

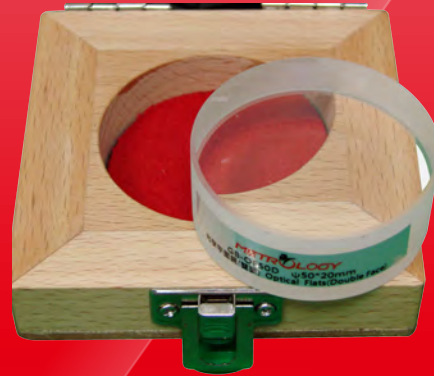
# METROLOGY®

*Arc Radius Measuring Gauge*



*Inverted Measuring Gauge*

*Optical Flats*



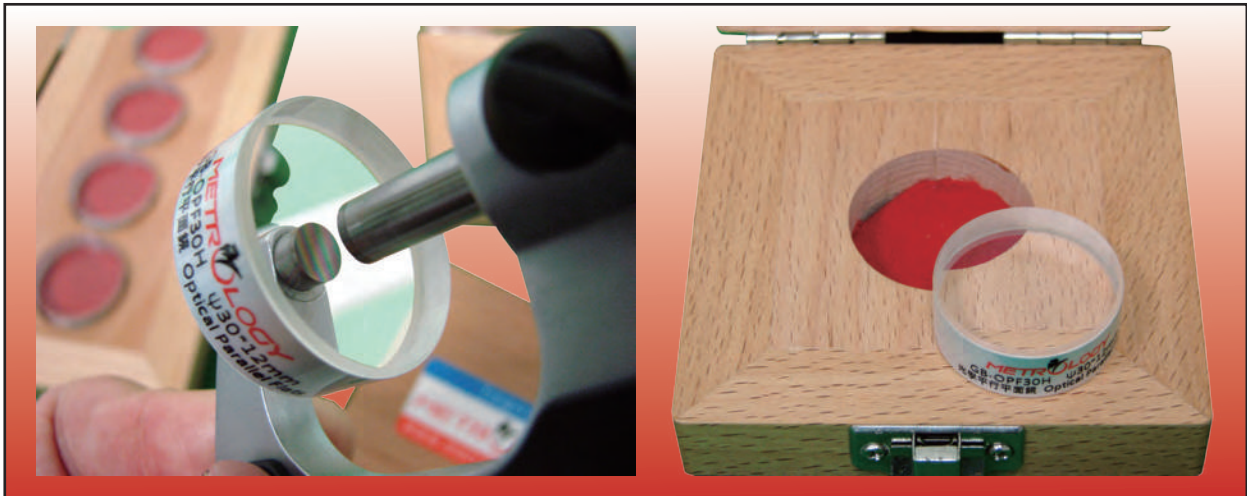
*Dial Center Finder*



*Bore Gauge Checkmaster*

## ■ Optical Parallel Flats

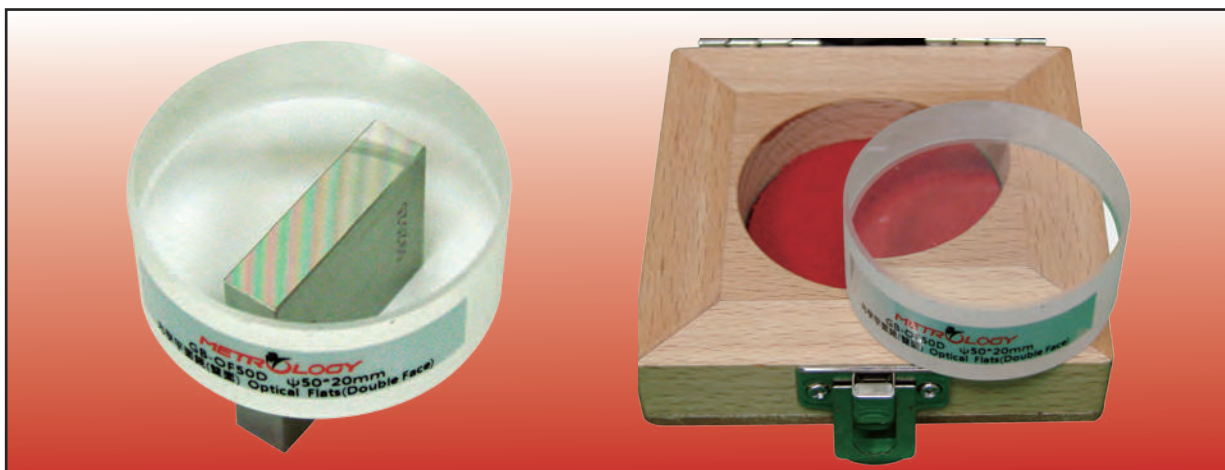
For checking the parallelism & flatness of seals, mating and gages surface.



