








# Dial Test Indicator

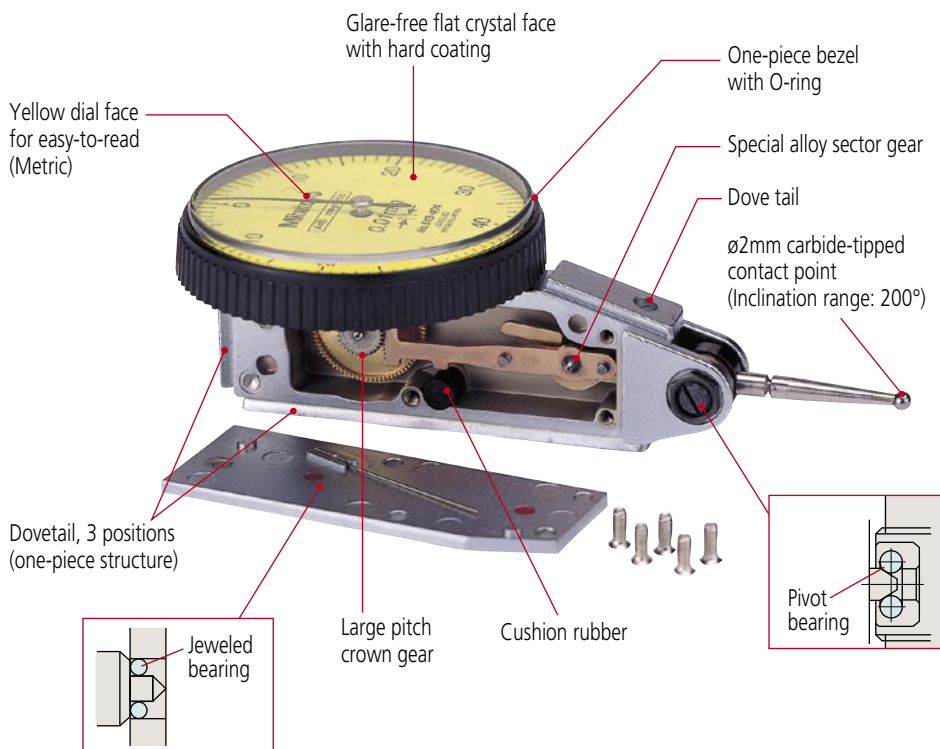
## SERIES 513

### FEATURES

- Narrow or deep places, which cannot be measured with a normal dial gauge, can be easily and accurately measured.
- Mitutoyo's proprietary new structure permits smooth pointer operation.
- Use of a hard frame body provides excellent rigidity and durability.
- Non-magnetic pointer and contact point permit secure operation even in environments with magnetism.
- Use of a clear and concise wide dial face allows excellent visibility.
- The surface of the crystal is hard-coated, to make it scratch-resistant.
- Flat crystal makes gradations easy to read. Moreover, the unified structure of the outer frame prevents oil and water from permeating via the front face.
- Six types are available: vertical, inclined, perpendicular, horizontal, universal, and pocketable, allowing users to select the model most suited to their needs.
- Vertical: Standard
- Inclined: Dial face inclined 20°, compared with the vertical type, allows easy reading.
- Perpendicular: Best suited for centering holes.
- Horizontal: The graduations can be read from the front, with the probe on the tip of the horizontal conical rod abutting the workpiece.
- Universal: The direction of the probe movement can be freely changed.
- Pocketable: Compact type

### Description of Icon

Icon	Description
	With revolution counter type
	Long contact point type
	Jeweled bearing type
	Double scale spacing type, easy-on-the-eyes
	Compact type
	Dustproof type
	Anti-magnetic type

