |

**MEASURING TIPS FOR INTERNAL SCREW THREAD MICROMETERS**

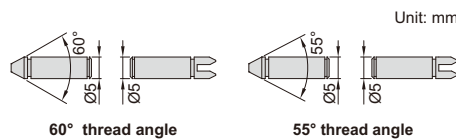
- Supplied in pair
- Suitable for **3226** series micrometers

**Metric and unified screw (60° thread angle)**

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



**7321-T1S**



**Whitworth screw (55° thread angle)**

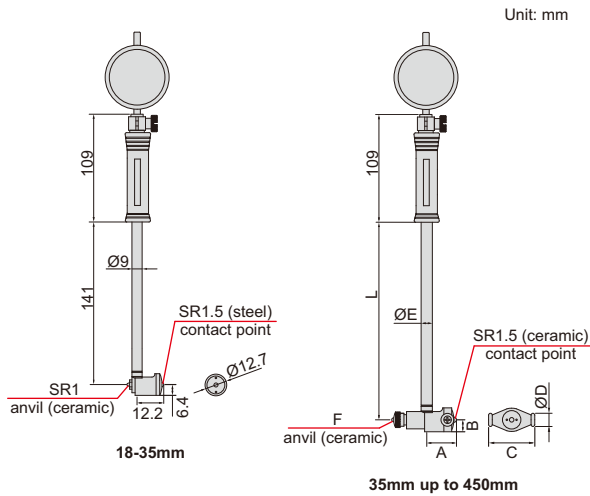
| Code      | Pitch                                  |
|-----------|--|
| 7321-T21  | 60-48TPI                               |
| 7321-T22  | 48-40TPI                               |
| 7321-T23  | 40-32TPI                               |
| 7321-T24  | 32-24TPI                               |
| 7321-T25  | 24-18TPI                               |
| 7321-T26  | 18-14TPI                               |
| 7321-T27  | 14-10TPI                               |
| 7321-T28  | 10-7TPI                                |
| 7321-T29  | 7-4.5TPI                               |
| 7321-T210 | 4.5-3.5TPI                             |
| 7321-T2S  | 10 pairs/set, including all above tips |





PRECISION BORE GAGES

6



2825-160



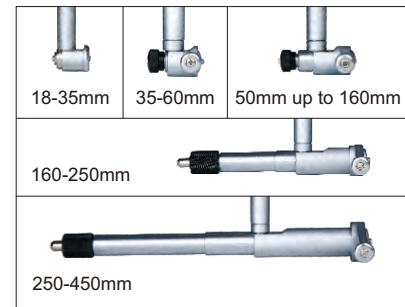
2126-35

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

| Range     | A    | B  | C     | ØD | ØE   | F     | L   |
|-----------|------|----|-------|----|------|-------|-----|
| 35-60mm   | 22   | 9  | 27    | 13 | 12.8 | SR2   | 141 |
| 50-100mm  | 26   | 9  | 35    | 13 | 12.8 | SR2   | 141 |
| 50-160mm  | 26   | 9  | 35    | 13 | 12.8 | SR2   | 141 |
| 100-160mm | 26   | 9  | 35    | 13 | 12.8 | SR2   | 141 |
| 160-250mm | 56.5 | 13 | 74.5  | 15 | 12.8 | SR2   | 241 |
| 250-450mm | 86.5 | 15 | 101.5 | 15 | 14.5 | SR2.5 | 241 |

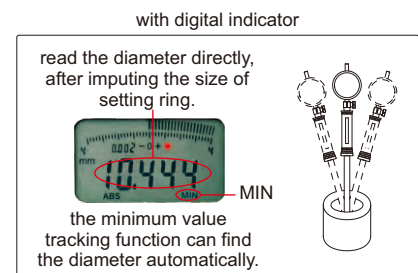
With dial indicator

| Code     | Range     | Indicator   | Accuracy | Repeatability |
|----------|-----------|---|----------|---------------|
| 2825-35  | 18-35mm   | dial indicator, range 1mm, graduation 0.001mm (code 2313-1FA) | ±0.007mm | 0.0015mm      |
| 2825-60  | 35-60mm   |   | ±0.007mm | 0.0015mm      |
| 2825-100 | 50-100mm  |   | ±0.007mm | 0.0015mm      |
| 2825-160 | 50-160mm  |   | ±0.007mm | 0.0015mm      |
| 2825-161 | 100-160mm |   | ±0.007mm | 0.0015mm      |
| 2825-250 | 160-250mm |   | ±0.007mm | 0.0015mm      |
| 2825-450 | 250-450mm |   | ±0.007mm | 0.0015mm      |



