

# Bore Gages

## SERIES 526 — for Extra Small Holes

These Bore Gages measure diameters of small holes. The radial displacement of split-ball contact is converted to axial displacement of measuring rod, which is shown on the dial indicator.

### FEATURES

- Optional stand (215-120M) is available for efficient measurement of multiple small holes.



526-172



526-127

### SPECIFICATIONS

Metric		
Range	Order No.	Probe depth (D)
0.95 - 1.55mm	526-172*	11.5mm
1.5 - 4mm	526-162*	17.5, 22.5mm
3.7 - 7.3mm	526-152*	32mm
7 - 10mm	526-124	56mm
10 - 18mm	526-125	62mm
0.95 - 1.55mm	526-173*	11.5mm
1.5 - 4mm	526-163*	17.5, 22.5mm
3.7 - 7.3mm	526-153*	32mm
7 - 10mm	526-126	56mm
10 - 18mm	526-127	62mm

Inch		
Range	Order No.	Probe depth (D)
.037" - .061"	526-176*	.45"
.06" - .155"	526-166*	.68", .88"
.145" - .29"	526-156*	1.25"
.3" - .4"	526-122	2.2"
.4" - .7"	526-123	2.4"
.3" - .4"	526-119	2.2"
.4" - .7"	526-120	2.4"

\*Provided with setting rings

0.001" graduation (w/ 29235B-10)

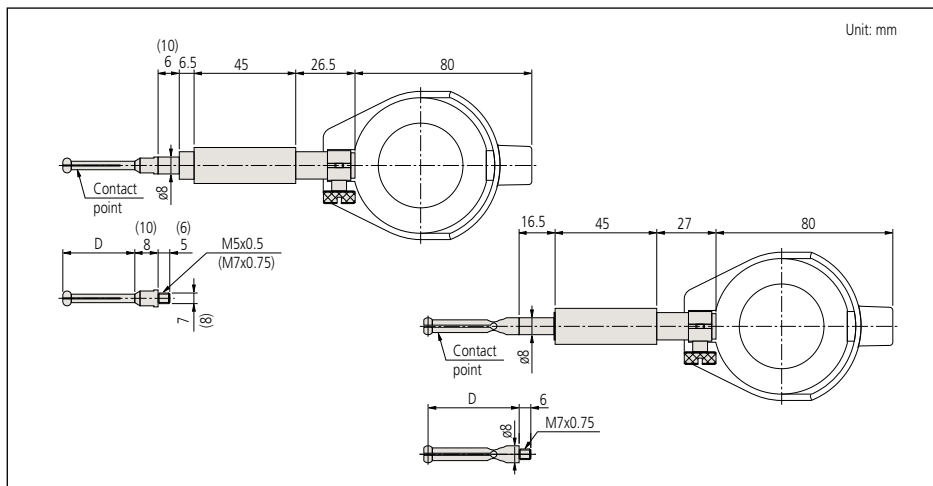
0.0005" graduation (w/ 29225B)

\*Provided with setting rings

0.001mm graduation (w/ 21095B-10)

0.01mm graduation (w/ 20465B)

### DIMENSION



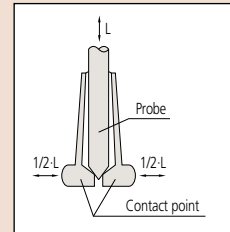
### Technical Data

Accuracy: 4µm

Repeatability: 2µm

Graduation: 0.01mm, 0.001mm, .0005 or .00001"

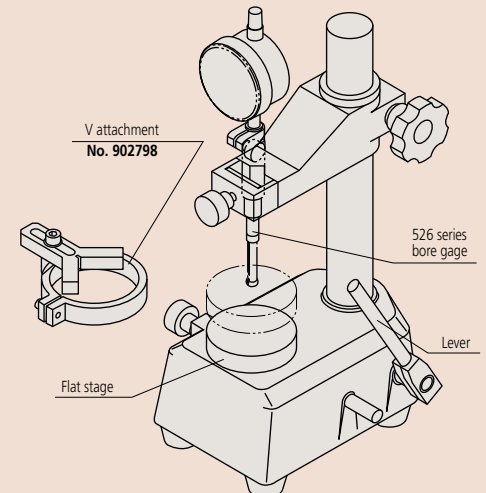
### Contact Point



### Optional Accessory

Setting ring (See page 122.)

215-120M: Bore gage stand



# Bore Gages

## SERIES 511 — for Small Holes

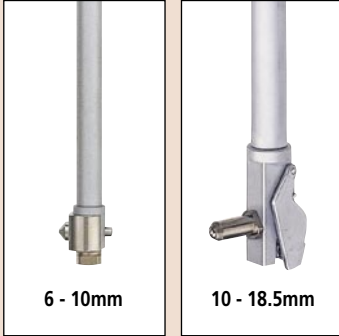
### FEATURES

- Its interchangeable anvils are made of alloyed steel.
- The dial indicator is fully protected by a rugged cover.

