

Bore Gages

For easy and accurate measurement of inside diameters

Bore Gages

SERIES 511 — Short Leg Type

- Compact and lightweight due to the short length below the grip.
- Longer plunger stroke with no effect on accuracy.
- Carbide contact point ensures high durability and wear resistance.
- This model reduces the influence of heat from the operator's hand by approx. 50 % by increasing the grip size and making the grip hollow-structured, thereby retaining high-accuracy measurement.
- 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.
- 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)



511-761



511-762



511-763



511-761

Note: The dial indicator and the protection cover are optional.



511-763

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Technical Data

- Accuracy: Metric models 2 μ m
Inch models 0.00008 in
- Repeatability: Metric models 0.5 μ m
Inch models 0.00002 in
- Adjacent error: Metric models 1 μ m
Inch models 0.00004 in

Optional Accessories

- Dial indicator (See Chapter F)
- Dial protection cover: **21DZA000**
(See page C-45)

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)

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

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	Interchangeable Washer	Sub-Anvil	Spanner	
511-761	18 - 35	1.2	4 or less	6 or less	511-761	Not supplied	Not supplied	9 pcs.	2 pcs.	Not supplied	1 pc.	50
511-762	35 - 60				511-762			6 pcs.	4 pcs.		Not supplied	
511-763	50 - 150	511-763	11 pcs.	13 pcs.	Not supplied			Not supplied				
511-764	100 - 160	511-764										
511-771	18 - 35	1.2	4 or less	6 or less	511-761	2109SB-10 (Graduation: 0.001 mm)	21DZA000	9 pcs.	2 pcs.	Not supplied	1 pc.	50
511-772	35 - 60				511-762			6 pcs.	4 pcs.		Not supplied	
511-773	50 - 150	511-763	11 pcs.	13 pcs.	Not supplied			Not supplied				
511-774	100 - 160	511-764										
511-766	18 - 35	1.2	4 or less	6 or less	511-761	2046SB (Graduation: 0.01 mm)	21DZA000	9 pcs.	2 pcs.	Not supplied	1 pc.	50
511-767	35 - 60				511-762			6 pcs.	4 pcs.		Not supplied	
511-768	50 - 150	511-763	11 pcs.	13 pcs.	Not supplied			Not supplied				
511-769	100 - 160	511-764										
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	Interchangeable Washer	Sub-Anvil	Spanner	
511-781	0.7 - 1.4	0.047	4 or less	6 or less	511-781	Not supplied	Not supplied	9 pcs.	2 pcs.	Not supplied	1 pc.	2
511-782	1.4 - 2.5				511-782			6 pcs.	4 pcs.		Not supplied	
511-783	2.0 - 6.0	511-783	11 pcs.	13 pcs.	Not supplied			Not supplied				
511-784	4.0 - 6.5	511-784										
511-791	0.7 - 1.4	0.047	4 or less	6 or less	511-781	2923SB-10 (Graduation: 0.0001 in)	21DZA000	9 pcs.	2 pcs.	Not supplied	1 pc.	2
511-792	1.4 - 2.5				511-782			6 pcs.	4 pcs.		Not supplied	
511-793	2.0 - 6.0	511-783	11 pcs.	13 pcs.	Not supplied			Not supplied				
511-794	4.0 - 6.5	511-784										
511-786	0.7 - 1.4	0.047	4 or less	6 or less	511-781	2922SB (Graduation: 0.0005 in)	21DZA000	9 pcs.	2 pcs.	Not supplied	1 pc.	2
511-787	1.4 - 2.5				511-782			6 pcs.	4 pcs.		Not supplied	
511-788	2.0 - 6.0	511-783	11 pcs.	13 pcs.	Not supplied			Not supplied				
511-789	4.0 - 6.5	511-784										

Note 1: A 50 mm sub-anvil is supplied with **511-763**.

Note 2: A 2 in sub-anvil is supplied with **511-783**.

Note 3: 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.)