With digital indicator

| Code     | Range     | Indicator   | Accuracy | Repeatability |
|----------|-----------|---|----------|---------------|
| 2126-35  | 18-35mm   | digital indicator, code 2108-101F, range 12.7mm/0.5", resolution 0.001mm/0.00005" | ±0.007mm | 0.002mm       |
| 2126-60  | 35-60mm   |   | ±0.007mm | 0.002mm       |
| 2126-100 | 50-100mm  |   | ±0.007mm | 0.002mm       |
| 2126-160 | 50-160mm  |   | ±0.007mm | 0.002mm       |
| 2126-161 | 100-160mm |   | ±0.007mm | 0.002mm       |
| 2126-250 | 160-250mm |   | ±0.007mm | 0.002mm       |
| 2126-450 | 250-450mm |   | ±0.007mm | 0.002mm       |



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

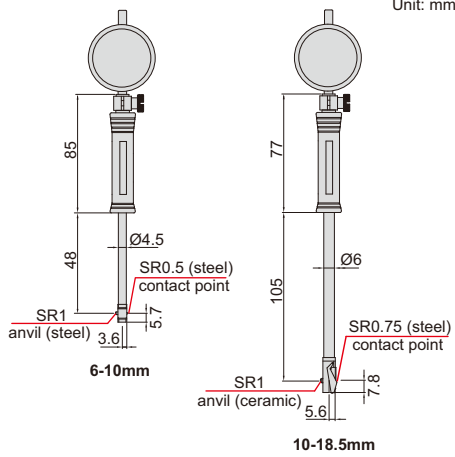
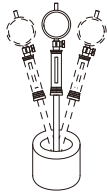
## BORE GAGES FOR SMALL HOLES

with digital indicator

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



the minimum value tracking function can find the diameter automatically.



Unit: mm

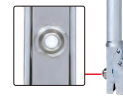


2852-10



2152-18

ceramic anvil



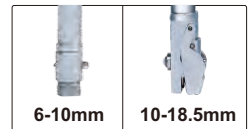
- Optional accessory: setting ring (code **6312**), bore gage setter

With dial indicator

| Code    | Range     | Indicator   | Accuracy | Repeatability |
|---------|-----------|---|----------|---------------|
| 2852-10 | 6-10mm    | dial indicator, range 3mm, graduation 0.01mm (code <b>2311-3F</b> ) | ±0.012mm | 0.003mm       |
| 2852-18 | 10-18.5mm | dial indicator, range 3mm, graduation 0.01mm (code <b>2311-3F</b> ) | ±0.012mm | 0.003mm       |

With digital indicator

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



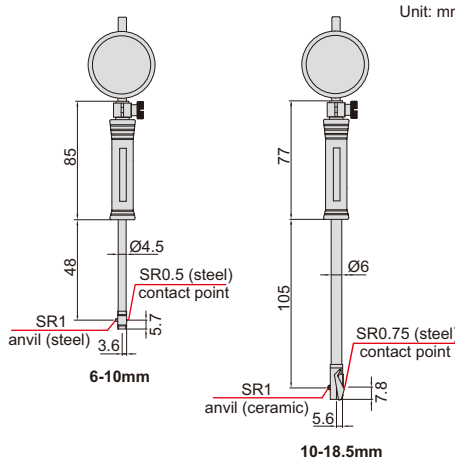
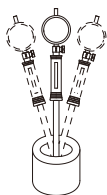
## PRECISION BORE GAGES FOR SMALL HOLES

with digital indicator

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



the minimum value tracking function can find the diameter automatically.



