

Depth Gage (Dial Type)



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.

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

The edge of the needle contact point is sharp, and may cause injury. Be especially careful of injury or damaging the edge when handling.

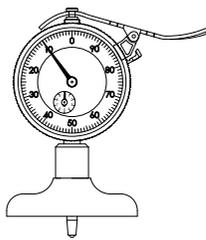
NOTICE Shows risks that could result in property damage.

- Do not disassemble or modify.
- Do not use or store the product in a place with sudden temperature changes. Also, before using the product, allow it to acclimate to room temperature.
- Use in a location with minimal dust, oil, and oil mist, away from direct sunlight.
- 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.
- Avoid loads in the vertical direction relative to the plunger or usage involving torsion to the plunger.
- Do not apply excessive force or subject the product to sudden impacts such as falling.
If an impact is applied, inspect accuracy and operation before use.
- Avoid usage in places directly exposed to splashes of water or coolant.

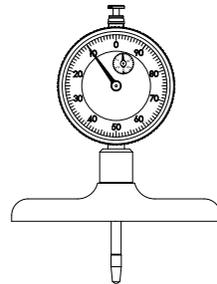
Contents

1. Types.....	Page 1
2. Names of Components	Page 1
3. Preparations before Use	Page 2
4. Measurement Method	Page 2
5. Lifting Lever/Bezel Clamp/Limit Hand	Page 2
6. Precautions after Use.....	Page 3
7. Specifications	Page 3
8. Off-Site Repairs (Subject to Charge)	Page 3

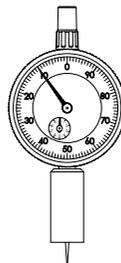
1. Types



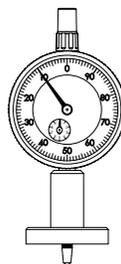
- Code No.
7211A
7212A
7217A
7218A
7220A
7221A



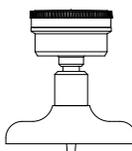
- Code No.
7213A
7214A



- Code No.
7222A



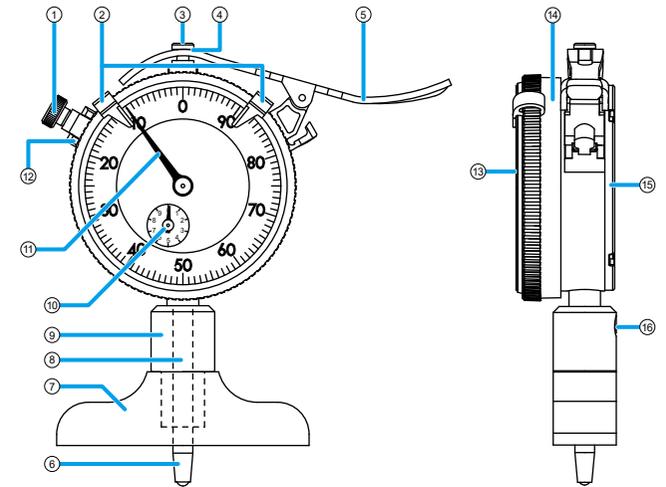
- Code No.
7210A
7223A
7224A



- Code No.
7231A
7237A
7238A

2. Names of Components

The figure shows Code No. 7212A.



- | | |
|--|-------------------|
| ① Bezel clamp (optional for the metric type) | ⑨ Holder |
| ② Limit hand (optional) | ⑩ Short pointer |
| ③ Stop screw | ⑪ Pointer |
| ④ Spacer | ⑫ Dovetail groove |
| ⑤ Lifting lever | ⑬ Crystal |
| ⑥ Contact point | ⑭ Bezel |
| ⑦ Base | ⑮ Back |
| ⑧ Plunger | ⑯ Fastening screw |

3. Preparations before Use

1) Checking items before use

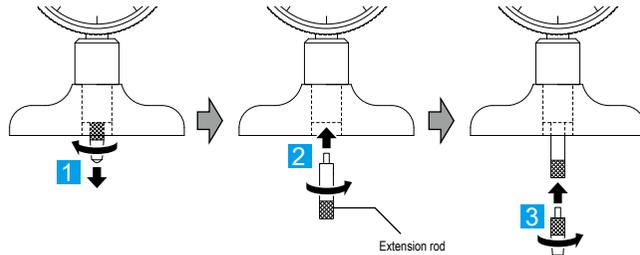
- Check that the pointer, short pointer, and plunger move smoothly in the posture in which this product is used.
- Check that the pointer and short pointer maintain the set stop points when they stop.
- Check that the contact point and screws are not loose.