Model No.	Spec.(mm)	Accuracy	
GB-OPF30N	Φ30*12	Parallelism 0.4μm	Flatness 0.2μm
GB-OPF30H		Parallelism 0.2μm	Flatness 0.1μm

## ■ Optical Flats

For checking the flatness of seals, mating and gages surface.



Model No.	Spec.(mm)	Accuracy
GB-OF45S	Φ45*15 Single Face	Flatness 0.1μm
GB-OF45D	Φ45*15 Double Face	
GB-OF50S	Φ50*20 Single Face	Flatness 0.03μm
GB-OF50D	Φ50*20 Double Face	
GB-OF60S	Φ60*20 Single Face	
GB-OF60D	Φ60*20 Double Face	
GB-OF75S	Φ75*20 Single Face	
GB-OF75D	Φ75*20 Double Face	





■ Optical Parallel Sets

For checking micrometer anvil and spindle face for flatness and squareness to the spindle axis.



Model No.	Specification (mm)	Accuracy
GB-OP12S	Φ30 (Thickness: 12, 12.12, 12.25, 12.37; 4 pcs/set) For 0-25mm	Flatness 0.1μm
GB-OP25S	Φ30 (Thickness: 25, 25.12, 25.25, 25.37; 4 pcs/set) For 25-50mm	Parallelism 0.2μm

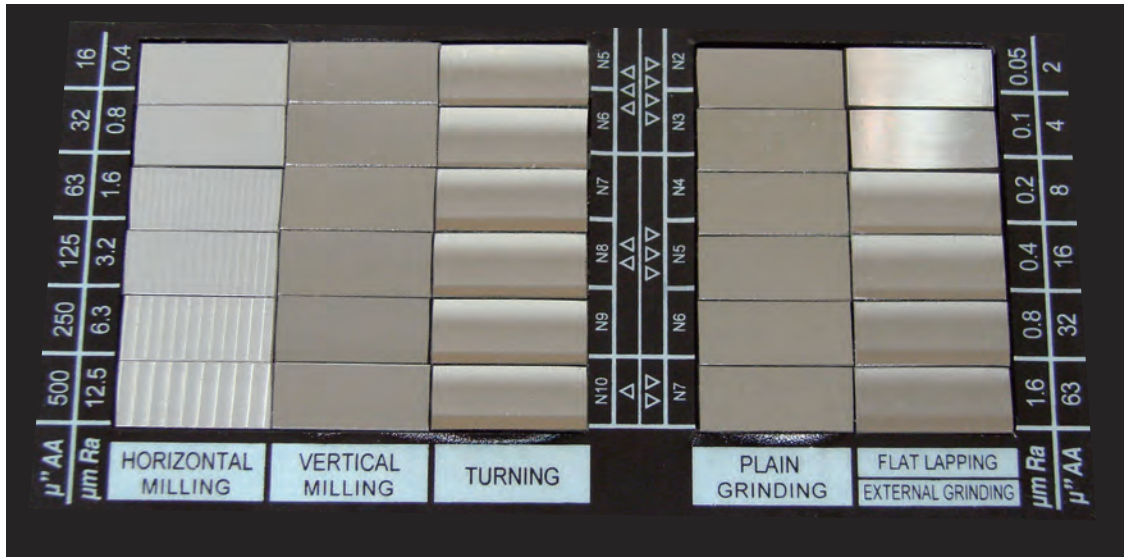
■ Monochromatic Light (for optical parallel and flats)

**TYPE C LIGHT**, for General Purpose use. Available in 4", 6" and 12" capacity.

<p><b>FLAT WORK FLATNESS</b> DEVIATION: 0 = 1mk OR LESS</p> <p>OPTICAL FLAT WORK</p>	<p><b>CYLINDRICAL (CONVEX)</b> DEVIATION: 1 BAND = 11.6mk</p> <p>OPTICAL FLAT WORK</p>	<p><b>SPHERICAL (CONVEX)</b> DEVIATION: 2 BANDS = 23.2mk</p> <p>OPTICAL FLAT WORK</p>
<p><b>PROGRESSIVE GROOVE</b></p> <p>OPTICAL FLAT WORK</p>	<p><b>PEAKS AND VALLEYS</b> DEVIATION: 5 BANDS = 58mk</p> <p>OPTICAL FLAT WORK</p>	<p><b>IRREGULAR RING</b></p> <p>OPTICAL FLAT WORK</p>

