

Bore Gages

For easy and accurate measurement of inside diameters

Bore Gages

SERIES 511 — ABSOLUTE Digimatic Bore Gages

- These ABSOLUTE Digimatic bore gages are exclusively designed for inside diameter measurement.
- Up to four extension rods (250mm or 500mm) can be used for measuring at the bottom of a hole 2m deep.
- The display and grip can be rotated up to 320 degrees and the display can be inclined up to 90 degrees, so that it is easily readable from any direction.
- The minimum value holding function provides easy measurement of hole diameter.
- Setting the Bore Gage to a master value using a gauge block set allows quick and accurate setting.
- 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.)



SPECIFICATIONS

Metric									
Order No.	Range	Stroke of contact point	Measuring force	Guide force	Resolution	Content of set			Probing depth
						Anvil	Interchangeable washer	Battery (SR44)	
511-501	45-100mm	1.2mm	5N or less	10N or less	0.001mm	12 pcs.	4 pcs.	2 pcs.	150mm
511-502	100-160mm					13 pcs.	4 pcs.	2 pcs.	

Inch									
Order No.	Range	Stroke of contact point	Measuring force	Guide force	Resolution	Content of set			Probing depth
						Anvil	Interchangeable washer	Battery (SR44)	
511-521	1.8-4.0"	.047"	5N or less	6N or less	.0005" / 0.001mm	12 pcs.	4 pcs.	2 pcs.	6"
511-522	4.0-6.5"					13 pcs.	4 pcs.	2 pcs.	

- Notes: 1) Normal use is assumed to be 8 hours per day.
 2) The correct peak value may not be displayed if the anvil's speed exceeds 50 µm/s.
 3) IP53 indicates resistance to dust and dripping water, but only applies when the connector cap is in place.

ABSOLUTE™ (Refer to page IX for details.)

Technical Data

Accuracy: Metric models 3µm
 Inch models .00012"
 Excluding quantizing error
 Repeatability: Metric models 2µm
 Inch models .00008"
 Adjacent error: Metric models 2µm
 Inch models .00008"
 Battery: SR44 (2 pc), **938882**, for initial operational checks (standard accessory)
 Battery life: Approx. 2000 hours under normal use.
 Display: LCD character height 8.5mm
 Scale type: ABSOLUTE electrostatic linear encoder
 Max. response speed: Unlimited

Function

Preset function
 Master value registration (3 values at maximum)
 Tolerance judgment
 Upper/Lower limit registration (3 values at maximum)
 Minimum value holding
 Data output
 Display rotation (320°)
 Display inclination (90°, 7 steps)
 Low battery alarm display
 Error display

Optional Accessories

21DZA089: Extension rod 250 mm (10")
21DZA081: Extension rod 500 mm (20")
 Up to four extension rods can be jointed, and the maximum length 2m is allowed.
 Refer to page A-21 for details
 Connecting cables for Input Tool/ Digimatic Mini-Processor, etc.
 1m: **905338**
 2m: **905409**
USB Input Tool Direct (2m): 06ADV380F
 Connecting cables for **U-WAVE-T**
 For standard (160mm): **02AZD790F**
 For foot switch: **02AZE140F**
 _____ : Setting ring (See page C-47.)

Example of connection

When connecting four pieces of 500mm extension rods

Gauge blocks and block sets for setting the origin or master value (optional)

Usage example



Rectangular gauge blocks

* Available only for 511-501/521

516-118-10

516-118-60 with calibration certificate

Description	Order No.	Qty	
Nominal length (mm)	1	611611-021	1
	2	611612-021	1
	3	611613-021	1
	5	611615-021	1
	10	611671-021	1
	20	611672-021	1
	30	611673-021	1
40	611674-021	1	
Flat jaw	630030	1 pair (2 pcs)	
Holder 160 mm	619004	1	
Certificate of inspection		1	

