

HILTI

POL 10 / POL 15

English



1 Information about the documentation

1.1 About this documentation

- Read this documentation before initial operation or use. This is a prerequisite for safe, trouble-free handling and use of the product.
- Observe the safety instructions and warnings in this documentation and on the product.
- Always keep the operating instructions with the product and make sure that the operating instructions are with the product when it is given to other persons.

1.2 Explanation of signs used

1.2.1 Warnings

Warnings alert persons to hazards that occur when handling or using the product. The following signal words are used in combination with a symbol:



DANGER! Draws attention to imminent danger that will lead to serious personal injury or fatality.



WARNING! Draws attention to a potential hazard that could lead to serious personal injury or fatality.



CAUTION! Draws attention to a potentially dangerous situation that could lead to minor personal injury or damage to the equipment or other property.

1.2.2 Symbols in the documentation

The following symbols are used in this document:



Read the operating instructions before use



Instructions for use and other useful information

1.2.3 Symbols in the illustrations

The following symbols are used in illustrations:



These numbers refer to the corresponding illustrations found at the beginning of these operating instructions.

3

The numbering reflects the sequence of operations shown in the illustrations and may deviate from the steps described in the text.



Item reference numbers are used in the **overview illustrations** and refer to the numbers used in the **product overview section**.



These characters are intended to specifically draw your attention to certain points when handling the product.

1.3 Product information

Hilti products are designed for professional use and may be operated, serviced and maintained only by trained, authorized personnel. This personnel must be informed of any particular hazards that may be encountered. The product and its ancillary equipment can present hazards if used incorrectly by untrained personnel or if used not in accordance with the intended use.

The type designation and serial number are stated on the rating plate.

- ▶ Write down the serial number in the table below. You will be required to state the product details when contacting Hilti Service or your local Hilti organization to inquire about the product.

Product information

Level	POL 10/15
Generation	01
Serial no.	

2 Safety

2.1 General safety measures

In addition to the information relevant to safety given in each of the sections of these operating instructions, the following points must be strictly observed at all times. The product and its ancillary equipment can present hazards if used incorrectly by untrained personnel or if used not in accordance with the intended use.

- ▶ Keep all safety instructions and other instructions for future reference.
- ▶ Stay alert, watch what you are doing and use common sense when operating the product. Do not use the product while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating the product can result in serious personal injury.
- ▶ Check the product for damage before use. Have damage repaired by **Hilti Service**.
- ▶ **Do not render safety devices ineffective and do not remove information and warning notices.**
- ▶ **Keep the device out of reach of children.**
- ▶ Never tamper with or modify the product in any way.
- ▶ **You must check the accuracy of the device after it has been dropped or subjected to other mechanical stresses.**
- ▶ **The device is designed for the tough conditions of jobsite use, but as with other optical and electronic instruments (e.g. binoculars, spectacles, cameras) it must be handled with care.**
- ▶ **The device is protected to prevent the ingress of moisture, but you must always wipe it dry before stowing it in the transport container.**
- ▶ **When the device is brought into a warm environment from very cold conditions, or vice-versa, allow it to become acclimatized before use.**
- ▶ **Comply with national health and safety requirements.**
- ▶ Before starting to use the product, always make sure that it is full working order.
- ▶ **Never aim the product against the sun or other powerful light sources.**
- ▶ Take the influences of the surrounding area into account. Do not use the device where there is a risk of fire or explosion.

2.2 Proper preparation of the working area

- ▶ **Avoid unusual postures when working on ladders. Maintain firm footing and balance at all times.**
- ▶ Readings taken in the vicinity of reflective objects or surfaces, through panes of glass or similar materials can falsify the result of measurement.
- ▶ Keep the lens and the eyepiece clean to avoid errors in measurement.
- ▶ **Use the device only within its specified limits.**
- ▶ **Use the device and its accessories etc. in accordance with these instructions and in the manner intended for the particular type of device. Take the working conditions and the work to be performed into account.** Use of equipment for applications other than those intended can result in hazardous situations.
- ▶ **Do not work with surveyor's staffs in the vicinity of high-voltage electricity cables.**