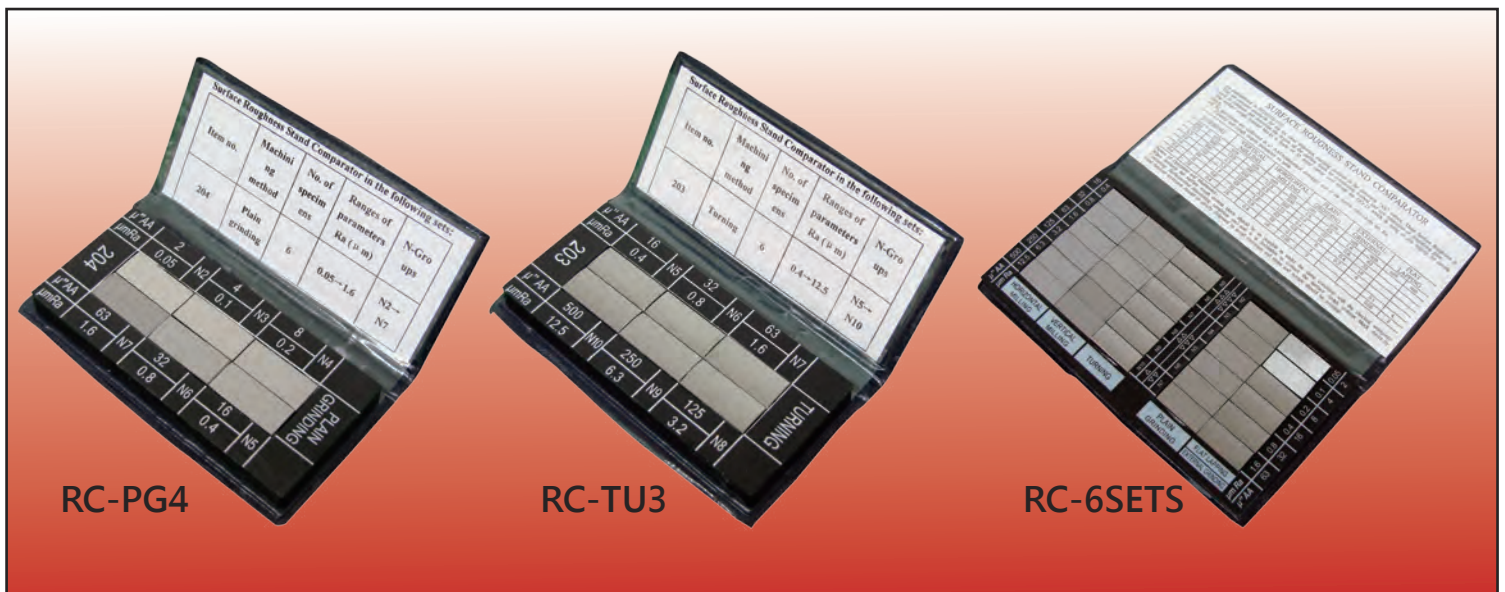
■ Roughness Comparison Specimens

For roughness comparison by sight, touch, microscope and etc.



RC-6SETS

Model No.	Measuring Range	Pcs	Remark
RC-PG4	Ra: 0.05/0.1/0.2/0.4/0.8/1.6 um	6	Plain Grinding
RC-TU3	Ra: 0.4/0.8/1.6/3.2/6.3/12.5 um	6	Lathe Turning
RC-6SETS	Horizontal Milling /Vertical Milling/Turning Ra: 0.4/0.8/1.6/3.2/6.3/12.5 um Plain Grinding Ra: 0.05/0.1/0.2/0.4/0.8/1.6 um Flat Lapping Ra: 0.05/0.1 um External Grinding Ra: 0.2/0.4/0.8/1.6 um	30	Horizontal Milling Vertical Milling Lathe Turning Plain Grinding Flat Lapping External Grinding