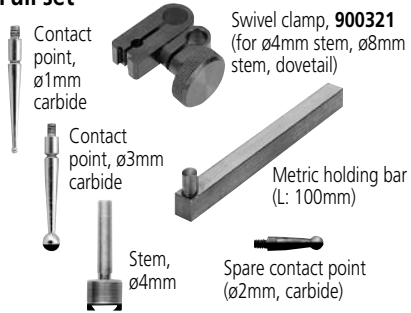


# Dial Test Indicator

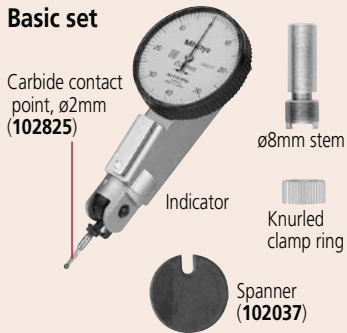
## SERIES 513 — Universal Type

### Set Configuration: Metric

#### Full set

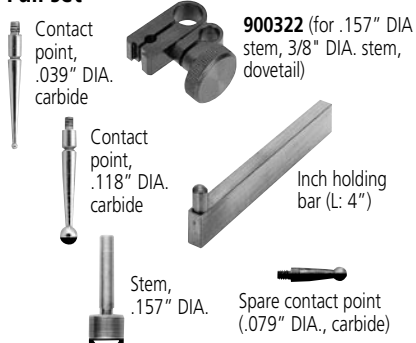


#### Basic set

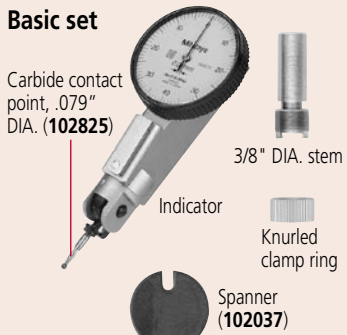


### Set Configuration: Inch

#### Full set



#### Basic set

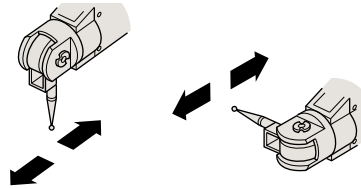


### Optional Accessory

- : Swivel clamp (See page 278.)
- : Holding bar (See page 278.)
- : Stem (See page 278.)
- 102824:** Contact point, ø1mm ball (carbide)
- 102825:** Contact point, ø2mm ball (carbide)
- 102826:** Contact point, ø3mm ball (carbide)

### FEATURES

- Universal application to all directions. (Not only the direction of the measuring point, but also the direction of measurement itself can be adjusted 360 degrees without moving the indicator.)



513-304GE

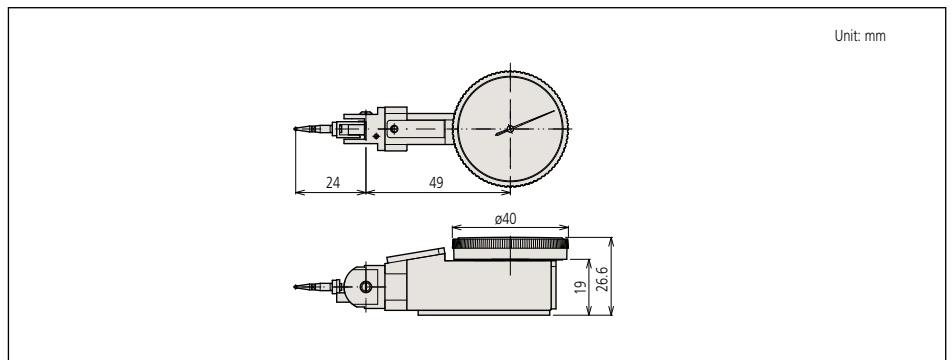
### SPECIFICATIONS



Metric		Range	Accuracy	Dial reading	Measuring force	Jeweled bearing type					
Graduation	Order No.						Basic set	Full set	—	—	—
0.01mm	<b>513-304GE</b>	0.8mm	8µm	0-40-0	0.3N or less	✓	—	—	—	—	—

Inch		Range	Accuracy	Dial reading	Measuring force	Jeweled bearing type					
Graduation	Order No.						Basic set	Full set	—	—	—
.0005"	<b>513-302G</b>	.03"	.0005"	0-15-0	0.3N or less	✓	—	—	—	—	—

### DIMENSION



# Dial Test Indicator

## SERIES 513 — Horizontal Type

### FEATURES

- Performs easy and accurate measurement of narrow or recessed areas, plus inside and outside diameters that dial indicators cannot access.
- No-clutch structure for automatic reversal of measuring direction.
- Resistant to water and dust thanks to the one-piece bezel and "crystal" design with O-ring.
- The glare-free flat crystal face has a scratch-resistant coating.
- High-sensitivity and quick-response because of jeweled bearings.



