Externally Mounted Indicator Type Snap Meter (en)

Safety Precautions

To ensure operator safety, use this product according to the directions, functions and specifications given in this User's Manual.
Use under other conditions may compromise safety.

⚠CAUTION Shows risks that could result in minor or moderate injury.

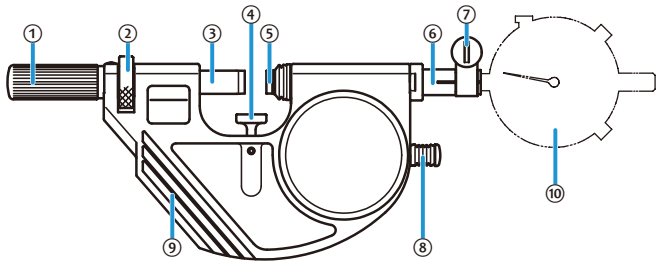
Always handle the measuring faces and other sharp parts of this product with care to avoid injury.

NOTICE Shows risks that could result in property damage.

- Do not use this product for purposes other than measurement.
- Do not disassemble or modify. Doing so will void the warranty.
- Do not use or store the product in a place with sudden temperature changes. Adapt the product to ambient temperature before use.
- Do not store the product in a place with high humidity or a lot of dust.
- Do not use the product in a place where it may contact water, etc.
- Apply anti-rust treatment after use if the product is used in a place where it is directly exposed to splashes of coolant, etc. Rust may cause malfunction.
- Do not apply excessive force or subject to sudden impacts such as dropping.
- Remove dust, cutting chips, etc. and apply anti-rust oil after use.
- Remove any dirt on the product by wiping gently with a soft non-linty cloth. Do not use organic solvents such as cleaning agents or thinner.
- When mounting on a stand for use, fasten the thick part of the frame. Tightly fastening other locations may negatively affect parallelism or indication stability.
- When the pointer exceeds the dial range, do not move the spindle any further forward. Otherwise, damage to the dial indicator may result.

Contents

1. Names of Components



① Spindle clamp knob
② Spindle lead nut
③ Spindle
④ Workpiece stopper
⑤ Anvil
⑥ Indicator holder*
⑦ Clamp screw
⑧ Anvil retraction button
⑨ Frame
⑩ Dial indicator (available as an option)

*Indicator holder mounting diameter: $\phi 8^{+0.015}_{0}$ mm (Metric model)/$\phi 9.53^{+0.015}_{0}$ mm (Inch model)

2. Precautions for Use

■ Precautions and Cleaning after Use

- After use, check each part for damage and clean the entire spindle and anvil with a soft cloth that does not produce fibers.
- If oil, cutting fluid, or liquid itself has adhered to the product, or if the product is very dirty, clean it with a soft, lint-free cloth dipped in a volatile solvent (cleaning alcohol, etc.).
- After use, apply anti-rust treatment to the spindle and anvil, using Micrometer Oil (Part No. 207000).
- If using in places exposed to water-based cutting fluid, always apply anti-rust treatment after cleaning.
- If Micrometer Oil is unavailable and the only option is a commercial product, we recommend low-viscosity anti-rust oil of ISO VG10 or so.

3. Dial Indicator Mounting

Important

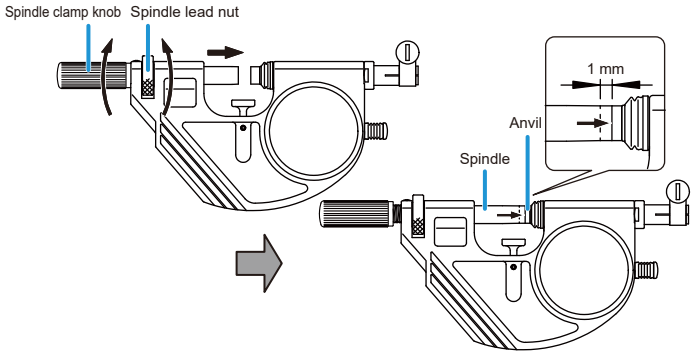
When mounting the dial indicator, do not tighten the clamp screw more than necessary. Otherwise, malfunctions may result.

The figure shows an example with the high-accuracy one-revolution dial indicator (Hicator Series 524) mounted.

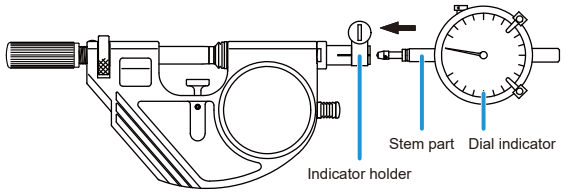
1 Loosen the spindle clamp knob, rotate the spindle lead nut, and push the anvil in with the spindle so that the anvil position is around the midpoint of the operating range (about 1 mm away from contact with the spindle).

Tips

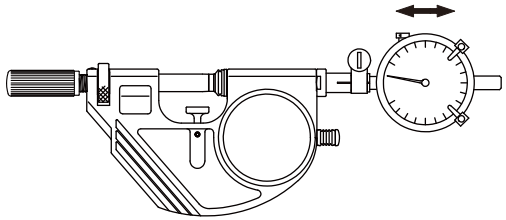
The spindle lead nut rotation is deliberately stiff.



