

Caution: Prevent liquid from getting into indicator to damage electronics.

Code	Range	Digital indicator resolution	Straightness measurement accuracy
2144-200	200mm	0.001mm/0.00005"	3μm

Parallelism of top and bottom surfaces of granite holder: 2μm
Flatness of top and bottom surfaces of granite holder: 1.5μm

- 1-Digital indicator
- 2-Stainless steel base
- 3-Granite holder



1. Used for measuring the straightness and flatness of workpiece.
2. When the digital indicator is installed with the stainless steel base, adjust the position so that the digital indicator sleeve extends about 3mm (fig. 1); When measuring, keep the sleeve moving along the edge of the granite inner groove.

3. Measurement
 - Clean the working surface before measuring.
 - Choose two suitable gage blocks with same height, pad between the tested workpiece and the granite holder (fig. 2)
 - Install the digital indicator on the stainless steel base. After the completion of installation, the bottom surface of stainless steel base shall be in contact with the upper surface pressure of the granite holder. Then set the digital indicator to zero.
 - Move the stainless steel base back and forth at a constant speed and get the reading.

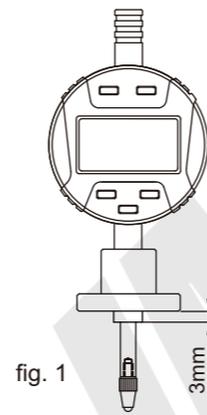
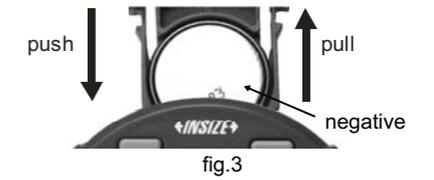


fig. 1



- Display
- 1-Analog pointer
 - 2-Tolerance sign
 - 3-Analog pointer resolution
 - 4-Metric mode
 - 5-Inch mode
 - 6-Preset mode
 - 7-Absolute measuring mode
 - 8-Tolerance measuring mode
 - 9-LED light
 - 10-Measuring direction sign
 - 11-Difference between the max. and min. measuring value
 - 12-Minimum value track measurement
 - 13-Maximum value track measurement
 - 14-Set upper/lower limit

4. Install and remove battery (CR2032), the negative side of battery should face out (fig. 3).



5. Display can be rotated by 320°.

6. Buttons:
 - Long press: longer than 2 seconds; short press: less than 2 seconds.

- M/TOL---Long press until "TOL" appears to enter 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. Short press "M/TOL" button to exit tolerance measuring mode.
- Long press until "TOL" and "▼" appears to enter tolerance set mode. 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 "M/TOL" button, "▲" appears and the last digit blinks. Set the upper limit as setting the lower limit way. Short press "M/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.
- Short press, "MAX" appears and enter maximum reading tracking mode. Short press again, "MIN" appears and enter minimum reading tracking mode. Short press for the third time, "TIR" 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 the spindle moves up. "▼" appears, the value decreases if the spindle moves up.
- 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 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.
- DATA---Short press for data port output current display value, When the transmission is successful, the LED light will be on once, but if the transmission is failed, the LED light will not be on.
- Long press for switch analog resolution.

- Shutdown time setting:
After shutting down, press and hold the ABS button, short press the ZERO button to turn on, after displaying "----", release the ABS button to enter the shutdown time mode setting, the default display is "6.0", which means it will automatically shut down after 6 hours of standing, short press ABS The key can switch the value, and it can switch between 0 and 6 hours every 0.5 hour. When the switch display is "0.0", it means that the gauge will not automatically shut down.

7. After measurement, please oil the contact point. The spindle should not be oiled, otherwise, the movement of the spindle will not be smooth.
8. If the digital indicator drops or be shocked, please inspect the measuring accuracy before using.

9. Note:
 - During measuring, the pressure should not be too large or too small, ensure that the bottom surface of the stainless steel base is in full contact with the upper surface of the granite holder.
 - During measuring, in order to ensure the accuracy of the measurement results, the pressure must be kept consistent during the movement.
 - After use the digital indicator and the stainless steel base should be oiled to prevent rust; the granite holder needs to be wiped clean, pay attention to protection.

10. If the battery symbol appears on the display, battery voltage is too low, please replace battery. If the digits do not change when buttons are pressed or spindle 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.

11. Working temperature is 0-40°C/32-104°F, relative humidity should not exceed 80%.