ABS Coolant Proof Caliper
Coolant Proof Micrometer

Coolant Proof withstands water, oil, and dirt.

Development of new coolant resistant technology has led to the creation of IP66/IP67 protection level calipers. New waterproofing technology has enabled the creation of IP65 protection level micrometers.
Achieving IP66/IP67 protection level

**ABS Coolant Proof Caliper**

<table>
<thead>
<tr>
<th>Type</th>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection from solid objects</td>
<td>6</td>
<td>Dust-tight No ingress of dust.</td>
</tr>
<tr>
<td>(people or things)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection from liquids</td>
<td>6</td>
<td>Protected against powerful water jets.</td>
</tr>
<tr>
<td>(water, etc.)</td>
<td>7</td>
<td>Protected against the effects of temporary immersion in water.</td>
</tr>
</tbody>
</table>

* Size of direct jets: uses 6.3 mm (inner diameter) nozzle emitting a 30 kPa jet of water at 12.5 liters per minute for at least 3 minutes from a distance of approx. 3 meters.

Achieving IP65 protection level

**Coolant Proof Micrometer**

<table>
<thead>
<tr>
<th>Type</th>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection from solid objects</td>
<td>6</td>
<td>Dust-tight Protection against ingress of dust and full protection against contact.</td>
</tr>
<tr>
<td>(people or things)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection from liquids</td>
<td>5</td>
<td>Protected against water jets. Water projected in jets* against the enclosure from any direction shall have no harmful effects.</td>
</tr>
<tr>
<td>(water, etc.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Size of direct jets: uses 6.3 mm (inner diameter) nozzle emitting a 30 kPa jet of water at 12.5 liters per minute for at least 3 minutes from a distance of approx. 3 meters.

Air leakage detection system used for water-proof testing

Generally, air leakage tests are performed to evaluate water resistance. Testing begins by placing a measuring tool into a capsule. Next, air with equivalent pressure is supplied to the capsule and the master, then the valves are closed. If none of the air in the capsule seeps into the measuring tool, the capsule’s air pressure will remain equal to that in the master, and the differential pressure gauge will continue to point to the center. However, if some air does seep into the measuring tool, it will create an air pressure difference indicated by the differential pressure gauge. Thus, detection of air pressure differences is used as a criterion for judging leakage. Every single unit of the ABS Coolant Proof calipers and Coolant Proof micrometer is tested this way for air leakage to help ensure product quality.
Temperature environment test
This equipment is used to conduct reliability tests under various extreme temperatures and humidity levels.

Work environment test
This equipment is used to perform long-term continuous spindle operation tests.

Electronic component test
A fully automated inspection system is used to ensure the reliability of all pre-shipment inspections of electronic components that have narrow precision tolerances, switching functions, etc.
Digital calipers with waterproof absolute scale:
ABS Coolant Proof Caliper

Ideal for use in environments with heavy exposure to coolants.

• The IP66/IP67 Coolant Proof Caliper incorporates a new length measuring system that provides protection level IP66/IP67 so the calipers can be used even in environments where large amounts of cutting oils are being sprayed from various directions (only vernier calipers could be used before).
• No need to wipe off water and oil from the main scale during use.
• Built-in ABS (absolute) scale means that these calipers are ready to use immediately after power-on without origin resetting.

• Auto power ON/OFF function.
• Measurement data output function is available with a water-resistant connection cable.
• Certificate of inspection* is included.

*It is not the type used to obtain calibration certificates.
Optional accessories

- Water-resistance connection cable*4
  1-meter cable: No. 05CZA624
  2-meter cable: No. 05CZA625

*4 This connection cable is dedicated for Coolant Proof Caliper.

- DP-1VR Digimatic Mini-Processor
  No. 264-504-5A
  (Data processing device for quality control applications)

- Keyboard Input Tool
  No. 264-005

- RS232C Input Tool
  No. 264-007

- USB Input Tool
  (Measurement data input device with USB keyboard signals)
  No. 262-012

Specifications

- Resolution: .0005”/0.01mm, 0.01mm
- Accuracy*1: ±.001”/±0.02mm (<8”/200mm), ±.0015”/±0.03mm (>8”/200mm)
- Functions: Origin setting, Auto power ON/OFF*2, Measurement data output, Error reporting
- Protection level: IP66 or IP67 (IEC60529), Anti-corrosion treatment is required after use
- Power supply: One button-type silver oxide battery (SR44) (two batteries for 12”/300mm models)
- Battery life: Three years under normal use conditions (one year for 12”/300mm models)
- Length standard*3 encoder: Electromagnetic induction absolute linear
- Maximum response speed: Unlimited
- Mass: 168g (150mm), 198g (200mm), 350g (300mm)
- Standard accessories: Button-type silver oxide battery (SR44, No. 938882), and one screwdriver for battery replacement

