

# Bore Gages

For easy and accurate measurement of inside diameters

## Bore Gages SERIES 511 — with Micrometer Head

- Micrometer head is attached to the anvil for accurate dimensional setting.
  - Longer plunger stroke with no effect on accuracy.
  - Carbide is used for the contact point ensuring high durability and wear resistance.
  - This model reduces the influence of heat from the operator's hand by 50% by increasing the grip size and making the grip hollow-structured, thereby retaining high-accuracy measurement.
  - Wide measuring range with sub-anvils.
  - Alternative indicators may be used in place of those recommended\*.
- \* Some indicators and protection covers cannot be used with these bore gages. Contact a Mitutoyo sales office if considering the use of dial or digimatic indicators other than the recommended models.
- 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.)



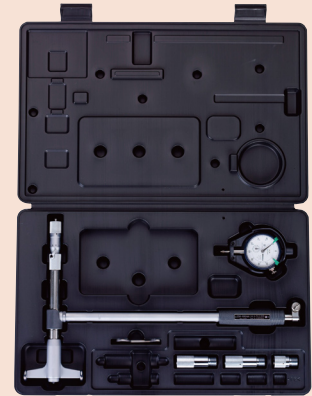
511-803

511-804

Dial indicators and protection covers are optional.



511-804



511-806

## SPECIFICATIONS

Metric													
Order No.	Range	Stroke of contact point	Measuring force	Guide force	Content of set						Probing depth		
					Bore gage	Dial indicator	Dial protection cover	Micrometer head	Sub-Anvil	Spanner			
511-803	60 - 100 mm	1.6 mm	5N or less	10N or less	511-803	Not supplied	Not supplied	1 pc.	2 pcs.	3 pcs.	150 mm		
511-804	100 - 160 mm				511-804				3 pcs.				
511-805	150 - 250 mm				511-805				4 pcs.				
511-806	250 - 400 mm		6N or less	15N or less	511-806				3 pcs.			2 pcs.	250 mm
511-807	400 - 600 mm				511-807				2 pcs.				
511-808	600 - 800 mm				511-808				2 pcs.				
511-823	60 - 100 mm	1.6 mm	5N or less	10N or less	511-803	2109SB-10 (Graduation: 0.001 mm)	21DZA000	1 pc.	2 pcs.	3 pcs.	150 mm		
511-824	100 - 160 mm				511-804				3 pcs.				
511-825	150 - 250 mm				511-805				4 pcs.				
511-826	250 - 400 mm		6N or less	15N or less	511-806				3 pcs.			2 pcs.	250 mm
511-827	400 - 600 mm				511-807				2 pcs.				
511-828	600 - 800 mm				511-808				2 pcs.				
511-813	60 - 100 mm	1.6 mm	5N or less	10N or less	511-803	2046SB (Graduation: 0.01 mm)	21DZA000	1 pc.	2 pcs.	3 pcs.	150 mm		
511-814	100 - 160 mm				511-804				3 pcs.				
511-815	150 - 250 mm				511-805				4 pcs.				
511-816	250 - 400 mm		6N or less	15N or less	511-806				3 pcs.			2 pcs.	250 mm
511-817	400 - 600 mm				511-807				2 pcs.				
511-818	600 - 800 mm				511-808				2 pcs.				