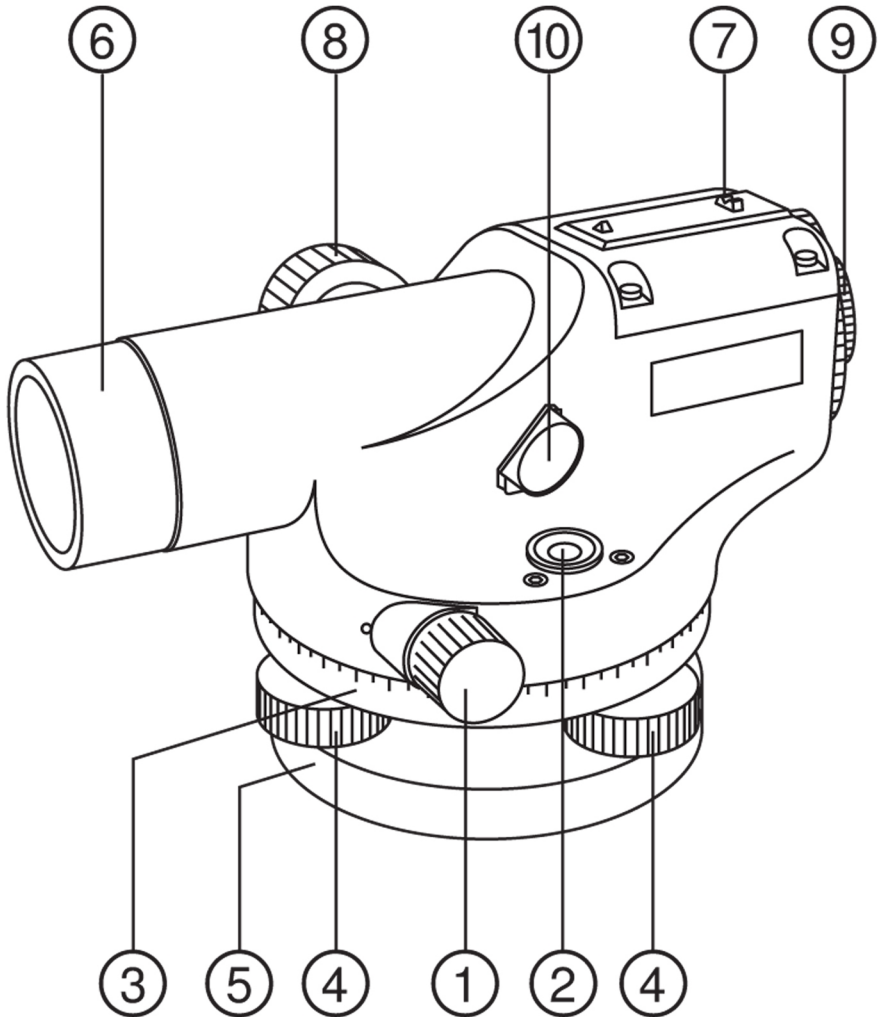
2.3 Electromagnetic compatibility

Although the device complies with the strict requirements of the applicable directives, **Hilti** cannot entirely rule out the possibility of interference to the device caused by powerful electromagnetic radiation, possibly leading to incorrect operation. Check the accuracy of the device by taking measurements by other means when working under such conditions, or if you are unsure.

3 Description

3.1 Product overview

3.1.1 POL 10/15 optical leveling device



- | | |
|-------------------------|-----------------------|
| ① Lateral drive | ⑥ Lens |
| ② Circular bubble level | ⑦ Open sight |
| ③ Horizontal circle | ⑧ Focusing knob |
| ④ Footscrews | ⑨ Eyepiece |
| ⑤ Base plate | ⑩ Bubble-level mirror |

3.1.2 Intended use

The product is an optical level. It is designed for taking references on horizontal planes with high precision, even over long distances, and for the transmission and verification of these data.

3.1.3 Items supplied

POL 10/15 optical level, hex key, adjusting wrench, plumb line, operating instructions, case.

Other system products approved for use with this product can be found at your local **Hilti Store** or online at: www.hilti.group.

4 Technical data

4.1 Technical data

	POL 10	POL 15
Standard deviation for 1 km (0.62 mile), double run	2.5 mm (0.10 in)	1.5 mm (0.06 in)
Leveling accuracy over 30 m (98 ft), single measurement	±2.0 mm (±0.08 in)	±1.5 mm (±0.06 in)
Shortest distance to target	65 cm (26 in)	65 cm (26 in)
Compensator type	X-shape, wire suspension, air-damped	X-shape, wire suspension, air-damped
Working range, compensator	±15'	±15'
Adjustment precision, compensator	0.5"	0.5"
Sensitivity, circular bubble level	8' : 2 mm (0.08 in)	8' : 2 mm (0.08 in)
Weight	1.8 kg (4.0 lb)	1.8 kg (4.0 lb)
Tripod thread	5/8 in	5/8 in
Operating temperature	-20 °C ... 50 °C (-4 °F ... 122 °F)	-20 °C ... 50 °C (-4 °F ... 122 °F)
Storage temperature	-30 °C ... 60 °C (-22 °F ... 140 °F)	-30 °C ... 60 °C (-22 °F ... 140 °F)