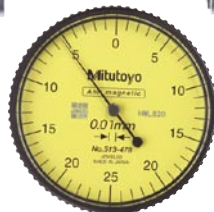
513-474E



513-477E



513-471E



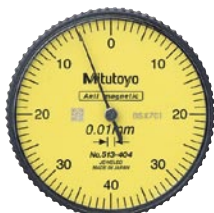
513-478E



513-475E



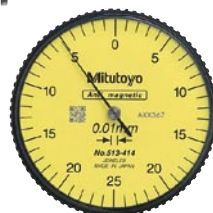
513-424E



513-404E



513-414E



513-415E

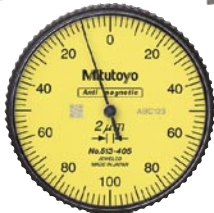
**Ruby contact point models**

- Higher resistance to wear
- Non-magnetic, non-conductive tip allows use in EDM processes

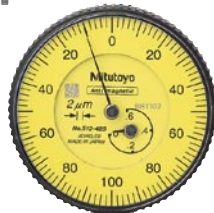
**Carbide contact point models**



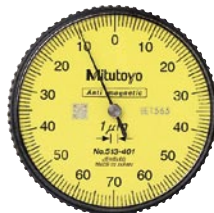
513-426E



513-405E

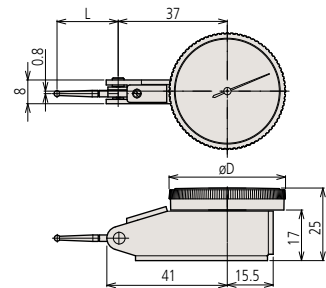


513-425E



513-401E

### DIMENSION



Order No.	L	D
513-424E	22.3	ø40
513-404E	20.9	ø40
513-415E	44.5	ø40
513-426E	22.3	ø40
513-405E	14.7	ø40
513-425E	14.7	ø40
513-401E	12.8	ø40
513-466E	22.3	ø28
513-464E	20.9	ø28
513-465E	14.7	ø28
513-414E	36.8	ø40
513-409	14.7	ø40

### Special Set: No. 513-908 (mm)

513-404E: Dial test indicator  
7014: Mini magnetic stand

### No. 513-907 (inch)

513-402: Dial test indicator  
7014: Mini magnetic stand

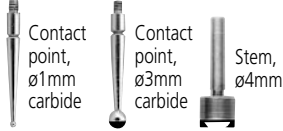


## Set Configuration: Metric and Metric/Inch

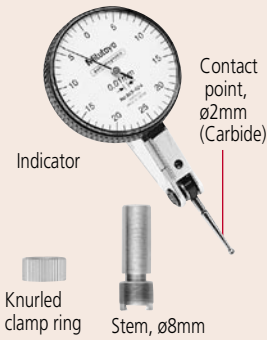
### Full set

Swivel clamp (900321, for  $\varnothing 4\text{mm}$ ,  $\varnothing 8\text{mm}$ , dovetail) Metric holding bar (L: 100mm)

### Plus set



### Basic set

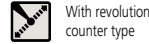
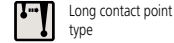
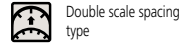
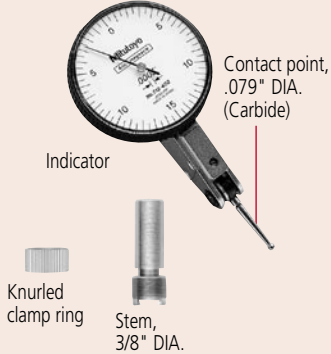


## Set Configuration: Inch and Inch/Metric

### Full set

Contact point, .039" DIA. carbide; Contact point, .118" DIA. carbide; Stem, .157" DIA.; Swivel clamp (900322, for .157" DIA., 3/8" DIA., dovetail); Inch holding bar (L: 4")