Unit: mm

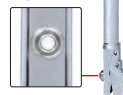


2853-10



2153-18

ceramic anvil



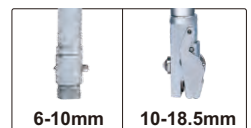
- Optional accessory: setting ring (code **6312**), bore gage setter

With dial indicator

| Code    | Range     | Indicator   | Accuracy | Repeatability |
|---------|-----------|---|----------|---------------|
| 2853-10 | 6-10mm    | dial indicator, range 1mm, graduation 0.001mm (code <b>2313-1FA</b> ) | ±0.007mm | 0.0015mm      |
| 2853-18 | 10-18.5mm | dial indicator, range 1mm, graduation 0.001mm (code <b>2313-1FA</b> ) | ±0.007mm | 0.0015mm      |

With digital indicator

| Code    | Range     | Indicator   | Accuracy | Repeatability |
|---------|-----------|---|----------|---------------|
| 2153-10 | 6-10mm    | digital indicator, code <b>2108-101F</b> , range 12.7mm/0.5", resolution 0.001mm/0.00005" | ±0.007mm | 0.002mm       |
| 2153-18 | 10-18.5mm | digital indicator, code <b>2108-101F</b> , range 12.7mm/0.5", resolution 0.001mm/0.00005" | ±0.007mm | 0.002mm       |

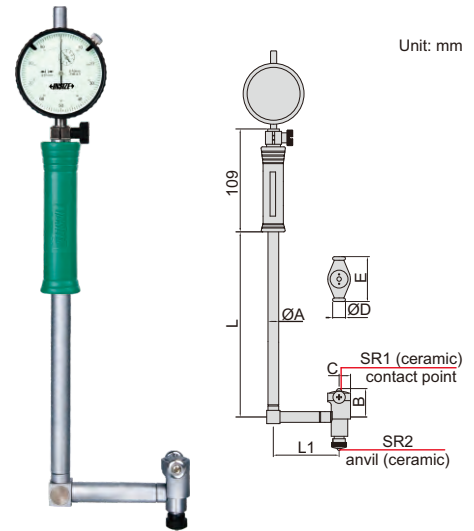
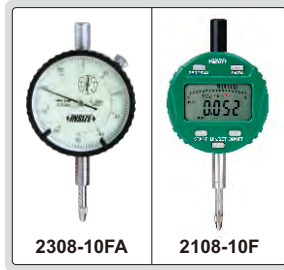
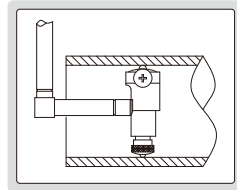


BORE GAGES

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

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

| Range     | ØA   | B    | C    | ØD | E     | L   | L1   |
|-----------|------|------|------|----|-------|-----|------|
| 35-60mm   | 12.8 | 22   | 9    | 13 | 27    | 141 | 75   |
| 50-160mm  | 12.8 | 28.5 | 9.2  | 13 | 35    | 141 | 76.2 |
| 160-250mm | 14.5 | 62.0 | 12.7 | 15 | 74.5  | 391 | 100  |
| 250-450mm | 14.5 | 91.5 | 15.0 | 15 | 101.5 | 391 | 100  |