5 Operation

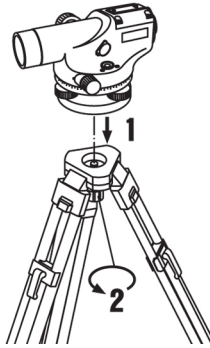
5.1 Preparations at the workplace



Note

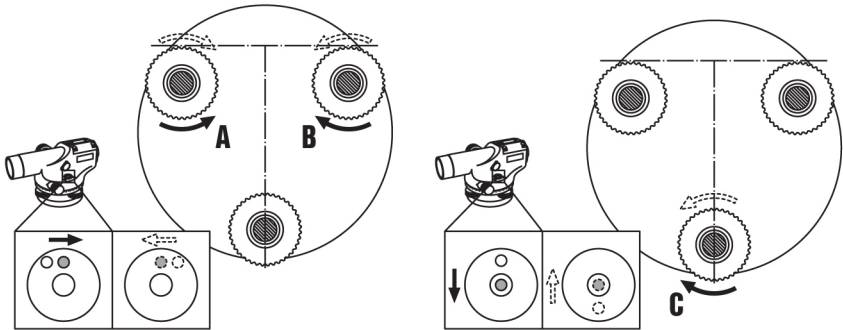
Set up the POL 10/15 on a tripod to ensure its stability.

5.1.1 Setting up the tripod



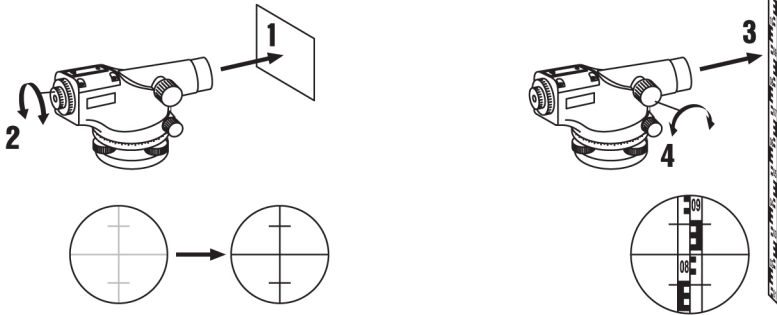
1. Push the legs of the tripod firmly into the ground.
2. Make sure that the tripod head is approximately level.
3. Set the POL 10/15 on the tripod head and tighten the locking screw on the tripod.

5.1.2 Leveling



1. Center the bubble in the circular bubble level by turning the footscrews.
2. Simultaneously turn footscrews **(A)** and **(B)** in opposite directions until the bubble is bisected by the centering line between **(A)** and **(B)**.
3. Turn footscrew **(C)**, until the bubble is perfectly centered.
4. Turn the POL 10/15 through 180° and check that the bubble remains centered.
 - ◀ If the bubble remains centered you can proceed.
 - ▼ If the bubble is no longer centered the circular bubble level has to be adjusted. → page 8

5.1.3 Focusing the telescope



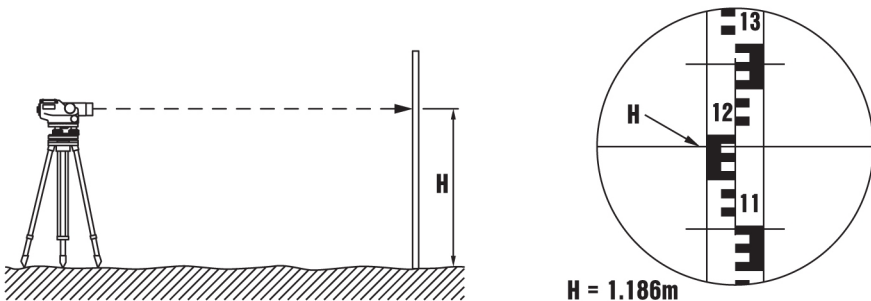
1. Aim the telescope at a light-colored background.
2. Turn the eyepiece until the crosshairs are in sharp focus.
3. Aim the telescope at the leveling staff.
4. Turn the focusing knob until the scale on the leveling staff is in sharp focus.

