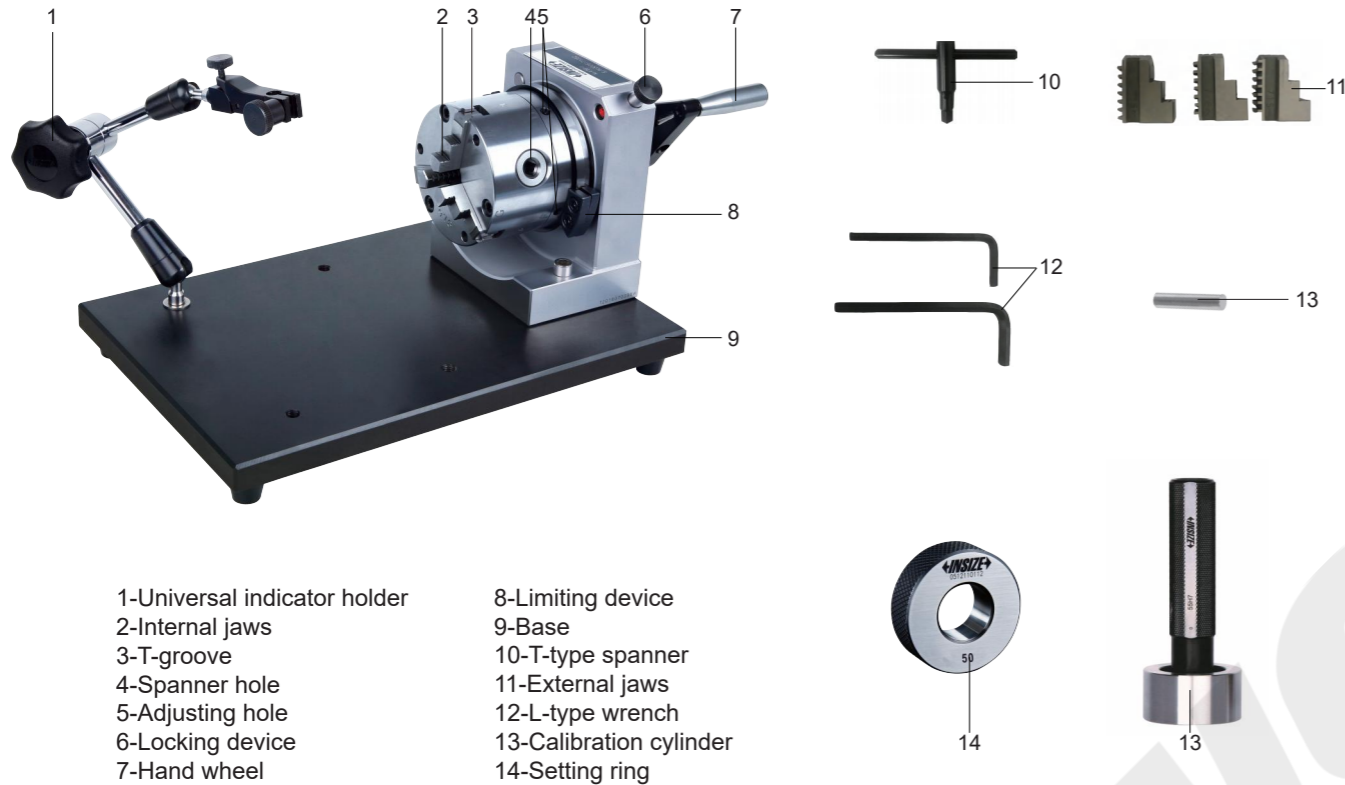


OPERATION INSTRUCTION

Concentricity Gage

Code	Applicable Inside Diameter	Applicable Outside Diameter	Accuracy
4786-2	Ø24-64mm	Ø2-70mm	3µm



- 1-Universal indicator holder
- 2-Internal jaws
- 3-T-groove
- 4-Spanner hole
- 5-Adjusting hole
- 6-Locking device
- 7-Hand wheel
- 8-Limiting device
- 9-Base
- 10-T-type spanner
- 11-External jaws
- 12-L-type wrench
- 13-Calibration cylinder
- 14-Setting ring

1. Concentricity gage is mainly used to measure cylindrical workpiece's roundness and concentricity.

2. Install jaws:

- Put T-type spanner into spanner hole and rotate the T-type spanner (fig. 1). In the beginning of the plane thread appears in 1 T-groove, place the corresponding 1 jaw in 1 T-groove.
- Install the 2 and 3 jaws successively according to above method.
- Continue to rotate T-type spanner until the jaw threads fully contact with all the threads in the plane threads of the chuck.
- Finish installation (fig. 2).



