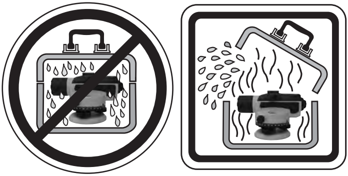
STABILA®

OLS 26

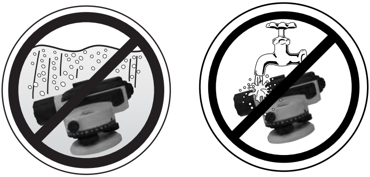
en Operating instructions

2018

B1

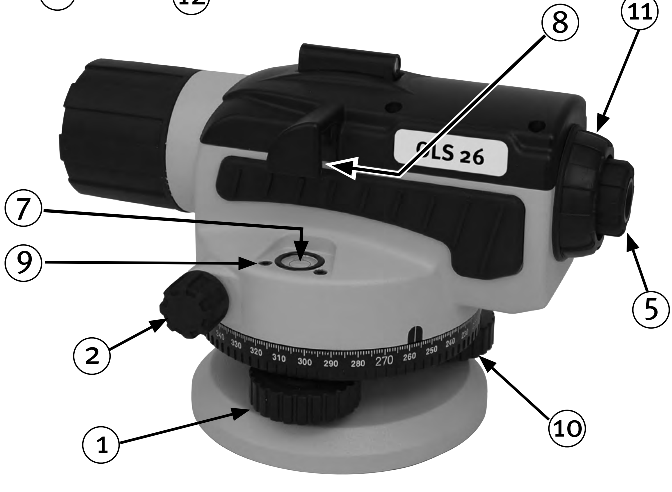


B2



B3

A



en

Operating instructions

The STABILA OLS 26 level can be used for many types of measurement on the building site. It can be used for the optical transfer of heights as well as measuring distances and angles.

We have endeavoured to explain the unit‘s handling and functioning in as clear and comprehensible manner as possible. If, however, you still have any unanswered questions, we should be pleased to provide advice over the telephone at any time on the following telephone number:

+49 / 63 46 / 3 09 - 0

A Main components

(1) Adjusting screws for levelling the instrument
(2) Adjusting screws for setting angles
(3) Object lens
(4) Focus adjustment (for sharpening the image)
(5) Eyepiece
(6) Optical sight
(7) Circular vial
(8) Tilted mirror for circular vial
(9) Adjusting screws for the circular vial
(10) Horizontal circle
(11) Cover for adjusting the reticle
(12) 5/8“ threaded connector for tripod

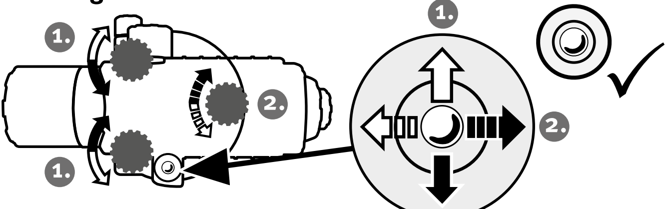
- Like every precision optical instrument, the OLS 26 must be handled with great care.
- Its accuracy should be checked carefully before each occasion on which it is used.

- Do not use the level to look directly at the sun, laser beams or any powerful light source !
- Always use the carrying case when moving the instrument.
- B1 Do not store the laser when wet.
  Dry the laser and case before putting the laser away.
- B2 Do not subject the instrument to major temperature variations.
- Clean the level with a damp cloth. Do not spray or immerse the unit.
  B3 Do not use solvents or thinners !
- Do not unscrew !

Commissioning

Assemble the tripod and place it firmly in the required position. The tripod head should be aligned as level as possible. Screw the level onto the connecting thread of the tripod. To ensure that the level is in exactly the right position, suspend the plumb-line from the connecting screw under the instrument if necessary.

Levelling the instrument:



The OLS 26 is aligned by turning the adjusting screws (1).
The bubble of the circular vial (7) must be precisely in the centre.

If the bubble in the vial moves outside the central ring when the OLS 26 is rotated through 180°, the circular vial must be adjusted.