2) Mounting the extension rods

- Use if the measurement point is too deep for the contact point to reach.
- The rods are supplied with the following models as a standard accessory.
Code numbers: 7211A, 7212A, 7213A, 7214A, 7217A, 7218A, 7220A, 7221A, 7231A, 7237A, 7238A
 - Use a combination of extension rods depending on the dimension to measure.

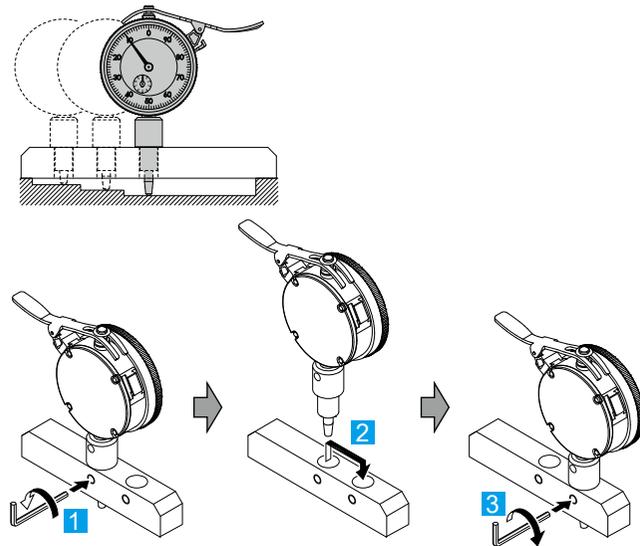
NOTICE Shows risks that could result in property damage.

- If the total length of the extension rods is at least 110 mm, be sure to use this product in a vertical orientation (with the contact point facing downward). The plunger operations may be affected.
- When removing and mounting the contact point or extension rod, apply a soft cloth such as felt to its knurled part (if not knurled, to the area near the plunger), and hold it with pliers or longnose pliers.



- 1 Remove the contact point.
- 2 Mount the extension rod to the body.
- 3 Mount the contact point to the end of the extension rod.

3) Changing the dial indicator-mounting locations (Code numbers: 7220A, 7221A)

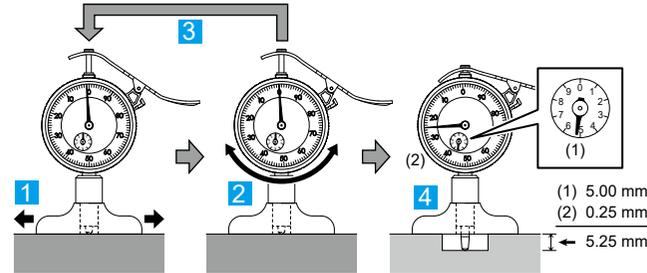


- 1 Loosen the fastening screw on the base with a wrench to remove the dial indicator from the base.
- 2 Change the location of the dial indicator.
- 3 Push in the dial indicator, and then tighten the fastening screw on the base with the wrench. (Tightening torque: 100 to 150 N·cm)

4. Measurement Method

NOTICE Shows risks that could result in property damage.

- Do not allow the contact point to strike the workpiece hard. The workpiece may deform and measurement results may be affected.
- Do not loosen or remove screws and disassemble the product.
- **Be sure to set the reference point before measuring. When using the product in a place with fluctuating temperatures, frequently check the set reference point.**
- **Before measuring, wipe the contact point and the bottom side of the base with a dry cloth or a cloth moistened with a small amount of alcohol to remove dust, cutting chips, etc.**



- 1 Bring the base surface into contact with the reference surface (a surface such as a surface plate with assured flatness), and then slide the base sideways several times until stable, smooth movement is achieved.
- 2 Turn the bezel to adjust the zero point as required.
- 3 Repeat step 1 several times to check that the reference point is not displaced.
- 4 Bring the base surface into contact with the workpiece.

