STABILA OLS 26 Optical Level Measuring Device Instruction Manual

Contents

STABILA OLS 26 Optical Level Measuring Device

Product Information

STABILA OLS 26 Level
The STABILA OLS 26 level is a versatile tool that can be used for various measurements on the building site. It can transfer heights optically, measure distances and angles accurately. The product is designed to be user-friendly and easy to handle. If you have any questions, please contact us at +49 / 63 46 / 3 09 -0.

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

Important: Do not use solvents or thinners on the product.

Commissioning
To start using the product, assemble the tripod and place it in the required position. Ensure the tripod head is leveled as much as possible. Screw the level onto the connecting thread of the tripod. To ensure that the level is in

the right position, suspend the plumb-line from the connecting screw under the instrument if necessary.

Product Usage Instruction

Leveling the Instrument

1. Turn the adjusting screws (1) to align the OLS 26. The bubble of the circular vial (7) must be in the center.

Setting up the Telescope

1. Focus the cross-hairs by rotating the eyepiece and turn the OLS 26 to face a light-colored background.
2. 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.

Measuring Heights

1. Place the level as close as possible to the mid-point between two measuring points and level the instrument.
2. Align the level with measuring point A and read off figure A1.
3. Align the level with measuring point B and read off figure B1.
4. Calculate the height (h) by subtracting B1 from A1 (h = A1 – B1).

Measuring Distances

Use the formula h [cm] x 100 = L [m] to calculate distance (L).

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

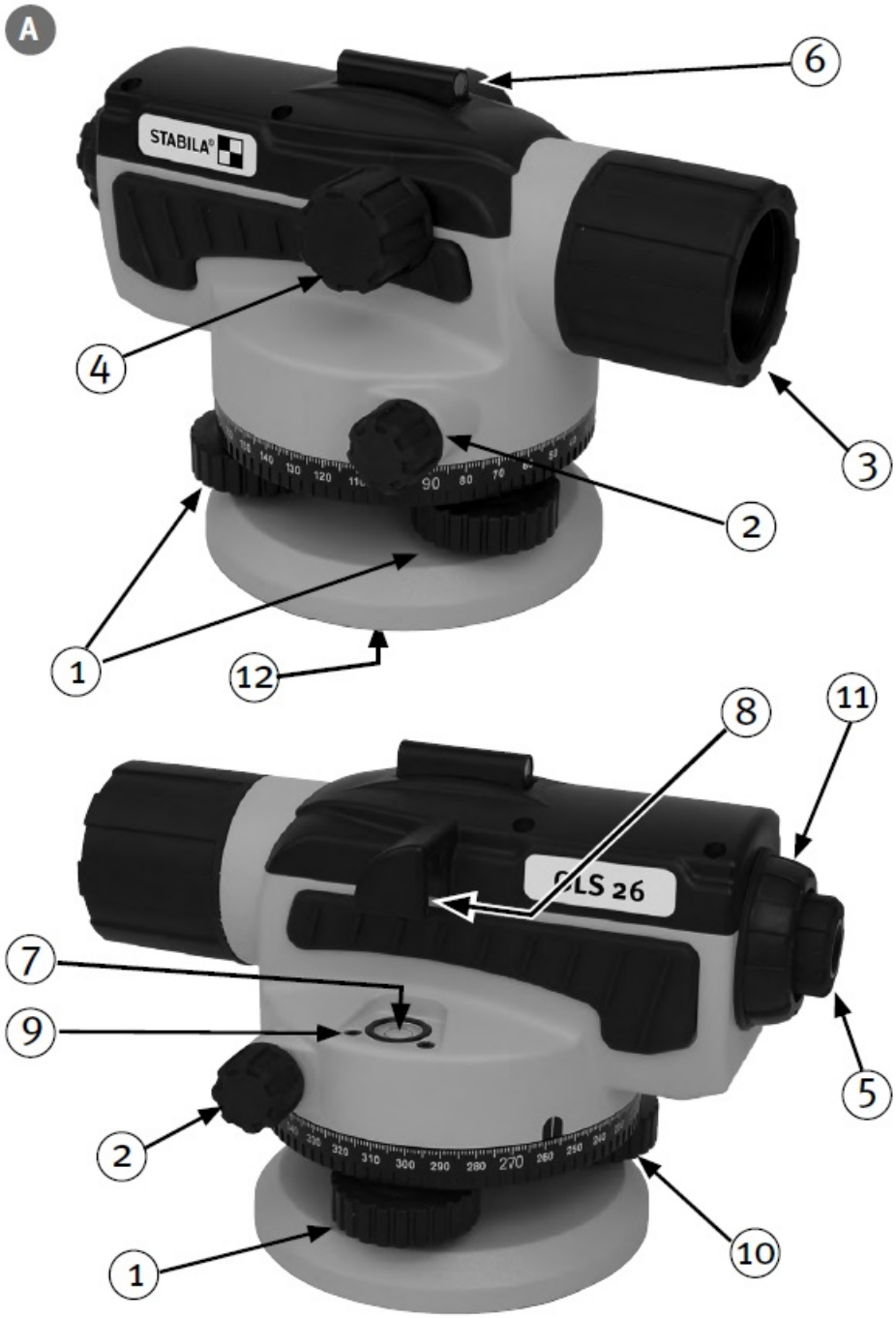
To ensure accurate readings, the calibration of the OLS 26 level should be checked regularly. Check the unit before starting any new tasks, particularly after exposure to strong vibrations or impact.