RC-PG4

RC-TU3

RC-6SETS

## ■ Dial Center Finder

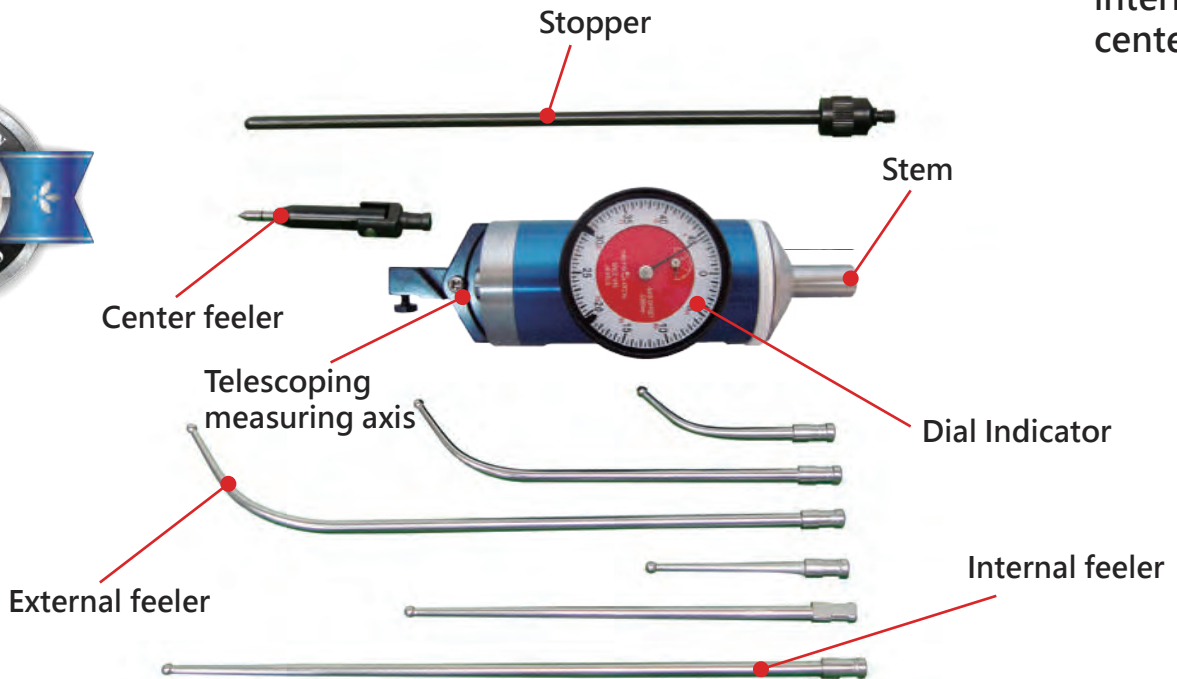
Can be fitted on to spindle chucks of varies machines to find the centers of workpieces.