### Basic set



513-466E



513-464E



513-465E

## SPECIFICATIONS

### Metric

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force						
	Basic set	Plus set	Full set										
0.01mm	513-424E	513-424A	513-424T	0.5mm	5 $\mu\text{m}$	0-25-0	0.3N or less	✓	✓	—	✓	—	—
0.01mm	513-478E	—	—	0.5mm	5 $\mu\text{m}$	0-25-0	0.3N or less	✓	✓	—	✓	—	—
0.01mm	513-414E	513-414A	513-414T	0.5mm	10 $\mu\text{m}$	0-25-0	0.2N or less	✓	✓	✓	✓	—	—
0.01mm	513-466E	—	—	0.5mm	5 $\mu\text{m}$	0-25-0	0.3N or less	✓	✓	—	✓	✓	—
0.01mm	513-404E	513-404A	513-404T	0.8mm	8 $\mu\text{m}$	0-40-0	0.3N or less	✓	—	—	✓	—	—
0.01mm	513-474E	—	—	0.8mm	8 $\mu\text{m}$	0-40-0	0.3N or less	✓	—	—	✓	—	—
0.01mm	513-464E	—	—	0.8mm	8 $\mu\text{m}$	0-40-0	0.3N or less	✓	—	—	✓	✓	—
0.01mm	513-415E	513-415A	513-415T	1mm	10 $\mu\text{m}$	0-50-0	0.2N or less	✓	—	✓	✓	—	—
0.01mm	513-477E	—	—	1mm	10 $\mu\text{m}$	0-50-0	0.2N or less	✓	—	✓	✓	—	—
0.01mm	513-426E	513-426A	—	1.5mm	8 $\mu\text{m}$	0-25-0	0.4N or less	✓	✓	—	✓	—	✓
0.002mm	513-405E	513-405A	513-405T	0.2mm	3 $\mu\text{m}$	0-100-0	0.3N or less	✓	—	—	✓	—	—
0.002mm	513-475E	—	—	0.2mm	3 $\mu\text{m}$	0-100-0	0.3N or less	✓	—	—	✓	—	—
0.002mm	513-465E	—	—	0.2mm	3 $\mu\text{m}$	0-100-0	0.3N or less	✓	—	—	✓	✓	—
0.002mm	513-425E	513-425A	—	0.6mm	6 $\mu\text{m}$	0-100-0	0.4N or less	✓	—	—	✓	—	✓
0.001mm	513-401E	—	—	0.14mm	3 $\mu\text{m}$	0-70-0	0.3N or less	✓	—	—	✓	—	—
0.001mm	513-471E	—	—	0.14mm	3 $\mu\text{m}$	0-70-0	0.3N or less	✓	—	—	✓	—	—

\*provided with a  $\varnothing 2\text{mm}$  ruby contact point as a substitute for  $\varnothing 2\text{mm}$  carbide contact point.

### Inch

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force					
	Basic set	Plus set	Full set									
.0005"	513-402	—	513-402T	.03"	.0005"	0-15-0	0.3N or less	✓	—	✓	—	—
.0005"	513-472	—	—	.03"	.0005"	0-15-0	0.3N or less	✓	—	✓	—	—
.0005"	513-412	—	513-412T	.03"	.0005"	0-15-0	0.2N or less	✓	✓	✓	—	—
.0005"	513-479	—	—	.03"	.0005"	0-15-0	0.2N or less	✓	✓	✓	—	—
.0005"	513-462	—	—	.03"	.0005"	0-15-0	0.3N or less	✓	—	✓	✓	—
.0001"	513-403	—	513-403T	.008"	.0001"	0-4-0	0.3N or less	✓	—	✓	—	—
.0001"	513-473	—	—	.008"	.0001"	0-4-0	0.3N or less	✓	—	✓	—	—
.0001"	513-463	—	—	.008"	.0001"	0-4-0	0.3N or less	✓	—	✓	✓	—

\*provided with a  $\varnothing 2\text{mm}$  ruby contact point as a substitute for  $\varnothing 0.079"$  carbide contact point.