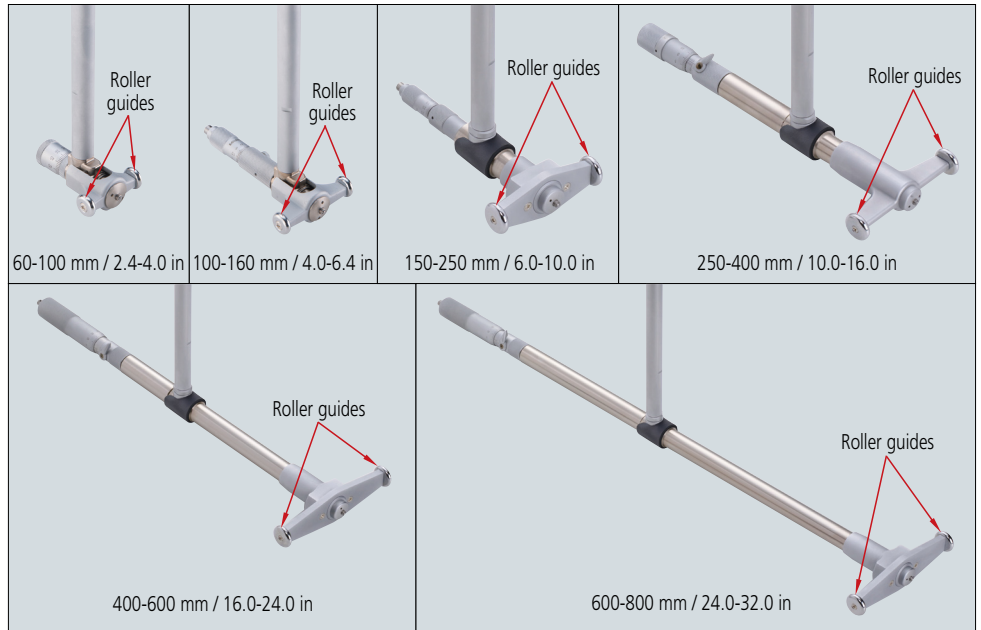
  

Inch													
Order No.	Range	Stroke of contact point	Measuring force	Guide force	Content of set						Probing depth		
					Bore gage	Dial indicator	Dial protection cover	Micrometer head	Sub-Anvil	Spanner			
511-833	2.4 - 4.0 in	0.063 in	5N or less	10N or less	511-833	Not supplied	Not supplied	1 pc.	2 pcs.	3 pcs.	6 in		
511-834	4.0 - 6.4 in				511-834				3 pcs.				
511-835	6.0 - 10.0 in				511-835				4 pcs.				
511-836	10.0 - 16.0 in		6N or less	15N or less	511-836				3 pcs.			2 pcs.	10 in
511-837	16.0 - 24.0 in				511-837				2 pcs.				
511-838	24.0 - 32.0 in				511-838				2 pcs.				
511-853	2.4 - 4.0 in	0.063 in	5N or less	10N or less	511-833	2923SB-10 (Graduation: 0.0001 in)	21DZA000	1 pc.	2 pcs.	3 pcs.	4 in		
511-854	4.0 - 6.4 in				511-834				3 pcs.				
511-855	6.0 - 10.0 in				511-835				4 pcs.				
511-856	10.0 - 16.0 in		6N or less	15N or less	511-836				3 pcs.			2 pcs.	6 in
511-857	16.0 - 24.0 in				511-837				2 pcs.				
511-858	24.0 - 32.0 in				511-838				2 pcs.				
511-843	2.4 - 4.0 in	0.063 in	5N or less	10N or less	511-833	2922SB (Graduation: 0.0005 in)	21DZA000	1 pc.	2 pcs.	3 pcs.	4 in		
511-844	4.0 - 6.4 in				511-834				3 pcs.				
511-845	6.0 - 10.0 in				511-835				4 pcs.				
511-846	10.0 - 16.0 in		6N or less	15N or less	511-836				3 pcs.			2 pcs.	6 in
511-847	16.0 - 24.0 in				511-837				2 pcs.				
511-848	24.0 - 32.0 in				511-838				2 pcs.				

Notes: 1) Storage boxes for 511-807/808/837/838 models are made of wood. The boxes of other models are made of plastic.

2) It is not permissible to expand measuring range using sub-anvils other than as supplied as standard accessories. (The measurement accuracy in such cases is not guaranteed.)

## Contact Points



## Technical Data

Accuracy: Metric models 2  $\mu$ m  
Inch models 0.00008 in  
Repeatability: Metric models 0.5  $\mu$ m  
Inch models 0.00002 in  
Adjacent error: Metric models 1  $\mu$ m  
Inch models 0.00004 in

## Optional Accessories

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

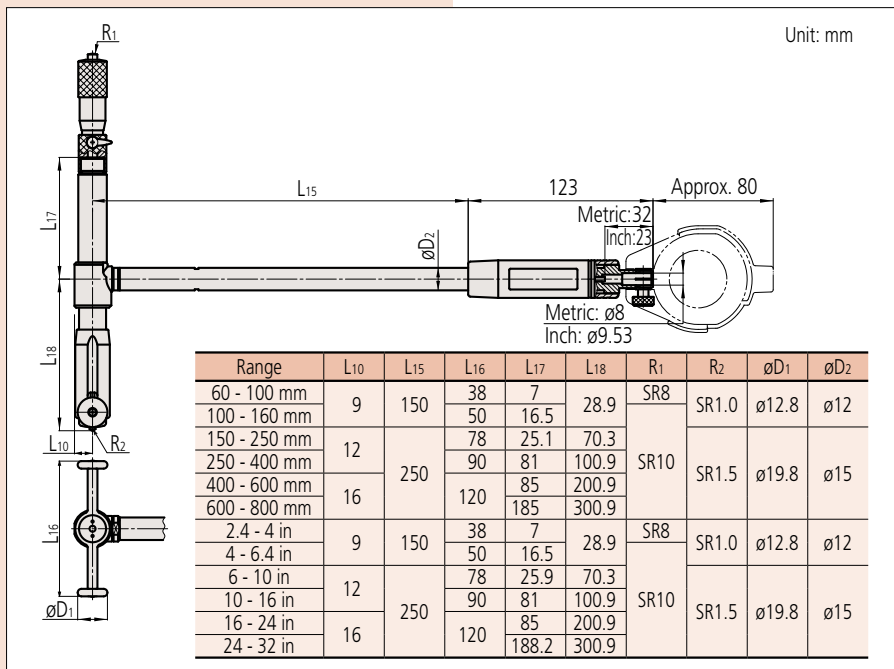
## Recommended Dial Indicators (see Chapter F)