Order No. (IP66)

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Range</th>
<th>Order No.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>500-632</td>
<td>150mm</td>
<td>500-682</td>
<td>6”/150mm</td>
</tr>
<tr>
<td>500-637</td>
<td>150mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-633</td>
<td>200mm</td>
<td>500-683</td>
<td>8”/200mm</td>
</tr>
<tr>
<td>500-638</td>
<td>200mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-634</td>
<td>300mm</td>
<td>500-684</td>
<td>12”/300mm</td>
</tr>
<tr>
<td>500-639</td>
<td>300mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-662</td>
<td>150mm</td>
<td>500-672</td>
<td>6”/150mm</td>
</tr>
<tr>
<td>500-666</td>
<td>150mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-667</td>
<td>200mm</td>
<td>500-673</td>
<td>8”/200mm</td>
</tr>
<tr>
<td>500-668</td>
<td>200mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-669</td>
<td>300mm</td>
<td>500-674</td>
<td>12”/300mm</td>
</tr>
<tr>
<td>500-670</td>
<td>300mm</td>
<td>—</td>
<td>—</td>
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</table>

Order No. (IP67)

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Range</th>
<th>Order No.</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>500-712</td>
<td>150mm</td>
<td>500-762</td>
<td>6”/150mm</td>
</tr>
<tr>
<td>500-716</td>
<td>150mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-713</td>
<td>200mm</td>
<td>500-763</td>
<td>8”/200mm</td>
</tr>
<tr>
<td>500-717</td>
<td>200mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-722</td>
<td>150mm</td>
<td>500-752</td>
<td>6”/150mm</td>
</tr>
<tr>
<td>500-726</td>
<td>150mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-727</td>
<td>200mm</td>
<td>500-753</td>
<td>8”/200mm</td>
</tr>
<tr>
<td>500-728</td>
<td>200mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500-729</td>
<td>300mm</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Remarks

- with data output, with thumb roller
- with data output, without thumb roller
- with data output, with thumb roller
- with data output, without thumb roller
- without data output, with thumb roller
- without data output, without thumb roller
- without data output, with thumb roller
- without data output, without thumb roller
- without data output, without thumb roller

Dimensions

<table>
<thead>
<tr>
<th>Range</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>6”/150mm</td>
<td>.83”</td>
<td>.66”</td>
<td>9.18”</td>
<td>1.59”</td>
<td>.64”</td>
</tr>
<tr>
<td>8”/200mm</td>
<td>.97”</td>
<td>.79”</td>
<td>11.45”</td>
<td>1.99”</td>
<td>.64”</td>
</tr>
<tr>
<td>12”/300mm</td>
<td>1.11”</td>
<td>.97”</td>
<td>16.21”</td>
<td>2.54”</td>
<td>.79”</td>
</tr>
</tbody>
</table>

Unit: inch (mm)

- with data output, with thumb roller
- with data output, without thumb roller
- with data output, with thumb roller
- with data output, without thumb roller
- without data output, with thumb roller
- without data output, without thumb roller
- with data output, with thumb roller
- without data output, without thumb roller

*1 Quantizing error ±1 count is not included.
*2 Display automatically shuts off approximately 20 minutes after completing measurements. Power is automatically turned on when slider is moved.
*3 Patented (in Japan and U.S.A.), patents pending (in China, Germany, United Kingdom, France, Switzerland, and India)
Digital Micrometer with Coolant-proof Function

Coolant Proof Micrometer

New technology Digimatic micrometers for use in coolant-exposed environments.

- Based on new water-proof structural technology, these micrometers provide IP65 protection levels, enabling use in environments exposed to cutting oil, etc.
- Measurement data output function is available with a water-resistant connection cable.
- Oil-resistance materials are used in all plastic components.
- ±0.00005"/±1 µm instrumental error (3"/75 mm or less range models)
- Auto power ON/OFF function.
- Certificate of inspection* is included. (2"/50mm or less range models)

*It is not the type used to obtain calibration certificates.
Optional accessories

- Water-resistance connection cable*2
  1-meter cable: No. 05CZA662
  2-meter cable: No. 05CZA663

- DP-1VR Digimatic Mini-Processor
  No. 264-504-5A
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Note:
All our product details, in particular the illustrations, drawings, dimension and performance details and other technical specifications contained in this publication are to be considered to be approximate average values. To this extent, we reserve the right to make changes in design, technical data, dimensions and weight. Our specified standards, similar technical rules and technical specifications, descriptions and illustrations of the products are correct at the time of printing. The current version of our general terms and conditions also apply. Only offers which we have submitted can be considered to be definitive.