

## **OPERATION INSTRUCTION**

## Digital Internal Caliper Gage Series 2151

Resolution: 0.01mm/0.0005"

Accuracy: ±0.04mm



1-Measuring head

2-Movable caliper arm

3-"TOL" button

4-"M" button

5-"ZERO" button

6-"in/mm" button

7-"ABS" button

8-Fixed caliper arm

9-Handle

- 1. Digital internal caliper gage is used to measure inside size rapidly.
- 2. Buttons:

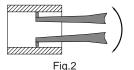
Long press: longer than 2 seconds; short press: less than 2 seconds.

- TOL---Short press to enter into tolerance measuring mode. Under this mode, "▶" at the upper right corner blinks if the reading is larger than the upper limit; "◄" at the top left corner blinks if the reading is less than the lower limit.
  - ---Long press to enter into tolerance set mode. "▼" appears and the last digit blinks. Short press "ZERO" button to position the digit, the digit blinks when it is positioned. Short press "in/mm" button to change the digit from 0 to 9. After setting the lower limit, short press "TOL" button, "▲" appears and the last digit blinks. Set the upper limit as setting the lower limit way. Short press "TOL" button to finish set and enter into tolerance measuring mode.
    - If the lower limit is larger than the upper limit, "EEE" will appear and the digital indicator enter into tolerance set mode again automatically.
- M---Short press, "MAX" appears and enter into maximum reading tracking mode. Short press again, "MIN" appears and enter into minimum reading tracking mode. Short press for the third time, "TIP" appears and to get the difference between the maximum and minimum reading of one measurement.

- in/mm---Short press for inch and metric reading conversion
  - ---Long press to change measuring direction. "▲" appears, the value increases if pressing handle. "▼" appears, the value decreases if pressing handle.
- ABS---Short press for absolute and relative measuring mode conversion. The normal mode is absolute measuring mode("ABS" is on display). Short press the button to enter relative measuring mode at any point(this point is called "relative zero point"), "ABS" disappears and the reading is zero. In this mode, the reading is the distance to the "relative zero point". Press the button again to return back to absolute measuring mode.
  - ---Long press to enter into initial reading set mode. "SET" appears and the last digit blinks. Short press "ZERO" button to position the digit, the digit blinks when it is positioned. Short press "in/mm" button to change the digit from 0 to 9. Long press "ABS" button to exit set mode.
- ZERO---When display is powered on: short press to get initial reading on absolute measuring mode("ABS" is on display); long press to turn off display.
  - ---When display is powered off: short press to turn on display.
- 3. It is necessary to calibrate dial caliper with calibrated tool(setting standard ring or micrometer) before measuring. Caliper gage measures calibrated tool(Fig.1), set the reading same as the normal value of calibrated tool.



4. During measurement, press handle to make distance between two measuring heads less than the hole's diameter. And then put caliper gage into the measured hole, release handle to make measuring heads to contact the hole completely, shake caliper gage gently along hole's axial direction and radial direction to find the minimum reading in axial direction(Fig.2) and the maximum reading in radial direction(Fig.3), then get the result. When measuring width, it is to find minimum reading to get the result.





Fia.3

- 5. One battery can last for one year use. If there is nothing on display or digits blurring, battery voltage is too low, please replace battery. If the digits do not change when buttons are pressed or movable caliper arm is moved, take out battery and put it back after 1 minute. If the indicator is not be used for a long period of time, please remove the battery. Otherwise, liquid may leak from the battery and damage the indicator.
- 6. During measurement, protect measuring heads from excessive operation. After use, oil measuring heads to avoid rust.

MN-2151-C/E