### Technical Data

Accuracy: 5µm  
 Repeatability: 2µm  
 Graduation: 0.01mm, 0.001mm, .0005 or .0001"

### Contact Point



6 - 10mm

10 - 18.5mm

### Optional Accessory

Setting ring (See page 122.)



511-204

### SPECIFICATIONS

#### Metric

Range	Order No.	Probe depth
6 - 10mm	511-210	50mm
10 - 18.5mm	511-203	100mm
6 - 10mm	511-211	50mm
10 - 18.5mm	511-204	100mm

0.001mm graduation  
(w/ 21095B-10)

0.01mm graduation  
(w/ 20465B)

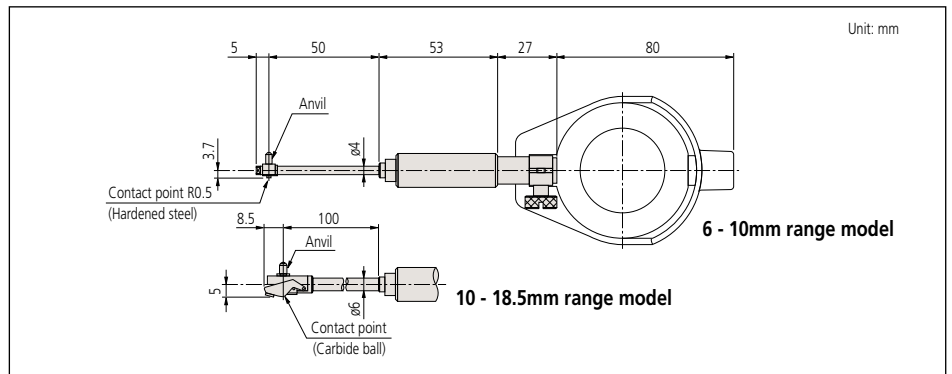
#### Inch

Range	Order No.	Probe depth
.24" - .4"	511-212	2"
.4" - .74"	511-206	4"
.24" - .4"	511-213	2"
.4" - .74"	511-207	4"

.0001" graduation  
(w/ 29235B-10)

.0005" graduation  
(w/ 29225B)

### DIMENSION



# Bore Gages

## SERIES 511

Mitutoyo offers a complete selection of Bore Gages, all of them with interchangeable anvils and necessary accessories to perform close tolerance ID measurements.



511-173

### FEATURES

- Most popular Bore Gages.
- Carbide-tipped contact points for durability.
- The dial indicator is fully protected by a rugged cover.
- Optional extension rods can be attached for measuring deep holes.
- Economy Bore Gage Sets are also available.

### SPECIFICATIONS

Metric		Individual
Range	Order No.	Probe depth
18 - 35mm	511-167	100mm
35 - 60mm	511-168	150mm
50 - 100mm	511-169	150mm
50 - 150mm	511-170	150mm
100 - 160mm	511-178	150mm
160 - 250mm	511-179	250mm
250 - 400mm	511-180	250mm
18 - 35mm	511-171	100mm
35 - 60mm	511-172	150mm
50 - 100mm	511-173	150mm
50 - 150mm	511-174	150mm
100 - 160mm	511-175	150mm
160 - 250mm	511-176	250mm
250 - 400mm	511-177	250mm

Inch		Individual
Range	Order No.	Probe depth
.7" - 1.4"	511-163	4"
1.4" - 2.5"	511-164	6"
2" - 4"	511-165	6"
2" - 6"	511-166	6"
4" - 6.5"	511-187	6"
6.5" - 10"	511-188	10"
10" - 16"	511-189	10"
.7" - 1.4"	511-159	4"
1.4" - 2.5"	511-160	6"
2" - 4"	511-161	6"
2" - 6"	511-162	6"
4" - 6.5"	511-184	6"
6.5" - 10"	511-185	10"
10" - 16"	511-186	10"

Metric		Bore Gage Sets
Range	Order No.	Number of probes
18 - 150mm	511-902	3
18 - 150mm	511-901	3

Inch		Bore Gage Sets
Range	Order No.	Number of probes
.7" - 6"	511-912	3
.7" - 6"	511-911	3

0.001mm graduation  
(w/ 21095B-10)

0.01mm graduation  
(w/ 20465B)

.0001" graduation  
(w/ 29235B-10)

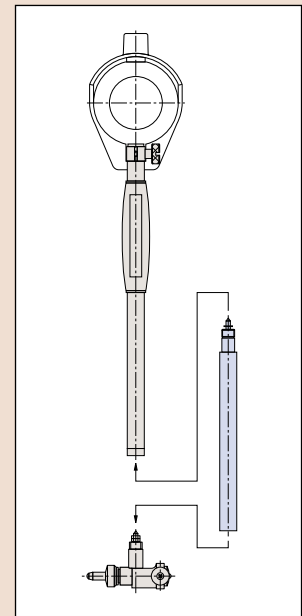
.0005" graduation  
(w/ 29225B)

