

Dial Indicator



Safety Precautions

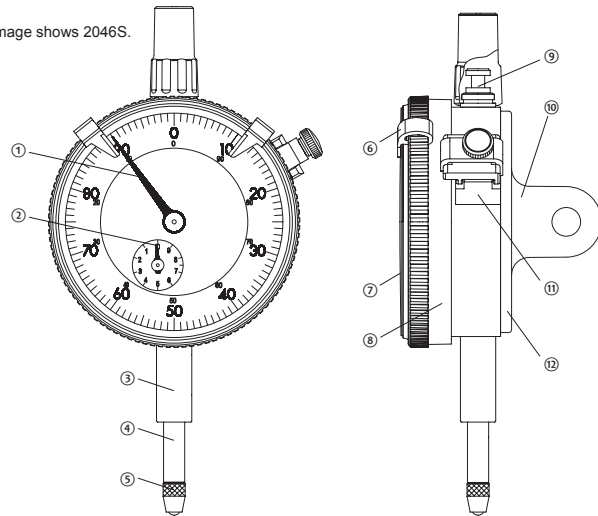
To ensure operator safety, use this product in conformance with the directions, functions and specifications given in this User's Manual. Use under other conditions may compromise safety.

NOTICE

- Do not disassemble or modify. This may cause damage.
- Do not use or store the product in a place with sudden temperature changes. Adapt the product to room temperature before use.
- Do not store the product in a place with high humidity or a lot of dust.
- Do not move the plunger quickly or apply horizontal force.
- Do not apply excessive force or subject to sudden impacts such as dropping.
- If an impact such as falling is applied, inspect accuracy, etc. before use.
- Remove dust, cutting chips, etc. before and after use.
- Apply anti-rust treatment if the product is used in a place where it is directly exposed to splashes of coolant, etc. Rust may cause malfunction.

1. Names of Components

Image shows 2046S.



- | | |
|---|--------------|
| ① Pointer | ⑦ Crystal |
| ② Short pointer
(revolution counting device) | ⑧ Bezel |
| ③ Stem | ⑨ Stop screw |
| ④ Plunger | ⑩ Lug |
| ⑤ Contact point | ⑪ Dovetail |
| ⑥ Limit hand | ⑫ Back |

2. Precautions for Use

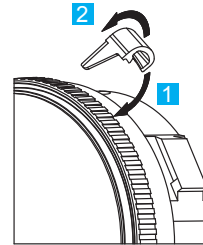
1) Checking items before use

- Before using the product, confirm that the pointer, short pointer (revolution counting device), and plunger move smoothly. Also, confirm that the long and short pointer (revolution counting device) are stable at the dwell position you have set.

- Confirm that the back and contact point are not loosened.
- Be sure to use only the product's stem or lug for mounting.
- When using the stem for mounting, be sure not to tighten too much. If the stem is tightened too much, the plunger may not operate well.
- Use a holder with sufficient rigidity, confirmed with the following procedures. After mounting the dial indicator on it, bring the contact point into contact with a workpiece. Lightly push the bezel with a finger from above or below. The pointer will move. Check whether the pointer returns to the original position.
- For use in a place with fluctuating temperature, frequently check the set position of the pointer with a reference gage such as a master.
- Don't remove the stop screw. Removing the stop screw may cause the plunger to move downward too far and may release the gear engagement.

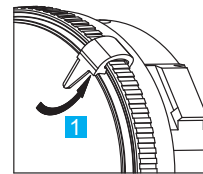
2) Mounting/removing the limit hand

- Mounting



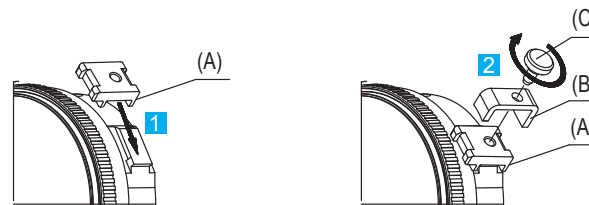
- 1 Hook the limit hand on the bezel.
- 2 Push the limit hand until a click sound is heard.

- Removing



- 1 Remove the limit hand by lifting it in the direction indicated by the arrow.

3) Mounting the external clamp [excluding T type (■ ■ ■ ■ T, TB, T-10)]

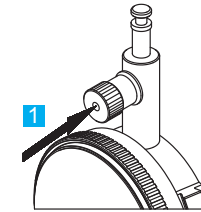


- 1 Fit the clamp bracket (A) into the dovetail.
- 2 Tighten the clamp screw (C) while pressing the clamp bracket (A) with the clamp plate (B).

NOTICE

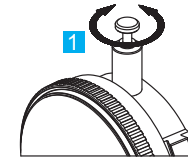
- If using the product horizontally or in a reversed orientation, the clamp screw may loosen and fall off due to vibration, etc.

4) Releasing the pointer held at the peak point (2046S-80, 2046SB-80 only)



- 1 Press in the arrow direction.
⇨ The pointer held at the peak point will be released.

5) Adjusting the pointer position (2048S-10, 2048SB-10 only)



- 1 Turn the upper knob.

NOTICE

The pointer position can be adjusted by turning the upper knob regardless of the vertical movement of the plunger.

3. Measurement Method

- 1 Set the pointer position to the reference point with a reference gage or master. Read the short pointer (revolution counting device) value as well if available.
- 2 Turn the bezel to adjust the zero point as required.
- 3 Measure the workpiece in the same orientation and conditions as the reference point setting.
- 4 Read the pointer value from the front. Read the short pointer (revolution counting device) value as well if available.

NOTICE

If the contact point strikes the workpiece to be measured hard, the workpiece may deform and measurement results may be affected.

4. Precautions after use

- Clean the sliding surface of the plunger with a dry cloth or a cloth slightly moistened with alcohol. Do not lubricate the plunger at this time.
- Clean the crystal with a soft, dry cloth or a cloth slightly moistened with neutral detergent. Do not use anything but neutral detergent.
- The performance of the dial indicator is strongly influenced by usage and storage conditions. We recommend stipulating a maintenance cycle in-house according to usage frequency, environment, storage method, etc., and inspecting the product periodically.
- If the product is repaired or disassembled by a party other than Mitutoyo, its performance cannot be guaranteed.

5. Specifications

- Operation environment: Temperature 0°C to 40°C, humidity 30% to 70% (no condensation)

6. Off-Site Repairs (Subject to Charge)

Off-site repair (subject to charge) is required in the case of the following malfunctions. Contact your nearest dealer or our sales office.

- Poor plunger operation
- Serious pointer dwell position deviation (pointer skipping)
- Poor accuracy