5.2 Types of work

5.2.1 Preparing to measure

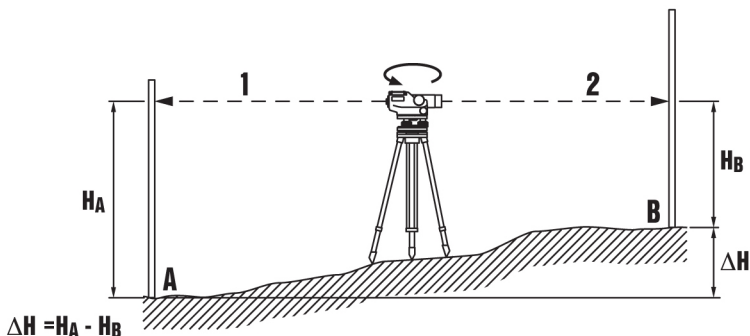
1. Stand the leveling staff on the measuring point.
2. Use the open sight to aim at the leveling staff.
3. Turn the focusing knob to bring the scale on the staff into sharp focus.
4. Use the lateral drive to precision-aim at the leveling staff.

5.2.2 Measuring the height



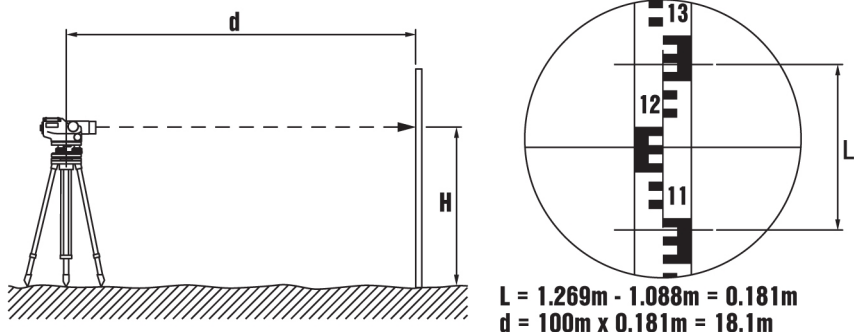
1. Prepare to measure. → page 6
2. Read the height (**H**) from the middle line of the crosshairs.

5.2.3 Measuring the difference in height



1. For better accuracy, set up the POL 10/15 equidistant from both measuring points.
2. Use the leveling staff to obtain a height reading for point (A).
3. Use the leveling staff to obtain a height reading for point (B).
4. Calculate the difference in height by subtracting the reading for point (B) from the reading for point (A).

5.2.4 Measuring the distance



1. Prepare to measure. → page 6
2. Read the heights at the top and bottom lines of the crosshairs and calculate the difference between the two values.
3. Calculate the distance by multiplying the calculated difference by 100.

5.2.5 Measuring the angle

1. Prepare to measure. → page 6
2. Turn the horizontal circle to 0.
3. Aim the POL 10/15 at point B.
4. Read the angle from the horizontal circle.

6 Care and maintenance

6.1 Cleaning and drying

Care

- Blow dust off the lenses.
- Do not touch lenses with your fingers.
- Use only a clean, soft cloth for cleaning. If necessary, moisten the cloth slightly with pure alcohol or a little water. Do not use cleaning agents containing silicone as they can attack the plastic parts.

6.2 Hilti Measuring Systems Service

Hilti Measuring Systems Service checks the device and, if deviations from the specified accuracy are found, recalibrates it and rechecks to ensure conformity with specifications. The service certificate provides written confirmation of conformity with specifications at the time of the test. The following is recommended:

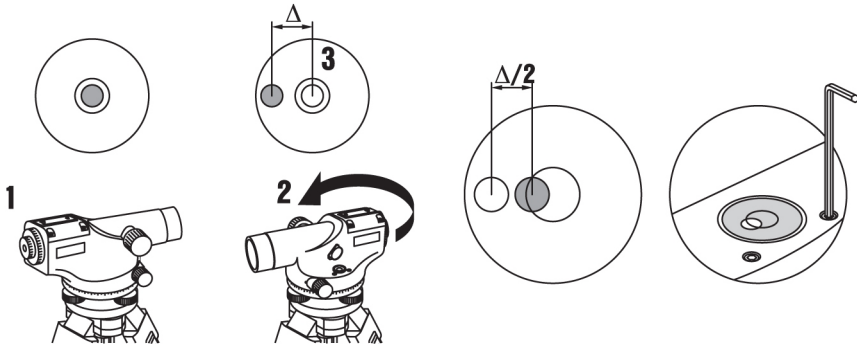
- Choose a test/inspection interval that matches usage of the device.
- Have testing and inspection carried out by Hilti Measuring Systems Service after exceptionally heavy usage or exposure to unusual conditions and before carrying out important work, or at least once a year.

Testing and inspection by Hilti Measuring Systems Service does not relieve the user of the obligation to check the device before and during use.