### Technical Data

Accuracy: 5µm  
Repeatability: 2µm  
Graduation: 0.01mm, 0.001mm, .0005 or .0001"

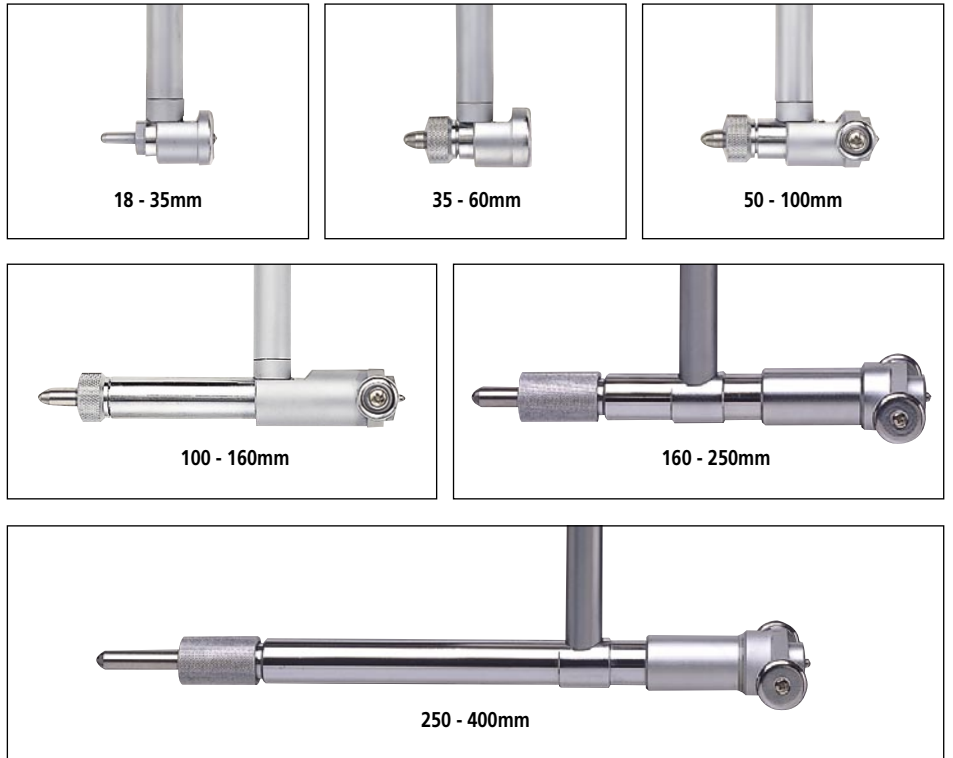
### Optional Accessory

- 953549:** 125mm Extension rod for 18-35mm (.7"-1.4") models
- 953552:** 125mm Extension rod for 35-160mm (1.4"-6.5") models
- 953557:** 125mm Extension rod for 160-400mm (6.5"-16") models
- 953550:** 250mm Extension rod for 18-35mm (.7"-1.4") models
- 953553:** 250mm Extension rod for 35-160mm (1.4"-6.5") models
- 952361:** 250mm Extension rod for 160-400mm (6.5"-16") models
- 953551:** 500mm Extension rod for 18-35mm (.7"-1.4") models
- 953554:** 500mm Extension rod for 35-160mm (1.4"-6.5") models
- 953558:** 500mm Extension rod for 160-400mm (6.5"-16") models
- 953555:** 750mm Extension rod for 35-160mm (1.4"-6.5") models
- 953559:** 750mm Extension rod for 160-400mm (6.5"-16") models
- 953556:** 1000mm Extension rod for 35-160mm (1.4"-6.5") models
- 953560:** 1000mm Extension rod for 160-400mm (6.5"-16") models

