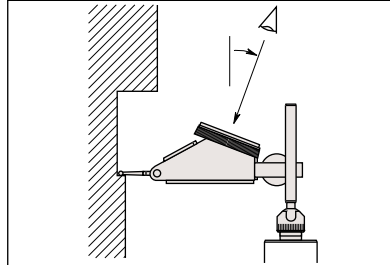


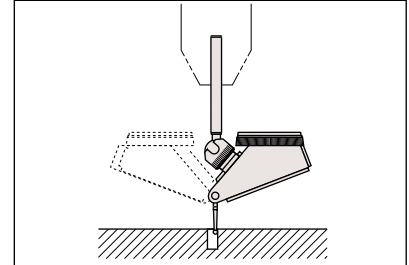


### Dial Test Indicator SERIES 513 — Horizontal (20° Tilted Face), Vertical, and Parallel Types

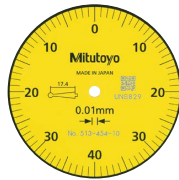
- Specially designed for easy viewing of dial.



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

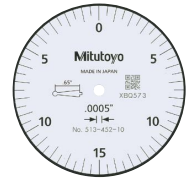


- Using the universal holder allows easy hole centering. The dial face always faces upward when the indicator is rotated, which makes reading easy.



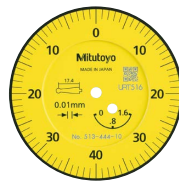
Graduation: 0.01 mm  
Range: 0.8 mm

Carbide contact point



Graduation: 0.0005 in  
Range: 0.03 in

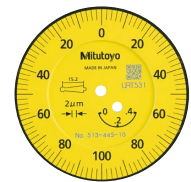
Carbide contact point



Graduation: 0.01 mm  
Range: 1.6 mm

With revolution counter

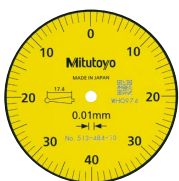
Carbide contact point



Graduation: 0.002 mm  
Range: 0.4 mm

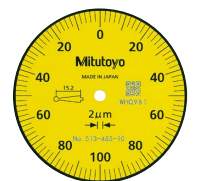
With revolution counter

Carbide contact point



Graduation: 0.01 mm  
Range: 0.8 mm

Carbide contact point



Graduation: 0.002 mm  
Range: 0.2 mm

Carbide contact point

Note: 513-4XX-10 is indicated on the dial face. But the Order No. for the set provided with the stem etc. has a suffix (E or A or T) at the end.

# Dial Test Indicators



With revolution counter



Long contact point



Carbide contact point

## SPECIFICATIONS

Metric			Horizontal (20° tilted face) type												
Basic set	Order No.		Graduation (mm)	Range (mm)	Dial reading	Maximum permissible error (MPE)* (µm)				Mass (g)	Measuring force (N)	With revolution counter	Long contact point	Carbide contact point	Remarks
	Plus set	Full set				Measuring range	One rev.	10 scale divisions	Hysteresis						
513-444-10E	513-444-10A	513-444-10T	0.01	1.6	0-40-0	16	10	5	5	3	48	0.3 or less	✓	✓	✓
513-445-10E	513-445-10A	513-445-10T	0.002	0.4	0-100-0	6	5	2	4	1					

Inch			Horizontal (20° tilted face) type												
Basic set	Order No.		Graduation (in)	Range (in)	Dial reading	Maximum permissible error (MPE)* (in)				Mass (g)	Measuring force (N)	With revolution counter	Long contact point	Carbide contact point	Remarks
	Plus set	Full set				One rev.	First 2.5 rev.	Hysteresis	Repeatability						
—	513-442-10A	513-442-10T	0.0005	0.06	0-15-0	±0.0005	±0.0005	0.0002	±0.0002	48	0.3 or less	✓	✓	✓	Black dial
—	513-442-16A	513-442-16T													
—	513-446-10A	513-446-10T													
—	513-446-16A	513-446-16T	0.0001	0.016	0-4-0	±0.0002	±0.0002	0.0001	±0.00004	48	0.3 or less	✓	✓	✓	Black dial
—	513-443-10A	513-443-10T													
—	513-443-16A	513-443-16T													

Metric			Vertical type												
Basic set	Order No.		Graduation (mm)	Range (mm)	Dial reading	Maximum permissible error (MPE)* (µm)				Mass (g)	Measuring force (N)	With revolution counter	Long contact point	Carbide contact point	Remarks
	Plus set	Full set				Measuring range	One rev.	10 scale divisions	Hysteresis						
513-456-10E	—	—	0.01	0.5	0-25-0	6	—	5	4	3	46	0.3 or less	✓	✓	✓
513-454-10E	513-454-10A	513-454-10T		0.8	0-40-0	9	—	—	—	—					
513-455-10E	513-455-10A	513-455-10T	0.002	0.2	0-100-0	4	—	2	3	1	46	0.3 or less	✓	✓	✓