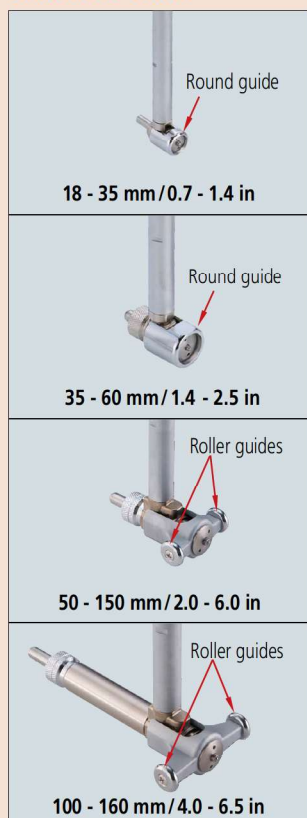
Recommended Digimatic Indicators (see Chapter F)

- Metric models: **543-310B** (ID-C112GXB: 0.001 mm)
- Inch models: **543-312B** (ID-C112GEXB: 0.001 mm/0.00005 in)

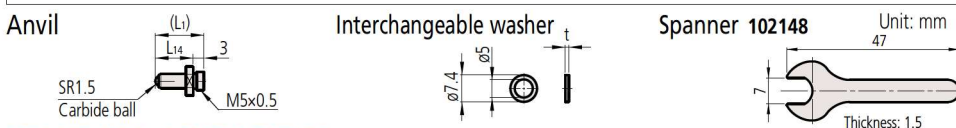
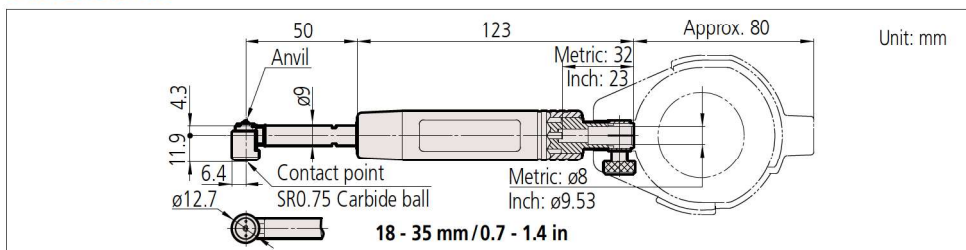


- The ID measurement can be performed easily since the minimum value is detected automatically.
 - Up to three combinations of master value and tolerance value can be set.
 - Nine measurement results (maximum) can be saved and recalled from memory (when no external device is connected).
- Refer to page F-14 for details.

