

Dial Test Indicators (DTIs)

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Measuring & Inspection



Photo via Wikimedia Commons (DialTestIndicator2050-08.jpg)

A dial test indicator (DTI) is a precision gauge with a lever or plunger that measures small movements, runout and flatness down to 0.01 mm or finer. It is used on machine tables, lathe chucks and workpieces to set up, align and check accuracy.

Key Features

- Graduations from 0.01 mm to 0.001 mm
- Plunger and lever (test indicator) styles
- Rotating face for zeroing at any angle
- Jewelled movements for smooth reading
- Fits magnetic bases and height stands

Typical Uses in the Workshop

- Check lathe chuck and workpiece runout
- Align machine tables and fences square
- Measure flatness, parallelism and backlash
- Centre workpieces in 4-jaw chucks

Safe Operation

1. Mount the indicator firmly on a magnetic base
2. Sweep the workpiece and watch the needle movement
3. Zero the dial at the reference position
4. Read the total indicated runout as the difference
5. Record readings before and after adjustment

SAFETY NOTES

- Keep the indicator out of swarf and chips
- Never force the plunger against the work
- Do not drop the instrument - it is delicate
- Store in its box with the plunger protected
- Check the mount is tight before measuring

Maintenance & Consumables

- Wipe the plunger and body clean after use
- Check the bezel rotates and locks smoothly
- Calibrate against slip gauges or a stand
- Store with the plunger retracted
- Replace the protective cap on the stylus

Specification & Buying Notes

Buy quality DTIs with 0.01 mm graduation in protective boxes, plus a robust magnetic base with fine adjustment. A lever-style DTI is more versatile than a plunger for school work.