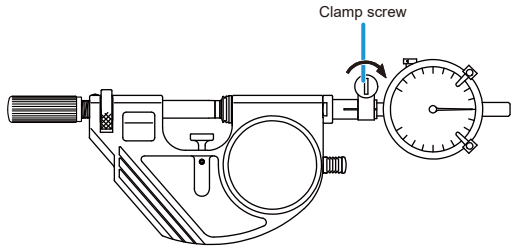
2 Insert the dial indicator stem part into the indicator holder.



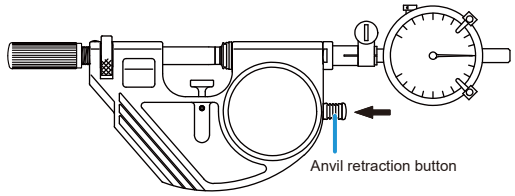
3 Adjust the insertion amount of the dial indicator so that its indicated value is around the midpoint of the measurement range.



4 Tighten the clamp screw at the adjusted position to fix the dial indicator.



5 Push the anvil retraction button and confirm that the dial indicator operates normally.



Mitutoyo

Mitutoyo Corporation 20-1, Sakado 1-Chome, Takatsu-ku, Kawasaki-shi, Kanagawa 213-8533, Japan

Date of publication: May 1, 2024
Printed in Japan

4.Reference Point Setting

Important

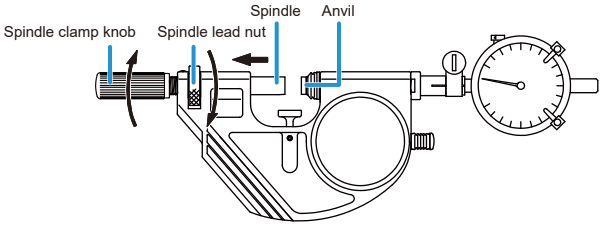
- Be sure to follow the procedure below to confirm and adjust the reference point prior to measuring.
- When setting the reference point for this product, use a calibrated gage (a gauge block, a micrometer standard bar, or a master gage dedicated for the workpiece).
- Remove any dirt or oil from the measuring surfaces of the gage and product prior to setting the reference point.
- Use the same orientation and conditions when measuring and setting the reference point.

The figure shows an example with the high-accuracy one-revolution dial indicator (Hicator Series 524) mounted.

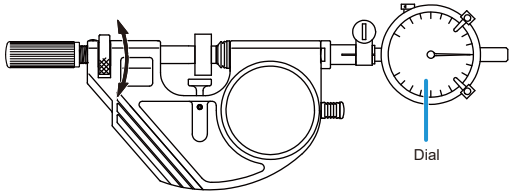
1 Remove any dirt or dust from the measuring surfaces of the gage and the product.
2 Loosen the spindle clamp knob, rotate the spindle lead nut, and move the spindle back until the gage is caught.

Tips

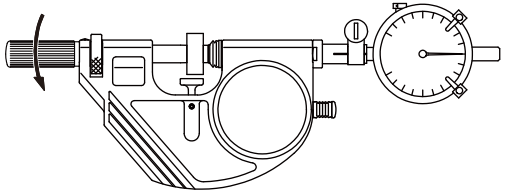
The spindle lead nut rotation is deliberately stiff.



3 Catch the gage between the spindle and the anvil.
4 Rotate the spindle lead nut and adjust the spindle position so that the pointer points to the zero on the dial.



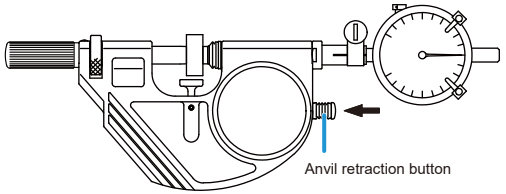
5 Tighten the spindle clamp knob and fix the spindle.



6 Push and then slowly release the anvil retraction button.
» The pointer points to zero on the dial.

NOTICE Shows risks that could result in property damage.

- When pushing the anvil retraction button, support the gage manually to prevent it from falling. Otherwise, the body or gage could be damaged.



7 If the pointer does not point to zero on the dial, make fine adjustments to the reference point with the dial indicator zero adjustment function.

Tips

For details on the dial indicator zero adjustment function, see the instruction manual for the dial indicator mounted on this product.

5.Measurement Method

Measure with the same orientation and conditions as when setting the reference point.

1 Push and hold the anvil retraction button.
» The anvil moves backward.
2 Insert the workpiece between the measurement surfaces and slowly release the anvil retraction button.
» The workpiece is clamped and the pointer points to the measured value.
3 Read the measured value.

Tips

For details on reading measured values, see the instruction manual for the dial indicator mounted on this product.

6.Specifications

- Anvil operating range : 2 mm [0.078 in]
- Indication variation : 0.4 µm [0.00002 in]
- Measuring force : 5 N to 10 N
- Operating temperature : 5 °C to 40 °C
- Storage temperature : -10 °C to 60 °C

7.Paid Maintenance

We recommend periodic inspections to check and maintain the product's accuracy. Also, if any of the following defects occur, please contact the agent where you purchased the product or a Mitutoyo sales office.

- Inconsistent measured values
  Burrs or nicks generated by an impact on the measurement surfaces may affect measurement repeatability.

Mitutoyo
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Date of publication: May 1, 2024
Printed in Japan