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Material Testing Solutions

Verticality Tester

PER-01

PER-02*

PER-02 is a simpler version without hand roller.

Accurate Verticality Measurement for Bottles, Vials, and Containers Worldwide

Precision That Defines Stability — Ensure Every Bottle Stands Perfectly Straight.

Decades of Innovation in Material Testing

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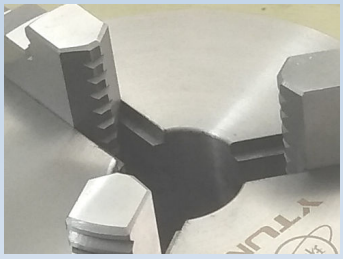
The **Verticality Tester (Perpendicularity Tester)** is a precision instrument designed to measure the deviation of bottles, vials, and containers from the true vertical axis. Accurate verticality ensures that packaging stands upright, functions properly on automated lines, and meets strict quality requirements in industries such as:

- Food and beverage
- Cosmetics and personal care
- Pharmaceuticals
- Chemical and household products
- Packaging R&D laboratories

This instrument is widely used by bottle manufacturers, filling plants, QC laboratories, regulatory testing facilities, and research institutions.



WHY VERTICALITY MATTERS

Verticality is one of the most important dimensional parameters in packaging.
Poor verticality may cause:

- Bottles tilting or wobbling on shelves
- Label misalignment during high-speed labeling
- Capping or sealing failures
- Increased production rejects
- Jamming on filling lines
- Reduced brand appearance quality

A perfectly vertical bottle ensures:

- Smooth operation on automated machinery
- Consistent labeling and closure performance
- Improved consumer perception
- Compliance with industry standards

The Verticality Tester helps manufacturers maintain these crucial standards with confidence.

APPLICATIONS

The tester is suitable for:

- PET bottles
- Glass bottles
- Vials and ampoules
- Cosmetic jars
- Pharmaceutical containers
- Chemical packaging
- Specialty laboratory bottles
- Low-volume and small-diameter containers

Common names for this type of instrument include: **Bottle Deviation Tester**, **Coaxial Tester**, **Coaxiality Tester**, and **Circle Runout Tester** (for vials).

HOW IT WORKS – WORKING MECHANISM

The Verticality Tester uses a rotating platform and a precision gauge to measure the runout (deviation) of a bottle's mouth relative to its axis.

Measurement Procedure

1. **Secure the bottle** on the rotating plate.
2. **Position the dial gauge** so it gently contacts the bottle's mouth.
3. **Rotate the bottle 360 degrees** smoothly.
4. **Record the maximum and minimum readings** displayed by the gauge during rotation.
5. Calculate verticality deviation: **Vertical Axis Deviation = (Maximum – Minimum) ÷ 2**

This process gives an accurate measure of how straight the bottle stands relative to its base.

Technical Features

- **Convenient Probe Adjustment**

Quick and precise fine-tuning allows the operator to position the probe effortlessly for different bottle sizes.

- **Exceptional Reading Precision**

High-resolution digital gauges provide accuracy as fine as 0.001 mm.

- **Smooth, Consistent Rotation**

The balanced rotary platform ensures stable, even sample rotation for reliable measurements.

- **Flexible Sample Compatibility**

Supports a wide range of bottle diameters and heights. Custom fixtures are available for irregular shapes.

- ***Optional* Digital Output**

Measurement data can be exported directly to **PC Excel** or SPC software for analysis and traceability.

- **Robust, Laboratory-Grade Design**

Engineered for long-term accuracy, minimal maintenance, and daily industrial QC use.

Specifications

Sample Diameter	5 mm – 145 mm (customizable)
Test Range	0 – 12.7 mm (customizable)
Division Value	0.01 mm or optional 0.001 mm
Measurable Height	15 mm – 300 mm (customizable)
Power	Li-ion button cell

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