

Dial Indicator / Comparator

Model No.

209 Series

DIAL GAUGE

Thank you for purchasing the Niigata Seiki Dial Gauge. Used with a Magnetic Base or Indicator Stand, this gauge will show the difference in position from a zero point set at a reference position.

APPLICATIONS

- Comparing parts to a master part during inspection
- Measuring machine tools positioning accuracy
- Measuring runout for rotary shafts
- Checking vise parallelism on milling machines
- Measuring flatness of surfaces and assemblies
- Confirming machine tool feed distance

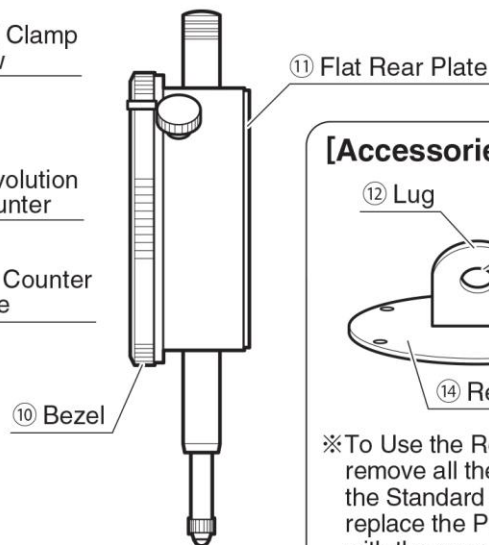
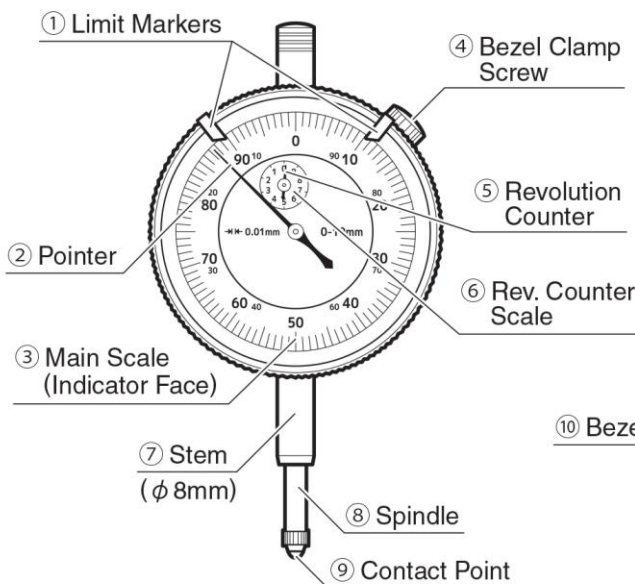
- For safe and proper use of this product, please read this instruction manual before use and follow the procedures described. Please keep manual where it is accessible to user for future reference.
- Keep this manual with the instrument if transferred or leased to a third party.
- For inquiries about this product, please contact dealer or Niigata Seiki at the address listed on the following page.

SAFETY NOTIFICATIONS

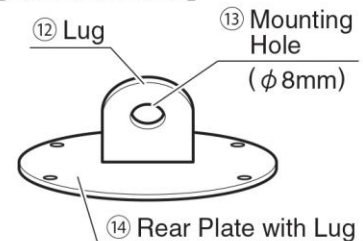
Throughout this manual, "⚠" symbol indicate RISK OF PERSONAL INJURY OR PROPERTY DAMAGE if not followed.

The "⊘" symbol indicates something which is PROHIBITED, and the "⊙" symbol Indicates REQUIRED step or necessary condition.

PART IDENTIFICATION AND FUNCTION



[Accessories]



※To Use the Rear Plate with Lug, remove all the screws securing the Standard Flat Rear Plate, replace the Plate, and secure with the screws.