Finding external center

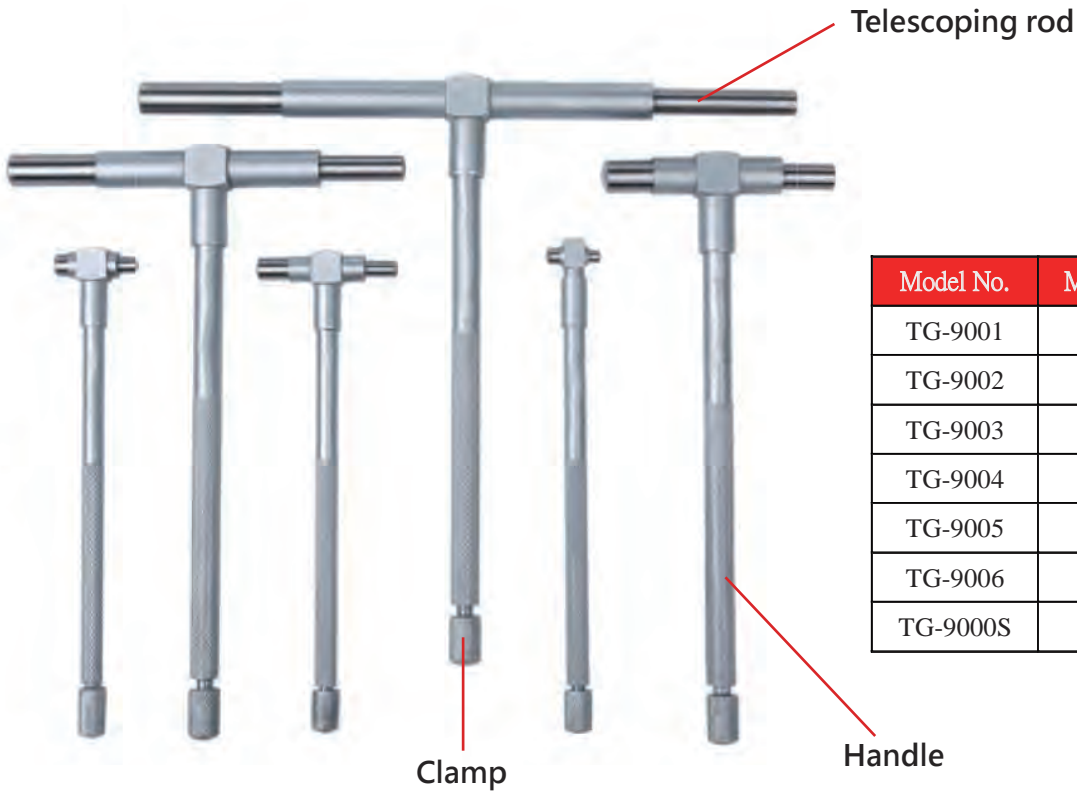


Finding internal center

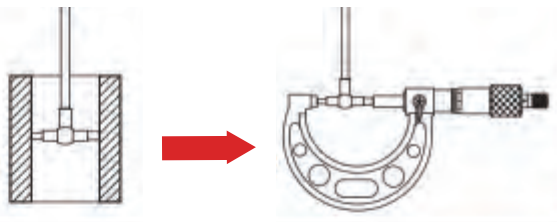


Model No.	Measuring Range	Accuracy	Remark
CF-9000	Indicator 0-3mm	0.005mm	Full set with indicator. Straight feeler 3 pieces, curved feeler 3 pieces, center point feeler 1 piece, stopper bar 1 piece.
	Short Feeler $\phi$ 3-100mm		
	Middle Feeler $\phi$ 3-200mm		
	Long Feeler $\phi$ 3-300mm		
	Center Point Feeler $\phi$ 0-3mm		

■ Telescoping Gauge



Model No.	Measuring Range	Depth (mm)
TG-9001	8-12.7	102
TG-9002	12.7-19	
TG-9003	19-32	
TG-9004	32-54	127
TG-9005	54-90	
TG-9006	90-150	
TG-9000S	8-150mm (Set)	



**Operation method**

For measuring internal diameter or internal through-groove of workpieces by comparative method.

Reading can be shown on the outside micrometer.