### Metric/inch

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force		
	Basic set	Plus set	Full set						
0.002mm, .0001"	513-409	—	513-409T	0.2mm, .0075"	3 $\mu\text{m}$	0-10-0, 0-38-0	0.3N or less	✓	✓

### Inch/Metric

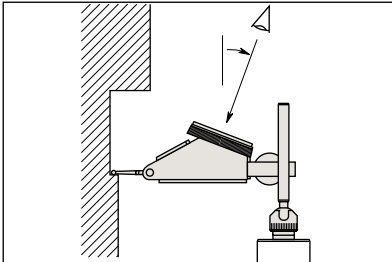
Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force		
	Basic set	Plus set	Full set						
.0005", 0.01mm	513-406	—	513-406T	.03", 0.7mm	.0005"	0-15-0, 0-35-0	0.3N or less	✓	✓

# Dial Test Indicator

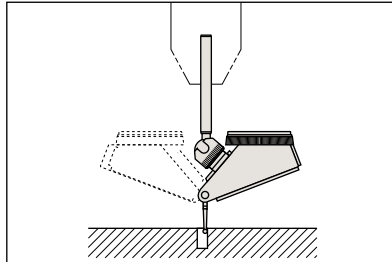
**SERIES 513 — Horizontal (20 Tilted Face), Vertical, and Parallel Types**

## FEATURES

- Specially designed for easy viewing of measurements.



- The dial face obliquely faces upward, allowing users to read the graduations from the user's side. It is convenient when measuring on the side of a large workpiece and the workbench is high.



- Using the universal holder allows easy hole centering. The dial face always faces upward when the indicator is rotated, which makes reading easy.



513-454E



513-455E



513-444E



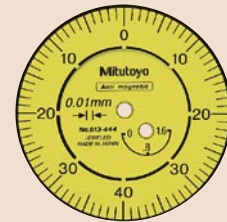
513-445E



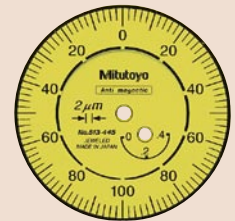
513-284G



(Refer to the page 9 for details.)



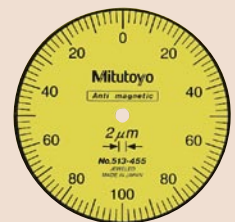
513-444E



513-445E



513-454E  
513-284GE



513-455E

## Optional Accessory

- : Swivel clamp (See page 278.)
- : Holding bar (See page 278.)
- : Stem (See page 278.)
- : Contact points (See page 278.)



Anti-magnet type



With revolution counter type



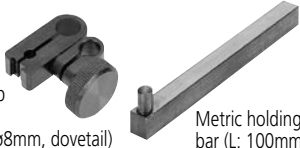
Jeweled bearing type



Long contact point type

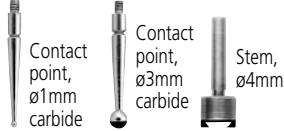
### Set Configuration: Metric

#### Full set

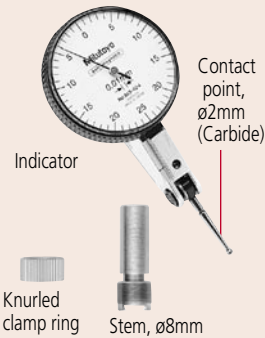
Swivel clamp  
(900321,  
for ø4mm, ø8mm, dovetail)

Metric holding bar (L: 100mm)

#### Plus set

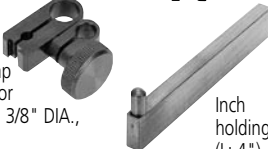


#### Basic set

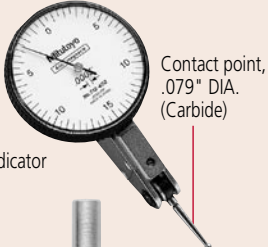


### Set Configuration: Inch

#### Full set

Contact point,  
.039" DIA.  
carbideContact point,  
.118" DIA.  
carbideStem,  
.157" DIA.Swivel clamp  
(900322, for  
.157" DIA., 3/8" DIA.,  
dovetail)Inch holding bar  
(L: 4")

#### Basic set



Indicator

Contact point,  
.079" DIA.  
(Carbide)Knurled  
clamp ringStem,  
3/8" DIA.