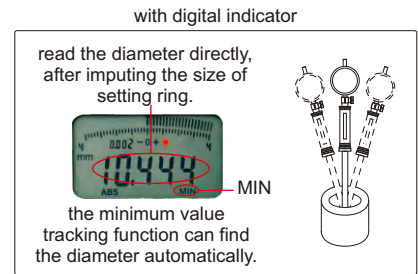
2827-160A

With dial indicator

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

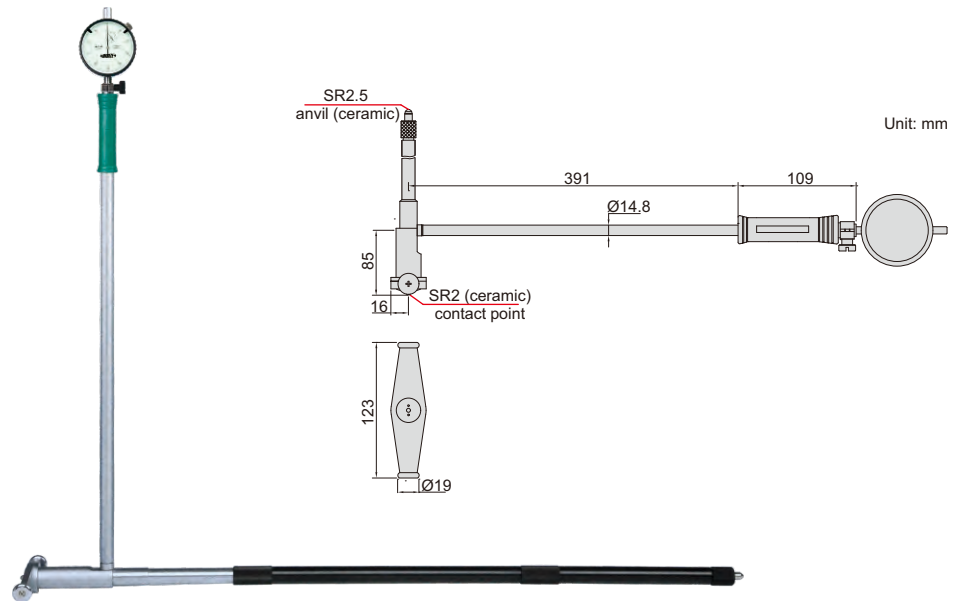
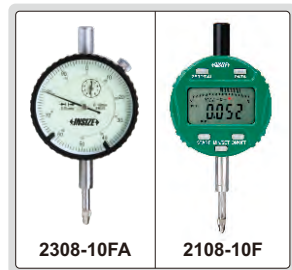
With digital indicator

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



BORE GAGES

ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS



2828-800A

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



ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

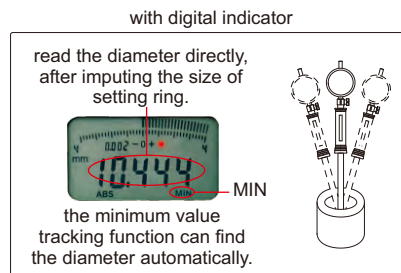
## BORE GAGE SETS



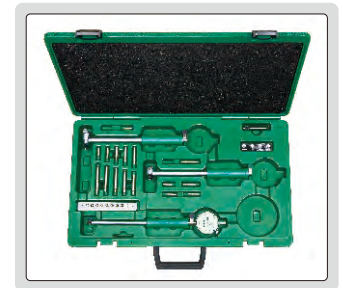
2824-S160

2724-S3

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



packaging (code 2824-S3)



### With dial indicator

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

### With digital indicator

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

## BORE GAGE FOR BARRIER INSIDE BORE

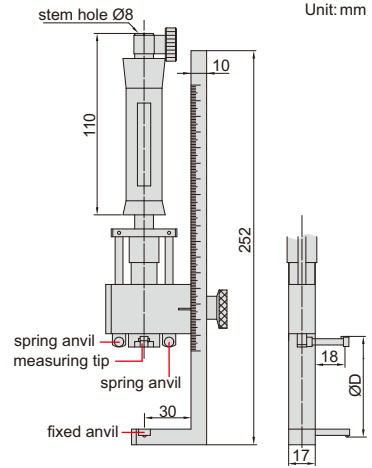
ATTENTION: NOT SUITABLE FOR 0.001MM DIAL INDICATORS

MEASURE DIAMETER OF BORES WITH BARRIER INSIDE

6



dial indicator is optional



2348-210

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

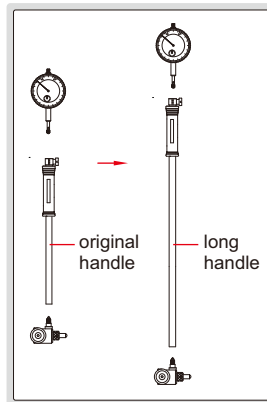
| Code      | Range ØD | Diameter of barrier Ød  | Travel of measuring tip | Accuracy (without dial indicator) | Measuring force |
|-----------|----------|-------------------------|-------------------------|-----------------------------------|-----------------|
| 2348-210* | 40-210mm | <D-14 (less than 50mm)* | 1.6                     | 0.018                             | 2N              |

\*For example:

When measuring size ØD is 40mm, D-14=26mm, so the diameter of barrier should be less than 26mm.  
 When measuring size ØD is 70mm, D-14=56mm, however it should be less than 50mm, so the diameter of barrier should be less than 50mm.