* Equivalent to JIS B 7506 Grade 0

Square gauge blocks

* Available only for 511-501/521

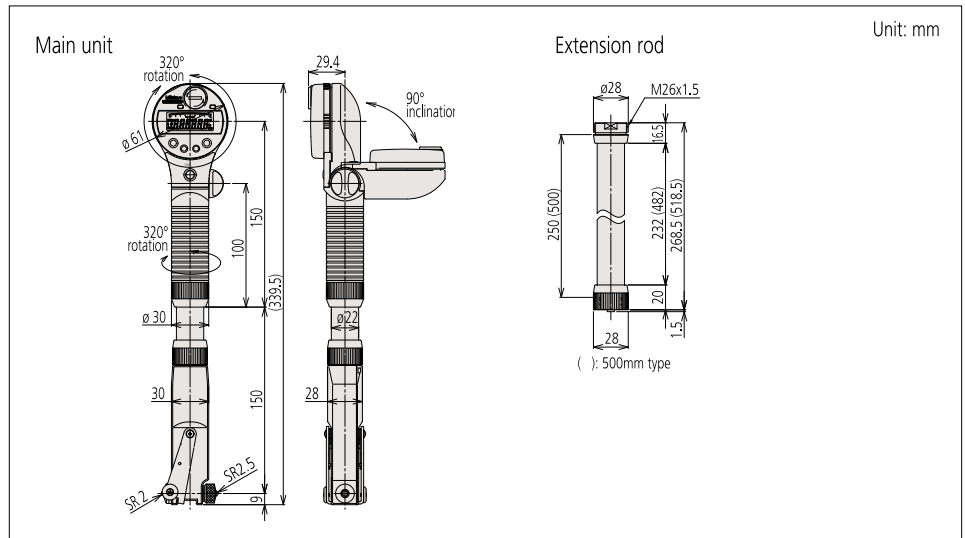
516-119-10

516-119-60 with calibration certificate

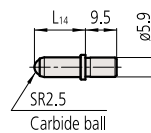
Description	Order No.	Qty	
Nominal length (mm)	1	614611-021	1
	2	614612-021	1
	3	614613-021	1
	5	614615-021	1
	10	614671-021	1
	20	614672-021	1
	30	614673-021	1
40	614674-021	1	
Flat jaw	619072	1 pair (2 pcs)	
Tie rod 3"	619062	1	
Tie rod 2 1/4"	619063	1	
Tie rod 1 1/2"	619064	1	
Flat head screw 1 1/4"	619057	2	
Flat head screw 5/8"	619058	2	
Certificate of inspection		1	

* Equivalent to JIS B 7506 Grade 0

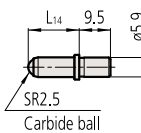
DIMENSIONS



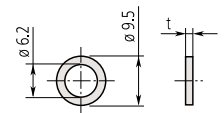
Anvil



Anvil



Interchangeable washer



STANDARD ACCESSORIES

Bore gage (Main body)	Marked No.	Parts No.	Anvil		L14	Interchangeable washer	
			Size*1			Parts No.	t
511-501 511-521	1	21DZA232A	45mm	1.8"	5.5mm/.22"	205457 205458 205459 205460	0.5mm/.02" 1.0mm/.04" 2.0mm/.08" 3.0mm/.12"
	2	21DZA232B	50mm	2.0"	10.5mm/.42"		
	3	21DZA232C	55mm	2.2"	15.5mm/.61"		
	4	21DZA232D	60mm	2.4"	20.5mm/.81"		
	5	21DZA232E	65mm	2.6"	25.5mm/1.00"		
	6	21DZA232F	70mm	2.8"	30.5mm/1.20"		
	7	21DZA232G	75mm	3.0"	35.5mm/1.40"		
	8	21DZA232H	80mm	3.2"	40.5mm/1.59"		
	9	21DZA232J	85mm	3.4"	45.5mm/1.79"		
	10	21DZA232L	90mm	3.6"	50.5mm/1.99"		
	11	21DZA232M	95mm	3.8"	55.5mm/2.19"		
	12	21DZA232N	100mm	4.0"	60.5mm/2.38"		
511-502 511-522	1	21DZA232A	100mm	4.0"	5.5mm/.22"	205457 205458 205459 205460	0.5mm/.02" 1.0mm/.04" 2.0mm/.08" 3.0mm/.12"
	2	21DZA232B	105mm	4.2"	10.5mm/.42"		
	3	21DZA232C	110mm	4.4"	15.5mm/.61"		
	4	21DZA232D	115mm	4.6"	20.5mm/.81"		
	5	21DZA232E	120mm	4.8"	25.5mm/1.00"		
	6	21DZA232F	125mm	5.0"	30.5mm/1.20"		
	7	21DZA232G	130mm	5.2"	35.5mm/1.40"		
	8	21DZA232H	135mm	5.4"	40.5mm/1.59"		
	9	21DZA232J	140mm	5.6"	45.5mm/1.79"		
	10	21DZA232L	145mm	5.8"	50.5mm/1.99"		
	11	21DZA232M	150mm	6.0"	55.5mm/2.19"		
	12	21DZA232N	155mm	6.2"	60.5mm/2.38"		
	13	21DZA232P	160mm	6.4"	65.5mm/2.58"		

*1 Indication of measuring size.