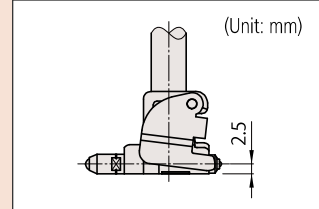


# Bore Gages

For easy and accurate measurement of inside diameters

## Bore Gages SERIES 511 — for Blind Holes

- Capable of ID (inside diameter) measurement close to the bottom of a hole.
- Carbide contact point ensuring high durability and wear resistance.
- Grip is large and hollow to reduce effect of body heat on high-accuracy measurements.
- The indicator (dial indicator, Digimatic indicator) and dial protection cover are optional. Select an indicator from the recommended dial indicators and Digimatic indicators. Please contact us for advice when using an indicator other than the recommended indicators.
- Optional Extension Rods can be attached for measuring deep holes. (For details, refer to page C-45.)
- A Bore Gage Checker and a range of Setting Rings are available to aid in accurately setting a gage before making a measurement. (For details, refer to pages C-46 and C-47.)



### Technical Data

- Accuracy: Metric models 4 μm  
Inch models 0.00016 in
- Repeatability: Metric models 1 μm  
Inch models 0.00004 in
- Adjacent error: Metric models 1 μm  
Inch models 0.00004 in

### Optional Accessories

- Dial indicator (See Chapter F)
- Dial protection cover: **21DZA000**

### Recommended Dial Indicators (see Chapter F)

- Metric models: **2046SB** (0.01 mm)  
**2972TB** (0.01 mm - One-revolution type)  
**2109SB-10** (0.001 mm)  
**2900SB-10** (0.001 mm - One-revolution type)
- Inch models: **2922SB** (0.0005 in)  
**2977TB** (0.0005 in - One-revolution type)  
**2923SB-10** (0.0001 in)  
**2910SB-10** (0.0001 in - One-revolution type)

### Recommended Digimatic Indicators (see Chapter F)

- Metric models: **543-310B** (0.001 mm)
- Inch models: **543-312B** (0.001 mm/0.00005 in)

Note: Indicators equipped with rubber bellows, such as water-proof types, cannot be used.

Note: The dial indicator and protection cover are optional.

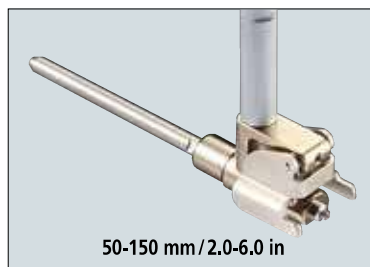
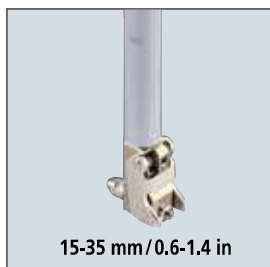
## SPECIFICATIONS

Metric										
Order No.	Range (mm)	Stroke of contact point (mm)	Measuring force (N)	Guide force (N)	Content of set					Probing depth (mm)
					Bore gage	Dial indicator	Dial protection cover	Anvil	Washer	
511-415	15 - 35	1.2	4 or less	6 or less	511-415	Not supplied	Not supplied	11 pcs.	1 pc.	150
511-416	35 - 60		5 or less	10 or less	511-416			6 pcs.	4 pcs.	
511-417	50 - 150	1.2	4 or less	6 or less	511-415	2046SB (Graduation: 0.01 mm)	21DZA000	11 pcs.	1 pc.	150
511-425	15 - 35		5 or less	10 or less	511-416			6 pcs.	4 pcs.	
511-426	35 - 60	1.2	4 or less	6 or less	511-415	2109SB-10 (Graduation: 0.001 mm)	21DZA000	11 pcs.	1 pc.	150
511-427	50 - 150		5 or less	10 or less	511-417			6 pcs.	4 pcs.	
511-435	15 - 35	1.2	4 or less	6 or less	511-415	2109SB-10 (Graduation: 0.001 mm)	21DZA000	11 pcs.	1 pc.	150
511-436	35 - 60		5 or less	10 or less	511-417			6 pcs.	4 pcs.	
511-437	50 - 150	1.2	4 or less	6 or less	511-415	2109SB-10 (Graduation: 0.001 mm)	21DZA000	11 pcs.	1 pc.	150
511-438	15 - 35		5 or less	10 or less	511-417			6 pcs.	4 pcs.	

Note 1: A 10 mm (0.4 in) sub-anvil is supplied with 511-415/425/435/418/428/438 and a 50 mm (2 in) sub-anvil is supplied with 511-417/427/437/420/430/440.

Note 2: It is not permissible to use a sub-anvil other than as supplied as a standard accessory, or widen a measuring range by using multiple sub-anvils. (The measurement accuracy in such cases is not guaranteed.)

## Contact Points



Inch										
Order No.	Range (in)	Stroke of contact point (in)	Measuring force (N)	Guide force (N)	Content of set					Probing depth (in)
					Bore gage	Dial indicator	Dial protection cover	Anvil	Washer	
511-418	0.6 - 1.4	0.047	4 or less	6 or less	511-418	Not supplied	Not supplied	11 pcs.	1 pc.	6
511-419	1.4 - 2.4		5 or less	10 or less	511-419			6 pcs.	4 pcs.	
511-420	2.0 - 6.0	0.047	4 or less	6 or less	511-418	2922SB (Graduation: 0.0005 in)	21DZA000	11 pcs.	1 pc.	6
511-428	0.6 - 1.4		5 or less	10 or less	511-419			6 pcs.	4 pcs.	
511-429	1.4 - 2.4	0.047	4 or less	6 or less	511-418	2923SB-10 (Graduation: 0.0001 in)	21DZA000	11 pcs.	1 pc.	6
511-430	2.0 - 6.0		5 or less	10 or less	511-420			6 pcs.	4 pcs.	
511-438	0.6 - 1.4	0.047	4 or less	6 or less	511-418	2923SB-10 (Graduation: 0.0001 in)	21DZA000	11 pcs.	1 pc.	6
511-439	1.4 - 2.4		5 or less	10 or less	511-419			6 pcs.	4 pcs.	
511-440	2.0 - 6.0	0.047	4 or less	6 or less	511-418	2923SB-10 (Graduation: 0.0001 in)	21DZA000	11 pcs.	1 pc.	6
511-440	2.0 - 6.0		5 or less	10 or less	511-420			6 pcs.	4 pcs.	