Bull's eye levels and screw-on levels

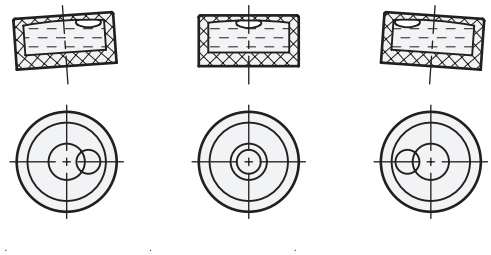
Technical information

Definition of terms

A spirit level is hollow body filled with a fluid and a gas bubble which is used to check the horizontal position of an object. The position of the gas bubble in the fluid shows the angle and the direction at which the object is inclined in relation to the horizontal level.

The function

The hollow body containing the fluid and the gas bubble has a defined radius at its topic side, causing the gas bubble to float by its buoyancy always to the highest point.
The transparent upper section normally carries markings or a circle centric to the biddle position. If the gas bubble is centered precisely inside the merking and if the air level is properly adjusted, the object to be checked is in the horizontal position.

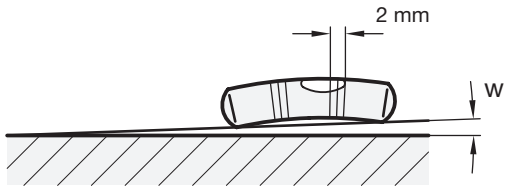


Types of spirit levels

Spirit levels are available as bull´s eye levels or screw-on levels.
Bull´s eye levels simultaneously measure the angle of inclination and the angular position, e.g. of a certain level, whereas screw-on levels indicate the angle of inclination in one dimension only along the axis of the level.

Sensitivity

The sensitivity of spirit levels is given as angle of inclination, e.g. 30 angular minutes or 0.5 degrees. This is the angle of inclination by which the spirit level must be tilted to make the bubble move by 2 mm. A spirit level with a sensitivity of 6 angular minutes therefore has a higher sensitivity than a spirit level with a sensitivity of 30 angular minutes.



Angle of inclination and difference in altitude

Sensitivity is sometimes also given in millimetre per metre, i.e. as difference in altitude per unit of the length.

See also the reference table opposite.

Difference in altitude in milimetre per metre	Angle w	
	in angular minutes	Degree, decimal
0.3	1	0.0167
0.9	3	0.0500
1.7	6	0.1000
2.9	10	0.1667
5.8	20	0.3333
8.7	30	0.5000
11.6	40	0.6667
14.5	50	0.8333
17.5	60	1.0000