



PRA 90

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 symbols used

### 1.2.1 Warnings

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



**DANGER !**

- ▶ Draws attention to imminent danger that will lead to serious personal injury or fatality.



**WARNING !**

- ▶ Draws attention to a potential threat of danger that can lead to serious injury or fatality.



**CAUTION !**

- ▶ Draws attention to a potentially dangerous situation that could lead to slight 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
	Dealing with recyclable materials
	Do not dispose of electric equipment and batteries as household waste

### 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
	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 <b>overview illustrations</b> and refer to the numbers used in the <b>product overview section</b>
	This symbol is intended to draw special attention to certain points when handling the product.
	Wireless data transfer

### 1.3 Product-dependent symbols

#### 1.3.1 Symbols on the product

The following symbols are used on the product:



Only use in enclosed spaces

### 1.4 Product information

**HILTI** products are designed for professional users and only trained, authorized personnel are permitted to operate, service and maintain the products. This personnel must be specifically informed about the possible hazards. 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 printed 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

Automatic tripod	PRA 90
Generation	01
Serial no.	

### 1.5 Declaration of conformity

We declare, on our sole responsibility, that the product described here complies with the applicable directives and standards. A copy of the declaration of conformity can be found at the end of this documentation.

The technical documentation is filed and stored here:

**Hilti** Entwicklungsgesellschaft mbH | Tool Certification | Hiltistraße 6 | 86916 Kaufering, DE

### 1.6 Type approval test

The notified body **CSA Group Bayern**, number 1948, has tested the tool and assessed the documentation and subsequently issued the following type approval test number: ZS 17 10 50140 007

## 2 Safety

### 2.1 Safety precautions



In addition to the information relevant to safety provided in the individual sections of these operating instructions and the information provided in the operating instructions of whichever type of rotating laser is being used, the following instructions must also be strictly observed at all times.

#### General safety instructions

Do not render safety devices ineffective and do not remove information and warning notices.

#### Proper preparation of the working area

- ▶ **Secure the site in which you are taking measurements and take care to avoid directing the beam towards other persons or towards yourself when setting up the appliance.**
- ▶ **When performing alignment work on ladders, avoid postures to which you are unaccustomed. Make sure you work from a safe stance and stay in balance at all times.**
- ▶ **Ensure that the tool is set up on a stable, level surface (not subject to vibration).**
- ▶ **Use the tool only within its specified limits.**
- ▶ **Take care to ensure that no parts of the body are located under the tripod when the tripod is set up or in operation.**
- ▶ **Do not use the tripod as a hoist or lifting aid.**
- ▶ Keep children away. Keep other persons away from the working area.
- ▶ **When setting up the tripod in enclosed spaces (indoor rooms), check the suitability of the floor on which it stands, as the tripod could gouge scratches into the floor.**

### 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 tool by taking measurements by other means when working under such conditions or if you are unsure. Likewise, **Hilti** cannot rule out the possibility of interference with other devices (e.g. aircraft navigation equipment).