Inch			Vertical type												
Basic set	Order No.		Graduation (in)	Range (in)	Dial reading	Maximum permissible error (MPE)* (in)				Mass (g)	Measuring force (N)	With revolution counter	Long contact point	Carbide contact point	Remarks
	Plus set	Full set				One rev.	First 2.5 rev.	Hysteresis	Repeatability						
513-452-10E	—	513-452-10T	0.0005	0.03	0-15-0	±0.0005	—	0.0002	±0.0002	46	0.3 or less	✓	✓	✓	✓
513-453-10E	—	513-453-10T	0.0001	0.008	0-4-0	±0.0001	—	0.0001	±0.00004	46	0.3 or less	✓	✓	✓	✓

Metric			Parallel Type												
Basic set	Order No.		Graduation (mm)	Range (mm)	Dial reading	Maximum permissible error (MPE)* (µm)				Mass (g)	Measuring force (N)	With revolution counter	Long contact point	Carbide contact point	Remarks
	Plus set	Full set				Measuring range	One rev.	10 scale divisions	Hysteresis						
513-486-10E	—	—	0.01	0.5	0-25-0	6	—	5	4	3	53	0.3 or less	✓	✓	✓
513-484-10E	513-484-10A	513-484-10T		0.8	0-40-0	9	—	—	—	—					
513-485-10E	—	—	0.002	0.2	0-100-0	4	—	2	3	1	53	0.3 or less	✓	✓	✓

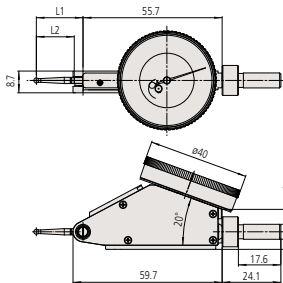
Inch			Parallel Type												
Basic set	Order No.		Graduation (in)	Range (in)	Dial reading	Maximum permissible error (MPE)* (in)				Mass (g)	Measuring force (N)	With revolution counter	Long contact point	Carbide contact point	Remarks
	Plus set	Full set				One rev.	First 2.5 rev.	Hysteresis	Repeatability						
—	513-482-10A	513-482-10T	0.0005	0.03	0-15-0	±0.0005	—	0.0002	±0.0002	53	0.3 or less	✓	✓	✓	✓

\* Horizontal (20° Tilted Face) Type, Vertical type:  
 We guarantee the accuracy of completed products by inspecting them with the dial face facing upward.  
 Parallel Type: We guarantee the accuracy of completed products by inspecting them with the dial face vertical.  
 Note: 513-4XX-10 is indicated on the dial face. But the Order No. for the set provided with the stem etc. has a suffix (E or A or T) at the end.

## DIMENSIONS

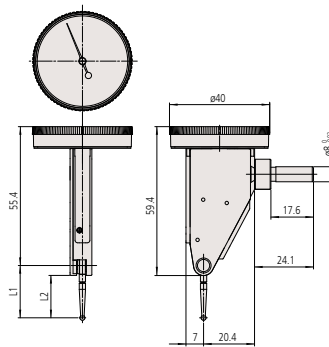
### Horizontal (20° Tilted Face) Type

unit: mm



Order No.	L1	L2
513-445-10E	18.7	15.2
513-444-10E	20.9	17.4

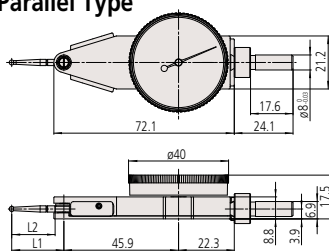
### Vertical Type



Order No.	L1	L2
513-484-10E	20.9	17.4
513-485-10E	18.7	15.2
513-486-10E	22.2	18.7

Order No.	L1	L2
513-454-10E	20.9	17.4
513-455-10E	18.7	15.2
513-456-10E	22.2	18.7

### Parallel Type



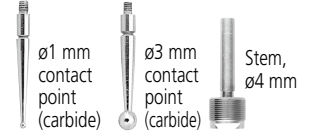
Note: A slight difference may occur depending on the center of the contact point, graduation plate, and stem fixing position, etc.

## Set Configuration: Metric

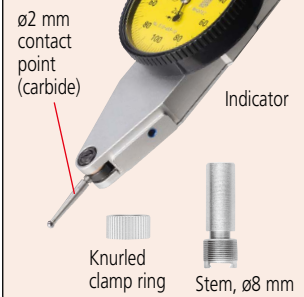
### Full set

Swivel clamp (900321, for ø4 mm stem, ø8 mm stem, and dovetail) Metric holding bar (L: 100 mm)

### Plus set



### Basic set

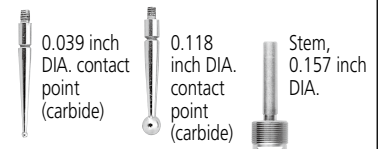


## Set Configuration: Inch

### Full set

Swivel clamp (900322, for 0.157 inch DIA. stem, 0.375 inch DIA. stem, and dovetail) Inch holding bar (L: 4 in)

### Plus set



### Basic set