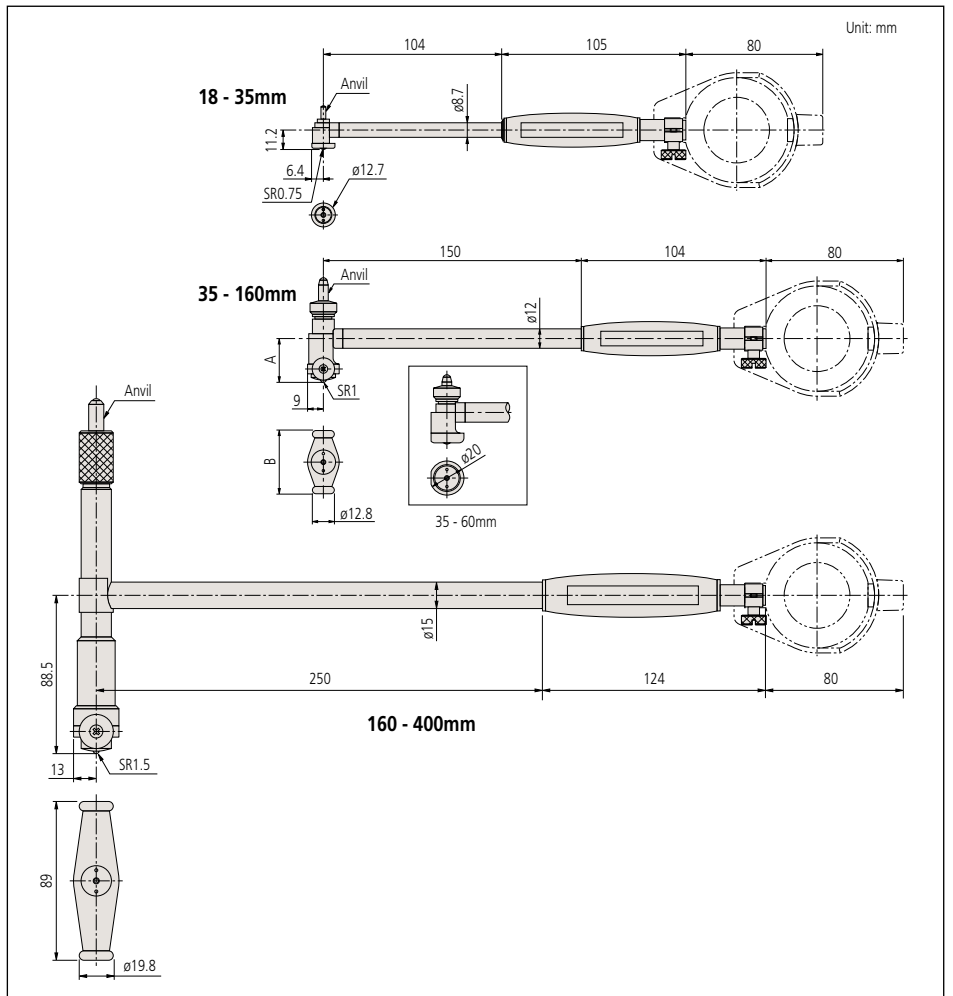


Setting ring (See page 122.)

## Contact Point



## DIMENSION



# Bore Gages

## SERIES 511 — Short Leg Type

### FEATURES

- Compact and lightweight because of the short length below the grip.
- Carbide-tipped contact point for durability.



511-461

### SPECIFICATIONS

Metric		
Range	Order No.	Probe depth
18 - 35mm	511-471	50mm
35 - 60mm	511-472	50mm
50 - 100mm	511-473	50mm
50 - 150mm	511-474	50mm
100 - 160mm	511-475	50mm
18 - 35mm	511-461	50mm
35 - 60mm	511-462	50mm
50 - 100mm	511-463	50mm
50 - 150mm	511-464	50mm
100 - 160mm	511-465	50mm

Inch		
Range	Order No.	Probe depth
.7" - 1.4"	511-491	2"
1.4" - 2.5"	511-492	2"
2" - 4"	511-493	2"
2" - 6"	511-494	2"
4" - 6.5"	511-495	2"
.7" - 1.4"	511-481	2"
1.4" - 2.5"	511-482	2"
2" - 4"	511-483	2"
2" - 6"	511-484	2"
4" - 6.5"	511-485	2"

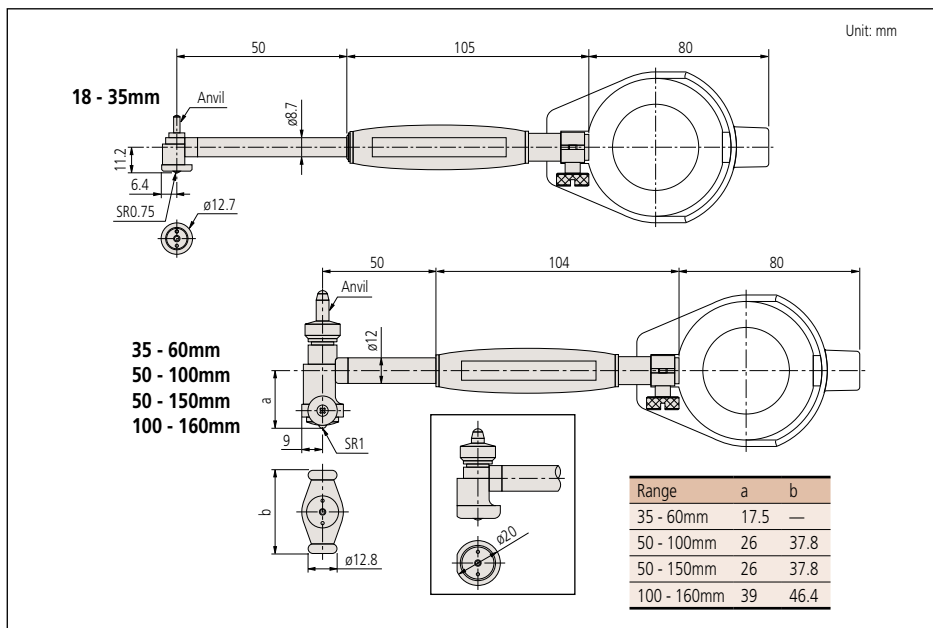
0.001mm graduation  
(w/ 2109SB-10)