6.3 Checking and adjusting

To ensure compliance with the technical specifications, have the device checked regularly (at least before each major / relevant measuring task).

6.3.1 Adjusting the circular bubble level



1. Set up the tripod. → page 5
2. Level the POL 10/15. → page 5
3. Turn the POL 10 / 15 through 180° and check whether the bubble in the circular bubble level is still centered.

Result 1 / 2

If the bubble is no longer centered, adjust the circular bubble level

- ▶ Use a hex key to turn the screws on the circular bubble level until the error is half corrected.
- ▶ Use the footscrews to level the device until the bubble in the circular bubble level is centered.
- ▶ Again turn the POL 10/15 through 180°.
- ▶ Depending on the severity of the error, repeat these steps if necessary.

Result 2 / 2

The bubble in the circular bubble level remains centered when you turn the POL 10/15 round to face the opposite direction.

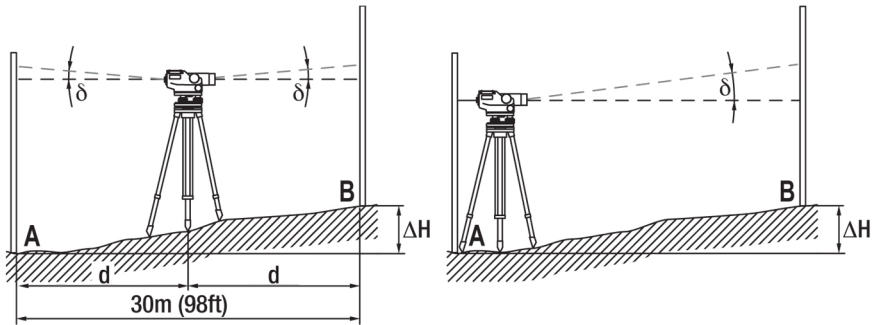
The circular bubble level is correctly adjusted.

6.3.2 Checking the target line



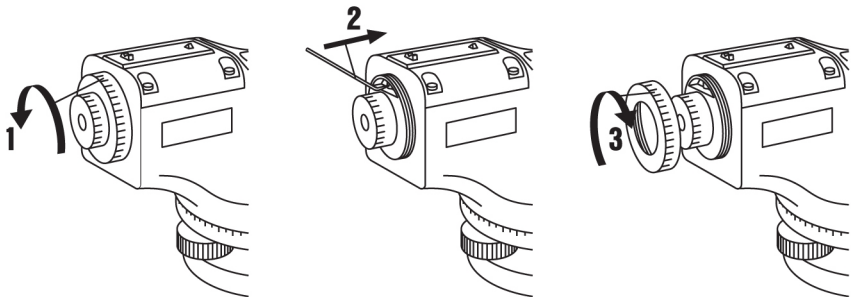
Note

Begin by checking that the circular bubble level is set correctly.



1. Set up the tripod. → page 5
2. Level the POL 10 / 15. → page 5
3. Select two measuring points **(A)** and **(B)** and set up the POL 10 / 15 exactly midway between the two points. The distance between the two measuring points should be approx. 30 m (98 ft).
4. Stand the leveling staffs on the measuring points.
5. Read the heights at both points and calculate the difference in height.
6. Set up the POL 10 / 15 at a distance of 1 m (3.3 ft) from measuring point **(A)**.
7. Read the heights at both points and calculate the difference in height.
8. Calculate the difference between the two height differences.
 - ◀ The difference is less than 3 mm (0.12 in).
 - ▼ The difference is more than 3 mm (0.12 in).
 - ▶ Adjust the target line. → page 9

6.3.3 Adjusting the target line




1. Remove the cover from the eyepiece.
2. Aim the POL 10 / 15 at leveling staff **(B)** and turn the knob to adjust the crosshairs until the difference between the height differences is less than 3 mm (0.12 in).

7 Transport and storage

- ▶ Do not stow the device away when it is wet. Allow it to dry completely before stowing it away.
- ▶ Comply with the temperature limits for storing your equipment. These limits are stated in the 'Technical data' section.
- ▶ Check the accuracy of your equipment before using it after a long period of storage or transportation.
- ▶ Use the **Hilti** case or equivalent for transporting or shipping your equipment.

8 Disposal

 Most of the materials from which **Hilti** tools and appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, your old tools, machines or appliances can be returned to **Hilti** for recycling. Ask **Hilti** Service or your Hilti representative for further information.



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- ▶ Disposal of electric tools or appliances together with household waste is not permissible.
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9 Manufacturer's warranty

- ▶ Please contact your local **Hilti** representative if you have questions about the warranty conditions.



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