### SPECIFICATIONS

#### Metric Horizontal (20° tilted face) type

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force					—	—	—
	Basic set	Plus set	Full set											
0.01mm	513-444E	513-444A	513-444T	1.6mm	10µm	0-40-0	0.3N or less	✓	✓	✓	—	—	—	
0.002mm	513-445E	513-445A	513-445T	0.4mm	5µm	0-100-0	0.3N or less	✓	✓	✓	—	—	—	

#### Inch Horizontal (20° tilted face) type

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force					Remarks
	Basic set	Plus set	Full set									
.0005"	513-442	—	513-442T	.06"	.0005"	0-15-0	0.3N or less	✓	✓	✓	—	—
.0005"	513-442-01	—	513-442T-01	.06"	.0005"	0-15-0	0.3N or less	✓	✓	✓	—	Blue dial
.0005"	513-442-06	—	513-442T-06	.06"	.0005"	0-15-0	0.3N or less	✓	✓	✓	—	Black dial
.0005"	513-446	—	513-446T	.06"	.0005"	0-15-0	0.2N or less	✓	✓	✓	✓	—
.0005"	513-446-06	—	513-446T-06	.06"	.0005"	0-15-0	0.2N or less	✓	✓	✓	✓	Black dial
.0001"	513-443	—	513-443T	.016"	.0002"	0-4-0	0.3N or less	✓	✓	✓	—	—
.0001"	513-443-06	—	513-443T-06	.016"	.0002"	0-4-0	0.3N or less	✓	✓	✓	—	Black dial

#### Metric Vertical type

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force			—	—	—	—
	Basic set	Plus set	Full set										
0.01mm	513-454E	513-454A	513-454T	0.8mm	8µm	0-40-0	0.3N or less	✓	✓	—	—	—	
0.002mm	513-455E	513-455A	513-455T	0.2mm	3µm	0-100-0	0.3N or less	✓	✓	—	—	—	

#### Inch Vertical type

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force			—	—	—	—
	Basic set	Plus set	Full set										
.0005"	513-452	—	513-452T	.03"	.0005"	0-15-0	0.3N or less	✓	✓	—	—	—	
.0001"	513-453	—	513-453T	.008"	.0001"	0-4-0	0.3N or less	✓	✓	—	—	—	

#### Metric Parallel type

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force			—	—	—	—
	Basic set	Plus set	Full set										
0.01mm	513-284GE	513-284GA	513-284GT	0.8mm	8µm	0-40-0	0.3N or less	✓	—	—	—	—	

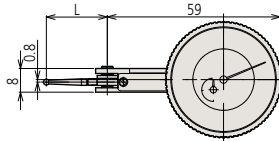
#### Inch Parallel type

Graduation	Order No.			Range	Accuracy	Dial reading	Measuring force			—	—	—	—
	Basic set	Plus set	Full set										
.0005"	513-282G	—	513-282GT	.03"	.0005"	0-15-0	0.3N or less	✓	—	—	—	—	