### General safety measures

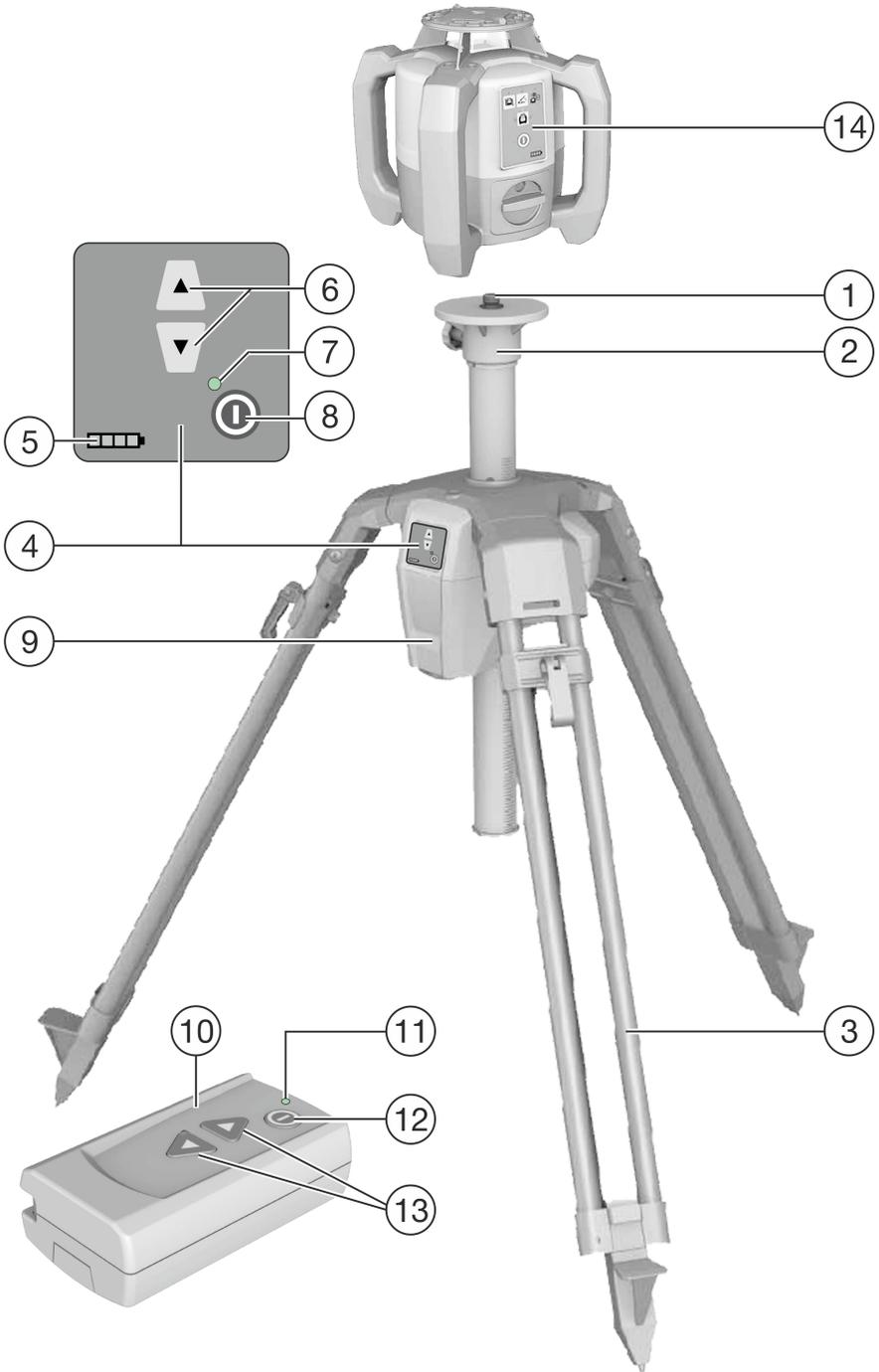
- ▶ Check the condition of the device before use. If the device is found to be damaged, have it repaired at a Hilti Service Center.
- ▶ **Always keep the PRA 90 threaded rod free from objects of any kind, including parts of the body or dirt.**
- ▶ **Do not put your fingers or other parts of the body into the tubes of the tripod legs or other points at which injuries may be caused.**
- ▶ **Although the appliance is designed for use on job sites under tough conditions, it should be handled with care, in the same way as other electrical appliances.**
- ▶ **Before the device is protected to prevent entry of dampness, it should be wiped dry each time before being put away in its transport container.**
- ▶ **Only use the AC adapter for connecting to the power supply.**
- ▶ **Ensure that the appliance and AC adapter do not present an obstacle that could lead to a risk of tripping or personal injury.**
- ▶ **Ensure that the workplace is well lit.**
- ▶ **Check extension cords at regular intervals and replace them if found to be damaged. Do not touch the AC adapter if the extension cord or AC adapter are damaged while working. Disconnect the supply cord plug from the power outlet.** Damaged supply cords or extension cords present a risk of electric shock.
- ▶ **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, cookers, stoves and refrigerators.** There is an increased risk of electric shock if your body is grounded.
- ▶ **Do not expose the supply cord to heat, oil or sharp edges.**
- ▶ **Never operate the AC adapter when it is dirty or wet. Dust (especially dust from conductive materials) or dampness adhering to the surface of the AC adapter may, under unfavorable conditions, lead to electric shock. Dirty or dusty tools or appliances should thus be checked by Hilti Service at regular intervals, especially if used frequently for working on conductive materials.**
- ▶ Avoid touching the contacts.
- ▶ **Use the carry strap supplied with the tripod to make it easier to carry the PRA 90. When transporting the PRA 90, take care not to allow the tripod to cause injury either to yourself or to other persons. Particular care should be taken in checking the position of the points at the ends of the legs during transportation.**
- ▶ **When you are finished using the PRA 90, always make sure that the threaded column is fully wound down before the tripod legs are folded together.**

