

Code		Length
Sensitivity 0.02mm/m(=0.001°)	Sensitivity 0.05mm/m(=0.0029°)	
4903-150A	4903-C150	150mm
4903-200A	4903-C200	200mm
4903-300A	4903-C300	300mm



1. Before using, the block level working surface and workpiece surface should be wiped clean with a clean soft cloth to avoid measurement error caused by tiny particles and sundries. In order to avoid the influence of ambient temperature, the block level and workpiece must be at the same temperature for at least 3 hours.

2. Set zero

a) Slide (not put) the level on a clean, plane and smooth surface. '-' side is on the left and '+' side is on the right (Fig.1).

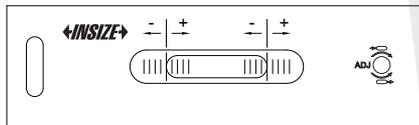


Fig.1

b) After the bubble stops moving, read A on the scale (Fig.2).

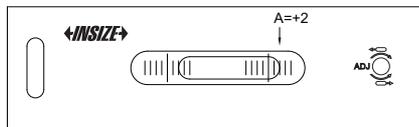


Fig.2

c) Turn the level 180°, slide (not put) the level at the same position of the surface (Fig.3).

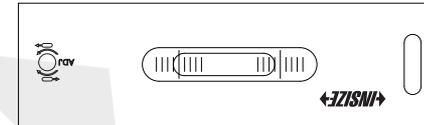


Fig.3

d) After the bubble stops moving, read B on the scale (Fig.4).

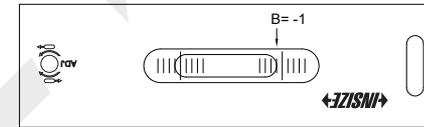


Fig.4

e) If $A-B \leq 1/2$, the level can be used. If $A-B > 1/2$ (in the above example, $A-B=3$), rotate the adjust screw lightly until the bubble moves to the middle between A and B (Fig.5).

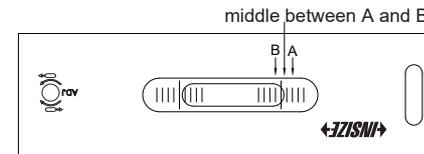


Fig.5

Note:

Two measurements should be read on the same side. The line of sight should be perpendicular to the leveling bubble when reading the measurement results to avoid parallax.

Zero Adjustment: turn the wrench clockwise and the bubble moves left; turn the wrench counter-clockwise and the bubble moves right (Fig. 6).

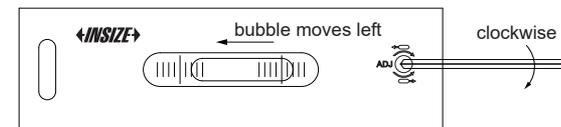


Fig. 6

3. Measuring

- a) Place the block level on the surface of the workpiece. For more precise measurement, it is recommended to turn the level 180° as described below.
- b) After the bubble stops moving, read C on the scale (Fig.7).

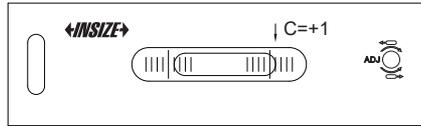


Fig.7

- c) Turn the level 180°, slide (not put) the level at the same position of the surface (Fig.8).

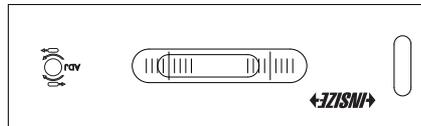


Fig.8

- d) After the bubble stops moving, read D on the scale (Fig.9).

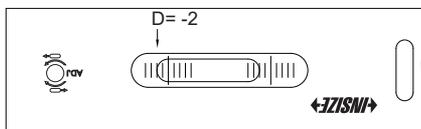


Fig.9

- e) The measurement is the average of readings at both ends of the bubble, it should be $(C+D)/2$.

In the above example: $C=+1$, $D=-2$, $(C+D)/2 = -1/2 \text{div}$.

For sensitivity of 0.02mm/m , the result is: $-1/2 \times 0.02 \text{mm/m} = -0.01 \text{mm/m}$

For sensitivity of 0.05mm/m , the result is: $-1/2 \times 0.05 \text{mm/m} = -0.025 \text{mm/m}$

4. When measuring, avoid the influence of temperature, do not hold the level for a long time, and avoid the influence of direct sunlight, haze and other factors on the level during measurement.
5. V-groove on bottom for shafts (shafts dia. 15~68mm).
6. In use, the level should be held lightly to avoid bumping. After use, the metal surface should be oiled to protect from rust.

Note:

- a) When the level is hit or other external forces lead to zero deviation is large, you can use the zero wrench to adjust level zero.
- b) The two red painted screws on the front and back of the side of the level are not adjustable.