The STABILA OLS 26 level can be used for many types of measurements 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

Main components

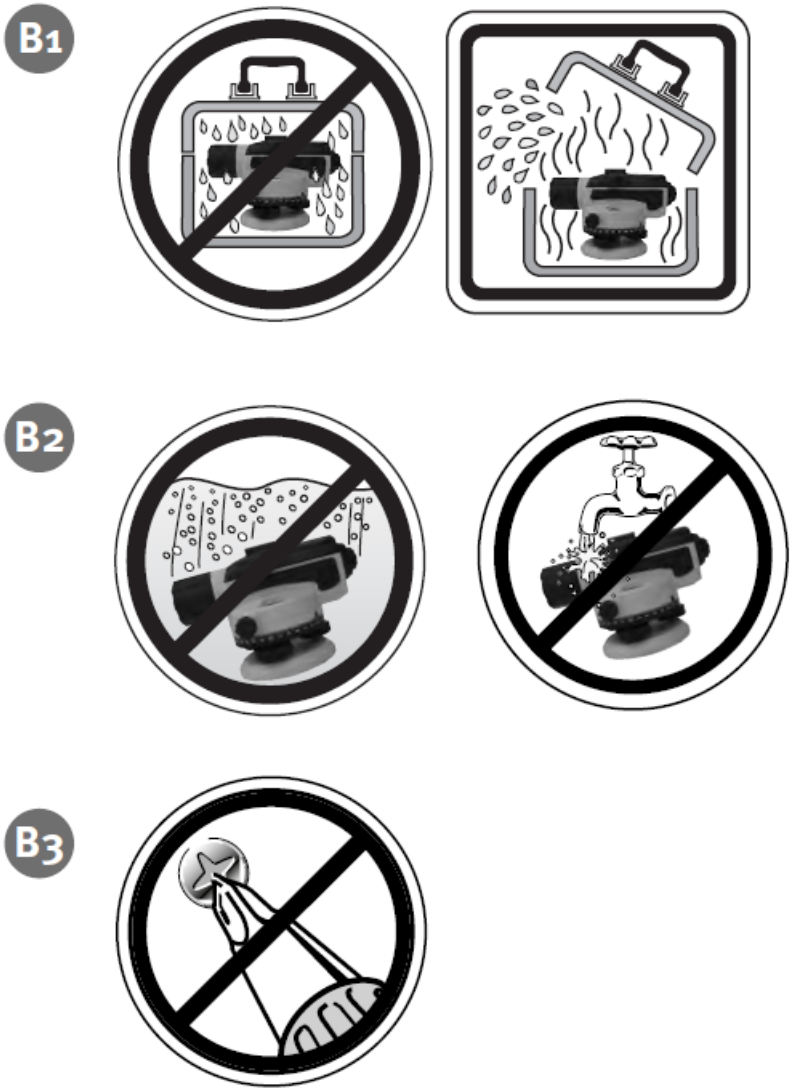
1. Adjusting screws for levelling the instrument
2. Adjusting screws for setting angles
3. Object lens

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.