### Use and care of battery-powered tools

- ▶ **Use only batteries of the type approved for use with the applicable tool.** Use of other batteries or use of the batteries for purposes for which they are not intended presents a risk of fire and explosion.
- ▶ **Do not expose batteries to high temperatures and keep them away from fire.** There is a risk of explosion.
- ▶ **Do not disassemble, squash or incinerate batteries and do not subject them to temperatures over 80 °C (176 °F).** This presents a risk of fire, explosion or injury through contact with caustic substances.
- ▶ **Do not allow moisture to enter the battery.** Moisture in the interior of the device may cause a short circuit and chemical reactions resulting in burns to the skin or fire.
- ▶ **Observe the special guidelines applicable to the transport, storage and use of Li-ion batteries.**
- ▶ **Avoid short circuiting the battery terminals. Check that the battery terminals and the terminals in the power tool are free from foreign objects before inserting the battery in the tool.** Short circuiting the battery terminals presents a risk of fire, explosion and chemical burns.
- ▶ **Never continue to use or attempt to charge damaged batteries, e.g. batteries with cracks, broken parts, bent or pushed-in / pulled-out contacts).**
- ▶ **Only use the AC adapter PRA 85 or the motor vehicle power adapter PRA 86 for operating the appliance and charging the battery.** The appliance may otherwise be damaged.





**3 Description****3.1 Overview of the product**

- |                                   |                                       |
|-----------------------------------|---------------------------------------|
| ① Laser adapter 5/8"              | ⑧ Control panel on/off button         |
| ② Tripod head                     | ⑨ Battery compartment                 |
| ③ Extendable supports             | ⑩ Optional remote control unit PRA 92 |
| ④ Control panel                   | ⑪ PRA 92 LED display                  |
| ⑤ Charging display control panel  | ⑫ PRA 92 On/Off button                |
| ⑥ Height regulation control panel | ⑬ PRA 92 height regulation            |
| ⑦ LED display control panel       | ⑭ Rotating laser                      |

### 3.2 Intended use

The product described is an automatic tripod onto which a rotating laser can be fitted. The tripod can be moved in height using the control panel or a remote control unit. Using the tripod and the rotating laser fitted to it, a horizontal laser plane can be established which is directed onto a particular target height, meter marks can be transmitted and horizontal heights aligned and checked.

The tripod can be operated in 3 different ways: with PRA 30 remote control/laser receiver (in combination with PR 30-HVS rotating laser for automatic alignment and monitoring), without remote control and with remote control unit PRA 92.

- ▶ Use only the **Hilti** Li-ion battery PRA 84 for this product.
- ▶ For these batteries, use only the **Hilti** PRA 85 AC adapter.

### 3.3 Automatic alignment

The tripod can be automatically aligned with the **Hilti** rotating lasers PR 30-HVS, PR 35, PR 300-HV2S or PRI 36. We recommend using the **Hilti** rotating laser PR 30-HVS. This was specially matched to the PRA 90 and has a three-device communication system between tripod, rotating laser and the associated remote control unit PRA 30.

Using these three components together, a laser plane can be aligned onto a precise point automatically. Only the target height has to be indicated using the PRA 30, and the PRA 90 directs the laser plane of the PR 30-HVS rotating laser exactly to that height.

If other rotating lasers are used, you will need the PRA 92 remote control unit in order to move the tripod up and down. Automatic alignment is therefore not possible.

### 3.4 Charge state display

During the charging operation in the device, during operation

Status	Meaning
4 LEDs light.	• Charge state 100%
3 LEDs light, 1 LED blinks.	• Charge state $\geq$ 75%
2 LEDs light, 1 LED blinks.	• Charge state $\geq$ 50%
1 LED lights, 1 LED blinks.	• Charge state $\geq$ 25%
1 LED blinks.	• Charge state $<$ 25%

During the charging operation outside the tool

Status	Meaning
Red LED on the battery lights.	• The battery is charging
Red LED on the battery does not light.	• Charge state 100%

### 3.5 Items supplied

Automatic tripod PRA 90, Li-ion battery PRA 84, AC adapter PRA 85, carry strap, operating instructions, manufacturer certificate.