0.01mm graduation  
(w/ 2046SB)

.0001" graduation  
(w/ 2923SB-10)

.0005" graduation  
(w/ 2922SB)

### DIMENSION



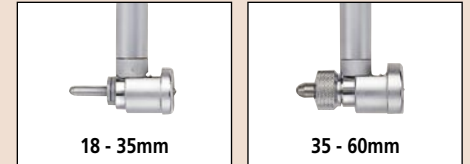
### Technical Data

Accuracy: 5µm

Repeatability: 2µm

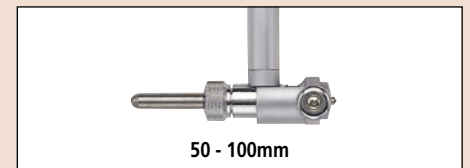
Graduation: 0.01mm, 0.001mm, .0005 or .0001"

### Contact Point

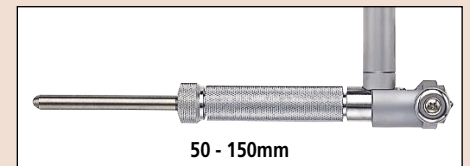


18 - 35mm

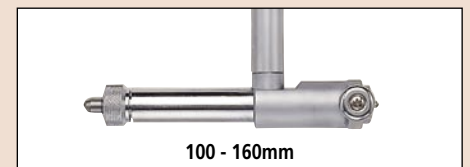
35 - 60mm



50 - 100mm



50 - 150mm



100 - 160mm

### Optional Accessory

— : Setting ring (See page 122.)

# Bore Gages

## SERIES 511 — for Blind Holes

### FEATURES

- Can measure ID at position close to the bottom of blind holes.

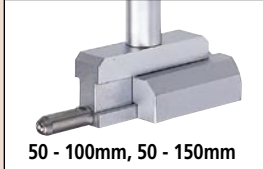
### Technical Data

Accuracy: 5µm  
 Repeatability: 2µm  
 Graduation: 0.01mm, 0.001mm, .0005 or .0001"

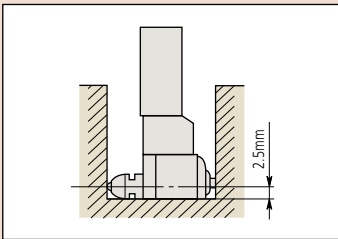
### Contact Point



15 - 35mm



50 - 100mm, 50 - 150mm



### Optional Accessory

— : Setting ring (See page 122.)



511-412

### SPECIFICATIONS

Metric		
Range	Order No.	Probe depth
15 - 35mm	511-421	150mm
35 - 60mm	511-422	150mm
50 - 100mm	511-423	150mm
50 - 150mm	511-424	150mm
15 - 35mm	511-411	150mm
35 - 60mm	511-412	150mm
50 - 100mm	511-413	150mm
50 - 150mm	511-414	150mm

0.001mm graduation (w/ 210958-10)

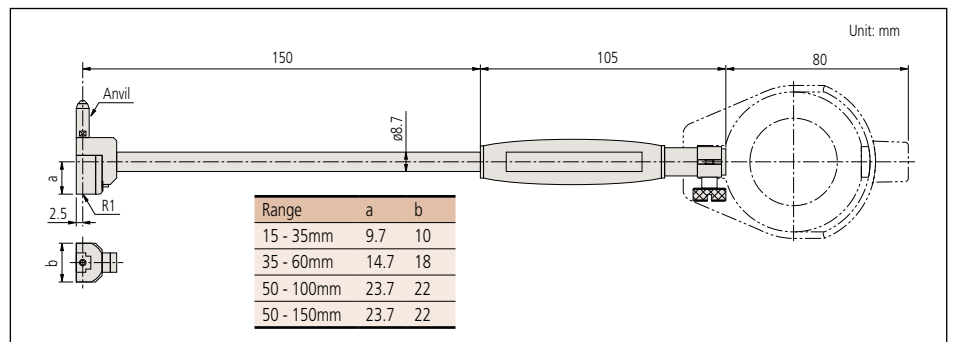
0.01mm graduation (w/ 204658)

Inch		
Range	Order No.	Probe depth
.6" - 1.4"	511-441	6"
1.4" - 2.4"	511-442	6"
2" - 4"	511-443	6"
2" - 6"	511-444	6"
.6" - 1.4"	511-431	6"
1.4" - 2.4"	511-432	6"
2" - 4"	511-433	6"
2" - 6"	511-434	6"

.0001" graduation (w/ 292358-10)

.0005" graduation (w/ 292258)

### DIMENSION



# Bore Gages

## SERIES 511 — with Micrometer Head

### FEATURES

- Interchangeable anvil is attached to a micrometer head for accurate dimensional setting.
- Wide measuring range with sub-anvils.
- Carbide ball contact point for durability.
- Extension rods (optional) can be attached for measuring deep holes.
- Optional Setting Rings offer the best method of zero-setting Bore Gages.