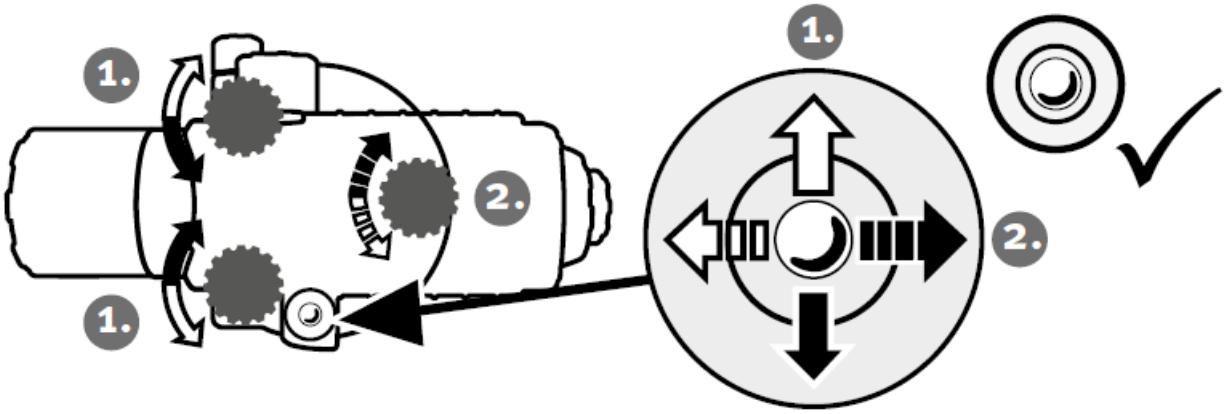
- **B1.** Do not store the laser when wet. Dry the laser and case before putting the laser away.
- **B2.** Do not subject the instrument to major temperature variations.
- **B3.** Clean the level with a damp cloth. Do not spray or immerse the unit. Do not use solvents or thinners!
- Do not unscrew!



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 center. 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-colored 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.

