



## OPERATION INSTRUCTION

### Inside/Outside Dial Caliper Gauge Series 2321/2332

Graduation: 0.01mm  
Accuracy:  $\pm 0.04\text{mm}$

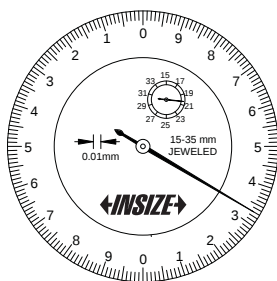
- 1-Measuring head
- 2-Movable caliper arm
- 3-Indicator head
- 4-Indicator plate
- 5-Bezel
- 6-Fixed caliper arm
- 7-Handle



1. Inside dial caliper is used to measure inside size rapidly.
2. It is necessary to calibrate dial caliper with calibrated tool before measuring. Dial caliper measures calibrated tool (Fig.1). If result is equal to the normal value of calibrated tool, dial caliper is ready to measure, otherwise, rotate bezel to set the reading same as the normal value of calibrated tool.
3. During measurement, press handle to make distance between two measuring heads less than the hole's diameter. And then put dial caliper into the measured hole, release handle to make measuring heads to contact the hole completely, shake dial caliper gently along hole's axial and radial to find the minimum value in axial direction and the maximum value in radial direction, then get the result. When measuring width, it is to find minimum value to get the result.
4. During reading, the sight is perpendicular to the scale to avoid parallax reading. The reading: get integer from scale which small pointer points, get decimal from scale which big pointer points.



Fig.1

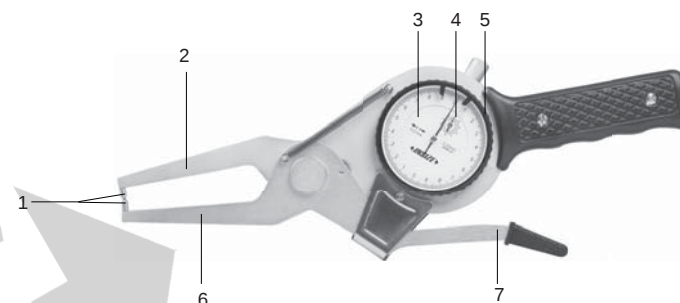


Integer reading: 20mm  
Decimal reading: 0.33mm  
Reading: 20.33mm

5. During measurement, protect measuring heads from excessive operation. After use, oil measuring heads to avoid rust.

Graduation: 0.01mm  
Accuracy:  $\pm 0.04\text{mm}$

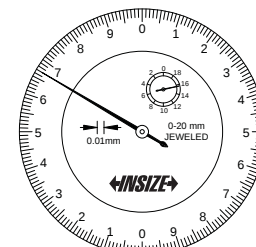
- 1-Measuring head
- 2-Fixed caliper arm
- 3-Indicator head
- 4-Indicator plate
- 5-Bezel
- 6-Movable caliper arm
- 7-Handle



1. Outside dial caliper is used to measure outside size rapidly.
2. It is necessary to do calibration before measuring. It's directly to set zero when the range is 0-20mm: press handle, release handle to make measuring heads to contact completely. If result is equal to zero, dial caliper is ready to measure. Dial caliper's range is more than 20mm, dial caliper is calibrated with calibrated tool (or gauge block). Dial caliper measures calibrated tool (Fig.1). If result is equal to the normal value of calibrated tool, dial caliper is ready to measure, otherwise, rotate bezel to set the reading same as the normal value of calibrated tool.
3. During measurement, press handle to make distance between two measuring heads more than the workpiece's diameter. release handle to make measuring heads to contact the workpiece completely. When measuring diameter, shake dial caliper gently along workpiece's axial and radial to find the minimum value in axial direction and the maximum value in radial direction, then get the result. When measuring width, it is to find minimum value to get the result.
4. During reading, the sight is perpendicular to the scale to avoid parallax reading. The reading: get integer from scale which small pointer points, get decimal from scale which big pointer points.



Fig.1



Integer reading: 15mm  
Decimal reading: 0.67mm  
Reading: 15.67mm

5. During measurement, protect measuring heads from excessive operation. After use, oil measuring heads to avoid rust.

MN-2321-C/E