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|------------------------------|--|----------------------|---|
| ①Limit Markers | For marking acceptance range for Pass/Fail testing | ⑧Spindle | Shaft moves up and down with measurement |
| ②Pointer | Main Scale indicator | ⑨Contact Point | Replaceable tip in contact with workpiece |
| ③Main Scale (Indicator Face) | Main Scale, rotate Bezel (⑩) to turn | ⑩Bezel | Rotate to turn Main Scale (③) |
| ④Bezel Clamp Screw | Clamps Scale to prevent rotation | ⑪Flat Rear Plate | Standard back cover |
| ⑤Revolution Counter | Pointer indicates Main Scale x100 | ⑫Lug | For mounting Gauge |
| ⑥Rev. Counter Scale | Each division is Main Scale x100 | ⑬Mounting Hole | φ 8mm, for mounting Gauge |
| ⑦Stem | For holding and mounting Gauge (φ 8mm) | ⑭Rear Plate with Lug | Accessory back cover for mounting Gauge using Lug |

HOW TO USE - Preparation

① Confirm that the Contact Point and Rear Cover are tightly fastened.

If loose, please re-tighten the Rear Plate Screws.

② Attach to the Holder using the Stem or Rear Lug.

Mounting Gauge by other than Stem or Lug will cause inaccuracy and product damage.

③ Confirm that Pointer and Revolution Counter movement is smooth.

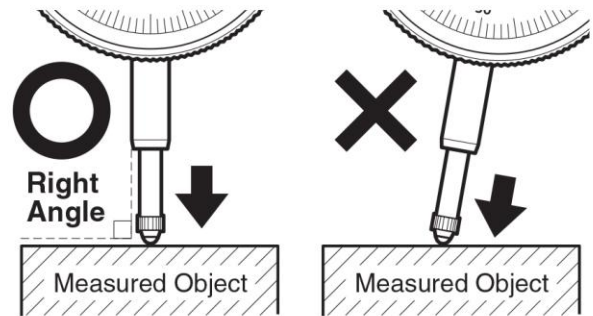
Using fingertip, gently press on Contact Point to move the Spindle up and down.

Motion of Pointers should be smooth. If it is not smooth make sure Stem is not clamped to Holder too tight, and adjust. Also make sure Pointer is stable at set position.

④ Make sure Spindle axis is perpendicular to measured surface.

If Spindle (Contact Point) is not at a right angle to surface, Gauge will not operate properly and measurement will be inaccurate. Always keep the Spindle axis perpendicular.

※ When used to check parallelism of Milling Machine vise, use a Magnetic Base to mount the Gauge perpendicular to surface, and move it out of the way during operation to prevent interference.



HOW TO USE - Comparison Measurements

① Set Up Reference Part.

Carefully lift Spindle with fingertip, and, taking care not to hit Spindle from the side, insert the Reference Part or Master under Contact Point.

② Set the Origin.

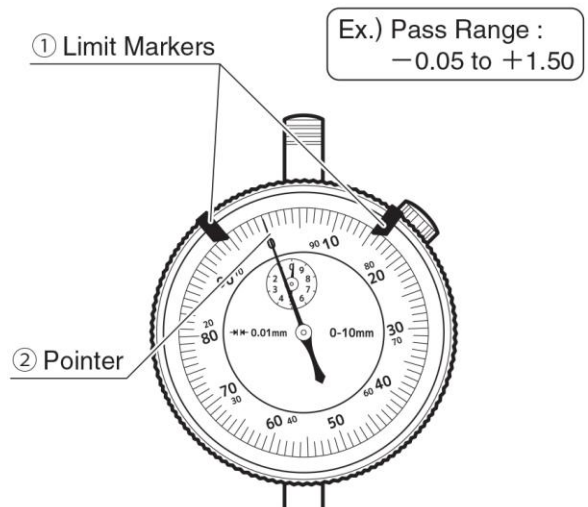
Adjust the gauge mount or rotate the Bezel to set the Gauge to "0".

③ Remove Reference, and begin measurements.

Remove Reference or Master, careful not to shock Spindle. Insert part to be measured and read the measurement off the Scale.

※ Setting the Limit Markers

Limit Markers can be moved to show acceptance range for measurements.



HOW TO USE - Parallelism, Flatness, Runout, etc.

① Position Contact Point on surface.

Carefully lifting Spindle with fingertip, and taking care not to hit Spindle from the side, position the surface to be measured under the Contact Point.

② Set the Origin.

Adjust the gauge mount, or rotate the Bezel to set the Gauge to "0".

③ Read the scale as the measured part is moved.

Slowly move the part while monitoring the Pointer and reading the measurement.