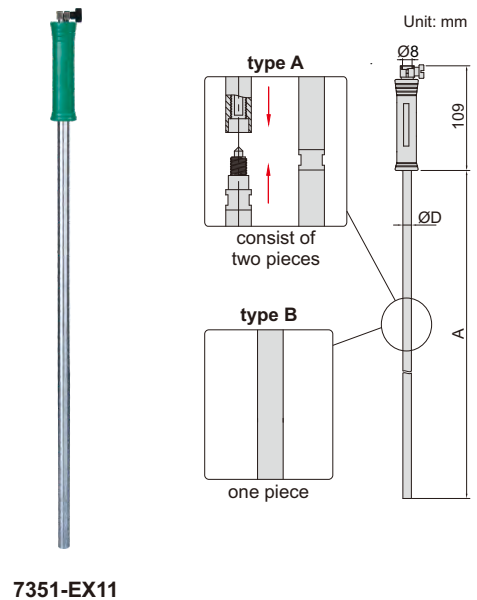
## LONG HANDLES

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



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

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



## ANVILS FOR BORE GAGES



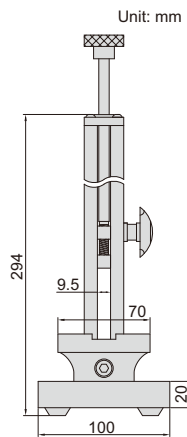
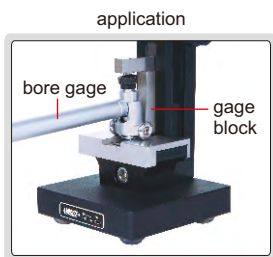
7350-160

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

| Code     | Applicable bore gages | Material of measuring face | Quantity per set | Measuring range of anvil (mm)                    |
|----------|-----------------------|----------------------------|------------------|--|
| 7350-10  | 6-10mm                | steel                      | 9 pcs            | 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10               |
| 7350-18  | 10-18.5mm             | ceramic                    | 9 pcs            | 10, 11, 12, 13, 14, 15, 16, 17, 18               |
| 7350-35  | 18-35mm               | ceramic                    | 9 pcs            | 18, 20, 22, 24, 26, 28, 30, 32, 34               |
| 7350-60  | 35-60mm               | ceramic                    | 6 pcs            | 35, 40, 45, 50, 55, 60                           |
| 7350-100 | 50-100mm              | ceramic                    | 11 pcs           | 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100      |
| 7350-160 | 50-160mm              | ceramic                    | 12 pcs           | 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105 |
| 7350-161 | 100-160mm             | ceramic                    | 12 pcs           | 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105 |
| 7350-250 | 160-250mm             | ceramic                    | 5 pcs            | 160, 170, 180, 190, 200                          |
| 7350-450 | 250-450mm             | ceramic                    | 5 pcs            | 250, 260, 270, 280, 290                          |

## BORE GAGE SETTERS

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



7353-160



Gage block set for 7353-160

| Blocks per set | Size (mm) | Step (mm) | Quantity | Remark            |
|----------------|-----------|-----------|----------|-------------------|
| 33             | 1.005     |           | 1 pc     | grade 2 (ISO3650) |
|                | 1.01-1.09 | 0.01      | 9 pcs    |                   |
|                | 1.1-1.9   | 0.1       | 9 pcs    |                   |
|                | 1-9       | 1         | 9 pcs    |                   |
|                | 10-30     | 10        | 3 pcs    |                   |
|                | 50        |           | 1 pc     |                   |
|                | 100       |           | 1 pc     |                   |

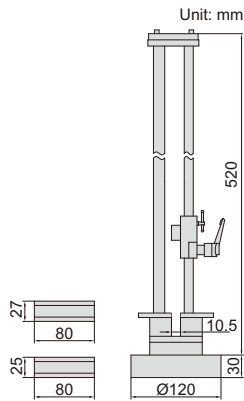
| Code      | Range   | Repeatability | Remark                 |
|-----------|---------|---------------|------------------------|
| 7353-160  | 0-160mm | 1.2µm         | with gage block set    |
| 7353-160W | 0-160mm | 1.2µm         | without gage block set |