### DIMENSION

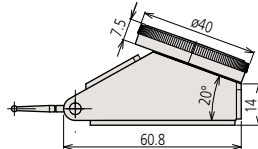
#### Horizontal (20° Tilted Face) Type

unit: mm

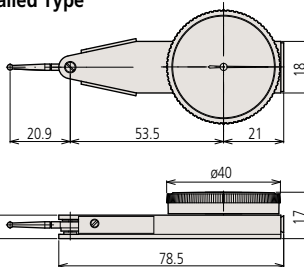


Order No.	L
513-444E	20.9
513-445E	14.7

Order No.	L
513-454E	20.9
513-455E	14.7

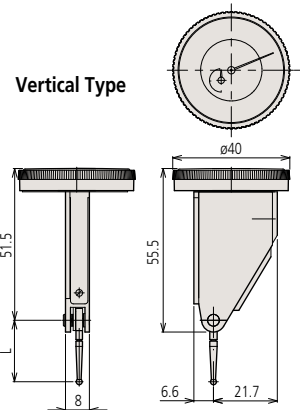


#### Parallel Type



513-284GE

#### Vertical Type

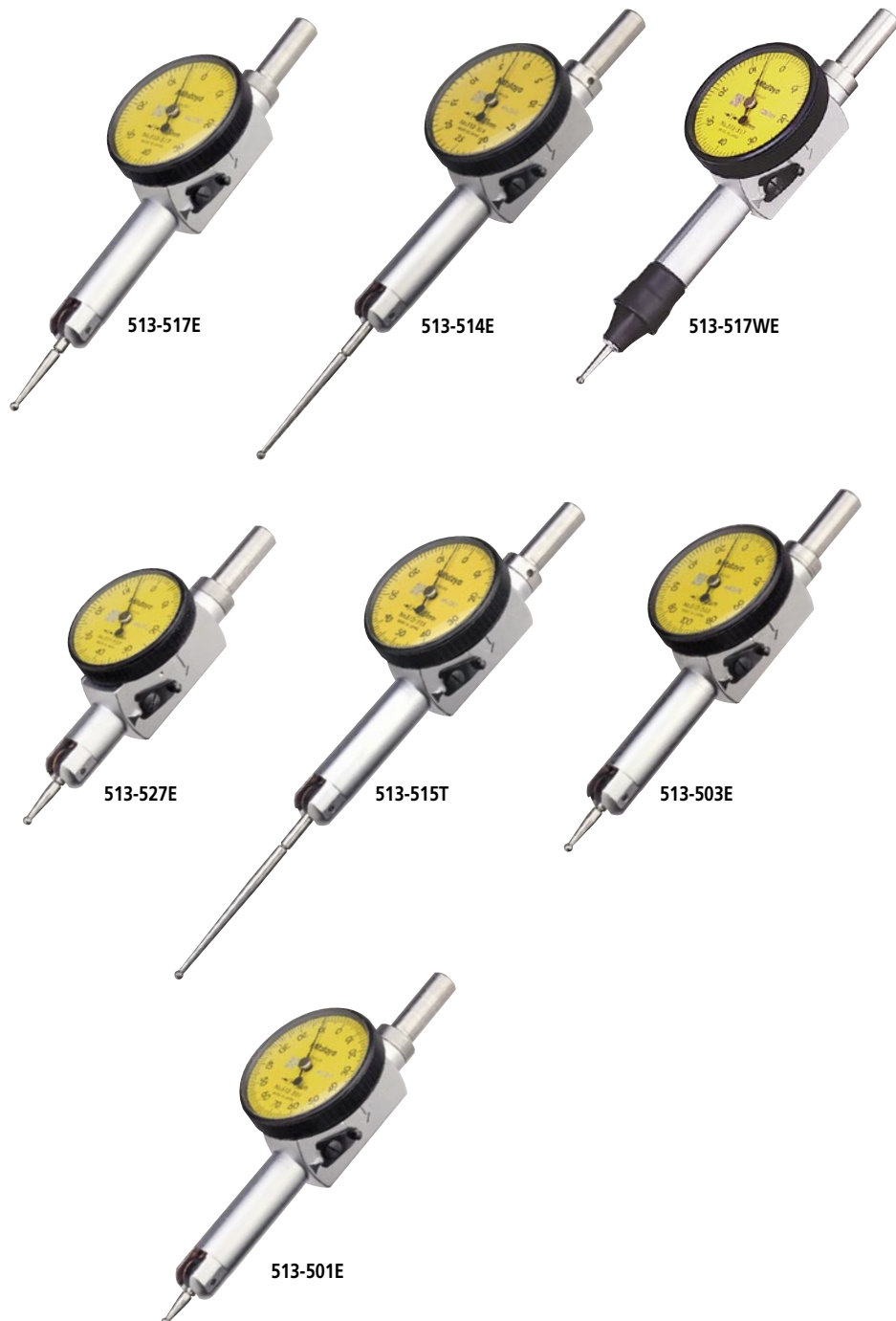


# Pocket Type Dial Test Indicator

## SERIES 513

### FEATURES

- Jeweled bearings assure higher sensitivity and accuracy.
- Reversible measuring direction.
- Two holding bars are supplied. (Full sets only.)
- Fully adjustable bezel/dial face.
- Contact point is adjustable within 220°.
- Bezel is sealed with an O-ring to keep out water / oil.



