

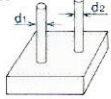
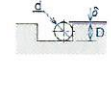


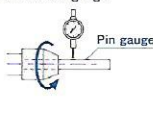
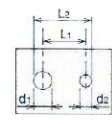
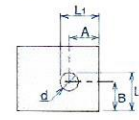
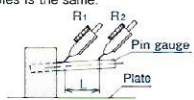
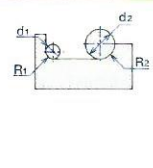
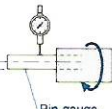
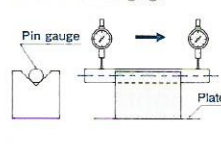
Pin gauges

5 Pin gauge

What is pin gauge

It's a pin shaped gauge manufactured with a specific size and durable materials to insure certain margin tolerance.

The main purpose is to check and determine the diameter of a small hole, however, it can also be used for geometric deviation measuring.

<p>1 Measure the diameter of the hole. It can be used as a plug gauge to determine if it passes or does not pass the specifications.</p> 	<p>2 Measure the depth of key way. δ: Read of dial gauge. $D=d-\delta$</p> 	<p>3 Measure the width of the slot. To measure the width of key slot etc..</p> 	<p>4 Measure the runout of gear teeth. Measurement of dial gauge.</p> 
<p>5 Measure the runout of chuck. Measurement of dial gauge.</p> 	<p>6 Measure the hole position. d_1, d_2: Read the diameter of pin gauge. L_1, L_2: Read the micrometer. $L = L_2 - \frac{d_1 + d_2}{2}$</p> 	<p>7 Measure the position of the hole. d: Diameter of pin gauge L_1, L_2: Read dial gauge. $A = L_1 - \frac{d}{2}$ $B = L_2 - \frac{d}{2}$</p> 	<p>8 Measure the parallelism of the hole. R_1, R_2: To read dial gauge. Inclination = $\frac{R_2 - R_1}{L}$ The parallelism of two holes is the same.</p> 
<p>9 Measure the radius. $R_1 = \frac{d_1}{2}$ $R_2 = \frac{d_2}{2}$</p> 	<p>10 Measure the runout of hole. R_1: The maximum read of dial gauge. R_2: The minimum read of dial gauge. $E = \frac{R_1 - R_2}{2}$</p> 	<p>11 Measure the parallelism of V groove. Measurement of dial gauge.</p> 	

Material

Three kinds of material: Steel, carbide and ceramic

Shapes

Two types of shape: straight and shank

※The shank shape is better handheld measuring device because it will have less temperature change from body temperature.



Steel • Straight type



Carbide • Shank type



Ceramic • Straight type

■ Precision · Specification

Nominal size (mm)	Sizes division (mm)	Length (mm)	Accuracy of diameter (μm)	Roundness · Cylindricity* (μm)	Hardness (HV)
0.05 ~ 0.09	0.01 step	5 ~ 10	±0.5	Within 0.5	Above 480
0.10 ~ 0.19		20			
0.20 ~ 0.999	0.001 step	40	±1	Within 0.8	Above 650
1.00 ~ 10.00		50			
10.01 ~ 20.00	±2		Within 1.6		
20.01 ~ 30.00	±3		Within 3		
30.01 ~ 41.00	—				

*Roundness is the width which with two round grips inside and outside the free handle drawing. Cylindricity is to have cylinder instead of circularness.

■ Precautions before use

- Clean the gauge with benzine or wipe off the anti-rust oil and dirt with clean cloth before use.
- Ensure there is no rust, scratch or burrs.

■ Precautions when using

- When using pin gauge, make sure there is no burrs or rust on the edge face. Keep an eye on the temperature difference of measuring object.
- Use pin vise or glove for straight pin gauge. Also, keep an eye on the expansion affect to gauge from body temperature.

■ Precautions after use

- After using, clean and apply oil on the gauge. Make sure it's scratch-free then place in provided case.
- For long-term storing, convey an inspection every half-year, apply anti-rust oil and keep it at a place with small changes in humidity and temperature.