You can find other system products approved for your product at your local **Hilti** Center or online at: [www.hilti.group](http://www.hilti.group).

## 4 Technical data

### 4.1 Technical data PRA 90

Communication range with PRA 30 in direction of the tripod control panel	50 m
Communication range with PRA 30 to the side of, or in the opposite direction of, the tripod control panel	30 m
Transportation length	94 cm
Weight	8 kg
Carry weight	≤ 5 kg
Maximum height (with rotating laser)	1.95 m
Minimum height (with rotating laser)	0.97 m
Total travel	54 cm
Smallest travel	0.25 mm
Operating temperature	-20 °C ... 60 °C
Storage temperature	-25 °C ... 60 °C
Protection class	IP 56
Tripod thread	5/8" x 11 mm
Radiant power	1.1 dBm
Frequency	2,400 MHz ... 2,483.5 MHz

### 4.2 Technical data PRA 84

Rated voltage	7.2 V
Maximum voltage during operation or during charging while in operation	13 V
Charging time at 32 °C	130 min
Operating temperature	-20 °C ... 50 °C
Storage temperature (dry)	-25 °C ... 60 °C
Charging temperature	0 °C ... 40 °C
Weight	0.3 kg

### 4.3 Technical data PRA 85

Mains power supply	115 V ... 230 V
AC frequency	47 Hz ... 63 Hz
Rated power	36 W
Rated voltage	12 V
Operating temperature	0 °C ... 40 °C
Storage temperature (dry)	-25 °C ... 60 °C
Weight	0.23 kg

### 4.4 Technical data PRA 92

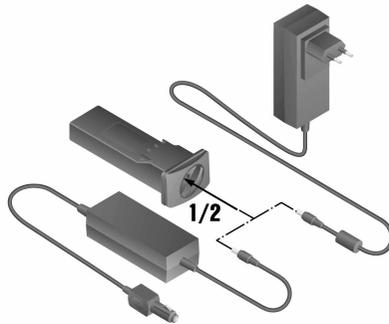
Infrared communication type	2.4 GHz
Power source	2 AA batteries
Operating temperature	-20 °C ... 50 °C
Storage temperature	-25 °C ... 60 °C

## 5 Before use

### 5.1 Charging the battery

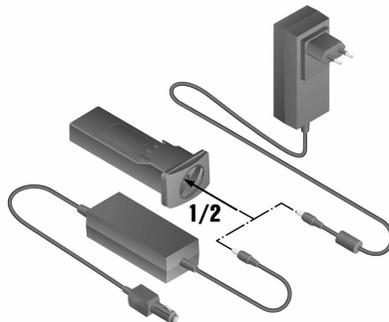


This tripod must only be operated with the **Hilti** battery PRA 84.



- ▶ Charge the batteries fully before using them for the first time.

#### 5.1.1 Charging the battery in the tool



#### WARNING

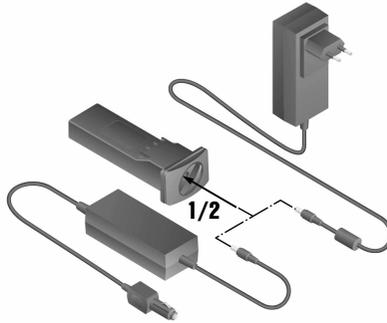
**Electrical hazards.** If liquids penetrate the tool, they may cause the AC adapter to short circuit and explode. This may result in serious injury and cause burns!

- ▶ The PRA 85 AC adapter is for indoor use only.
1. Place the battery into the battery compartment.
  2. Rotate the socket cover so that the charging socket on the battery can be seen.
  3. Plug the cord from the AC adapter or motor vehicle power adapter into the battery.
  4. Connect the AC adapter or the motor vehicle power adapter to the power supply.



The current charge status is shown by the battery display on the tripod when it is switched on.

### 5.1.2 Charging the battery externally (not in the tool)



#### **WARNING**

**Electrical hazards.** If liquids penetrate the tool, they may cause the AC adapter to short circuit and explode. This may result in serious injury and cause burns!