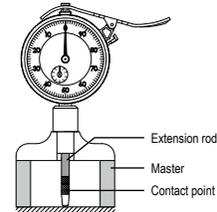
Tips

For code numbers 7211A, 7212A, 7217A, 7218A, 7220A, 7221A, slowly bring the contact point into contact with the workpiece while operating the lifting lever.

- 5 Read the values indicated by the pointer and short pointer. (5.25 mm)

Tips

When an extension rod is mounted, set the reference point with a reference gage or master.



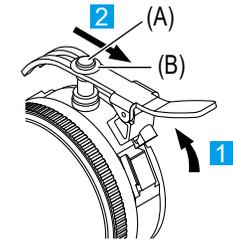
5. Lifting Lever/Bezel Clamp/Limit Hand

1) Mounting/removing the lifting lever (Code numbers: 7211A, 7212A, 7217A, 7218A, 7220A, 7221A)

- Mounting

NOTICE Shows risks that could result in property damage.

Do not remove the spacer (B). The lifting lever operations may be affected.



- 1 Lift the plunger and fit the stop screw (A) between the tips of the lifting lever.

Tips

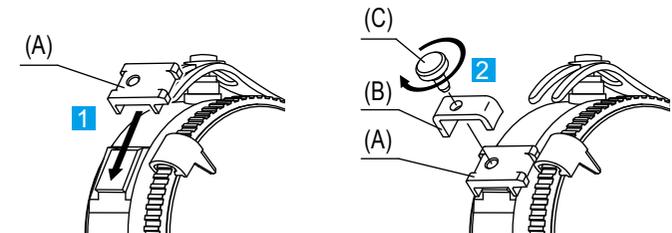
- Insert the tips of the lifting lever under the spacer (B).
- 2 Fit the grooves of the lifting lever into the dovetail groove and move it in the direction of the arrow to secure it.

- Removing



- 1 Push the finger rest part up and remove the lifting lever.

2) Mounting the bezel clamp (optional for the metric type)



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

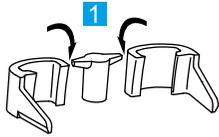
NOTICE Shows risks that could result in property damage.

The clamp screw may loosen and fall off due to vibration, etc.

3) Mounting/removing the limit hand (optional)

Use when clearly displaying the measured value tolerance range.

- Detaching the limit hand (Code numbers: 7231A, 7237A, 7238A)

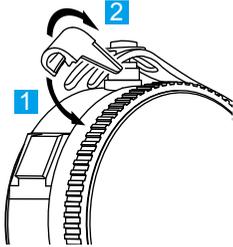


- 1 Detach the limit hand.

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

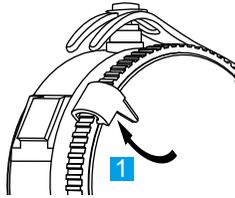
When detaching the limit hand, be careful not to injure yourself on the detached part.

- 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.

6. 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. This may cause malfunction.
- When cleaning the crystal, wipe it with a soft cloth moistened with diluted neutral detergent. Do not use an organic solvent such as thinner, which may cause the product to deform or malfunction.
- When storing this product, apply a small amount of rust preventive oil to the bottom side of the base to prevent it from rusting.
- The performance of this product is strongly influenced by usage and storage conditions. We recommend stipulating a maintenance cycle as in-house rules according to usage frequency, environment, storage method, etc., and inspecting the product periodically.
- Do not store the product in a place with a high temperature or humidity, or a lot of dust or oil mist.

7. Specifications

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

8. Off-Site Repairs (Subject to Charge)

Off-site repair (subject to charge) is required in the case of the following malfunctions. Contact the agent where you purchased the product or our sales office. If the product is repaired or disassembled by a party other than Mitutoyo, its performance cannot be guaranteed.

- Poor plunger operation
 - Serious pointer dwell position deviation (pointer skipping)
 - Poor accuracy
- * If the fundamental structural components or multiple components need to be replaced, we reserve the right to decline the repair.