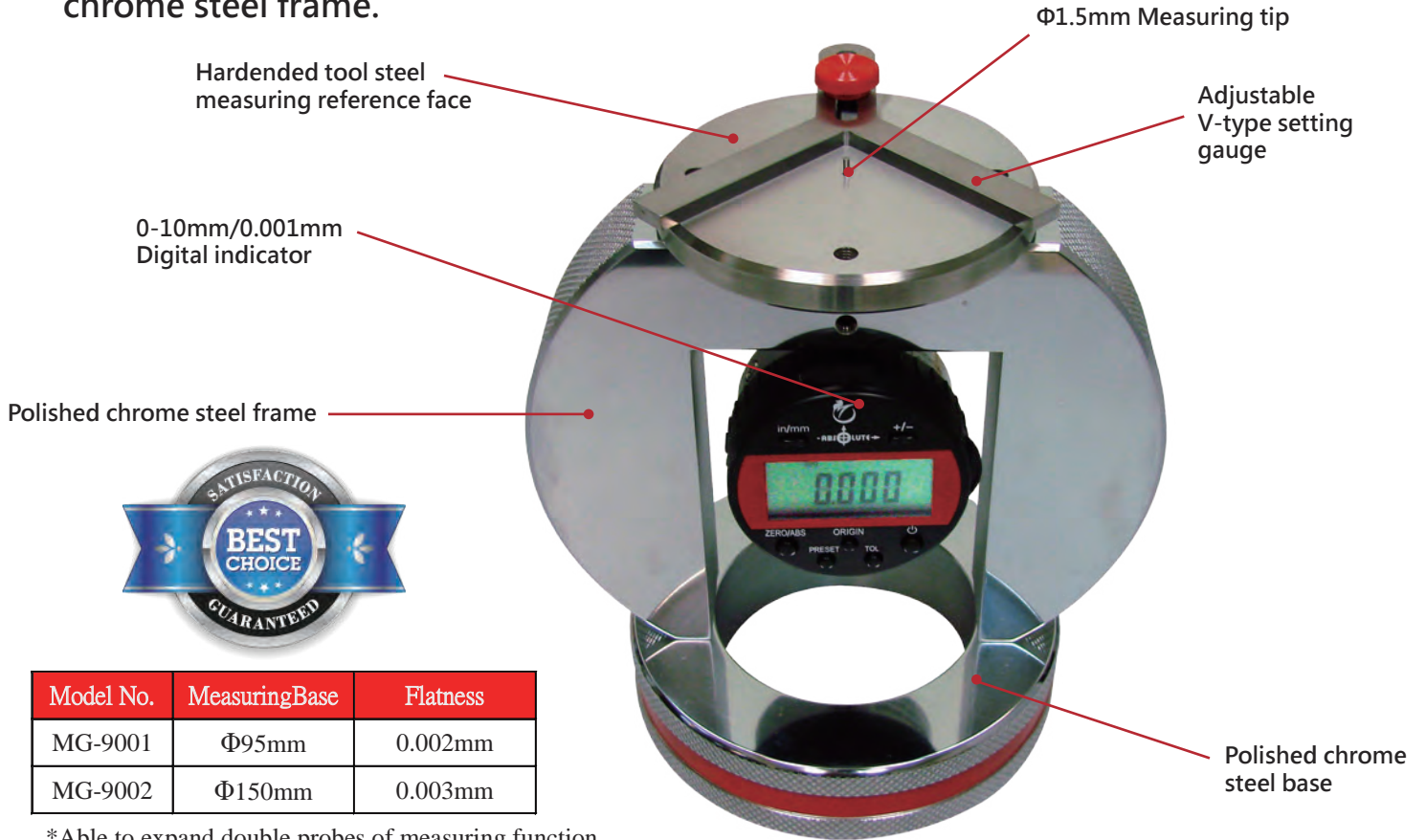
■ Dial Crank Shank Gage



Model No.	Measuring Range	Graduation	Remark
CS-9000	Indicator 0-3mm With extension measuring bar 60-500mm	0.01mm	Full set with indicator, measuring anvil & extension bar

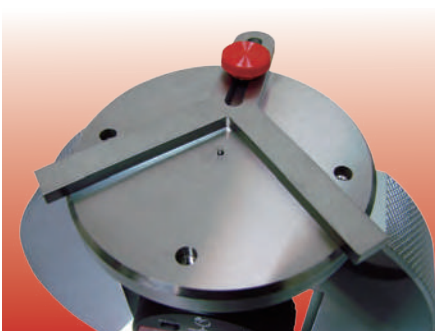
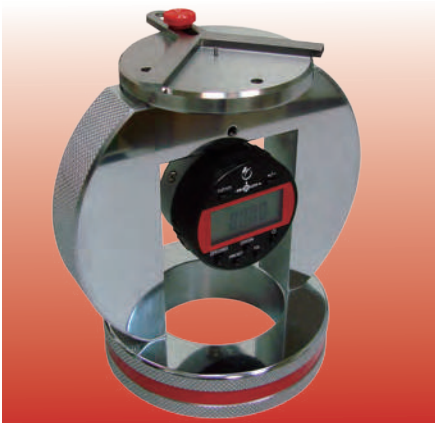
## ■ Inverted Measuring Gauge

For inspecting parallelism, flatness of workpieces.  
 Inverted for measurements of height, depth, steps without datum faces. Polished chrome steel frame.



Model No.	MeasuringBase	Flatness
MG-9001	Φ95mm	0.002mm
MG-9002	Φ150mm	0.003mm

\*Able to expand double probes of measuring function, for measuring workpiece actual thickness.

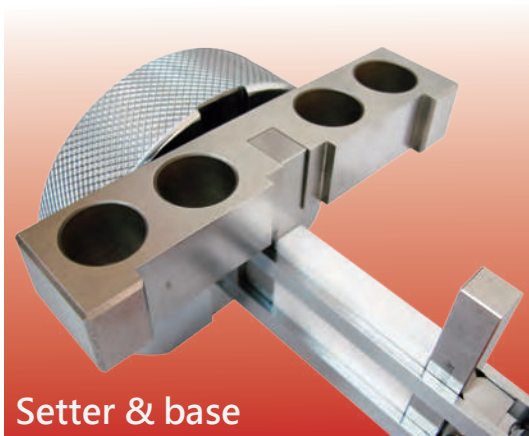


■ Bore Gauge Checkmaster

For dimension set zero & calibration of bore gauge.