511-334

### SPECIFICATIONS

Metric		
Range	Order No.	Probe depth
35 - 60mm	<b>511-343</b>	150mm
60 - 100mm	<b>511-333</b>	150mm
100 - 160mm	<b>511-311</b>	150mm
150 - 250mm	<b>511-313</b>	250mm
250 - 400mm	<b>511-315</b>	250mm
400 - 600mm	<b>511-317</b>	250mm
600 - 800mm	<b>511-327</b>	250mm
35 - 60mm	<b>511-344</b>	150mm
60 - 100mm	<b>511-334</b>	150mm
100 - 160mm	<b>511-312</b>	150mm
150 - 250mm	<b>511-314</b>	250mm
250 - 400mm	<b>511-316</b>	250mm
400 - 600mm	<b>511-318</b>	250mm
600 - 800mm	<b>511-328</b>	250mm

0.001mm graduation  
(w/ 21095B-10)

0.01mm graduation  
(w/ 20465B)

Inch		
Range	Order No.	Probe depth
1.4" - 2.5"	<b>511-346</b>	6"
2.4" - 4"	<b>511-336</b>	6"
4" - 6.4"	<b>511-326</b>	6"
6" - 10"	<b>511-320</b>	10"
10" - 16"	<b>511-322</b>	10"
16" - 24"	<b>511-324</b>	10"
24" - 32"	<b>511-330</b>	10"
1.4" - 2.5"	<b>511-345</b>	6"
2.4" - 4"	<b>511-335</b>	6"
4" - 6.4"	<b>511-325</b>	6"
6" - 10"	<b>511-319</b>	10"
10" - 16"	<b>511-321</b>	10"
16" - 24"	<b>511-323</b>	10"
24" - 32"	<b>511-329</b>	10"

.0001" graduation  
(w/ 29235B-10)

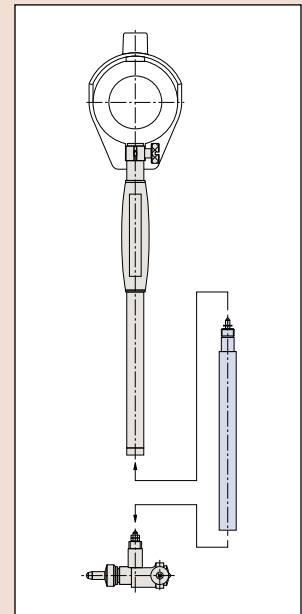
.0005" graduation  
(w/ 29225B)

### Technical Data

Accuracy: 5µm  
Repeatability: 2µm  
Graduation: 0.01mm, 0.001mm, .0005 or .0001"

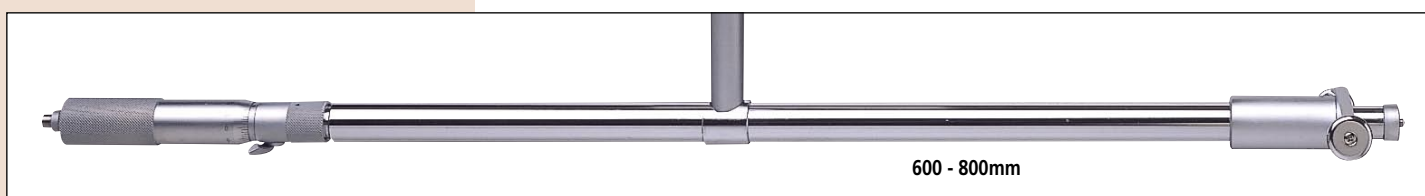
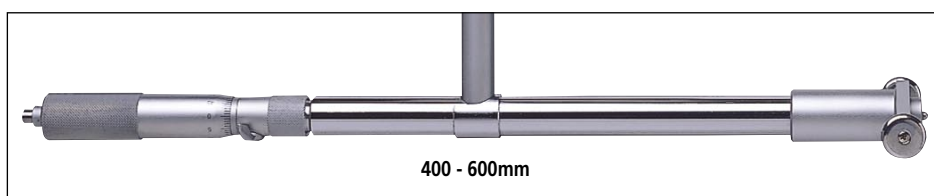
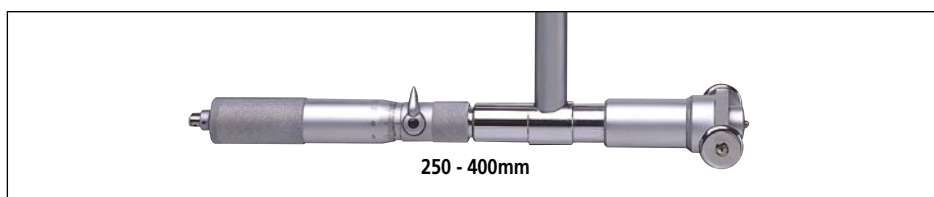
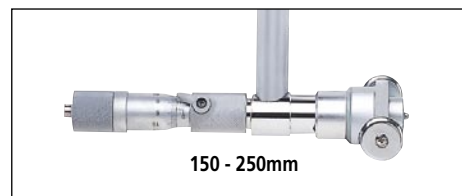
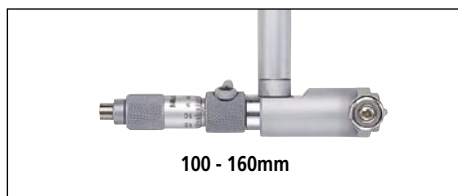
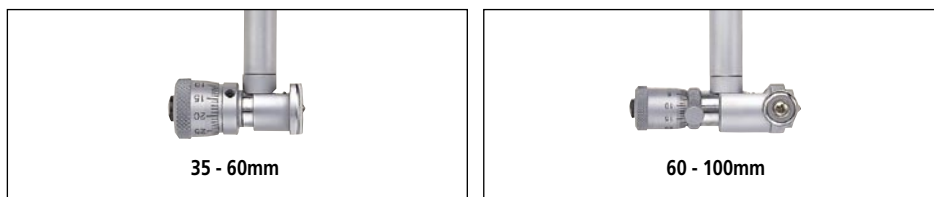
### Optional Accessory

