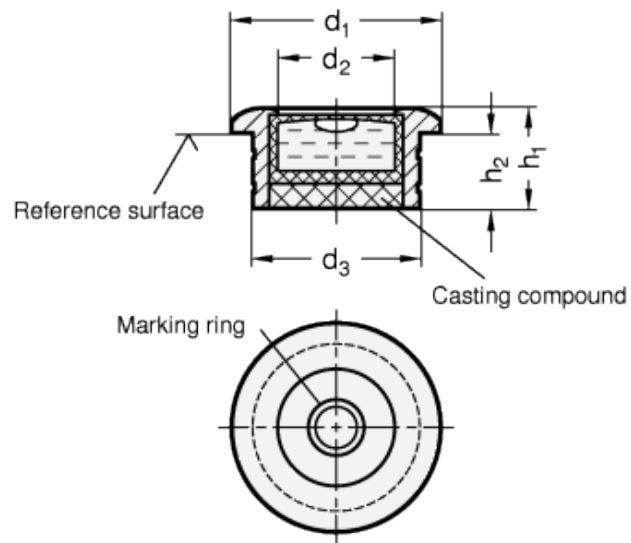


# GN 2278

Bull's eye levels



technical informations

## Specification

Sensitivity

30 Angle minutes, bubble move by 2mm

Housing

Aluminium

anodized, natural colour ALN

anodized, black ALS

Spirit level element  
Glass plastic body  
Filling  
colourless-transparent K

Casting compound  
mineral-based

### Information

Bull's eye levels GN 2278 for Insertion into bore holes are used to check the horizontal position of jigs, machines, devices, appliances and instruments.

The housing is grooved at its lower Diameter  $d_3$ , making it easier to mount in place, e.g. by gluing.

The spirit levels are aligned in relation to the reference or contact surface, so that the bubble is located inside the marking ring once the horizontal position of the contact surface is reached.

### On request

- Filling, green-transparent
- Other sensitivities
- Housing in brass or Stainless Steel

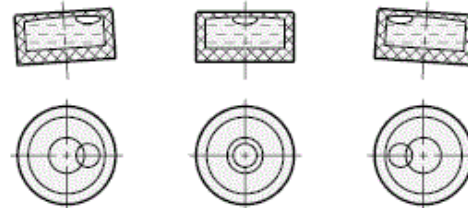
### Definition of terms

A spirit level is a 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 top 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 middle position. If the gas bubble is centered precisely inside the marking and if the air level is properly adjusted, the object to be checked is in the horizontal position.



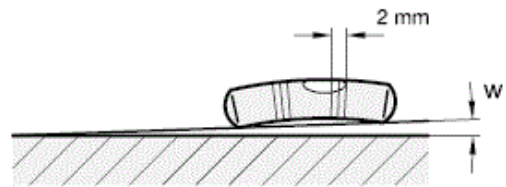
### Types of spirit levels

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 length.

See also the reference table opposite.

Difference in altitude in millimetre 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

Standard Elements Description	Main dimensions					Weight g
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub> -0.05/-0.15	h <sub>1</sub>	h <sub>2</sub>	
GN 2278-ALN-20-K-30	20	12	18	10	8	4
GN 2278-ALS-20-K-30	20	12	18	10	8	4
GN 2278-ALN-25-K-30	25	14	20	12	9	7
GN 2278-ALS-25-K-30	25	14	20	12	9	7
GN 2278-ALN-30-K-30	30	20	28	13	10	11
GN 2278-ALS-30-K-30	30	20	28	13	10	11



STANDARD MACHINE ELEMENTS WORLDWIDE