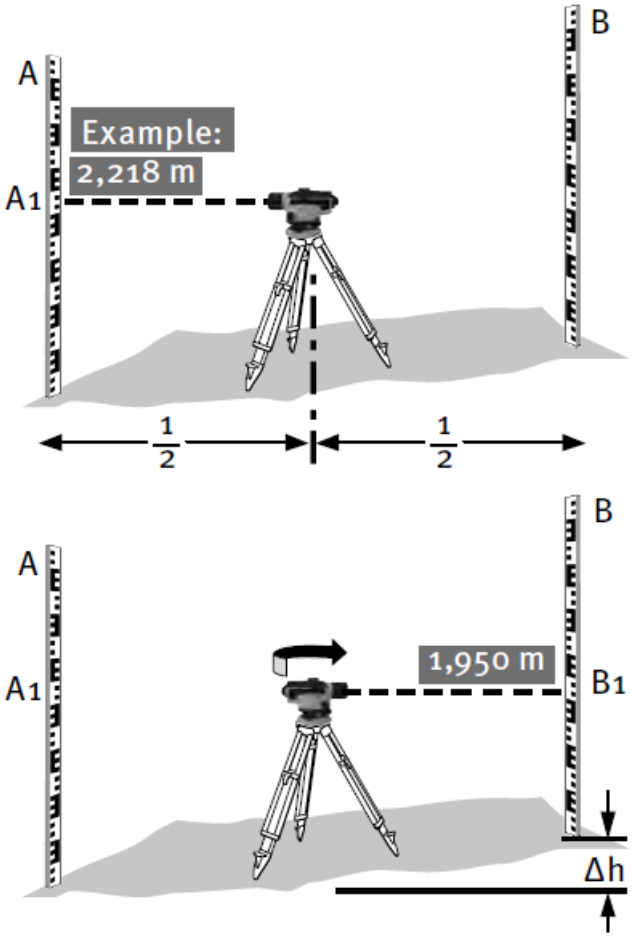
Working with the level

Measuring heights

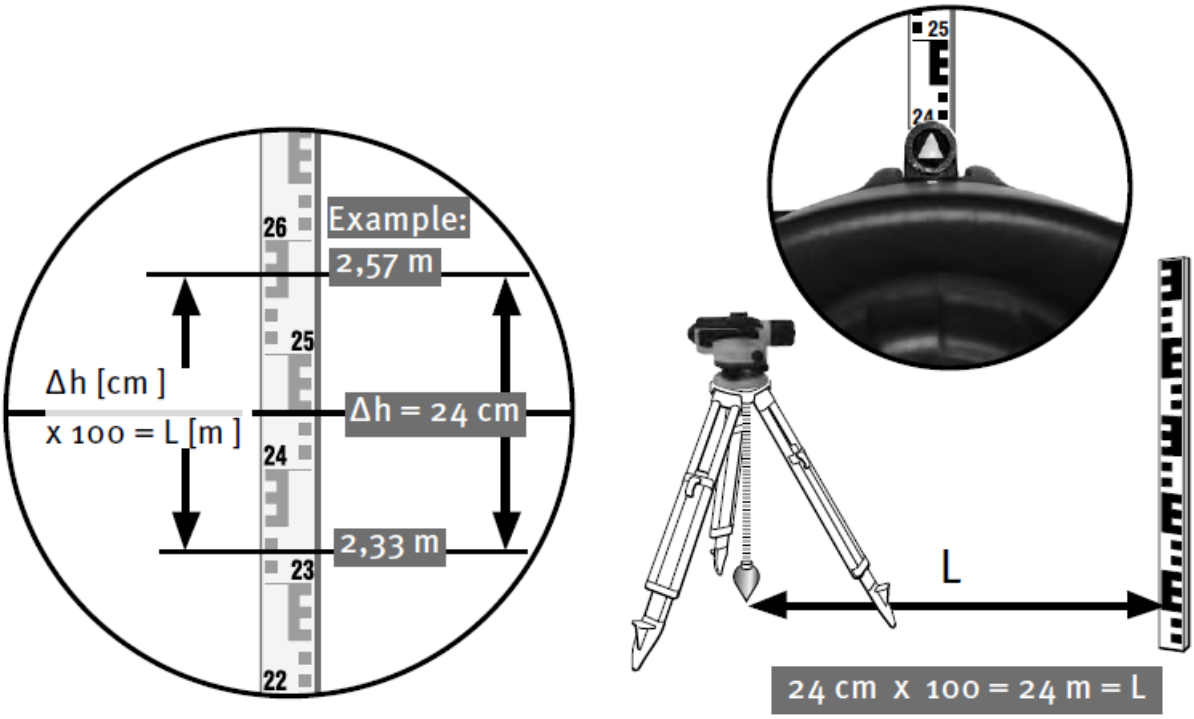
1. Place the level as close as possible to the mid-point between 2 measuring points and level the instrument.
2. Align the level with measuring point A and read off the figure A1.
3. Align the level with measuring point B and read off figure B1.
    - Δh = A1-B1

      Example:

      Δh = 2,218 m – 1,950 m = 0,268 m

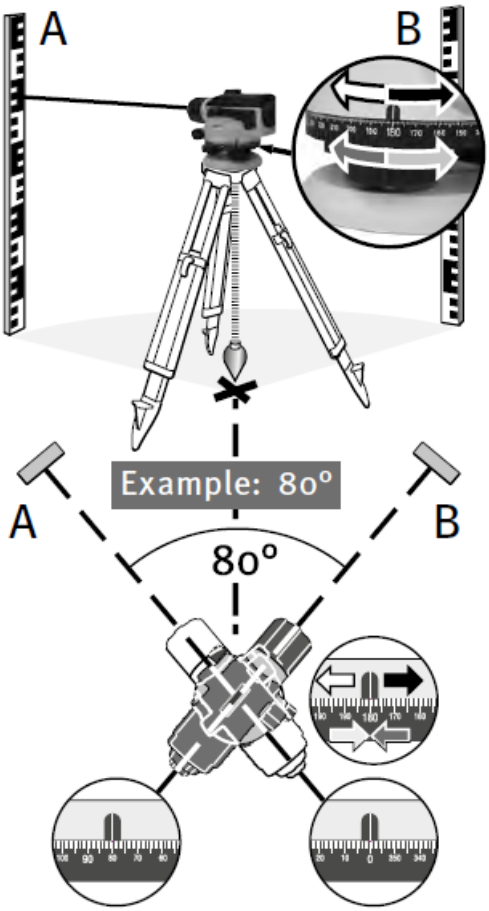


Measuring distances



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

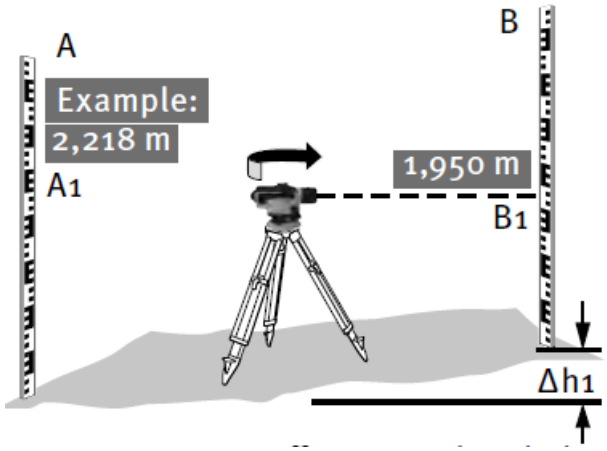


Checking the calibration

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-leveling range.

Check the reticle

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



The difference in height between the measuring points:Δh1 = A1-B1

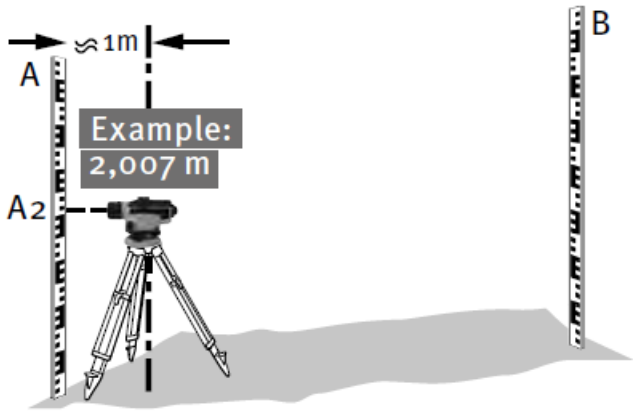
- **Example:** Δh1 = 2,218 m – 1,950 m = 0,268 m

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

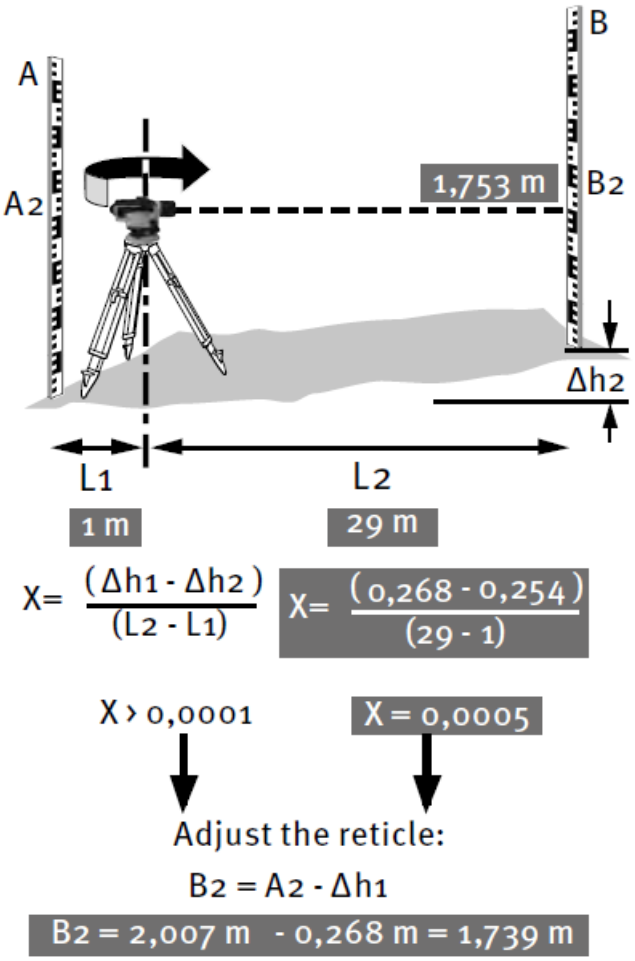
   Difference in height between the measuring points:

   Δh2 =A2 – B2

   2,007 m – 1,753 m = 0,254 m

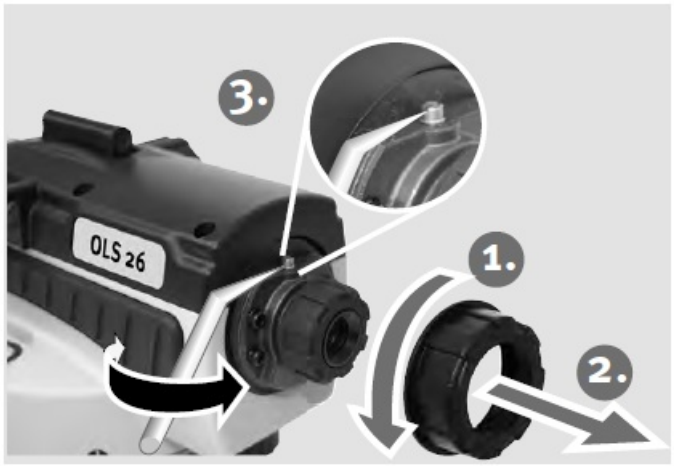


The error in the height is calculated from:



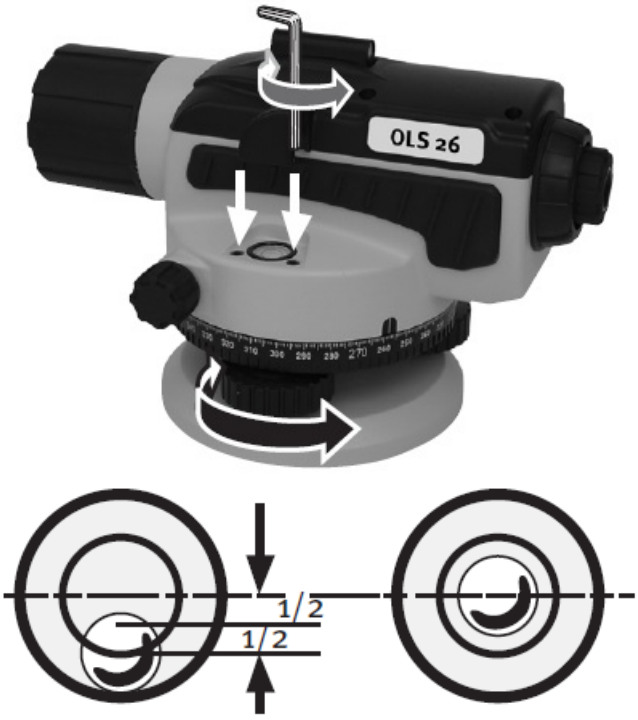
Adjusting the reticle:

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.

Warranty declaration

In addition to the statutory rights, which can be exercised at no cost, STABILA Messgeräte Gustav Ullrich GmbH, Landauer Str. 45, 76855 Annweiler, Germany provides a voluntary 2-year manufacturer‘s warranty for lasers and TECH products, which begins on the date on the proof of purchase and applies worldwide. A warranty claim can be made if a product develops a fault due to material or manufacturing defects. Claims cannot be made for defects resulting from accident, excessive stress, incorrect handling, modifications by unauthorised persons, natural wear and tear or minor deviations that are not significant for usage purposes. A claim can be made by sending the complete product together with the proof of purchase to STABILA or handing them over to a STABILA Service Point within the warranty period (warranty registration is available at www.stabila.com). Services provided under warranty (repair or replacement, as decided by STABILA) do not have the effect of extending the warranty period or starting a new warranty period. The warranty does not cover any other claims for damages. Replaced parts become the property of STABILA.

STABILA Messgeräte
Gustav Ullrich GmbH Landauer Str. 45 76855 Annweiler Germany.
www.stabila.com.

Documents / Resources

	STABILA OLS 26 Optical Level Measuring Device [pdf] Instruction Manual OLS 26, OLS 26 Optical Level Measuring Device, Optical Level Measuring Device, Level Measuring Device, Measuring Device

References

- Languages - STABILA Messgeräte Gustav Ullrich GmbH (EN-US)