

HILTI

PR 30-HVS

Operating instructions

en

Mode d'emploi

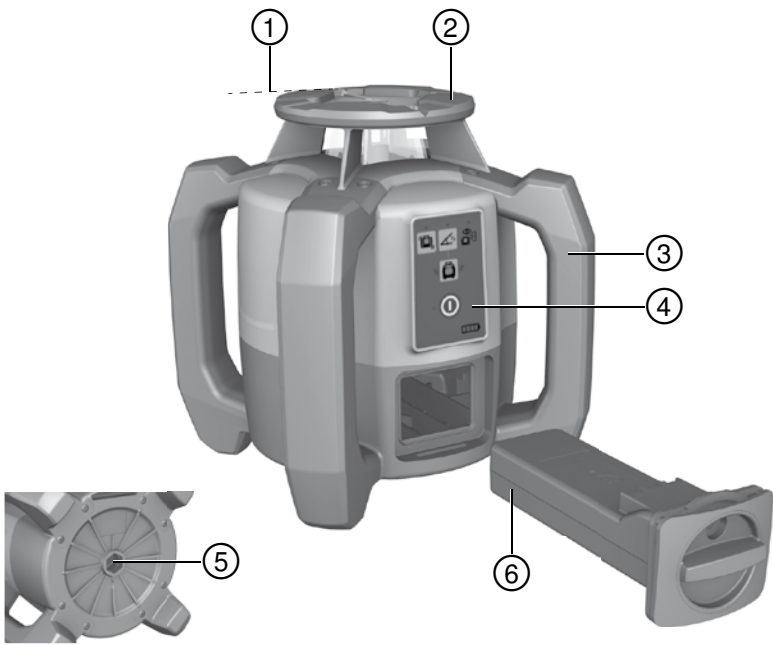
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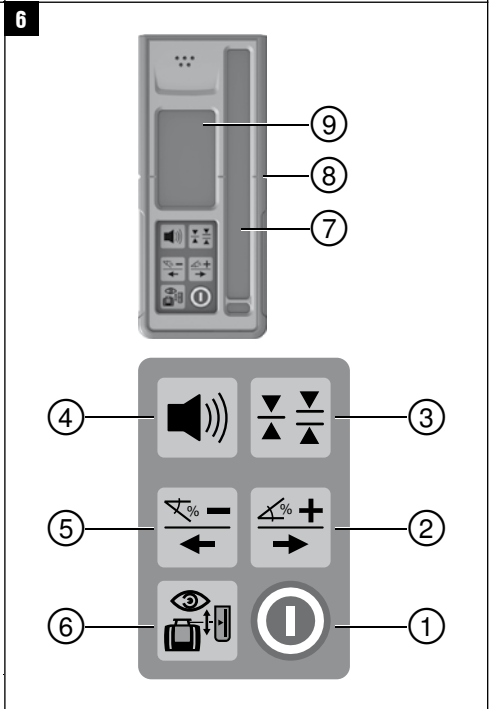
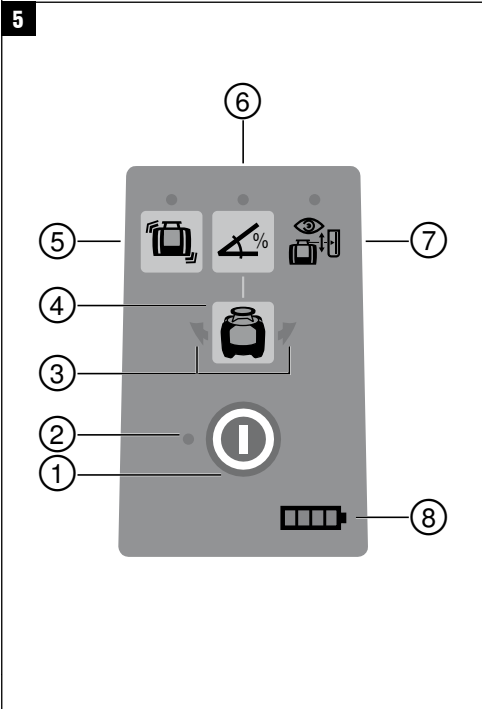
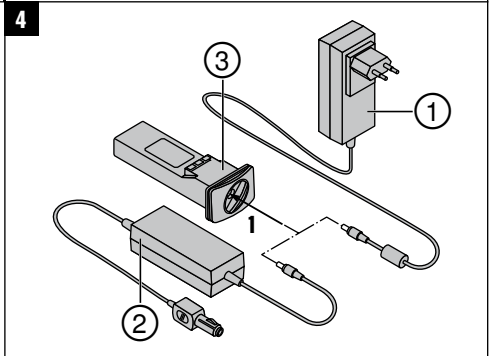
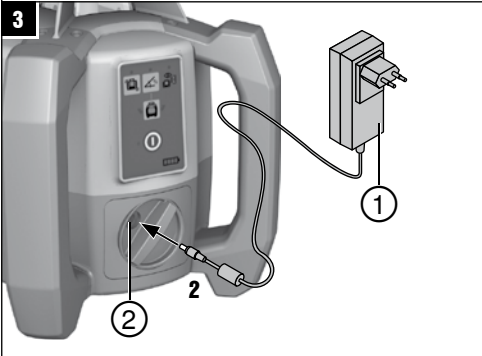
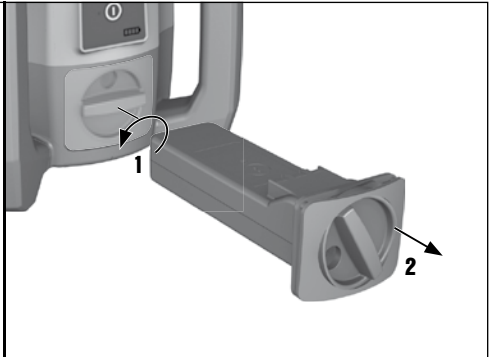
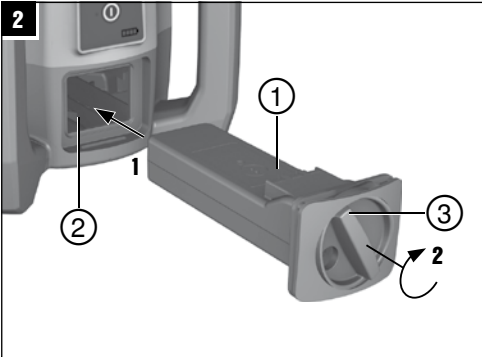
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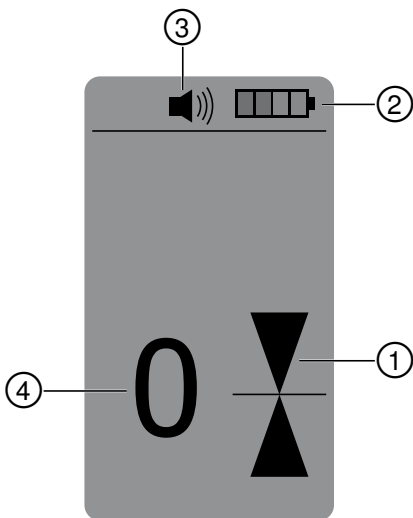
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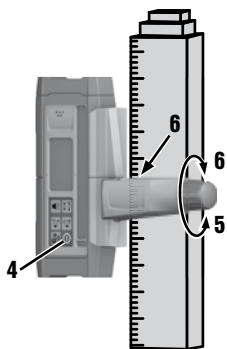
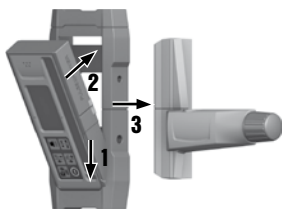


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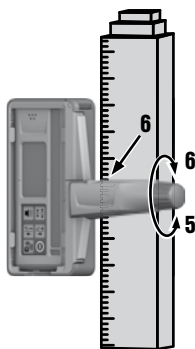
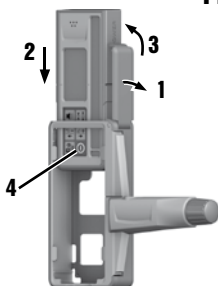