Setting up the telescope

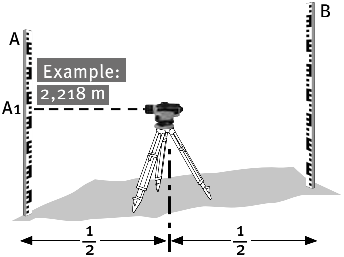
1. Focussing the eye-piece:

Turn the OLS 26 to face a light-coloured background. Focus the cross-hairs by rotating the eye-piece.

2. Focussing the object lens:

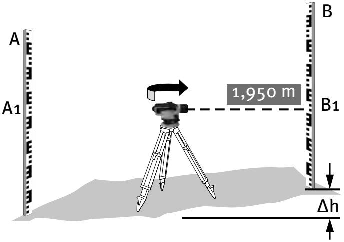
Use the sight (6) to point the OLS 26 towards an object (e.g. a levelling rod). Turn the adjusting screw (4) to focus the image.

Working with the level



Measuring heights

1. Place the level as close as possible to the mid-point between 2 measuring points and level the instrument.
2. Align the level with measuring point A and read off the figure A1.
3. Align the level with measuring point B and read off figure B1.

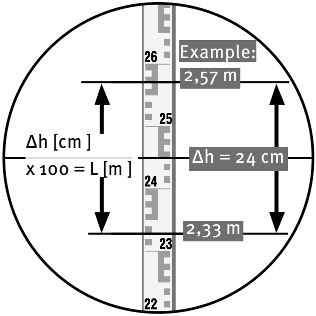


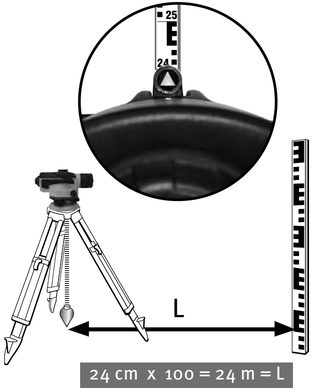
$\Delta h = A1 - B1$

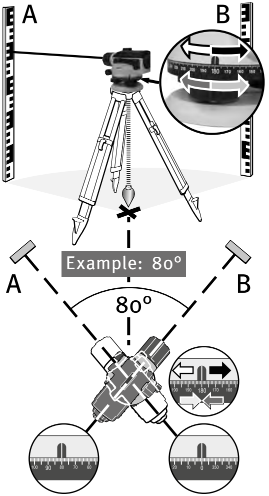
Example:

$\Delta h = 2{,}218\ \text{m} - 1{,}950\ \text{m} = 0{,}268\ \text{m}$

Measuring distances





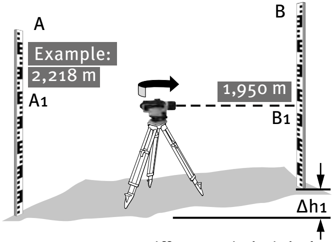


Measuring angles

1. Use the plumb-line to position the level exactly over the angular point.
2. Align the level with point A.
3. Set the horizontal circle to "0".
4. Align the level with point B.
5. Read off the horizontal angle between point A and point B from the horizontal circle

Checking the calibration

The OLS 26 level is designed for use on construction sites and was perfectly adjusted when it left our factory. As with any precision instrument, however, its calibration must be regularly checked. The unit should be checked before starting any new tasks, particularly when the unit has been exposed to strong vibrations. After an impact, the unit should be checked throughout its whole self-levelling range.

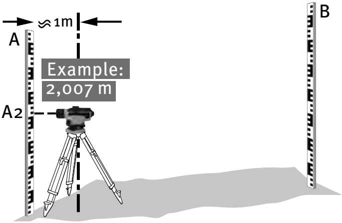


Check the reticle

1. Set up the instrument and level it between 2 levelling rods (approximately 30m from each).
2. Align the instrument with measuring point A and read off the figure A1 on the measuring point.
3. Align the instrument with measuring point B and read off the figure B1 on the measuring point.