## BORE GAGE SETTER

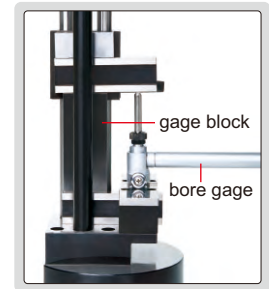
6

- Used together with gage blocks to set bore gages

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

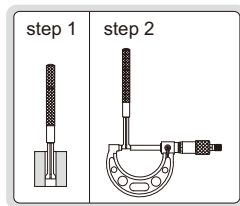


2395-400

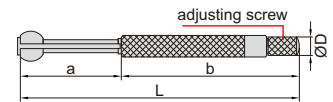


## SMALL HOLE GAGE SET

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



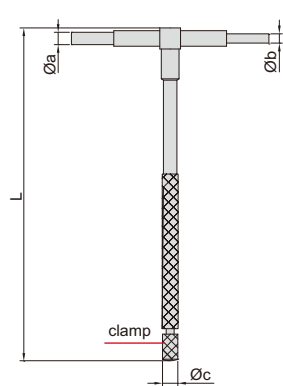
4208-1



| Range    | L  | a  | b  | ØD |
|----------|----|----|----|----|
| 3-5mm    | 76 | 24 | 52 | 5  |
| 5-7.5mm  | 79 | 27 | 52 | 5  |
| 7.5-10mm | 88 | 30 | 58 | 6  |
| 10-13mm  | 91 | 34 | 58 | 6  |

| Code   | Total range | Gages included                    |
|--------|-------------|-----------------------------------|
| 4208-1 | 3-13mm      | 3-5mm, 5-7.5mm, 7.5-10mm, 10-13mm |

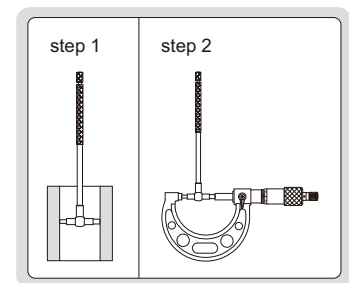
## TELESCOPING GAGE SET



4206-1

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

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



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



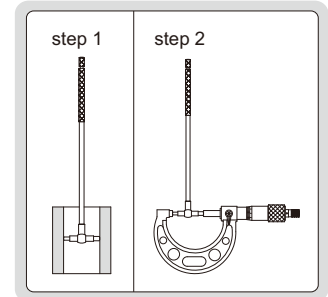
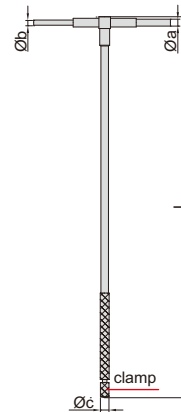
## LONG HANDLE TELESCOPING GAGES

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

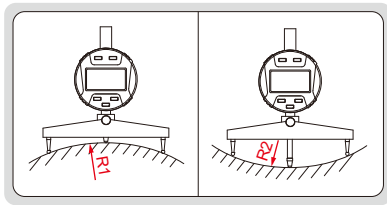
| Code   | Range     | L   | Øa  | Øb  | Øc  |
|--------|-----------|-----|-----|-----|-----|
| 4209-1 | 8-12.7mm  | 300 | 3.9 | 2.9 | 6.2 |
| 4209-2 | 12.7-19mm | 300 | 5.3 | 3.8 | 6.2 |
| 4209-3 | 19-32mm   | 300 | 5.3 | 3.8 | 6.2 |
| 4209-4 | 32-54mm   | 300 | 7.6 | 6.1 | 7.2 |
| 4209-5 | 54-90mm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