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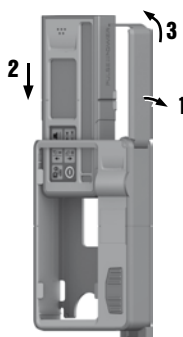
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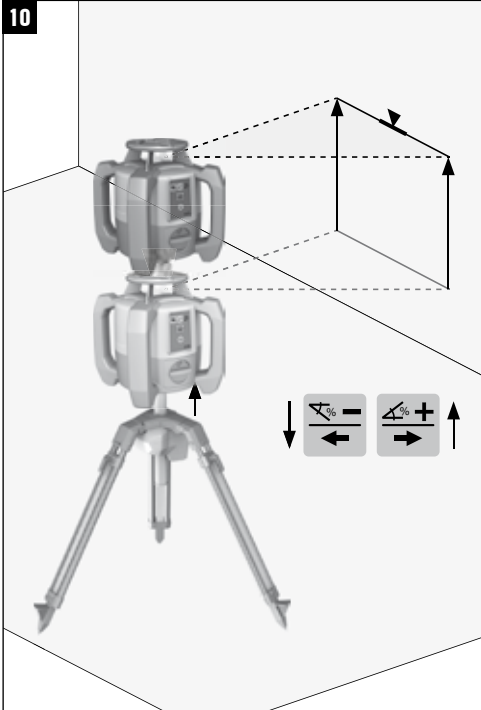
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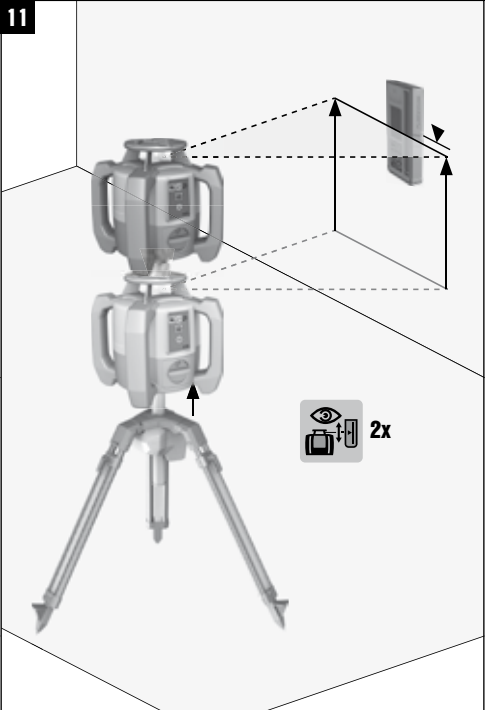
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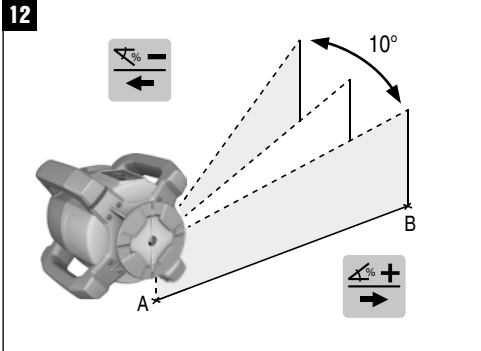
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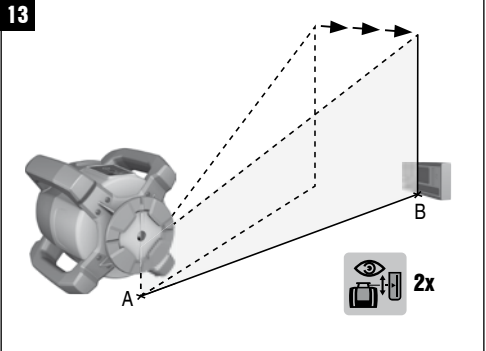
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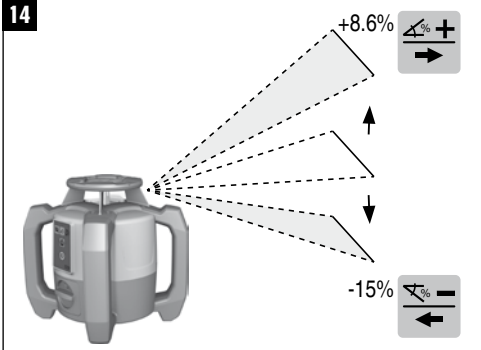
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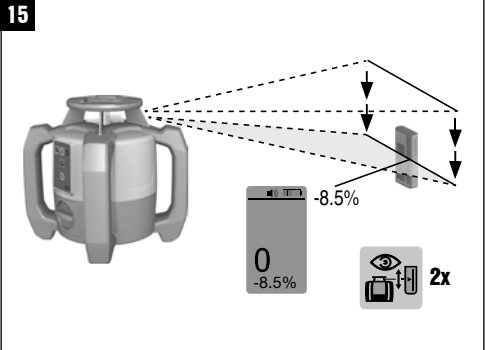
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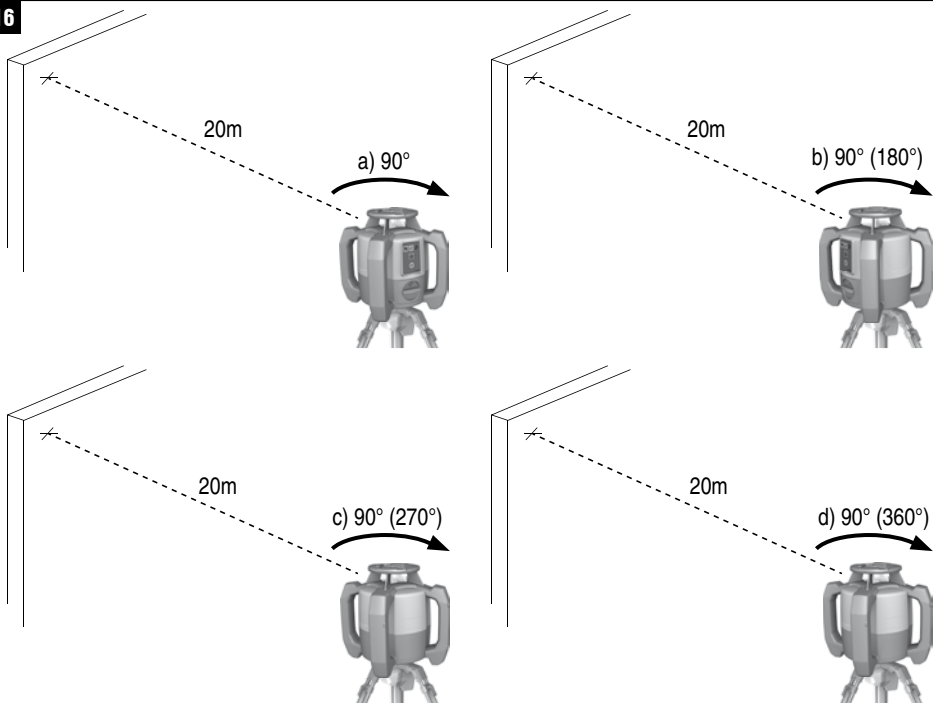
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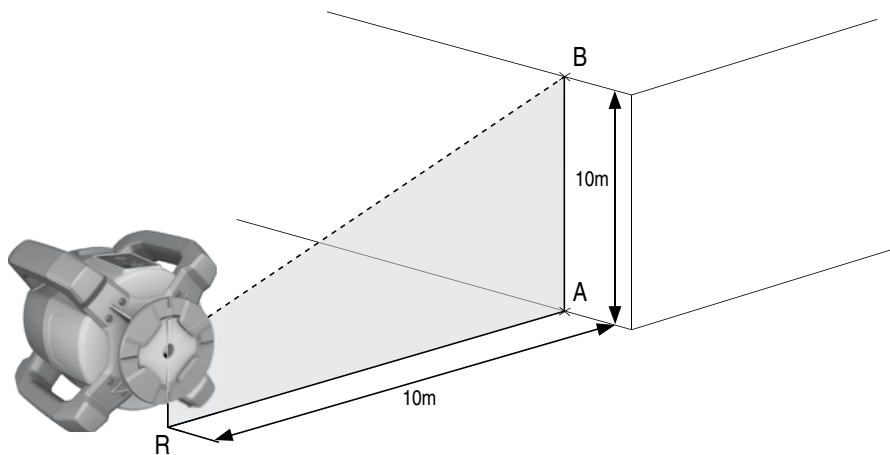
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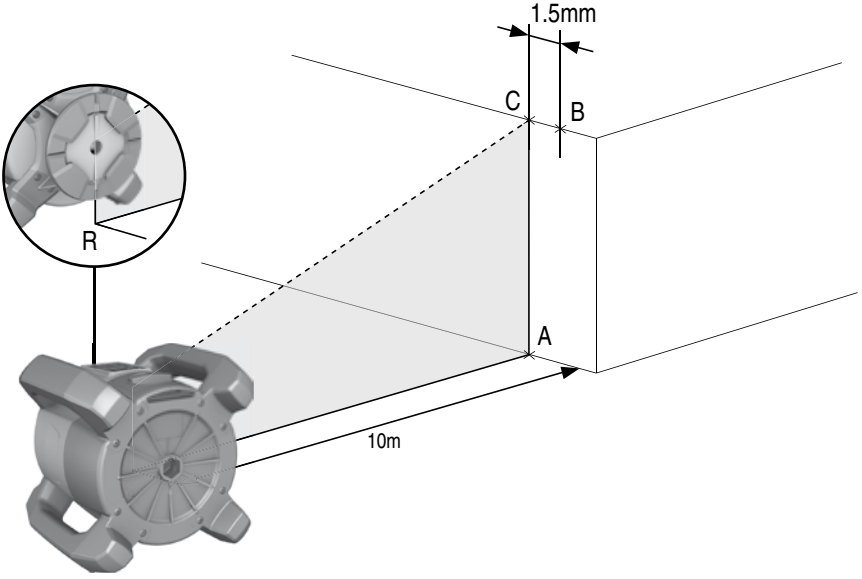


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ORIGINAL OPERATING INSTRUCTIONS

PR 30-HVS rotating laser

It is essential that the operating instructions are read before the tool is operated for the first time.