513-514E



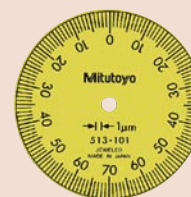
513-517E  
513-517WE  
513-527E



513-515T



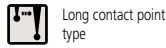
513-503E



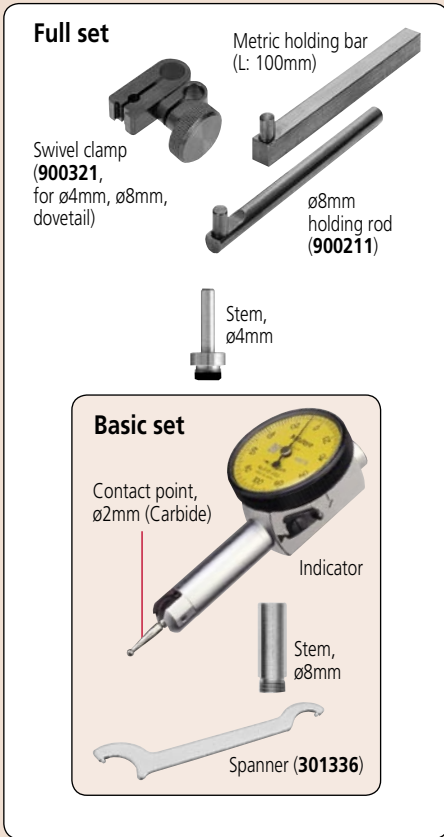
513-501E

### Optional Accessory

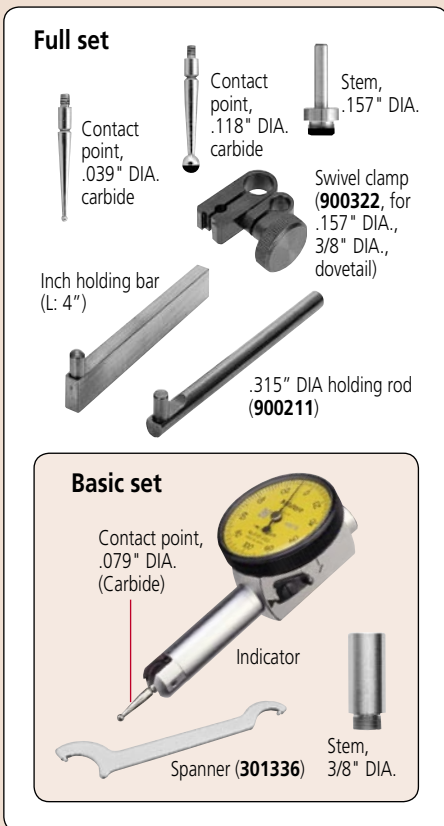
- : Swivel clamp (See page 279.)
- : Holding bar (See page 279.)
- : Stem (See page 279.)
- : Contact points (See page 279.)



### Set Configuration: Metric



### Set Configuration: Inch



### SPECIFICATIONS

#### Metric

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	!	◆	⊙	□	—	—
	Basic set	Full set										
0.01mm	513-514E	513-514T	0.5mm	10 $\mu\text{m}$	0-25-0	0.3N or less	✓	✓	—	—	—	—
0.01mm	513-517E	513-517T	0.8mm	8 $\mu\text{m}$	0-40-0	0.3N or less	—	✓	—	—	—	—
0.01mm	513-517WE	513-517WT	0.8mm	8 $\mu\text{m}$	0-40-0	0.3N or less	—	✓	✓	—	—	—
0.01mm	513-527E	513-527T	0.8mm	8 $\mu\text{m}$	0-40-0	0.3N or less	—	✓	—	✓	—	—
0.01mm	—	513-515T	1mm	10 $\mu\text{m}$	0-50-0	0.3N or less	✓	✓	—	—	—	—
0.002mm	513-503E	513-503T	0.2mm	3 $\mu\text{m}$	0-100-0	0.3N or less	—	✓	—	—	—	—
0.001mm	513-501E	513-501T	0.14mm	3 $\mu\text{m}$	0-70-0	0.4N or less	—	✓	—	—	—	—

#### Inch

Graduation	Order No.		Range	Accuracy	Dial reading	Measuring force	!	◆	⊙	—	—	—
	Basic set	Full set										
.001"	513-518	513-518T	.04"	.001"	0-20-0	0.3N or less	—	✓	—	—	—	—
.001"	513-528	513-528T	.04"	.001"	0-20-0	0.3N or less	—	✓	✓	—	—	—
.0005"	513-512	513-512T	.02"	.0005"	0-10-0	0.3N or less	✓	✓	—	—	—	—
.0001"	513-504	513-504T	.01"	.0002"	0-5-0	0.3N or less	—	✓	—	—	—	—

### DIMENSION