4209-6



## DIGITAL RADIUS GAGE (LOW ACCURACY)



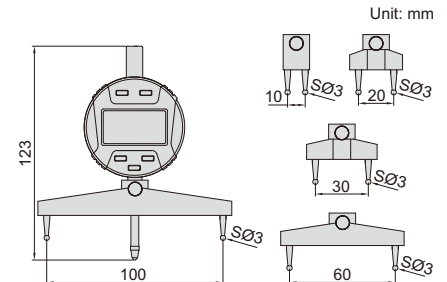
2183



ATTENTION: NO DATA OUTPUT

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

| Code | Range of external radius (R1) | Range of internal radius (R2) | Accuracy (mm) |
|------|-------------------------------|-------------------------------|---------------|
| 2183 | 5-910mm/0.2-35.83"            | 7-910mm/0.3-35.83"            | ±0.01R*       |



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

DATA OUTPUT

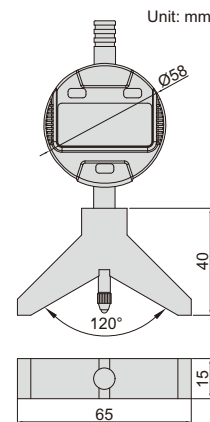


## DIGITAL RADIUS GAGE

- Measure radius of external arc, arc angle of measured surface should be larger than 60°
- Display radius value, no need to calculate
- Button function: on/off, zero, data preset, inch/mm
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Supplied with pin gage for zero setting
- Optional accessory: data output cable (code 7315-50M, 7302-40M)



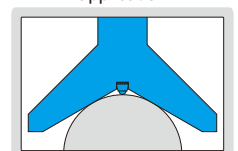
2188-55



pin gage (included)



application



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

## DIGITAL RADIUS CALIPERS

ATTENTION: THE ACTUAL RADIUS IS 2.414 TIMES OF THE READING

DATA OUTPUT

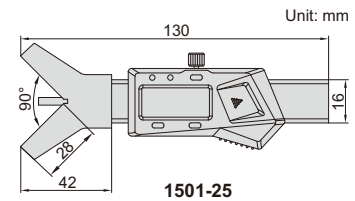


6

- Measure radius of external arc, arc angle of measured surface should be larger than 90°
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, set, mm/inch, preset (+, -)
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Supplied with pin gage for zero setting



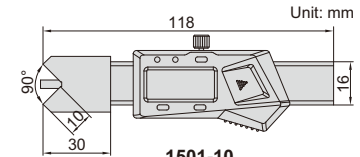
1501-25



1501-25



1501-10

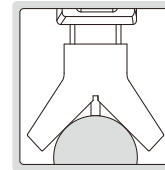


1501-10

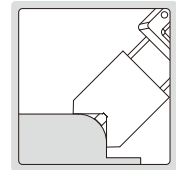
pin gage (included)



application

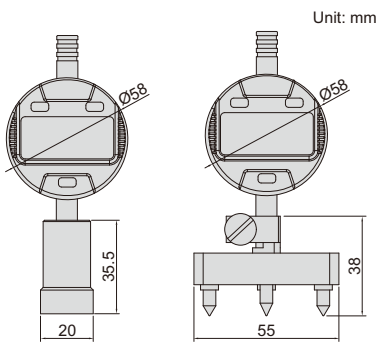


1501-10 can measure small workpieces or workpieces with steps



| Code    | Range (radius)      | Accuracy |
|---------|---------------------|----------|
| 1501-25 | 2-25mm/0.079-1"     | ±0.05mm  |
| 1501-10 | 2-10mm/0.079-0.394" | ±0.05mm  |

## DIGITAL SPHERE RADIUS GAGES



2190-100



2190-1250

- Measure radius of sphere
- Button function: on/off, zero, data preset, inch/mm, change measuring direction, absolute/incremental measurement
- Keep preset data in memory after restart
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Optional accessory: data output cable (code 7315-50M, 7302-40M, 7306-40M)

| Code      | Range (radius) | Resolution       | Accuracy | Radius calculation formula |
|-----------|----------------|------------------|----------|----------------------------|
| 2190-100  | SR15-100mm     | 0.001mm/0.00005" | 0.01SR*  | SR=50/H+H/2                |
| 2190-1250 | SR325-1250mm   | 0.001mm/0.00005" | 0.01SR*  | SR=312.5/H+H/2             |

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

application

