

Theodolite

The function of a Theodolite is to measure Horizontal angle and vertical angle. Telescope used to see the object, Horizontal plate for measuring horizontal angle and vertical plate used for measuring vertical angle. The traditional use has been for land surveying, but they are also used extensively for building and infrastructure construction, and some specialized applications such as meteorology and rocket launching. It consists of a moveable telescope mounted so it can rotate around horizontal and vertical axes and provide angular readouts.

These indicate the orientation of the telescope, and are used to relate the first point sighted through the telescope to subsequent sightings of other points from the same Theodolite position. These angles can be measured with great accuracy, typically to mill radian or seconds of arc.

From these readings a plan can be drawn, or objects can be positioned in accordance with an existing plan. The modern Theodolite has evolved into what is known as a total station where angles and distances are measured electronically, and are read directly to computer memory. The portable surveying instrument that we call a Theodolite was invented in the middle of the sixteenth century by Leonard Digges of Kent, who gave it a name that was expressed in the common Latinate form of the time: theodolites.



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