EN

PRECISION ENGINEER SPIRIT LEVEL

ART.: 10458xx

The Diesella spirit level is primarily used to check the straightness of machine guideways and other equipment, as well as to ensure correct horizontal and vertical installation.

Structure and Features

The spirit level consists mainly of a main body with a bubble vial, a secondary bubble vial, and a zero adjustment mechanism.

Measurement:

1. **Positioning**: Place the working surface of the spirit level close to the surface to be tested.
2. **Stabilization**: Wait until the bubble stabilizes.
3. **Reading**: Read the scale, which indicates the inclination per meter.

Calculation of Actual Inclination

To calculate the actual inclination over a length (L), use the following formula:
Actual Inclination = Scale Reading × L × Number of Divisional Deviations

Example: If the scale reading is 0.02 mm/m, the length (L) is 200 mm, and there are 2 divisional deviations:
Actual Inclination = (0.02 / 1000) × 200 × 2 = 0.008 mm

Zero Setting and adjustment

To ensure accuracy, the spirit level's zero position must be checked and adjusted before use.

1. **Preparation**: Clean the working surface and place the spirit level on a stable, horizontal surface with a solid base.
2. **Zero Position Check:**
   - When the bubble is stable, set one end (e.g., the left end) to zero.
   - Rotate the spirit level 180 degrees and place it back in the same position.
   - Read the value at the same end. If the reading differs from zero, the zero position error is half of this reading.

Adjustment Methods

If the zero position is incorrect, follow these steps:

1. Open the Cover Plate: Use a special key to carefully turn the adjustment nut.
2. Adjust the Screws: Adjust the 120° adjustment screws. After adjustment, if the difference between the two readings does not exceed 1/2 division, the adjustment is correct. Wait 2–4 hours to ensure no further change before using the spirit level. Tighten the adjustment nut after finalizing the adjustment.

Polishing

Polishing the working surface can help fine-tune the zero position, especially for fixed-type spirit levels.

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Service Notes

- Before use, clean the measuring surface and the working surface of the spirit level, and check the zero position.
- Keep the spirit level away from heat sources and drafts during use. Temperature changes can cause measurement errors. If the measuring environment's temperature differs from the storage environment's, store the spirit level in the measuring environment for 2 hours before use.
- After placing the spirit level on the measuring surface, wait until the bubble stabilizes before taking a reading.
- During reading, observe vertically to avoid parallax errors.
- After use, apply anti-rust treatment, and store the spirit level in a shock- and moisture-proof environment.