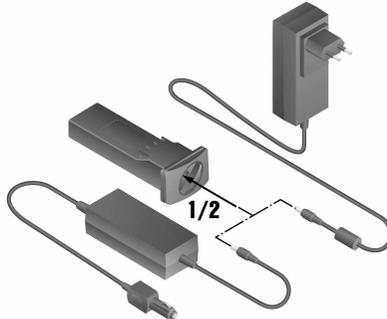
► The PRA 85 AC adapter is for indoor use only.

1. Remove the battery from the tripod and plug in the connector of the AC adapter or the motor vehicle power adapter.
2. Connect the AC adapter or the motor vehicle power adapter to the power supply.



The red LED on the battery lights while charging is in progress.

### 5.1.3 Charging the battery while the tool is in operation

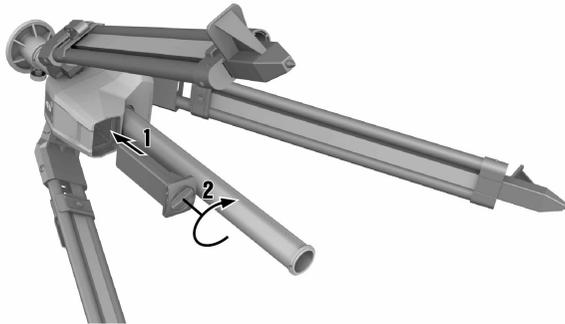


1. Turn the cover so that the charging socket on the battery can be seen.
2. Plug the connection of the AC adapter into the battery.
  - ◀ The tripod works during the charging operation and the charge state is displayed by the LEDs on the tripod.

## 5.2 Inserting the battery



Check that the terminals on the battery and on the tripod are free from foreign objects before inserting the battery.



1. Slide the battery into the holder on the tripod.
2. Turn the catch two notches in a clockwise direction until the “locked” symbol appears.

### 5.3 Removing the battery

1. Turn the catch two notches in an counter-clockwise direction until the “unlocked” symbol appears.
2. Remove the battery from the tool.

## 6 Operation

### 6.1 Fitting rotating laser to tripod



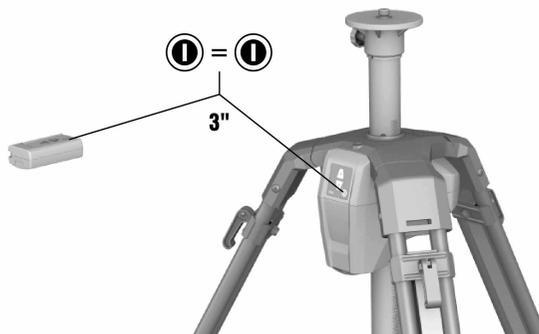
Only fit devices that weigh no more than 5 kg (11 lbs).

- ▶ Screw the rotating laser onto the tripod.

### 6.2 Working with the PRA 92 tripod and remote control unit (accessory)



Before use, the remote control unit must be paired with the tripod in order to enable communication between the two appliances.



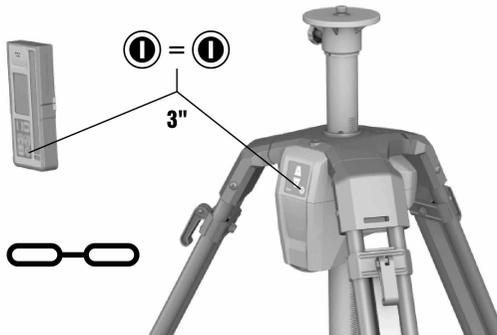
1. Press the On/Off button on the tripod and on the remote control unit and hold the buttons pressed simultaneously for at least 3 seconds.
  - ◀ Successful pairing is indicated by the LEDs on both tools lighting at the same time.
2. Align the control panel of the tripod towards the PRA 92.

3. On the keypad of the remote control unit, press the appropriate arrow buttons in order to move the tripod upwards or downwards.
  - ◀ When the tripod is moved, most rotating lasers either display “Shock” and adjust their level, or they show “Shock” and switch off.
  - ◀ With the **Hilti** models PRE 3, PR 20, PR 2-HVS, PR 25, PR 26 and PRE 38, there is only a leveling phase in the first minute. In the leveling phase, the laser plane can no longer be seen for a short time.