- 953549:** 125mm Extension rod for 18-35mm (.7"-1.4") models
- 953552:** 125mm Extension rod for 35-160mm (1.4"-6.5") models
- 953557:** 125mm Extension rod for 160-400mm (6.5"-16") models
- 953550:** 250mm Extension rod for 18-35mm (.7"-1.4") models
- 953553:** 250mm Extension rod for 35-160mm (1.4"-6.5") models
- 952361:** 250mm Extension rod for 160-400mm (6.5"-16") models
- 953551:** 500mm Extension rod for 18-35mm (.7"-1.4") models
- 953554:** 500mm Extension rod for 35-160mm (1.4"-6.5") models
- 953558:** 500mm Extension rod for 160-400mm (6.5"-16") models
- 953555:** 750mm Extension rod for 35-160mm (1.4"-6.5") models
- 953559:** 750mm Extension rod for 160-400mm (6.5"-16") models
- 953556:** 1000mm Extension rod for 35-160mm (1.4"-6.5") models
- 953560:** 1000mm Extension rod for 160-400mm (6.5"-16") models

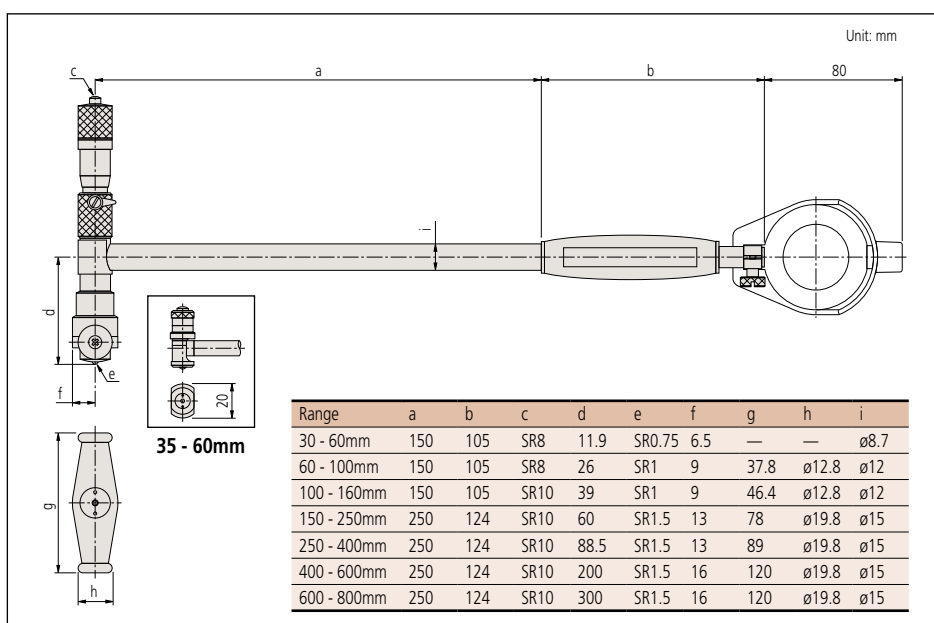


Setting ring (See page 122.)

## Contact Point



## DIMENSION





# ABSOLUTE Digimatic Bore Gage

## SERIES 511

This ABSOLUTE Digimatic bore gages are exclusively designed for ID measurement.



511-521

### FEATURES

- The minimum value holding function provides the easy of detection of hole diameter.