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)

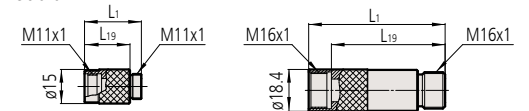
## Recommended Digimatic Indicators (see Chapter F)

Metric models: **543-310B** (ID-C112GX: 0.001 mm)  
Inch models: **543-312B** (ID-C112GEX: 0.001 mm/0.00005 in)  
\* Indicators equipped with rubber bellows, such as waterproof types, cannot be used.

## DIMENSIONS



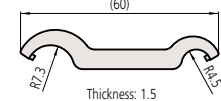
## Sub-anvil



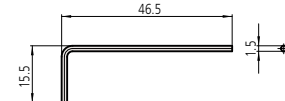
Notes: It is not permissible to use a sub-anvil other than as supplied as a standard accessory, or widen a measuring range by using multiple sub-anvils. (The measurement accuracy in such cases is not guaranteed.)

## Spanner

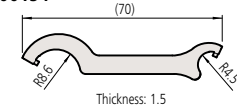
### 301336



### 202863



### 200154



## STANDARD ACCESSORIES

Metric		Micrometer head		Sub-Anvil				Spanner
Bore gage (Main body)	Order No.	Stroke	Screw size	Marked No.	Order No.	L1	L19	Order No.
511-803	21DZA267	10 mm	M11x1	10 mm	208892	15 mm	10 mm	301336 (2 pcs.) 202863 (1 pc.)
				20 mm	208894	25 mm	20 mm	
511-804	21DZA268	13 mm	M11x1	10 mm	208892	15 mm	10 mm	301336 (2 pcs.)
				20 mm	208894 (2 pcs.)	25 mm	20 mm	
511-805	21DZA268	13 mm	M11x1	10 mm	208892	15 mm	10 mm	301336 (2 pcs.)
				20 mm	208894 (2 pcs.)	25 mm	20 mm	
				50 mm	21DAA492	55 mm	50 mm	
511-806	953118	25 mm	M16x1	25 mm	208926	35 mm	25 mm	200154 (2 pcs.)
				50 mm	208928 (2 pcs.)	60 mm	50 mm	
511-807	953120	50 mm	M16x1	50 mm	208928	60 mm	50 mm	200154 (2 pcs.)
				100 mm	208932	110 mm	100 mm	
511-808	953120	50 mm	M16x1	50 mm	208928	60 mm	50 mm	200154 (2 pcs.)
				100 mm	208932	110 mm	100 mm	

Inch		Micrometer head		Sub-Anvil				Spanner
Bore gage (Main body)	Order No.	Stroke	Screw size	Marked No.	Order No.	L1	L19	Order No.
511-833	21DZA272	0.4 in	M11x1	0.4 in	208893	0.6 in	0.4 in	301336 (2 pcs.) 202863 (1 pc.)
				0.8 in	208895	1.0 in	0.8 in	
511-834	21DZA273	0.5 in	M11x1	0.4 in	208893	0.6 in	0.4 in	301336 (2 pcs.)
				0.8 in	208895 (2 pcs.)	1.0 in	0.8 in	
511-835	21DZA273	0.5 in	M11x1	0.4 in	208893	0.6 in	0.4 in	301336 (2 pcs.)
				0.8 in	208895 (2 pcs.)	1.0 in	0.8 in	
				2 in	21DAA493	2.2 in	2 in	
511-836	21DZA275	1.0 in	M16x1	1 in	208927	1.4 in	1 in	200154 (2 pcs.)
				2 in	208929 (2 pcs.)	2.4 in	2 in	
511-837	902313	2.0 in	M16x1	2 in	208929	2.4 in	2 in	200154 (2 pcs.)
				4 in	208933	4.4 in	4 in	
511-838	902313	2.0 in	M16x1	2 in	208929	2.4 in	2 in	200154 (2 pcs.)
				4 in	208933	4.4 in	4 in	