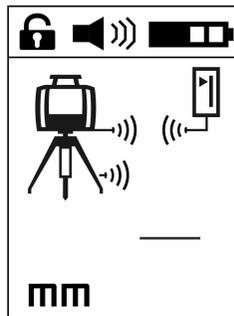
### 6.3 Working with the PRA 30 tripod and remote control unit

**i** Before use, the remote control unit must be paired with the tripod in order to enable communication between the two appliances.

The PR 30-HVS rotating laser should also have been paired separately with the PRA 30. In this way, three-device pairing is established which is essential for an automatic alignment of the laser plane.



1. Press the On/Off button on the tripod and on the remote control unit and hold the buttons pressed simultaneously for at least 3 seconds.
  - ◀ Successful pairing is shown by a chain on the PRA 30 display, while on the PRA 90 all LEDs are blinking. After this is displayed, both tools switch off automatically.



2. Press the On/Off buttons on the PRA 90, PRA 30 and PR 30-HVS..
  - ◀ On the PRA 30 remote control unit display, the rotating laser including tripod is shown, with the active radio connection being depicted as a wave.
  - ◀ If there is no active radio connection, a warning triangle appears on the display instead of the wave.

## 6.4 Align using the automatic tripod PRA 90

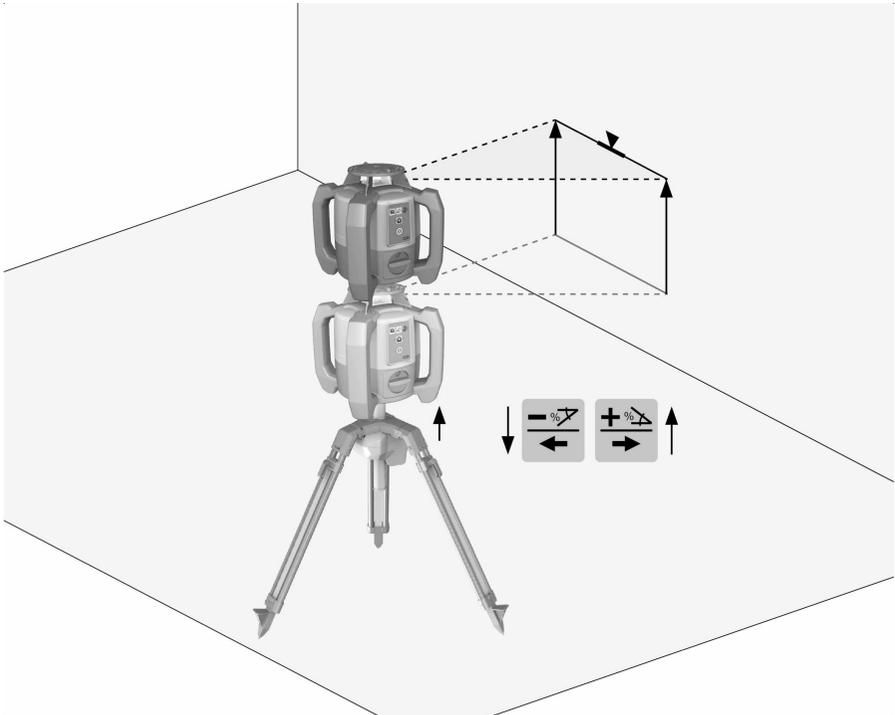


This function is only available with the automatic tripod PRA 90.

When used for the first time, the laser receiver PRA 30 must be paired with the tripod. With the optional automatic tripod PRA 90, the height of the laser plane can be manually or automatically adjusted to the desired height.

