Resolution: 0.01mm/0.0005″

Code	Width of keyway	Diameter of shaft	Accuracy
1531-200	3-250mm	Ø6-350mm	±0.05mm

1-Fine adjustment device
2-Keyway locking screw
3-Locking screw
4-Display screen
5-Measuring jaw
6-Keyway measuring jaw
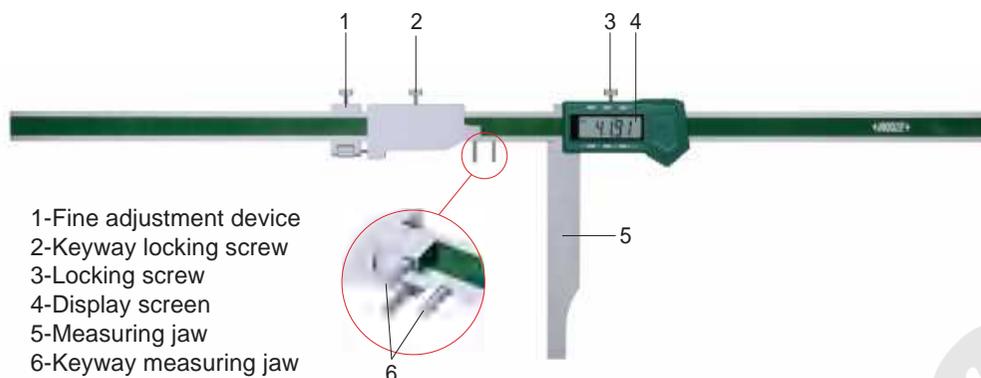
1. Install battery:

---Remove the battery cover(fig.1)

---Put CR2032 battery into battery house, the positive side of battery (+) should face out(fig.2)

---Close the battery cover

fig.1

fig.2

2. Buttons

mm/in---short press(<2 sec.): for inch and mm conversion

ABS---for absolute and relative measuring mode conversion. The normal mode is absolute measuring mode. Short press the button to enter relative measuring mode at any point (this point is called "relative zero point"), "INC" appears 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.

ON/OFF---short press: to turn on/off

"+", "-", "SET"---set initial reading(default inital reading is zero). Long press(>2 sec.) "SET" button and "SET" blinks, Long press "+" or "-" button to increase or decrease the reading, short press "SET" button to finish setting, "SET" disappears. During absolute measurement, press "SET" button to get the preset value.

3. Measuring：

---Extend the keyway measuring jaw into the slot to be measured, adjust the fine adjustment device to make the keyway measuring jaw contact the slot, and tighten the keyway locking screw.

---Move the caliper jaw to make contact with the workpiece to be measured (fig 4), and record the displayed value 'a' at this time.

---Flip the caliper 180°, extend the keyway measuring jaw into the slot to be measured, adjust the fine adjustment device to make the keyway measuring jaw contact the slot, tighten the keyway locking screw, move the caliper jaw to make contact with the workpiece to be measured (fig 5), and record the symmetry displayed value 'b' at this time. Calculate the difference between the two readings '$\triangle$'.

---The above operations should be performed once within the radial cross-sections at both ends of the keyway length. Take the larger absolute value of the difference in cross-sectional readings between the two measurements as $\triangle 1$, and the smaller absolute value as $\triangle 2$.

---Calculate the symmetry error 'f' of the shaft keyway according to the provisions of Annex A.12 of GB/T 1958-2004 shape and position tolerance inspection regulations.

$$f = \frac{2\triangle_2 h + d(\triangle_1 - \triangle_2)}{d-h}$$

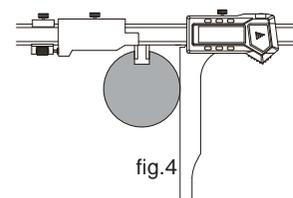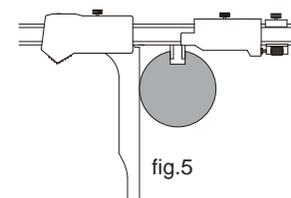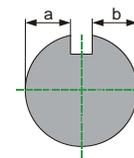In the formula：d—shaft diameter，h—Keyway depth

fig.4 fig.5 fig.6

a=b
slot is at the center

a>b
slot is offset

a<b
slot is offset

a≠b
slot is warped

4. Optional data output cable (7315-22, 7302-22).

MN-1531-200-C/E

V0

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