3. Calibration:

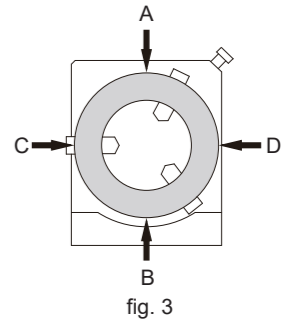
- When calibrating, it is necessary to keep the jaws and setting ring clean.
- Put the T-type spanner into the spanner hole, turn the T-type spanner to adjust the internal jaws to shrink to the appropriate position, and install the setting ring.
- Turn the T-type wrench in reverse direction to make the step surface of the internal jaws fully fit with the measuring surface of the setting ring.
- Adjust the indicator holder to make the indicator probe contact the measuring surface of the setting ring, and turn the hand wheel to observe the reading of the indicator. When adjusting hole A is turned to the top position (Fig. 3), set the reading of the indicator to zero, and when adjusting hole B is turned to the top position, record the reading of the gage. If A is greater than B,

loosen adjusting hole B first, then turn adjusting hole A to the top, use L-type wrench to turn adjusting hole A until the reading of indicator is half the difference between A and B, turn the hand wheel to make adjusting hole B to the top position, observe the reading and tighten adjusting hole B, repeat the above operation until the deviation of A and B readings is less than 3µm. If B is greater than A, adjust adjusting hole B until the deviation of A and B readings is less than 3µm. The adjustment mode of C and D adjusting holes is the same as that of A and B adjusting holes.

Note: the calibration cylinder is installed with external jaws, and the calibration method is the same as the setting ring.

Attention:

- Calibration with setting ring when measuring internal dimension; Calibration with calibration cylinder when measuring external dimension.
- The clamping position during measurement shall be consistent with that during calibration, and recalibration is required if changing to different positions.



3. Usage:

- Holding probe as below ways.

Caution: To avoid the measurement error which caused by fine adjustment elasticity, the lever needle and the fine adjustment screw should be located at the opposite side(fig.4);

When working, adjust the fine adjustment screw so that component 1 is between the top of thread and the middle of thread, to increase the elasticity of head, do not let component 1 be at the bottom of thread(fig.5).

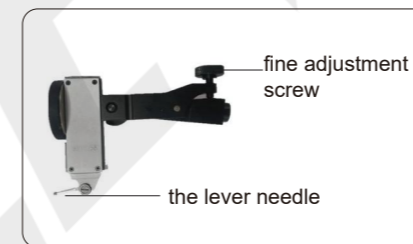


fig.4

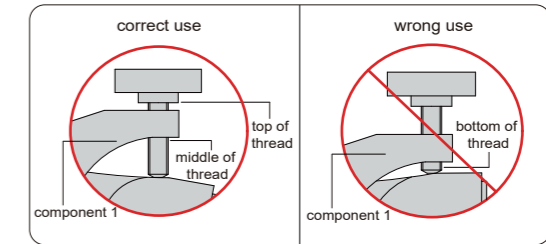


fig.5

4. Measurement:

- It is necessary to clean jaws and workpiece before measurement
- Install the workpiece and measure (fig. 6).
- Dial test indicator should be prepressing, the direction of the measuring point should be closed to the workpiece's axes as far as possible, rotate the hand wheel, get the result from the indicator after the pointer is steady.



for cylinder



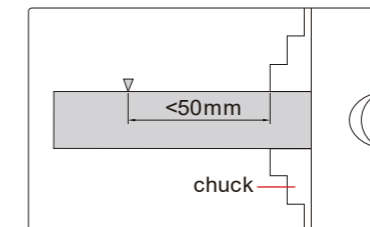
for tube

fig. 6

5. Notices:

- Install the jaws successively as per the numbers on the jaws. Keep the numbers on the jaws consistent with the numbers on the chuck during installation.
- During installation of the workpiece, the distance between measuring point and chuck should be < 50mm, accuracy can be controlled within 3µm.

to ensure the accuracy 3µm, the distance between measuring point and roller should be <50mm



- During measurement, get the reading after the pointer is steady.
- Measuring faces should be carefully protected from being scratched or damaged. It should be oiled to prevent rust after use

6. Optional accessory: Dial test indicators.

MN-4786-C/E