Always keep these operating instructions together with the tool.

Ensure that the operating instructions are with the tool when it is given to other persons.

Contents	Page
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1 These numbers refer to the corresponding illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while studying the operating instructions.

In these operating instructions, the designation "the tool" or "the rotating laser" always refers to the PR 30-HVS. "Remote control", "laser receiver" or "receiver" always refer to the PRA 30 (03).

Rotating laser **1**

- 1 Laser beam (plane of rotation)
- 2 Rotating head
- 3 Grip
- 4 Control panel
- 5 Base plate with $\frac{5}{8}$ " thread
- 6 PRA 84 Li-ion battery

Inserting and removing the battery **2**

- 1 PRA 84 Li-ion battery

- 2 Battery compartment
- 3 Catch

Charging the battery in the tool **3**

- 1 PUA 81 AC adapter
- 2 Charging socket

Charging the battery after removal from the tool **4**

- 1 PUA 81 AC adapter
- 2 PUA 82 motor vehicle power adapter
- 3 Charging activity LED

Rotating laser control panel **5**

- 1 On/off button
- 2 Auto-leveling LED
- 3 LED arrow for electronic inclination alignment
- 4 Electronic inclination alignment button (only in conjunction with inclined plane mode)
- 5 Shock warning function button and LED
- 6 Inclined plane mode button and LED
- 7 Surveillance mode LED (only with automatic vertical alignment)
- 8 Battery charge status LED

PRA 30 control panel **6**

- 1 On/off button
- 2 Inclination entry button (Plus / Right or Up arrow button) (with the PRA 90)
- 3 Units button
- 4 Volume button
- 5 Inclination entry button (Minus / Left or Down arrow button) (with the PRA 90):
- 6 Automatic alignment / surveillance mode button (vertical) (double click)
- 7 Receiving window
- 8 Marking notch
- 9 Display

PRA 30 display **7**

- 1 Display showing the position of the receiver relative to the height of the laser plane
- 2 Battery status
- 3 Volume
- 4 Indication of distance from laser plane

1 General information

1.1 Safety notices and their meaning

DANGER

Draws attention to imminent danger that will lead to serious bodily injury or fatality.

WARNING

Draws attention to a potentially dangerous situation that could lead to serious personal 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.

NOTE

Draws attention to an instruction or other useful information.

1.2 Explanation of the pictograms and other information

Symbols



Read the operating instructions before use.



General warning



Warning: caustic substances



Warning: electricity



For indoor use only



Return waste material for recycling.



Do not look into the beam.



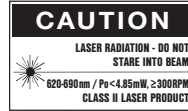
Warning: explosive substances

On the tool



Laser Class 2 in accordance with IEC/EN 60825-1:2007

On the tool



Laser Class II according to CFR 21, § 1040 (FDA)

Location of identification data on the tool

The type designation and serial number can be found on the type identification plate on the tool. Make a note of this data in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type: _____

Generation: 01 _____

Serial no.: _____

2 Description

2.1 Use of the product as directed

The Hilti PR 30-HVS is a rotating laser tool with a visible rotating laser beam and a reference beam set at 90° to the main beam. The rotating laser can be used vertically, horizontally and for inclined planes.

The tool is designed to be used to determine, transfer and check levels, verticals, slopes and right angles. Examples of its uses are: transferring datums and height marks, determining right angles for walls, vertical alignment on reference points and setting out slopes.

The tool is designed for professional use and may be operated, serviced and maintained only by trained, authorized personnel. This personnel must be informed of any special hazards that may be encountered. The tool and its ancillary equipment may present hazards when used incorrectly by untrained personnel or when used not as directed.

Hilti supplies various accessories which allow the tool to be used with maximum efficiency.

To avoid the risk of injury, use only genuine Hilti accessories and insert tools.

Observe the information printed in the operating instructions concerning operation, care and maintenance.

Take the influences of the surrounding area into account. Do not use the appliance where there is a risk of fire or explosion.

Modification of the tool is not permissible.

2.2 Features

The tool makes it possible for a single person to level or align in any plane quickly and with great accuracy. The tool levels itself automatically after switching on. The laser beam is emitted only when the specified accuracy has been achieved. LEDs indicate the current operating status. The tool is powered by a rechargeable Li-ion battery which can be charged while the tool is in operation.

2.3 Combined use of the PRA 30 remote control / laser receiver

The PRA 30 is a combined remote control unit and laser receiver. It can be used to control the PR 30-HVS rotating laser over great distances. The PRA 30 also serves as a laser receiver and can thus be used to detect and indicate the laser beam at great distance.

2.4 Digital distance measurement display

The laser receiver displays digitally the distance between the laser plane and the marking notch. This allows the user to determine the exact position of the receiver relative to the laser plane, with millimeter accuracy, in a single operation.

2.5 Automatic alignment and surveillance

Using the PR 30-HVS and the PRA 30, a person working alone can align the laser plane automatically with a certain point with great accuracy. The tool detects the applicable alignment (horizontal, inclined or vertical) automatically and uses the automatic alignment function accordingly (horizontal with the PRA 90 plus inclination) or automatic alignment with subsequent monitoring of the plane (vertical). With the aid of the PRA 30, the surveillance function checks alignment of the laser plane at regular intervals in order to avoid possible deviations due to temperature fluctuations, wind or similar. The surveillance function can be deactivated.

2.6 Digital inclination display with patented electronic inclination alignment

The digital inclination display is capable of indicating an inclination of up to 21.3% when the PR 30-HVS is operating in inclined mode. This makes it possible to set out and check slopes without having to make any calculations. Electronic inclination alignment allows optimum inclination accuracy.

2.7 Shock warning

The shock warning function is activated two minutes after the tool has leveled itself after switching on. If a button is pressed within these two minutes, the two-minute delay begins again. The tool switches to warning mode if it is brought out of level while in operation (due to vibration or an impact); all LEDs begin to blink and the laser switches off (the head stops rotating).

2.8 Automatic cut-out

The laser does not switch on and all LEDs blink if the tool is set up outside its self-leveling range ($\pm 5^\circ$) or if movement is blocked mechanically.

The tool can be set up on a tripod with a 5/8" thread or stood directly on some other steady surface (free of vibration). When automatic leveling is activated for one or both axes, the built-in servo system ensures that the specified accuracy is maintained. The tool switches itself off when automatic leveling cannot be achieved (tool set up outside its leveling range or physical impediment of the mechanism) or when knocked off level (see "Shock warning" section).

NOTE

If the correct level cannot be achieved, the laser switches itself off and all LEDs blink.

2.9 Items supplied

- 1 PR 30-HVS rotating laser
- 1 PRA 30 (03) laser receiver / remote control
- 1 PRA 80 or PRA 83 laser receiver holder
- 1 Operating instructions
- 1 PRA 84 Li-ion battery
- 1 PUA 81 AC adapter
- 2 Batteries (size AA cells)

2 Manufacturer's certificates

1 Hilti toolbox

2.10 Operating status indicators

The tool is equipped with the following operating status indicators: Auto-leveling LED, battery charge status LED, shock warning function deactivation LED, inclined plane mode LED, surveillance mode LED and electronic inclination alignment LED.

2.11 LED indicators

Auto-leveling LED	The green LED blinks.	The tool is in the leveling phase.
	The green LED lights constantly.	The tool has leveled itself / is operating normally.
Shock warning deactivation LED	The orange LED lights constantly.	The shock warning function is deactivated.
Inclined plane mode LED	The orange LED blinks.	Alignment in the sloping plane.
	The orange LED lights constantly.	Slope mode is active.
Surveillance mode LED	The orange LED lights constantly.	The tool is in surveillance mode. Alignment with the reference point (PRA 30) is correct.
	The orange LED blinks.	The tool is aligning the laser plane with the reference point (PRA 30).
Electronic inclination alignment LED	The orange LED arrows blink.	The tool is in electronic inclination alignment mode, the PRA 30 receives no laser beam.
	Both orange LED arrows light constantly.	The tool is correctly aligned with the PRA 30.
	The orange LED arrow on the left lights	The tool must be rotated in a clockwise direction.
	The orange LED arrow on the right lights	The tool must be rotated in a counter-clockwise direction.
All LEDs	All LEDs blink	The tool has been bumped, knocked off level or is exhibiting some error.

