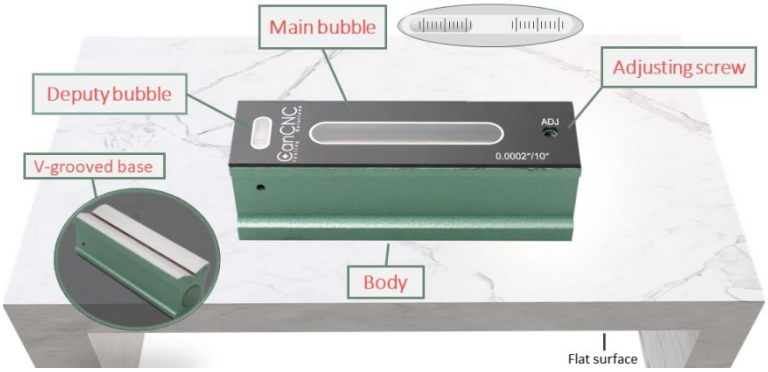
# CanCNC Professional Master Precision Level User Manual

## Usage

Professional Master Precision Level is used for checking the straightness or parallelism of the surface of machine tools and other equipment, and the correctness of horizontal and vertical installing positions. You can also use it to measure an object's inclination.

## Structure




## Setting

Put the level on a reasonably stable and flat surface. It does not have to be perfectly horizontal as far as it does not move. A square granite surface plate is good but any other flat surface like a machine bed or welding table is also acceptable.

Before the operation, make sure the work surface is sturdy and clean. Wipe the surface to remove all dirt and dust.

Remember to ensure the level gets back to the same position after each rotation.

## Warning

- Make sure the level, surface plate and work area are clean. Remove dust and dirt.
- Avoid shocks by handling with care. Keep it at a constant room temperature and insulate it with heat and airflow.
- Wait for a stationary bubble before reading the level.
- Read the bubble with a vertical observation to avoid producing parallax.
- Process anti-rust procedures after measuring. Pay attention to shockproof and humidity when placing it.

## Adjustment

Since the level is made of materials with coefficient of thermal expansion, there could be deviation due to impacts during transportation. So, we must check if the level is ready to use.

Fig.1

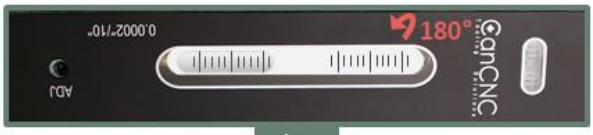


Fig.2

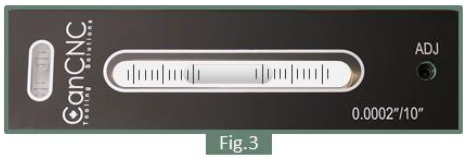


Fig.3

| | |
|---|---|
|  | Place the level on a clean flat surface that does not move. After the level is stationary, start reading. If the surface is horizontal, the bubble should be flowing in the middle between two long reference lines like Fig.3. If the surface is not horizontal, the bubble could be at one end, such as flowing at the right like Fig.1, which needs adjustment. Use a wrench to turn the adjustment screw under the red cap to adjust the level. |
|  | For example, when the bubble is at the right like Fig.1, mark down the measurement of the bubble's position. Slightly rotate the adjusting screw with a wrench by a small degree until the bubble reaches the middle between two long reference lines. The bubble will move gradually. Watch the screw's turning direction and the bubble movement carefully. |
|  | Rotate the level by 180° end-to-end. If the bubble is still at the same position as Fig.2 or has not reached the middle yet, mark down the reading of bubble's location between these deviations and keep adjusting with the wrench. |
|  | If the level is like Fig.3 and the difference between the two measurements is the same or at a position that the division is less than 1/2, the level is horizontal and ready to use. If the level still seems incorrect, repeat the above steps. |

## Calibrating

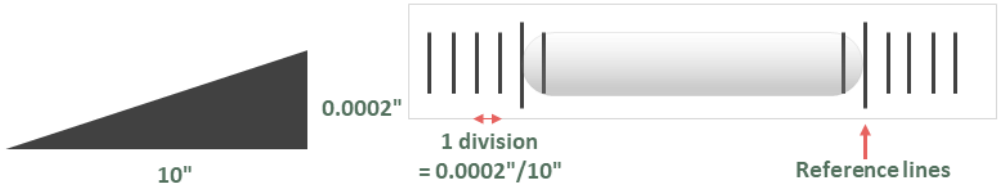

To determine whether calibration is correct, see if the bubble flows in the same position in both two measurements with the same number of deviations after the level is rotated by 180° every time, and the average measurements of these two are true horizontal levels. And if the bubble flows between the same number of deviations when the level is rotated by 180° every time, it does not have to be at the center.

If the bubble flows in different positions in two measurements, the level is not calibrated successfully. Repeat the above steps until the level is calibrated.

### *Measuring increment*


1. Mark down the datum of the two measurements, create graphs and see if these two curves are symmetrical.
2. Calculate the increment.
3. To measure the increment, slide the level along the surface.
4. Mark down the deviations.

### *Inclination calculation*




Inclination = 0.0002”/10” x length x no. of division deviations

This is an example of calculating inclination of 1 division deviation:

- S908-C606 = 0.0002"/10" x 6" x 1= 0.00012“
- S908-C608 = 0.0002"/10" x 8" x 1= 0.00016“
- S908-C612 = 0.0002"/10" x 12" x 1= 0.00024"