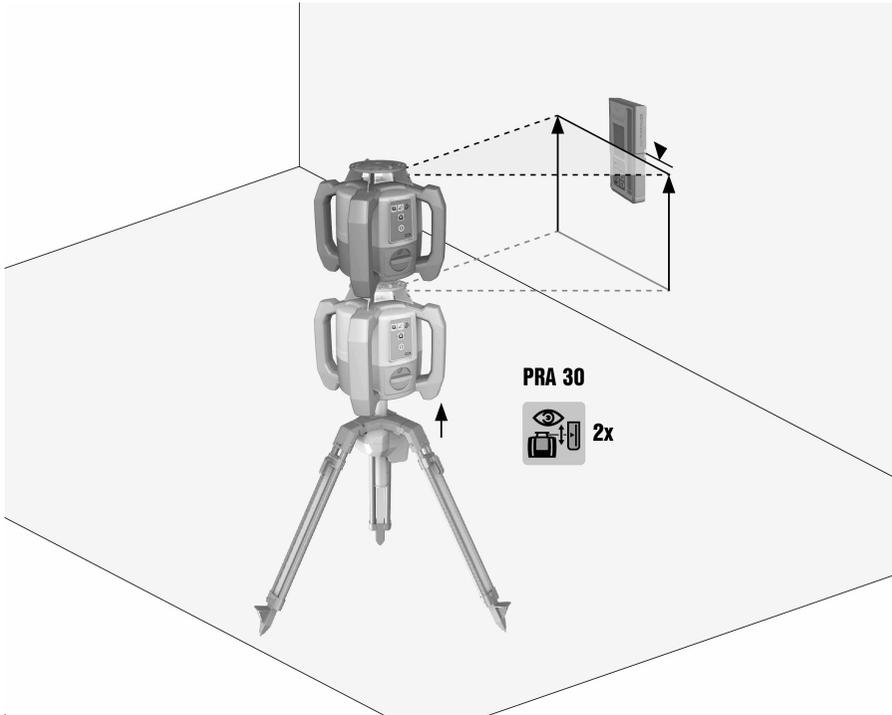
1. Mount the tool on the automatic tripod PRA 90.
2. Switch on the rotating laser, the automatic tripod and the laser receiver.
3. Now align the height of the laser plane manually → page 13 or automatically → page 14.

### 6.4.1 Manual alignment

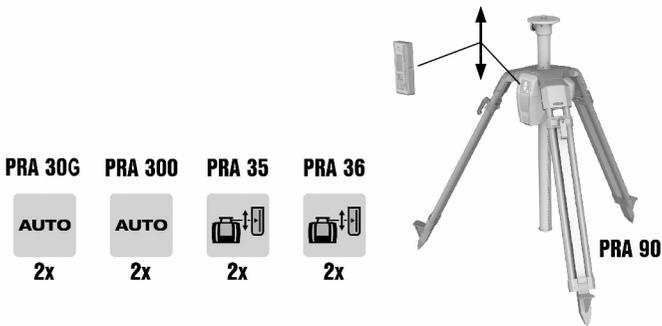


- ▶ Press the +/- buttons on the laser receiver or the arrow buttons on the PRA 90 to shift the horizontal plane up or down (parallel).

## 6.4.2 Automatic alignment



1. Keep the receiver side of the laser receiver at the desired target height and towards the PRA 90 control panel. Hold the laser receiver still while alignment is taking place and take care to ensure that the line of sight between the laser receiver and the tool is not obstructed.



2. Press the “Automatic alignment” button on the laser receiver twice in quick succession (double-click). Double-click the button again to complete the procedure.
  - ◀ This double-click starts the process of bringing the laser plane into alignment, i.e. the tripod elevates or lowers itself to the required height. During this time, an acoustic signal sounds continuously. As soon as the laser beam strikes the detection area of the laser receiver, the beam moves to the position of the marking notch (reference plane). After the position has been reached and the rotating laser has leveled itself, a signal tone with a duration of 5 seconds indicates that the process is complete. The “Automatic alignment” symbol is then also no longer shown.
3. Check the height settings in the display.

#### 4. Remove the laser receiver.



If the automatic alignment process was not successful, short signal tones are emitted and the “Automatic alignment” symbol goes out.

### 6.5 Working with the tripod without the remote control unit

1. Press the On/Off button on the tripod.
  - ◀ The tripod switches on.
2. On the control panel of the tripod, press the appropriate arrow buttons in order to move the tripod upwards or downwards.

## 7 Care and maintenance



Observe the temperature limits of -25 °C (-13 °F) to +60 °C (140 °F) if you keep your equipment inside a motor vehicle.

- Always keep the threaded rod free from coarse dirt and concrete residues.
- Use only a clean, soft cloth for cleaning. If necessary, moisten the cloth slightly with pure alcohol or water. Do not use any other liquids as these may affect the plastic parts.