2.12 Charge status of the Li-ion battery during operation

LEDs light constantly	LEDs blink	Charge status C
LED 1, 2, 3, 4	-	$C \geq 75 \%$
LED 1, 2, 3	-	$50 \% \leq C < 75 \%$
LED 1, 2	-	$25 \% \leq C < 50 \%$
LED 1	-	$10 \% \leq C < 25 \%$
-	LED 1	$C < 10 \%$

2.13 Charge status of the Li-ion battery during charging while inserted in the tool

LEDs light constantly	LEDs blink	Charge status C
LED 1, 2, 3, 4	-	$C = 100 \%$
LED 1, 2, 3	LED 4	$75 \% \leq C < 100 \%$
LED 1, 2	LED 3	$50 \% \leq C < 75 \%$
LED 1	LED 2	$25 \% \leq C < 50 \%$
-	LED 1	$C < 25 \%$

2.14 Battery charging activity is shown on the battery display while charging the battery outside the tool.

If the red LED lights constantly, the battery is being charged.
 If the red charging activity LED does not light, then either the charging operation is complete or the charger is providing no current.

3 Accessories

Designation	Short designation
Laser receiver / remote control	PRA 30 (03)
Laser receiver	PRA 20 (02)
Laser receiver holder	PRA 80
Laser receiver holder	PRA 83
Height transfer device	PRA 81
Slope adapter	PRA 79
AC adapter	PUA 81
Car charging connector	PUA 82
Battery	PRA 84
Battery	PRA 84G
Vertical angle	PRA 770
Batter board adapter	PRA 750
Batter board receiver holder	PRA 751
Facade adapter	PRA 760
Tripod	PUA 20
Crank tripod (elevator tripod)	PA 921
Crank tripod (elevator tripod)	PUA 30
Automatic tripod	PRA 90
Telescopic staffs	PUA 50, PUA 55

4 Technical data

Right of technical changes reserved.

PR 30-HVS

Receiving range (diameter)	With PRA 30 (03) (typical): 2... 500 m (6.56... 1,640.42 ft)
Range of remote control (circle diameter)	With PRA 30 (03) (typical): 0... 150 m (0... 492.13 ft)
Accuracy ¹	at 10 m: ± 0.75 mm
Plumb beam	Continuous, perpendicular to the plane of rotation
Laser class	Class 2, 620-690 nm; < 1 mW (EN 60825-1:2007 / IEC 60825-1:2007); Class II (CFR 21 § 1040 (FDA)); Maximum power < 4.85 mW at ≥ 300 r.p.m.
Speed of rotation	600/min, 1,000/min
Slope range	With the tool pre-inclined: ≤ 21.3%
Self-leveling range	±5°

¹ Influences such as particularly high temperature fluctuations, dampness, shock, dropping, etc. can affect accuracy. Unless stated otherwise, the tool was adjusted or calibrated under standard ambient conditions (MIL-STD-810G).
² The drop test was carried out from a tripod, dropping onto flat concrete under standard ambient conditions (MIL-STD-810G).

Power source	7.2 V / 4.5 Ah Li-ion battery
Battery life	Temperature +25°C (+77 °F), Li-ion battery: ≥ 25 h
Operating temperature range	-20...+50°C (-4...+122 °F)
Storage temperature range (dry)	-25...+60°C (-13...+140 °F)
Protection class	IP 66 (in accordance with IEC 60529); Not in "charging during operation" mode
Tripod thread	5/8" x 18
Weight (incl. PRA 84)	2.5 kg (5.51 lb)
Dimensions (L x W x H)	200 mm (7.87") x 200 mm (7.87") x 230 mm (9.06")
Drop test height ²	1.5 m (4.92 ft)

¹ Influences such as particularly high temperature fluctuations, dampness, shock, dropping, etc. can affect accuracy. Unless stated otherwise, the tool was adjusted or calibrated under standard ambient conditions (MIL-STD-810G).

² The drop test was carried out from a tripod, dropping onto flat concrete under standard ambient conditions (MIL-STD-810G).

PRA 30 (03)

Detection range (area diameter)	Typical distance with PR 30-HVS: 2...500 m (6.56... 1,640.42 ft)
Signal tone generator	3 volume levels plus mute setting
Liquid-crystal display	On both sides
Indicator range, distance from zero	± 52 mm
Laser plane display range	± 0.5 mm
Length of the detection area	120 mm (4.72")
Casing top edge center indicator	75 mm (2.95")
Marking notches	On both sides
Time without detection before automatic power off	15 min
Dimensions (L × W × H)	160 mm (6.3") × 67 mm (2.64") × 24 mm (0.94")
Weight (including batteries)	0.25 kg (0.55 lb)
Power source	2 AA batteries
Battery life	Temperature +20°C (+68 °F): Approx. 40 h (depending on the quality of the alkaline batteries used)
Operating temperature range	-20...+50°C (-4...+122 °F)
Storage temperature range	-25...+60°C (-13...+140 °F)
Protection class	IP 66 (in accordance with IEC 60529), except battery compartment
Drop test height ¹	2 m (6.56 ft)

¹ The drop test was carried out using the PRA 83 receiver holder, dropped onto flat concrete under standard ambient conditions (MIL-STD-810G).

PRA 84 Li-ion battery

Rated voltage (normal mode)	7.2 V
Maximum voltage (during operation or during charging while in operation)	13 V
Rated current	180 mA
Charging time	Temperature +32°C (+90 °F): 2 h 10 min (battery 80% charged)
Operating temperature range	-20...+50°C (-4...+122 °F)
Storage temperature range (dry)	-25...+60°C (-13...+140 °F)
Charging temperature range (also for charging during operation)	+0...+40°C (+32...+104 °F)

Weight	0.3 kg (0.66 lb)
Dimensions (L x W x H)	160 mm (6.3") x 45 mm (1.77") x 36 mm (1.42")

PUA 81 AC adapter

AC supply	115...230 V
AC frequency	47...63 Hz
Rated power	36 W
Rated voltage	12 V
Operating temperature range	+0...+40°C (+32...+104 °F)
Storage temperature range (dry)	-25...+60°C (-13...+140 °F)
Weight	0.23 kg (0.51 lb)
Dimensions (L x W x H)	110 mm (4.33") x 50 mm (1.97") x 32 mm (1.26")

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5 Safety instructions

5.1 Basic information concerning safety

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.

5.2 General safety rules



- a) Do not render safety devices ineffective and do not remove information and warning notices.
- b) Stay alert, watch what you are doing and use common sense when operating the machine. Don't use the machine when you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating machines may result in serious personal injury.
- c) Keep laser tools out of reach of children.
- d) Failure to follow the correct procedures when opening the tool may cause emission of laser radiation in excess of class 2 or, respectively, class 3. **Have the tool repaired only at a Hilti service center.**
- e) Do not operate the tool in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Tools and appliances create sparks which may ignite the dust or fumes.
- f) (Statement in accordance with FCC §15.21): Changes or modifications not expressly approved by the manufacturer can void the user's authority to operate the equipment.
- g) Use of setting-up / adjusting devices and equipment or operating procedures other than those specified in these instructions may lead to exposure to hazardous radiation.
- h) Check the condition of the tool before use. If the tool is found to be damaged, have it repaired at a Hilti service center.
- i) Maintain the machine carefully. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the machine's operation. If damaged, have the machine repaired before use. Poor maintenance is the cause of many accidents.
- j) The user must check the accuracy of the tool after it has been dropped or subjected to other mechanical stresses.
- k) Check the tool before using it for important measuring work.
- l) Check the accuracy of the measurements several times during use of the tool.
- m) When the tool is brought into a warm environment from very cold conditions, or vice-versa, allow it to become acclimatized before use.
- n) If mounting on an adapter, check that the tool is screwed on securely.
- o) Keep the laser exit aperture clean to avoid measurement errors.
- p) Although the tool is designed for the tough conditions of jobsite use, as with other optical and electronic instruments (e.g. binoculars, spectacles, cameras) it should be treated with care.
- q) Although the tool is protected to prevent entry of dampness, it should be wiped dry each time before being put away in its transport container.
- r) Keep the electrical contacts dry (protect from rain or dampness).
- s) Use the AC adapter only for connecting to the AC supply.
- t) Check to ensure that the tool and AC adapter do not present an obstacle that could lead to a risk of tripping and personal injury.
- u) Ensure that the workplace is well lit.
- v) Check the condition of the extension cord and replace it if damage is found. 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.