Contact Points



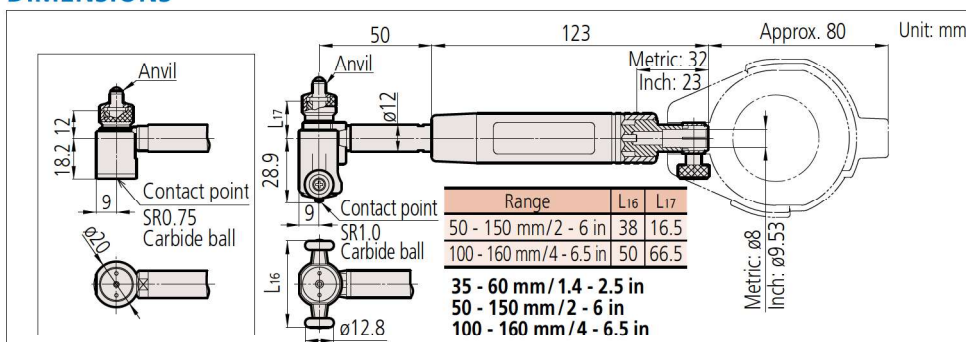
DIMENSIONS



STANDARD ACCESSORIES

Bore gage (Main body)	Anvil				Interchangeable washer		Spanner 102148
	Marked No.	Order No.	Indication of measuring size	L ₁	L ₁₄	t	
511-761 511-781	1	21DZA213A	18 mm/0.71 in	5.5 mm/0.22 in	2.5 mm/0.10 in	0.5 mm/0.02 in 1.0 mm/0.04 in	102148
	2	21DZA213B	20 mm/0.79 in	7.5 mm/0.30 in	4.5 mm/0.18 in		
	3	21DZA213C	22 mm/0.87 in	9.5 mm/0.37 in	6.5 mm/0.26 in		
	4	21DZA213D	24 mm/0.94 in	11.5 mm/0.45 in	8.5 mm/0.33 in		
	5	21DZA213E	26 mm/1.02 in	13.5 mm/0.53 in	10.5 mm/0.41 in		
	6	21DZA213F	28 mm/1.10 in	15.5 mm/0.61 in	12.5 mm/0.49 in		
	7	21DZA213G	30 mm/1.18 in	17.5 mm/0.69 in	14.5 mm/0.57 in		
	8	21DZA213H	32 mm/1.26 in	19.5 mm/0.77 in	16.5 mm/0.65 in		
	9	21DZA213J	34 mm/1.34 in	21.5 mm/0.85 in	18.5 mm/0.73 in		

DIMENSIONS



Note: 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.)

STANDARD ACCESSORIES

Bore gage (Main body)	Anvil				Interchangeable washer		Sub-Anvil
	Marked No.	Order No.	Indication of measuring size	L ₁	L ₁₄	t	
511-762 511-782	1	21DZA232A	35 mm/1.38 in	15	5.5	0.5 mm/0.02 in 1.0 mm/0.04 in 2.0 mm/0.08 in 3.0 mm/0.12 in	102178 (50 mm/2 in)
	2	21DZA232B	40 mm/1.57 in	20	10.5		
	3	21DZA232C	45 mm/1.77 in	25	15.5		
	4	21DZA232D	50 mm/1.97 in	30	20.5		
	5	21DZA232E	55 mm/2.17 in	35	25.5		
	6	21DZA232F	60 mm/2.36 in	40	30.5		
511-763 511-783 () Using 50 mm/2 in Sub-Anvil	1	21DZA232A	50 mm (100 mm)/1.97 in (3.94 in)	15	5.5		
	2	21DZA232B	55 mm (105 mm)/2.17 in (4.13 in)	20	10.5		
	3	21DZA232C	60 mm (110 mm)/2.36 in (4.33 in)	25	15.5		
	4	21DZA232D	65 mm (115 mm)/2.55 in (4.53 in)	30	20.5		
	5	21DZA232E	70 mm (120 mm)/2.74 in (4.72 in)	35	25.5		
	6	21DZA232F	75 mm (125 mm)/2.93 in (4.92 in)	40	30.5		
	7	21DZA232G	80 mm (130 mm)/3.12 in (5.12 in)	45	35.5		
	8	21DZA232H	85 mm (135 mm)/3.31 in (5.31 in)	50	40.5		
	9	21DZA232J	90 mm (140 mm)/3.50 in (5.51 in)	55	45.5		
	10	21DZA232L	95 mm (145 mm)/3.69 in (5.71 in)	60	50.5		
511-764 511-784	11	21DZA232M	100 mm (150 mm)/3.88 in (5.91 in)	65	55.5		
	1	21DZA232A	100 mm/3.94 in	15	5.5		
	2	21DZA232B	105 mm/4.13 in	20	10.5		
	3	21DZA232C	110 mm/4.33 in	25	15.5		
	4	21DZA232D	115 mm/4.53 in	30	20.5		
	5	21DZA232E	120 mm/4.72 in	35	25.5		
	6	21DZA232F	125 mm/4.92 in	40	30.5		
	7	21DZA232G	130 mm/5.12 in	45	35.5		
	8	21DZA232H	135 mm/5.31 in	50	40.5		
	9	21DZA232J	140 mm/5.51 in	55	45.5		
	10	21DZA232L	145 mm/5.71 in	60	50.5		
	11	21DZA232M	150 mm/5.91 in	65	55.5		
	12	21DZA232N	155 mm/6.10 in	70	60.5		
	13	21DZA232P	160 mm/6.30 in	75	65.5		