## 8 Transport and storage

### Transport



#### CAUTION

**Unintentional start-up during transportation.** If batteries are left inserted, the tool may start up unintentionally during transportation and the therefore may be damaged.

- ▶ Always transport the tool with the batteries removed.
- After use, wind the threaded rod down fully.
- Remove the battery.
- Only now fold in the tripod legs.
- For transporting or shipping your equipment, either use the **Hilti** shipping box, the **Hilti** transport pouch or an equivalent form of packaging.
- Always check the accuracy of the equipment before it is used after a prolonged period of transportation.

### Storage



#### CAUTION

**Unintentional damage caused by defective batteries.** Leaking batteries may damage the tool.

- ▶ Always store the tool without the batteries inserted.
- Store tools and appliances in a dry place where they cannot be accessed by children or unauthorized persons.
- Remove the tool from its case if it has become wet. Tools, carrying cases and accessories should be dried and cleaned at a maximum temperature of 40 °C (104 °F).
- Repack and store the equipment only once it is completely dry.
- Always check the accuracy of the equipment before it is used after a prolonged period of storage.
- Store the battery in a place that is as cool and dry as possible.
  - Never store the battery where it is exposed to direct sunlight or sources of heat, e.g. on heaters / radiators or behind glass.

## 9 Troubleshooting

If the trouble you are experiencing is not listed in this table or you are unable to remedy the problem by yourself, please contact **Hilti** Service.

## 9.1 Troubleshooting

Trouble or fault	Possible cause	Action to be taken
Tripod does not respond.	Tripod not switched on.	▶ Switch on tripod.
	Tripod not paired.	▶ Pair the remote control unit with the tripod.
	Batteries in the PRA 92 empty.	▶ Replace the batteries.
Tripod cannot be switched on.	Battery not fully inserted or empty.	▶ Insert the battery so that a "click" is heard or charge the battery.
Automatic alignment not successful.	The desired height is outside the maximum possible setting height.	▶ Check the adjustment height.
	Excessive vibration from external influences.	▶ Completely unfold the tripod and check that it stands firmly.
	Tripod is out of range.	▶ Approach the tripod more closely with the remote control unit and/or align the control panel towards the remote control unit.
Setting the monitoring mode is not successful.	The desired height is outside the maximum possible setting height.	▶ Check the adjustment height.
	Excessive vibration from external influences.	▶ Completely unfold the tripod and check that it stands firmly.
	Tripod is out of range.	▶ Approach the tripod more closely with the remote control unit and/or align the control panel towards the remote control unit.

## 10 RoHS (Restriction of Hazardous Substances)

Click on the link to go to the table of hazardous substances: [qr.hilti.com/r56543](http://qr.hilti.com/r56543).

There is a link to the RoHS table, in the form of a QR code, at the end of this document.

## 11 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.

### Battery disposal

Improper disposal of batteries can result in health hazards from leaking gases or fluids.

- ▶ DO NOT send batteries through the mail!
- ▶ Cover the terminals with a non-conductive material (such as electrical tape) to prevent short circuiting.
- ▶ Dispose of your battery out of the reach of children.
- ▶ Dispose of the battery at your **Hilti Store**, or consult your local governmental garbage disposal or public health and safety resources for disposal instructions.



- ▶ Do not dispose of power tools, electronic equipment or batteries as household waste!

## 12 Manufacturer's warranty

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



**Hilti Corporation**  
Feldkircherstraße 100  
9494 Schaan | Liechtenstein

**PRA 90 (01)**

[2011]

2006/42/EG

EN ISO 12100

2014/53/EU

EN 61010-1:2010

2011/65/EU

EN 62479:2010

2006/66/EC

EN 301 489-1 V2.1.1

EN 301 489-3 V2.1.1

EN 300 440 V2.1.1

EN 300 328 V2.1.1

Schaan, 03/2018

**Paolo Luccini**

Head of Quality and  
Process-Management  
BA Electric Tools & Accessories

**Thomas Hillbrand**

Head of BU Measuring  
Business Unit Measuring









Hilti Corporation  
LI-9494 Schaan  
Tel.: +423 234 21 11  
Fax: +423 234 29 65  
[www.hilti.group](http://www.hilti.group)



2164701



Hilti Connect