- w) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- x) **Do not expose the supply cord to heat, oil or sharp edges.**
- y) **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 should thus be checked at a Hilti Service Center at regular intervals, especially if used frequently for working on conductive materials.
- z) Avoid touching the contacts.

5.2.1 Battery tool use and care



- a) **Do not expose batteries to high temperatures or fire.** This presents a risk of explosion.
- b) **Do not disassemble, squash or incinerate batteries and do not subject them to temperatures over 80°C (176°F).** A risk of fire, explosion or injury through contact with caustic substances may otherwise result.
- c) **Avoid ingress of moisture.** Moisture in the interior of the tool may cause a short circuit and chemical reactions resulting in burns to the skin or fire.
- d) Under abusive conditions, liquid may leak from the battery. **Avoid contact. If contact accidentally occurs, flush with water. In the event of the liquid coming into contact with the eyes, rinse the eyes with plenty of water and consult a doctor.** Liquid ejected from the battery may cause irritation or burns.
- e) **Do not use batteries other than those approved for use with the applicable tool or appliance.** Use of other batteries or use of the battery for purposes for which it is not intended presents a risk of fire and explosion.
- f) **Observe the special instructions applicable to the transport, storage and use of Li-ion batteries.**
- g) **When not in use, keep the battery and the charger away from paper clips, coins, keys, nails, screws or other small metal objects that could cause a short circuit at the battery terminals or the charging contacts.** A short circuit at the battery terminals or charging contacts could result in personal injury (burns) or fire.
- h) **Avoid short-circuiting the battery.** Before inserting the battery in the tool, check that the terminals of the battery and the tool are free from foreign objects. Short-circuiting the battery terminals presents a risk of fire, explosion or contact with caustic substances.
- i) **Do not charge or continue to use damaged batteries (e.g. batteries with cracks, broken parts, bent or pushed-in and/or pulled-out contacts).**

- j) **Use only the PUA 81 AC adapter, PUA 82 motor vehicle power adapter or other chargers recommended by the manufacturer to power the tool or charge the battery.** Failure to observe these points may result in damage to the tool. Use of a charger with batteries other than the specific type(s) for which it is designed presents a risk of fire.

5.3 Proper organization of the work area

- a) **Secure the area in which you are working and take care to avoid directing the beam towards other persons or towards yourself when setting up the tool.**
- b) **Avoid unfavorable body positions when working from ladders. Make sure you work from a safe stance and stay in balance at all times.**
- c) Readings taken in the vicinity of reflective objects or surfaces, through panes of glass or similar materials may produce incorrect results.
- d) **Ensure that the tool is set up on a steady, level surface (not subject to vibration).**
- e) **Use the tool only within its specified limits.**
- f) Make sure that your PR 30-HVS is responding only to your PRA 30 and not to other PRA 30s that may be in use on the jobsite.
- g) **When working in "charging during operation" mode, attach the mains adapter in a secure position, e.g. on a tripod.**
- h) **When working in "charging during operation" mode, attach the AC adapter in a secure position, e.g. on a tripod.**
- i) Use of products for applications different from those intended could result in hazardous situations. **Use the product and its accessories etc. in accordance with these instructions and in the manner intended for the particular type of product. Take the working conditions and the work to be performed into account.**
- j) **Use of the telescopic staff in the vicinity of overhead high voltage cables is not permissible.**

5.3.1 Electromagnetic compatibility

Although the tool complies with the strict requirements of the applicable directives, Hilti cannot entirely rule out the possibility of the tool being subject to interference caused by powerful electromagnetic radiation, 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).

5.3.2 Laser classification for Laser Class 2 / Class II appliances

Depending on the version purchased, the tool complies with Laser Class 2 in accordance with IEC825-1:2007/EN60825-1:2007 and Class II in accordance with CFR 21 § 1040 (FDA). This tool may be used without need for further protective measures. The eyelid closure reflex protects the eyes when a person looks into the beam unintentionally for a brief moment. This eyelid closure reflex,

however, may be negatively affected by medicines, alcohol or drugs. Nevertheless, as with the sun, one should

not look directly into sources of bright light. Do not direct the laser beam toward persons.

6 Before use

NOTE

The tool may be powered only by a Hilti PRA 84 or PRA 84G battery.

6.1 Fitting the battery 2

CAUTION

Before inserting the battery in the tool, check to ensure that the battery terminals and the contacts in the tool are free from foreign objects.

1. Slide the battery into the appliance.
2. Turn the catch in a clockwise direction until the “locked” symbol appears.

6.2 Removing the battery 2

1. Turn the catch in a counter-clockwise direction until the “unlocked” symbol appears.
2. Pull the battery out of the appliance.

6.3 Charging the battery



DANGER

Use only the Hilti batteries and Hilti mains adapters listed under “Accessories”.

6.3.1 Charging a new battery for the first time

Charge the battery fully before using it for the first time.

NOTE

Make sure the system to be charged is standing securely.

6.3.2 Recharging a battery

1. Check that the outer surfaces of the battery are clean and dry.
2. Insert the battery in the tool.
NOTE Li-ion batteries are ready for use at any time, even when only partly charged.
Charging progress is indicated by the LEDs when the tool is switched on.

6.4 Options for charging the battery



NOTE

Make sure that the recommended temperature range is observed when charging (0 to 40°C).

DANGER

The PUA 81 AC adapter is for indoor use only. Avoid ingress of moisture.

6.4.1 Charging the battery in the tool 3

1. Insert the battery in the battery compartment (see 6.1).
2. Rotate the socket cover until the charging socket on the battery becomes visible.
3. Plug the cord from the AC adapter or motor vehicle power adapter into the battery.
The battery will be charged.
4. Switch the tool on in order to display the charging status while charging is in progress.

6.4.2 Charging the battery outside the tool 4

1. Remove the battery (see 6.2).
2. Connect the cord from the AC adapter or the motor vehicle power adapter to the battery.
The red LED on the battery indicates charging activity.

6.4.3 Charging the battery while the tool is in operation

DANGER

Operation in “charging during operation” mode is not permissible for outdoor use or in damp surroundings.

CAUTION

Avoid ingress of moisture. Moisture in the interior of the tool may cause a short circuit and chemical reactions resulting in burns to the skin or fire.

1. Rotate the socket cover until the charging socket on the battery becomes visible.
2. Plug the cord from the AC adapter into the battery.
The tool continues to operate while charging and battery charging status is indicated by the LEDs on the tool.

6.5 Battery use and care

Store the battery in a cool, dry place. Never store the battery where it is exposed to direct sunlight or sources of heat, e.g. on heaters / radiators or behind a motor vehicle windscreen. Batteries that have reached the end of their life must be disposed of safely and correctly to avoid environmental pollution.

6.6 Switching the tool on

Press the on/off button.

NOTE

After switching on, the tool begins to level itself automatically. After completion of the leveling process, the laser beam is switched on and begins to rotate in the normal direction.

6.7 LED indicators

Please refer to section 2 "Description".

6.8 Inserting batteries in the PRA 30**DANGER**

Do not use damaged batteries.

DANGER

Do not mix old and new batteries. Do not mix batteries of different makes or types.

NOTE

The PRA 30 may be powered only by batteries manufactured in accordance with the applicable international standards.

1. Open the laser receiver battery compartment.
2. Insert the batteries in the laser receiver.
NOTE Check to ensure correct polarity when inserting the batteries.
3. Close the battery compartment cover.

6.9 Pairing

The rotating laser and the remote control / laser receiver are already paired when supplied. Additional laser receivers of the same type or PRA 90 automatic tripods are not ready for use until they have been paired. The rotating laser and these accessories must be paired before they can be used together. Pairing tools and appliances means that they are explicitly assigned to each other.

The rotating laser and the PRA 90 automatic tripod then receive only signals from the remote control units / laser receivers with which they have been paired. The pairing enables appliances to work close to other rotating lasers without the risk that their settings will be altered by these other lasers.

6.9.1 Pairing the rotating laser and the laser receiver

1. Press the on/off buttons on the rotating laser and laser receiver simultaneously and keep them pressed for at least 3 seconds.
Successful pairing is indicated by a signal tone emitted by the laser receiver and all LEDs blinking on the rotating laser. At the same time, the "Paired" symbol appears briefly in the laser receiver display. The rotating laser and the receiver switch off automatically after pairing.
2. Switch the paired appliances on again.
The "Paired" symbol appears in the display.