Horizontal setting



Setter & base

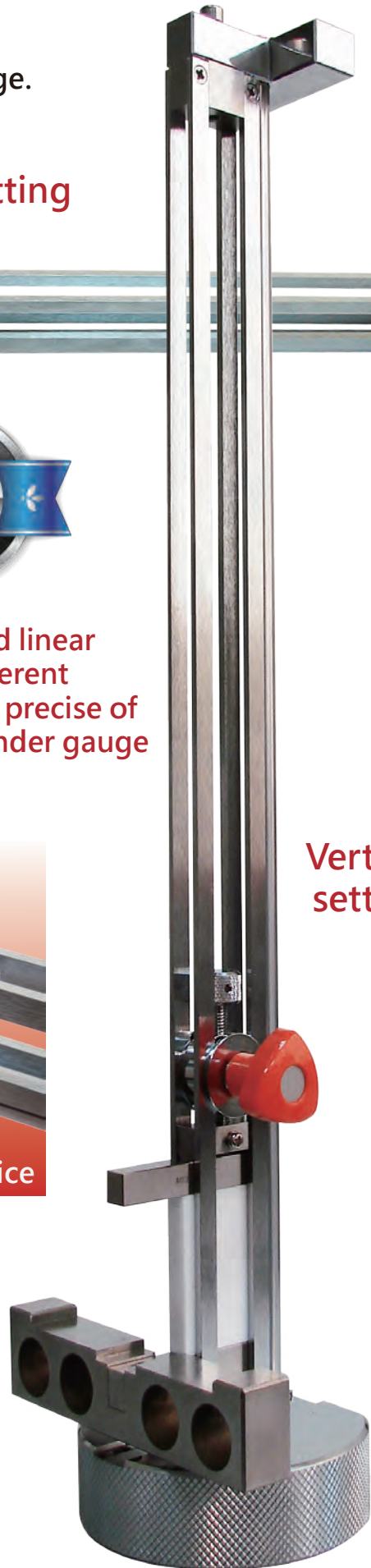
\*Repeatability and linear accuracy are different according to the precise of the selected cylinder gauge and indicator



Slide pressured locking device



Support stand



Vertical setting

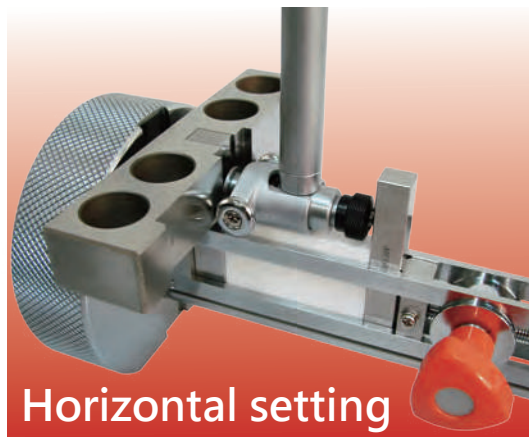


■ Bore Gauge Checkmaster

For dimension set zero & calibration of bore gauge.



Vertical setting



Horizontal setting

Gauge block hold standard

Model No.	Set Range	Uncertainty of measurement
BGC-9200	0-200mm	MAX : 0.002mm
BGC-9300	0-300mm	
BGC-9600	0-600mm	