Difference in height between the measuring points: $\Delta h_1 = A_1 - B_1$

Example: Δh_1 = 2,218 m - 1,950 m = 0,268 m

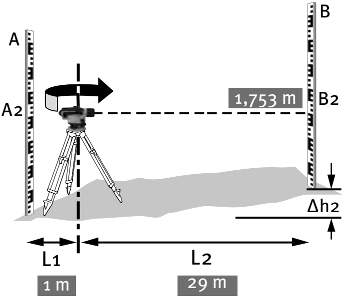


4. Set up the instrument and level it in front of the levelling rod A (distance approximately 1m)
5. Align the instrument with measuring point A and read off the figure A2 on the measuring point.
6. Align the instrument with measuring point B and read off the figure B2 on the measuring point.

Difference in height between the measuring points:

$$\Delta h2 = A2 - B2$$

2,007 m - 1,753 m = 0,254 m



The error in the height is calculated from:

$$X = \frac{(\Delta h1 - \Delta h2)}{(L2 - L1)} \qquad X = \frac{(0,268 - 0,254)}{(29 - 1)}$$

X › 0,0001 X = 0,0005

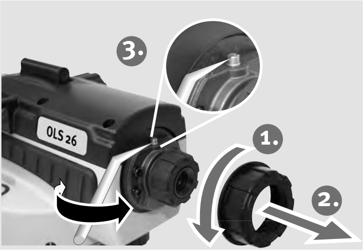
Adjust the reticle:

$$B2 = A2 - \Delta h1$$

B2 = 2,007 m - 0,268 m = 1,739 m

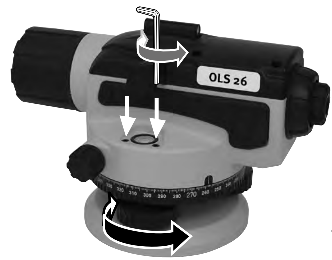
Adjusting the reticle:

1. Unscrew the cover (11).
2. Use the adjusting screw to adjust the set point which was determined earlier.
3. Check the reticle.
4. Adjust and check the reticle (repeat if necessary) until the theoretical set point and the set point which was determined earlier coincide.
5. Screw the cover (11) back into place.

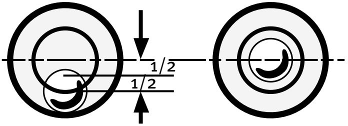


Adjusting the circular vial

It is only necessary to adjust the circular vial if the bubble of the vial clearly moves outside the central ring when the level is rotated through 180°.



1. Level the OLS 26.
2. Rotate the level through 180°.
3. Use the adjusting screws (9) to reduce the extent to which the bubble has moved outside the central ring by 50%. Then level the instrument and check again.



Technical data

Telescope magnification:		26 x
Minimum focussing distance:		ca. 1 m
Diameter of field of vision at 100m:		2,1 m
Objective lens aperture:		38 mm
Accuracy*	Compensator accuracy:	0,5“
	Vertical accuracy in an individual measurement:	1mm / 10m
	Standard deviation:	‹ 2mm/km
	Circular vial:	8‘/2mm
Distance measurement	Multiplication constant:	100
	Addition constant:	0
Horizontal circle increments:		1°
Operating temperature range:		-20°C ... + 40°C
Storage temperature range:		-30°C ... + 55°C
Protection class:		IP 54

* When operated within specified temperature range
Subject to technical modifications.

Guarantee terms and conditions

In addition to the statutory rights to which the purchaser is entitled and which are not limited by this guarantee, STABILA guarantees the instrument against defects and the absence of the warranted characteristics resulting from material or manufacturing defects for a period 24 months from the date of purchase. This guarantee is valid worldwide. STABILA has the right to decide at its own discretion whether the defects will be rectified by being repaired or whether the instrument will be replaced. STABILA accepts no further liability. Defects caused by improper handling (e.g. damage caused by the effects of powerful electric currents, operating the instrument with the incorrect voltage / type of current, use of unsuitable power sources) as well as modifications to the instrument undertaken by the purchaser or third parties invalidate the guarantee. No liability is accepted for normal wear and tear and minor defects which do not detract from the function of the instrument. Please send your claims under the guarantee along with the completed guarantee certificate to the guarantor (See last page).