6.9.2 Pairing the PRA 90 and the receiver

1. Press the on/off buttons on the PRA 90 automatic tripod and laser receiver simultaneously and keep them pressed for at least 3 seconds.
Successful pairing is indicated by a signal tone emitted by the laser receiver and all LEDs blinking on the PRA 90 automatic tripod. At the same time, the "Paired" symbol appears briefly in the laser receiver display. The tripod and the receiver switch off automatically after pairing.
2. Switch the paired appliances on again.
The rotating laser with the tripod is shown in the display on the laser receiver.

7 Operation**7.1 Checking the tool**

Check the accuracy of the tool before using it for important tasks, especially if it has been dropped or subjected to unusual influences or impacts etc. (see 8.6).

7.2 Switching the tool on

Press the on/off button.

NOTE

After switching on, the tool begins to level itself automatically.

7.3 Working with the PRA 30

The PRA 30 is a combined laser receiver and remote control unit. The remote control makes working with the rotating laser more convenient and is required in order to make use of certain functions. The laser beam is indicated by visual and audible signals.

7.3.1 Working with the laser receiver as a hand-held unit

- 1. Press the on/off button.
- 2. Hold the laser receiver with the detection area directly in the plane of the rotating laser beam.

7.3.2 Working with the laser receiver in the PRA 80 receiver holder 9

- 1. Open the catch on the PRA 80.
- 2. Place the receiver in the PRA 80 receiver holder.
- 3. Close the catch on the PRA 80.
- 4. Switch the receiver on by pressing the on/off button.
- 5. Turn the rotating grip to the open position.
- 6. Secure the PRA 80 receiver holder on the telescopic staff or leveling staff by tightening the clamping knob.
- 7. Hold the laser receiver with the detection area directly in the plane of the rotating laser beam.

7.3.3 Working with the laser receiver in the PRA 83 receiver holder 9

- 1. Push the receiver into the rubber sleeve of the PRA 83 at an angle until it fully encloses the receiver. Take care to ensure that the detection area and the buttons are facing the front.
- 2. Fit the receiver, complete with the rubber sleeve, onto the grip section. The cover and grip section are joined together by the magnetic holder.
- 3. Switch the receiver on by pressing the on/off button.
- 4. Turn the rotating grip to the open position.
- 5. Secure the PRA 83 receiver holder on the telescopic staff or leveling staff by tightening the clamping knob.
- 6. Hold the laser receiver with the detection area directly in the plane of the rotating laser beam.

7.3.4 Working with the PRA 81 height transfer device 9

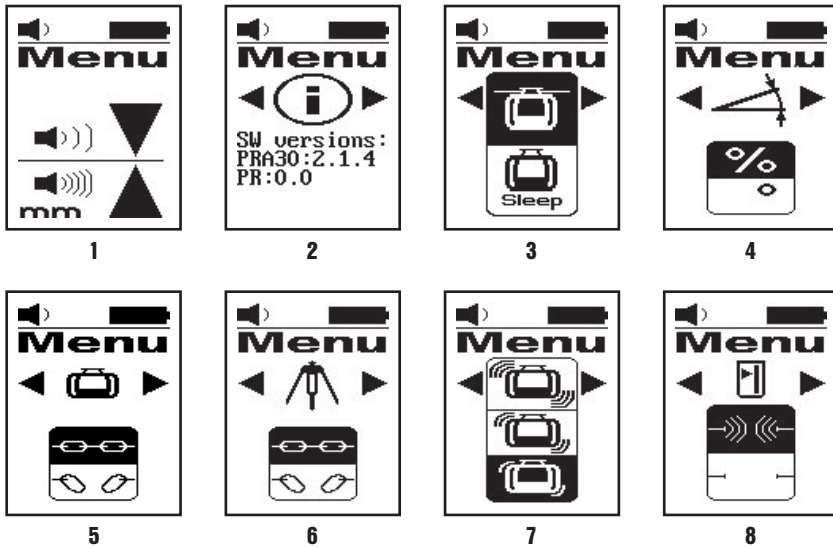
- 1. Open the catch on the PRA 81.
- 2. Insert the laser receiver in the PRA 81 height transfer device.
- 3. Close the catch on the PRA 81.
- 4. Switch the laser receiver on by pressing the on/off button.
- 5. Hold the laser receiver with the detection area directly in the plane of the rotating laser beam.
- 6. Position the laser receiver so that the distance display shows "0".
- 7. Use the measuring tape to measure the desired distance.

7.3.5 Setting the measuring unit 6

The "Units" button can be used to set the desired accuracy of the digital display (mm/cm/off).

7.3.6 Volume adjustment 6

The laser receiver is set to "Normal" volume when switched on. The volume can be adjusted by pressing the "Volume" button. One of four settings can be selected: "Low", "Normal", "High" or "Off".



1. Press and hold the on/off button for two seconds when switching the laser receiver on. The menu then appears in the display.
2. Use the “Units” button to select metric or imperial measuring units.
3. Use the “Volume” button to assign the more rapid signal tone to the detection area above or below the marking notch.
4. Use the arrow buttons (Left / Right) to select further points as necessary.
NOTE The arrow buttons (Left / Right) can be used to select settings. The “Units” button is used to change the applicable settings. The following settings can be made: Display software version (no adjustment possible), PR 30-HVS sleep mode (off / on), units for inclined plane mode (%/°), pairing the PR 30-HVS (pair / separate), pairing the PRA 90 (pair / separate), sensitivity of shock warning function (high / medium / low), wireless connection (on / off). Settings that affect the rotating laser only become effective when the rotating laser is switched on and a wireless connection has been established.
5. To save the settings, switch the laser receiver off.

NOTE Each setting that has been made becomes effective the next time the tool is switched on.

7.3.8 Double-click

When operating the tool, the “automatic alignment” and “surveillance” commands must be confirmed with a double-click in order to avoid incorrect operation.

7.4 Deactivating the shock warning function

1. Switch the tool on (see 7.2).
2. Press the “Deactivate shock warning” button. The shock warning deactivation LED lights constantly, indicating that the function has been deactivated.
3. To return to standard operating mode, switch the tool off and then switch it back on again.

7.5 Working in the horizontal plane

7.5.1 Setting up

1. Set up the tool in a suitable position for the application, e.g. on a tripod. Alternatively, the rotating laser may be mounted on a wall bracket. The angle of inclination of the surface on which it stands should not exceed $\pm 5^\circ$.
2. Press the on/off button.
The auto-leveling LED blinks green.
The laser switches on, the beam begins to rotate and the "auto leveling" LED lights as soon as the tool has leveled itself.

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7.5.2 Alignment using the PRA 90 automatic tripod

NOTE

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

When used for the first time, the PRA 30 laser receiver must be paired with the tripod (see 6.9.2).

With the optional PRA 90 automatic tripod you can set the height of the laser plane to the desired level manually or automatically.

1. Mount the tool on the PRA 90 automatic tripod.
2. Switch on the rotating laser, the automatic tripod and the laser receiver. Set the height of the laser plane manually (see 7.5.3) or automatically (see 7.5.4).

7.5.3 Manual alignment

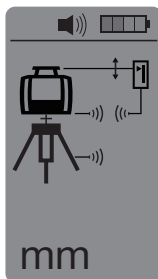
Press the +/- buttons on the laser receiver or the arrow buttons on the PRA 90 to shift the horizontal plane up or down (parallel).

7.5.4 Automatic alignment

1. Hold the laser receiver at the desired height with the detection area facing 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. A constant signal tone is emitted while this is taking place. 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.

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

7.6 Working in the vertical plane

1. When working in the vertical plane, mount the tool on a suitable tripod, facade adapter, batter board adapter or wall bracket, with the control panel facing upwards. Alternatively, the tool can be stood on the rubber feet on the rear grips.

NOTE The best wireless connection with the PRA 30 is provided by the side of the tool to the right of the control panel.

NOTE In order to ensure that the tool's specified accuracy can be maintained, make sure that it is set up on a level surface or mounted sufficiently level on the tripod or other accessory.

2. Use the visual sighting aids to adjust the tool so that its vertical axis is aligned in the required direction.
3. Press the on/off button.
After the tool has leveled itself automatically, it projects a stationary laser beam vertically downwards. This projected point is a reference point (not a plumb point) and can be used to help position the tool.
4. Align the tool so that the projected laser point coincides exactly with a reference point (e.g. nail on a batter board).
5. Now line up the laser plane with the second reference point manually (see 7.6.1) or automatically (see 7.6.2).
The laser begins to rotate automatically as soon as you begin the alignment operation.