\*Optional : Standard gauge block

■ Concentricity Tester

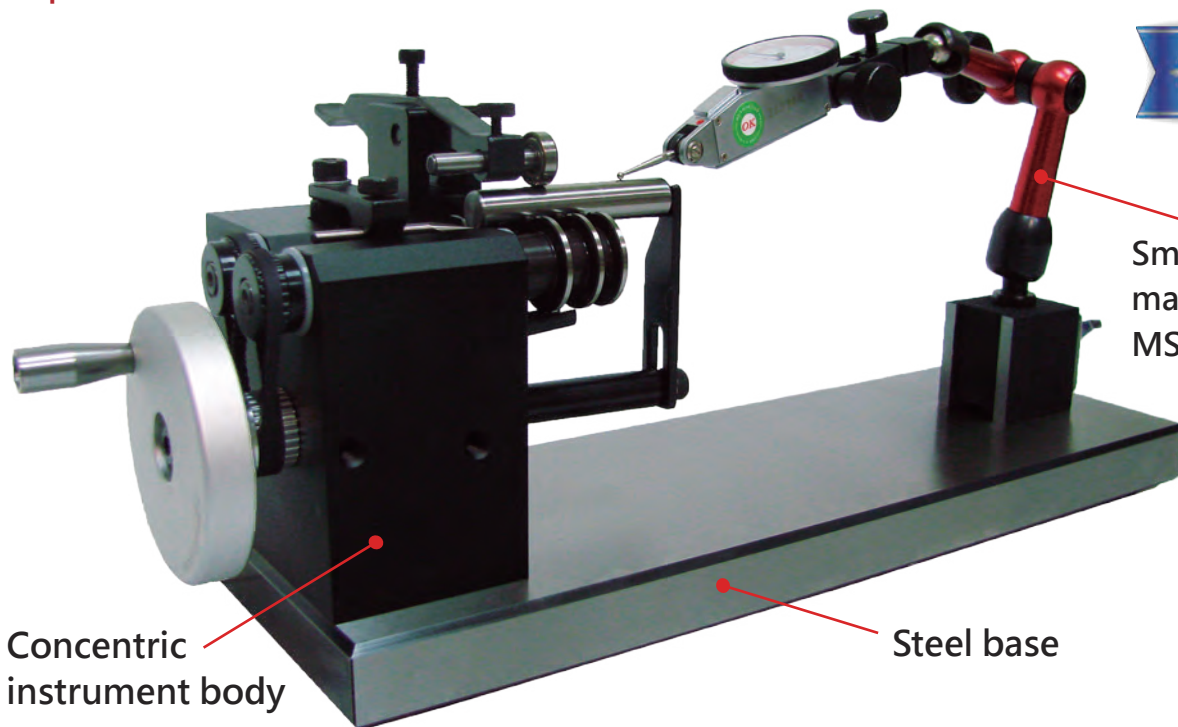
**Measurement function :** Specially designed for testing geometric errors such as concentricity, runout of cylindrical workpieces

**Standard accessories :** Precision steel base, concentric instrument body, small type universal magnetic stand, calibration report

**Optional accessories :** All kind of indicator



Small type universal magnetic stand MS-SU30K



CMG-9000

Concentric instrument body

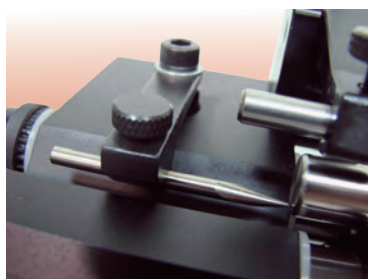
Steel base

**Measuring range :** Diameter 3~35mm Length 5~150mm Cylindrical workpieces

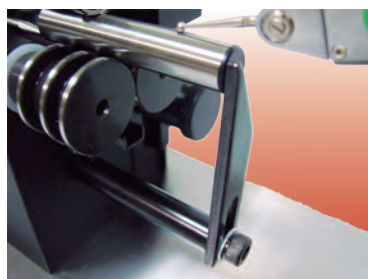
**Material of measure roller :** Hardened tool steel HRC58~62 Rotation accuracy  $\leq 3\mu\text{m}$



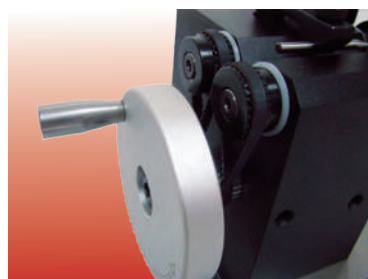
Constant pressure rolling bearing



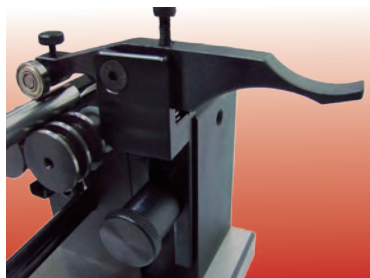
Back stopper



Front stopper



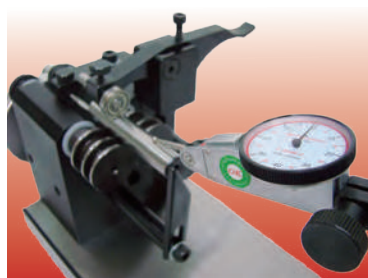
Rotating handwheel and precision transmission



Measuring device with adjustable range



precision concentric roller sets



Example of measuring concentricity with indicator



Optional precision level type dial indicator