TROUBLESHOOTING

- Origin position shifts during measurement.
  - Temperature changes during measurement can cause repeatability error.
  - Please try the following solutions:
    - Use in location with constant temperature.
    - When taking measurements, periodically adjust zero point using a Master reference to correct for temperature induced drift.
- Measurement is not stable, or measurement accuracy is poor.
  - Worn Contact Point will affect accuracy.
  - Periodically check Contact Point for wear, and replace if wear is affecting measurement accuracy.
  - Please try the following solutions:
    - Temperature changes during measurement can cause repeatability error.
    - Origin position shifts during measurement.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Graduation (mm)</th>
<th>Measurement Range (mm)</th>
<th>Scale</th>
<th>Retrace Error (μm)</th>
<th>Measuring Force (N)</th>
<th>Range (1 rev.) (mm)</th>
<th>Adjacent Error (μm)</th>
<th>Full Range Accuracy (μm)</th>
<th>Repeat Accuracy (μm)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>DI-10KD</td>
<td>0.01</td>
<td>0~10</td>
<td>±0.10</td>
<td>5</td>
<td>≤1.5</td>
<td>1</td>
<td>8</td>
<td>±20</td>
<td>5</td>
<td>125g</td>
</tr>
<tr>
<td>DI-10</td>
<td>0.01</td>
<td>0~10</td>
<td>±0.10</td>
<td>5</td>
<td>≤1.5</td>
<td>1</td>
<td>8</td>
<td>±20</td>
<td>5</td>
<td>125g</td>
</tr>
<tr>
<td>DI-1058</td>
<td>0.01</td>
<td>0~10</td>
<td>±0.10</td>
<td>5</td>
<td>≤1.5</td>
<td>1</td>
<td>8</td>
<td>±20</td>
<td>5</td>
<td>180g</td>
</tr>
<tr>
<td>DI-0560SC</td>
<td>0.01</td>
<td>0~5</td>
<td>±0.10</td>
<td>3</td>
<td>≤1.5</td>
<td>1</td>
<td>8</td>
<td>±12</td>
<td>3</td>
<td>125g</td>
</tr>
<tr>
<td>DI-1060SC</td>
<td>0.01</td>
<td>0~10</td>
<td>±0.10</td>
<td>3</td>
<td>≤1.5</td>
<td>1</td>
<td>8</td>
<td>±12</td>
<td>3</td>
<td>125g</td>
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<tr>
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<td>±0.1</td>
<td>2.5</td>
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<td>0.1</td>
<td>3.5</td>
<td>±5</td>
<td>0.4</td>
<td>145g</td>
</tr>
</tbody>
</table>

- Replacement Contact Point Part No.: DI-1058-8-DI-CP, Other models--DI-CPK

AFTER USE CARE, STORAGE

- Remove any dust or dirt after use. Do not lubricate.
  - Wipe any contamination from Spindle sliding surface using a dry cloth, or cloth moistened with alcohol.
  - To clean other surfaces, wipe with a soft dry cloth, or a cloth moistened with a mild cleaner.
- Check for wear of Contact Point.
  - Measurement accuracy will be affected by worn Contact Point. Regularly check for wear and replace Contact Point if worn.
- Store in provided case in a cool, dark, and dry location.
  - During storage, make sure there is no force on the Spindle (such as pushed in, or lateral force).
  - Keep away from moisture and direct sunlight, and secure from unauthorized personnel.

CALIBRATION

To maintain measurement accuracy, periodic calibration is recommended.

(For reference, we recommend a calibration interval of 3~4 months when used in a factory.)

Outside Japan, Please contact distributor or place of purchase to inquire about calibrations services.

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

SAFETY NOTIFICATIONS

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

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.

PART IDENTIFICATION AND FUNCTION

[Accessories]

Model DI-10 shown

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.

[Accessories]

Model DI-10 shown

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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Niigata Seiki Dial Indicator / Comparator

DI-0160SC
DI-1058
DI-10KD
DI-1060SC
DI-0560SC
DI-10

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.

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SAFETY PRECAUTIONS  Please Observe

Always follow the procedures specified below in order to prevent harm to yourself or others, and to prevent damage to property.

| Content marked as follows indicates risk of injury or damage if not followed. |
| CAUTION  Indicates risk of personal injury or property damage if not followed. |
| These symbols mark content that must be observed. |
| Denotes a prohibition – You MUST NOT do |
| Denotes a requirement – You MUST do |

**PREPARATION - Mounting**

Dial gauge must be securely mounted such as on a comparator stand or magnetic base. Please follow these guidelines.

- **Make sure Gauge holder is rigid.**
  - Holder must be sufficiently secure to prevent deflection from the weight of the Dial Gauge.
  - Holder must be rigid enough to hold Gauge and not to lift from measurement force.
  - Holder arm should be as short as possible to prevent deflection.

- **Dial Gauge must only be attached by Stem or Rear Lug.**
  - Mounting of gauge by other than Stem or Lug will cause inaccuracy and product damage.

- **During installation, do not over-tighten the Stem.**
  - Excessive force on the Stem may cause Spindle to bind.

- **Do not disassemble or modify.**
  - It may damage Gauge and cause poor accuracy.
  - Internal components may come loose causing product failure.

- **Do not shock Spindle.**
  - Rapid motion, or lateral force may damage Gauge and cause poor accuracy.

- **Handle With Care.**
  - Do not drop or subject to shock, do not place under heavy objects. Damage may cause failure or poor accuracy.

Read the manual and follow all instructions.
- Use of product other than as described in the manual may cause accident.
- Use only as indicator Gauge.
  - Use for any purpose other than measuring may damage or wear the instrument. Improper use may also cause accident.

Use in an environment which meets the following conditions:
- Temperature within range of 0~40°C, humidity 30~70% (non-condensing).
- Location with minimal dust, oil, oil mist, and protected from direct sunlight.
- Location protected from use by children and unauthorized people.
- Use in location contrary to the above may cause poor accuracy, damage to the product, or may result in accident or injury.

**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.

4. **Setting the Limit Markers**
   Limit Markers can be moved to show acceptance range for measurements.

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

   - **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.

   - **Set the Origin.**
     Adjust the gauge mount, or rotate the Bezel to set the Gauge to “0”.

   - **Read the scale as the measured part is moved.**
     Slowly move the part while monitoring the Pointer and reading the measurement.