7.6.1 Manual alignment

1. Press the arrow buttons (Left / Right) on the laser receiver to bring the vertical plane manually into alignment.

7.6.2 Automatic alignment and surveillance

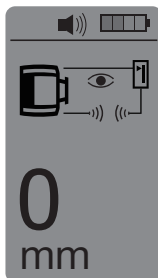
1. Hold the laser receiver with the marking notch at the desired alignment point and facing the rotating laser.
2. Double-click the "Automatic alignment" button. Double-click the button again to complete the procedure.
This double-click starts the process of bringing the laser plane into alignment. A constant signal tone is emitted while this is taking place.

The direction of the search can be changed by pressing the "Automatic alignment" button.

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).

Once the position is reached (i.e. the marking notch is found), a signal tone with a duration of 5 seconds indicates that the process is complete.

The laser receiver switches automatically to surveillance mode and checks at regular intervals whether the laser plane has shifted. If it is found to have shifted, the laser plane will be readjusted to the original marking plane as far as possible. If the marking plane is outside the leveling range of $\pm 5^\circ$, direct line of sight between the rotating laser and the laser receiver is obstructed for a long period or the alignment process is not completed successfully within a time of 2 minutes, then short signal tones are emitted, the laser stops rotating and the "Automatic alignment" symbol goes out. This indicates cancellation of the automatic alignment process.



3. Double-click the "Automatic alignment" button to leave surveillance mode.

7.7 Working with slopes

7.7.1 Setting up

NOTE

The slope can be set manually, automatically, or by using the PRA 79 slope adapter.

NOTE

Inclination can be set and displayed on the PRA 30 in percent (%) or in degrees (°). For instructions on how to set the desired unit, please refer to section 7.3.7 “Menu options”.

1. Set up the tool in a suitable position for the application, e.g. on a tripod.
2. Position the rotating laser either at the upper edge or lower edge of the inclined plane.
3. Position yourself behind the tool, facing the control panel.
4. With the aid of the target notch on the head of the tool, bring the tool roughly into alignment with the inclined plane (parallel to the plane). For more precise adjustment, first set the inclination and then carry out electronic inclination alignment (see 7.7.4).
5. Switch the tool on and then press the “Inclined plane mode” button. The “Inclined plane mode” LED then lights. The laser beam switches on as soon as the tool has leveled itself. The PR 30-HVS can be inclined as soon as “inclined plane mode” appears in the display on the PRA 30.

7.7.2 Setting the slope manually 6 14**NOTE**

If the tool measures a change in temperature of more than 10 degrees, laser rotation stops for about 40 seconds. During this time the tool corrects all errors that may have been caused by the temperature change. After this automatic correction the tool resets the laser plane to the previous inclination and the laser again begins to rotate.

Depending on by how much the rotating laser is already inclined, inclination values of up to 21.3 % can be entered. The display on the laser receiver shows the angle of inclination.

7.7.2.1 Positive inclinations

The positive inclination entry button (“Plus” button) raises the laser plane ahead of the rotating laser and lowers it behind the rotating laser.

1. Press the positive inclination entry button (“Plus” button) on the remote control.
NOTE If no button is pressed for three seconds, the tool will be set to the most recently displayed inclination value. The inclined plane mode LED then blinks.
The display on the laser receiver shows the angle of inclination.
2. If you wish to change the value quickly, press and hold the inclination entry button until the desired value is reached.

7.7.2.2 Negative inclinations

The negative inclination entry button (“Minus” button) lowers the laser plane ahead of the rotating laser and raises it behind the rotating laser.

1. Press the negative inclination entry button (“Minus” button) on the remote control.
NOTE If no button is pressed for three seconds, the tool will be set to the most recently displayed inclination value. The inclined plane mode LED then blinks.
The display on the laser receiver shows the angle of inclination.
2. If you wish to change the value quickly, press and hold the inclination entry button until the desired value is reached.

7.7.3 Setting the inclination (slope) automatically 6 15

With this function you can create an inclined laser plane between 2 points automatically and determine the angle of inclination between these points.

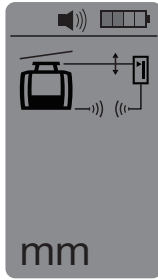
1. Set up the rotating laser at the top edge of the inclined plane like as described in 7.7.1.
2. Mount the laser receiver with the PRA 80/PRA 83 receiver holder, for example, on the PUA 50 telescopic staff.
3. Position the receiver immediately in front of the rotating laser, bring it into alignment with the laser plane at the correct height, and then secure it on the telescopic staff.
4. Position the receiver on the telescopic staff at the lower edge of the inclined plane and double-click the “Automatic alignment” button. Double-click the button again to complete the procedure.

The laser plane alignment procedure then begins. A constant signal tone is emitted while this is taking place. The direction of the search can be changed by pressing the “Automatic alignment” button.

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). Once the position is reached (i.e. the marking notch is found), a signal tone with a duration of 5 seconds indicates that the process is complete.

The “Automatic alignment” symbol is no longer shown in the display on the laser receiver and the receiver switches automatically to normal operating mode.

The inclination is shown in the display of the laser receiver for 5 seconds.



5. Read the inclination between the two points (positions of the rotating laser and the laser receiver) from the display of the laser receiver.

NOTE After 5 seconds, the inclination value disappears from the display on the laser receiver.

7.7.4 Optional electronic inclination alignment

After aligning the rotating laser approximately and setting the slope as described above, alignment of the PR 30-HVS can be optimized through use of Hilti's patented electronic alignment system.

1. Position the PRA 30 centrally opposite the PR 30-HVS at the end of the inclined plane. You can either hold it still by hand or fix it in place with the aid of the PRA 80 / PRA 83 .
2. Activate electronic inclination alignment on the PR 30-HVS by pressing the "Electronic inclination alignment" button.
When the arrows for electronic inclination alignment are blinking, the PRA 30 is receiving no laser beam from the PR 30-HVS.
3. When the left arrow lights, turn the PR 30-HVS clockwise.
4. When the right arrow lights, turn the PR 30-HVS counter-clockwise.
When both arrows light, the PRA 30 is correctly aligned.
After successful alignment (both arrows light constantly for 10 seconds), the function ends automatically.
5. Then secure the rotating laser on the tripod so that it cannot be inadvertently moved out of position.
6. You can also end electronic inclination alignment by pressing the "Electronic inclination alignment" button.

NOTE There may be deviations between the results obtained by approximate alignment with the sighting notches and fine alignment with the aid of electronic inclination alignment. As the electronic method is more accurate than the visual method, we recommend that electronic inclination alignment is always used as the reference.

7.7.5 Setting the inclination with the aid of the PRA 79 slope adapter

NOTE

Check that the slope adapter is fitted correctly between the tripod and the tool (please refer to the operating instructions for the PRA 79).

1. Set up the PRA 79 slope adapter in a suitable position for the application, e.g. on a tripod.
2. Position the tripod either at the upper edge or lower edge of the inclined plane.
3. Mount the rotating laser on the slope adapter and, with the aid of the target notch on the head of the PR 30-HVS, adjust the tool and slope adapter so that they are parallel to the inclined plane. The control panel of the PR 30-HVS should face away from the direction of inclination.
4. Make sure that the slope adapter is in the zero position (0°).
5. Switch the tool on (see 7.2).
6. Press the "Inclined plane mode" button.
The "Inclined plane mode" LED then lights on the control panel of the rotating laser.
The tool then begins automatic self-leveling. The laser switches on and begins to rotate as soon as this is complete.
7. Set the slope adapter to the desired angle of inclination.

NOTE When the angle of inclination is set manually, the PR 30-HVS levels the laser plane once and then subsequently fixes it. Vibration, changes in temperature or other influences that may occur during the course of the day may affect the position of the laser plane.

7.8 Returning to standard mode

To return to standard operating mode, switch the tool off and then switch it back on again.

7.9 Sleep mode

The PR 30-HVS can save power when in sleep mode. The laser is switched off, thereby extending battery life.

7.9.1 Activating sleep mode

1. When the PRA 30 is switched off, press and hold the on/off button of the PRA 30 for approx. 3 seconds.

2. Press the “Right” arrow button twice to access “Sleep mode” in the menu.
3. Press the “Units” button to activate the sleep mode on the PR 30-HVS.

7.9.2 Deactivating sleep mode

1. When the PRA 30 is switched off, press and hold the on/off button of the PRA 30 for approx. 3 seconds.
2. Press the “Right” arrow button twice to access “Sleep mode” in the menu.
3. Press the “Units” button to deactivate the sleep mode on the PR 30-HVS.
4. To ensure working accuracy, check the laser settings after the PR 30-HVS has been reactivated.

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8 Care and maintenance

8.1 Cleaning and drying

1. Blow dust off exit windows.
2. Do not touch the glass with the fingers.
3. Use only a clean, soft cloth for cleaning. If necessary, moisten the cloth slightly with pure alcohol or a little water.