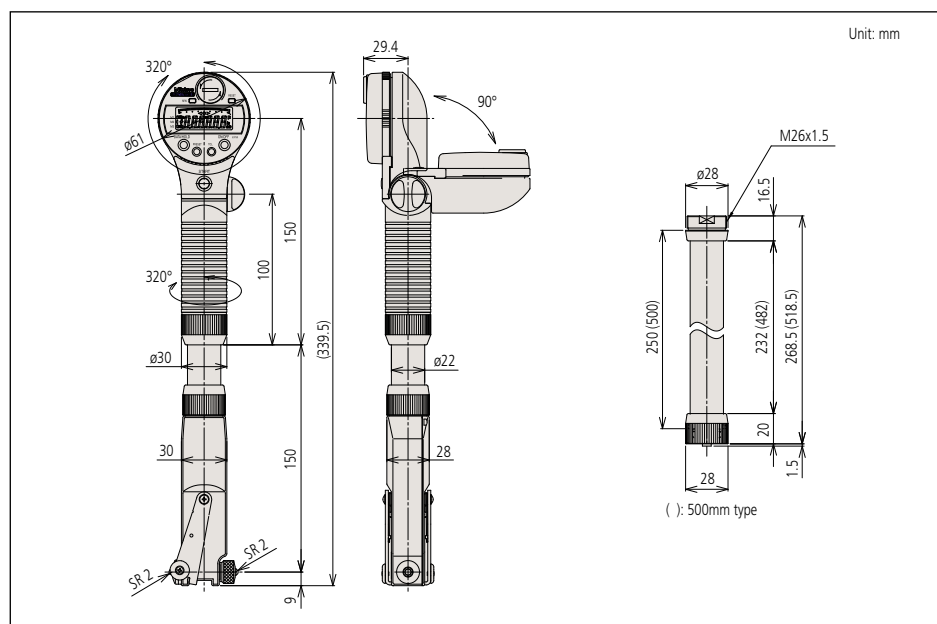
- Up to three sets of master value and upper/lower tolerance value can be memorized.
- An analog bar indicator is integrated to enhance the intuition in reading.
- GO/±NG judgment is performed by setting the upper and lower tolerances.
- Up to four rods (250mm or 500mm) can be used.

### SPECIFICATIONS

Metric		
Range	Order No.	Probe depth
45 - 100mm	511-501	150mm
100 - 160mm	511-502	150mm

Inch/Metric		
Range	Order No.	Probe depth
1.8 - 4"	511-521	6"
4 - 6.4"	511-522	6"

### DIMENSION



**ABSOLUTE®**

Absolute System Patented by MITUTOYO

(Refer to the page 9 for details.)

### Technical Data

Resolution: 0.001mm or .0005"/0.001mm  
 Display: LCD  
 Battery: SR44 (1 pc.) (938882)  
 Battery life: Approx. el: Conforming to IP53

### Functions

Origin-set, Zero-Setting, Presetting, Power on/off, inch/mm conversion (inch/mm type only), Data output, GO/±NG tolerance judgment  
 Alarm: Low battery voltage, scale contamination, overflow error, tolerance limit setting error

### Optional Accessory

- 21DZA089: Extension rod 250 mm (10")
- 21DZA081: Extension rod 500 mm (20")
- 516-118-10: Origin setup metric rectangular gauge block set
- 516-119-10: Origin setup metric square gauge block set
- 905338: SPC cable (1m)
- 905409: SPC cable (2m)
- : Setting ring (See page 122.)



Origin setup gauge block set

Example: using four extension rods.

# Dial Bore Gages

## SERIES 545 — Rugged, Production-Line Tools

### FEATURES

- Carbide-tipped contact point for excellent durability.
- Wide range of measurements with interchangeable Anvil Extensions (screw-in type).
- Carbide-tipped anvil is optional (901484).
- Two guide pins ensure high repeatability of measurements.
- Easy zero adjustment because the Dial Bore Gage can stand upright.
- Optional interchangeable rods provide a variety of probe depths.



### Technical Data

Graduation: 0.01mm, 0.001mm, .0005 or .0001"

### Optional Accessory

- 901484: Carbide-tipped anvil
- 901529: Interchangeable rod (Probe depth: 85mm)
- 901530: Interchangeable rod (Probe depth: 115mm)
- 901940: Interchangeable rod (Probe depth: 150mm)
- 901531: Interchangeable rod (Probe depth: 265mm)
- 901532: Interchangeable rod (Probe depth: 315mm)
- 901533: Interchangeable rod (Probe depth: 390mm)



— : Setting ring (See page 122.)



545-1055



545-1145

### SPECIFICATIONS

Metric		
Range	Order No.	Probe depth
35 - 50mm	545-1145	85mm
50 - 75mm	545-1155	115mm
75 - 150mm	545-1165	150mm
35 - 50mm	545-1045	85mm
50 - 75mm	545-1055	115mm
75 - 150mm	545-1065	150mm

0.001mm graduation    0.01mm graduation

Inch		
Range	Order No.	Probe depth
1.475" - 2.075"	545-1345	3.5"
1.975" - 3.075"	545-1355	4.5"
2.975" - 6.075"	545-1365	6"
1.475" - 2.075"	545-1245	3.5"
1.975" - 3.075"	545-1255	4.5"
2.975" - 6.075"	545-1265	6"

.0001" graduation    .0005" graduation

### DIMENSION