NOTE Abrasive cleaning materials may scratch the glass and impair the accuracy of the laser tool.

NOTE Do not use any other liquids as these may damage the plastic components.

4. Dry the equipment, observing the maximum temperatures given in the technical data.

NOTE Especially in summer and winter, take care that the given maximum and minimum temperatures are not exceeded, e.g. when the equipment is stored in a motor vehicle.

8.2 Care of the Li-ion battery

NOTE

A conditioning charge (as is required with NiCd or NiMH batteries) is not necessary with Li-ion batteries.

NOTE

Interruption of the charging procedure has no negative effect on battery life.

NOTE

Charging can be started at any time with no negative effect on battery life. There is no memory effect (as with NiCd or NiMH batteries).

NOTE

For best results, batteries should be stored fully charged in a cool dry place. Storing the battery in places subject to high ambient temperatures (e.g. at a window) has an adverse effect on battery life and increases the rate of self-discharge.

NOTE

Batteries lose capacity due to aging and overstraining. They can then no longer be fully charged. You may continue to work with a battery that shows signs of aging, but the battery should be replaced in good time.

1. Avoid ingress of moisture.
2. Charge the battery fully before using it for the first time.
3. Charge the battery as soon as its performance begins to drop significantly.
NOTE Recharging in good time will increase the service life of the battery.
NOTE If use of the tool continues, further battery discharge will be stopped automatically before the battery cells suffer damage.
4. Charge the battery with the Hilti charger approved for use with Li-ion batteries.

8.3 Storage

1. Remove the appliance from its case if it has become wet. Dry and clean the tool, its transport container and accessories (while observing the permissible temperature range). Repack the equipment only once it is completely dry.
2. Check the accuracy of the equipment before it is used after a long period of storage or transportation.
3. Remove rechargeable and non-rechargeable batteries from the tool or the laser receiver before storing the units for long periods. The tool or laser receiver may suffer damage caused by leakage from rechargeable or non-rechargeable batteries.

8.4 Transport

Use the Hilti toolbox or packaging of equivalent quality for transporting or shipping your equipment.

CAUTION

Always remove the batteries before shipping the tool.

8.5 Calibration by the Hilti Calibration Service

We recommend that the tool is checked by the Hilti Calibration Service at regular intervals in order to verify its reliability in accordance with standards and legal requirements.

Use can be made of the Hilti Calibration Service at any time. We recommend that the tool is calibrated at least once a year.

The calibration service provides confirmation that the tool is in conformance, on the day it is tested, with the specifications given in the operating instructions.

In the event of deviation from the manufacturer's specification, the used tool will be readjusted. After checking and adjustment, a calibration sticker applied to the tool and a calibration certificate provide written verification that the tool operates in accordance with the manufacturer's specification.

Calibration certificates are always required by companies certified according to ISO 900x.

The Hilti representative in your local region will be pleased to provide further information.

8.6 Checking accuracy

NOTE

In order to ensure compliance with the technical specifications, the tool should be checked regularly (at least before each major / relevant job).

NOTE

After falling and suffering an impact it can be presumed that the tool will continue to operate faultlessly, with the accuracy it achieved prior to the impact, when the following conditions are met:

The height of the fall did not exceed the height given in the technical data.

The tool suffered no obvious mechanical damage from the impact (e.g. breakage of the pentaprism).

The tool projects a rotating laser beam when in operation. The tool operated faultlessly before the impact.

8.6.1 Checking the main and transverse horizontal axes 16

1. Set up the tripod approx. 20 m from a wall and level the tripod head with a spirit level.



2. Mount the tool on the tripod and use the aiming notch to aim the tool at the wall.
3. Use the receiver to catch the laser beam and mark a point (point 1) on the wall.
4. Pivot the tool clockwise through 90° about its own axis. In doing so, ensure that the height of the tool does not change.
5. Use the laser receiver to catch the laser beam and mark a second point (point 2) on the wall.
6. Repeat steps 4 and 5 twice and mark points 3 and 4 on the wall with the aid of the laser receiver. When this procedure is carried out carefully, the vertical distance between the two marked points 1 and 3 (main axis) or, respectively, points 2 and 4 (transverse axis) should be less than 3 mm (at 20 m). If the deviation is greater than this, the tool should be returned to a Hilti Service Center for calibration.





8.6.2 Checking the vertical axis 17 18

1. Place the tool in the vertical position on a flat floor approx. 20 m from a wall.
2. Adjust the position of the tool so that the grips are parallel to the wall.
3. Switch the tool on and mark the reference point (R) on the floor.
4. With the aid of the receiver, mark point (A) low on the wall. Select medium speed.
5. With the aid of the receiver, mark point (B) at a height of approx. 10 m.
6. Pivot the tool through 180° and realign it with the reference point (R) on the floor and with point (A) at the base of the wall.
7. With the aid of the receiver, mark point (C) at a height of approx. 10 m.
8. Check the distance between points (B) and (C). When the procedure has been carried out carefully, the horizontal distance between the two points (B) and (C) marked at a height of 10 meters should be less than 1.5 mm (at 10 m).

NOTE If the deviation is greater: Please return the tool to a Hilti Service Center for calibration.

9 Troubleshooting

Fault	Possible cause	Remedy
The display shows this symbol 	The PRA 30 has not been paired with the PR 30-HVS.	Pair the tools (see section 6.9)
The display shows this symbol 	Invalid entry; the command is not possible.	Press a valid button.

Fault	Possible cause	Remedy
<p>The display shows this symbol</p> 	<p>The command is valid but the tool doesn't react.</p>	<p>Switch on all tools and make sure they are within wireless communication range. Check to ensure there are no obstructions between the tools. Do not exceed the maximum wireless communication range. For good wireless communication, the PR 30-HVS and PRA 30 should be positioned ≥ 10 cm (4 in) above floor level.</p>
<p>The display shows this symbol</p> 	<p>The tool is in surveillance mode. Re-alignment was not possible.</p>	<p>Check the positions of the PR 30-HVS and PRA 30 and make sure that the line of sight between the PR 30-HVS and PRA 30 is unobstructed. Restart automatic alignment (see section on automatic alignment and surveillance mode).</p>
<p>The display shows this symbol</p> 	<p>The tool is in sleep mode (the tool will remain in sleep mode for max. 4 hours).</p>	<p>Activate the tool (see section "Deactivating sleep mode")</p>
<p>The display shows this symbol</p> 	<p>The state of charge of the PR 30-HVS battery is low.</p>	<p>Charge the battery, use a different battery or use the PR 30-HVS in "charging during operation" mode (not suitable outdoors or in damp conditions).</p>

10 Disposal

WARNING

Improper disposal of the equipment may have serious consequences:
The burning of plastic components generates toxic fumes which may present a health hazard.
Batteries may explode if damaged or exposed to very high temperatures, causing poisoning, burns, acid burns or environmental pollution.
Careless disposal may permit unauthorized and improper use of the equipment. This may result in serious personal injury, injury to third parties and pollution of the environment.



Most of the materials from which Hilti tools or appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back old tools and appliances for recycling. Ask Hilti customer service or your Hilti representative for further information.



Dispose of the batteries in accordance with national regulations.

11 Manufacturer's warranty - tools

Hilti warrants that the tool supplied is free of defects in material and workmanship. This warranty is valid so long as the tool is operated and handled correctly, cleaned and serviced properly and in accordance with the Hilti Operating Instructions, and the technical system is maintained. This means that only original Hilti consumables, components and spare parts may be used in the tool.

This warranty provides the free-of-charge repair or replacement of defective parts only over the entire lifespan of the tool. Parts requiring repair or replacement as a result of normal wear and tear are not covered by this warranty.

Additional claims are excluded, unless stringent national rules prohibit such exclusion. In particular, Hilti is not obligated for direct, indirect, incidental or consequential damages, losses or expenses in connection with, or by reason of, the use of, or inability to use the tool for any purpose. Implied warranties of merchantability or fitness for a particular purpose are specifically excluded.

For repair or replacement, send the tool or related parts immediately upon discovery of the defect to the address of the local Hilti marketing organization provided.

This constitutes Hilti's entire obligation with regard to warranty and supersedes all prior or contemporaneous comments and oral or written agreements concerning warranties.

12 FCC statement (applicable in US) / IC statement (applicable in Canada)

CAUTION

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and may radiate radio frequency energy. Accordingly, if not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by taking the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected.

Consult your dealer or an experienced TV/radio technician for assistance.

NOTE

Changes or modifications not expressly approved by Hilti may restrict the user's authorization to operate the equipment.

This device complies with part 15 of the FCC Rules and RSS-210 of the IC.

Operation is subject to the following two conditions:

This device should cause no cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.



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