

HILTI

PRI 36

Operating instructions

en

Mode d'emploi

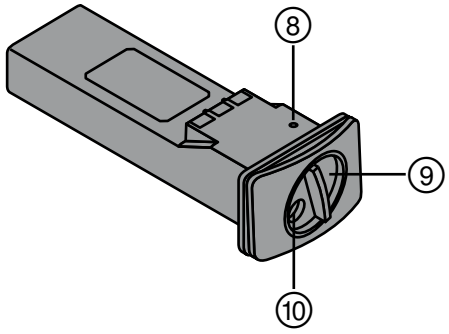
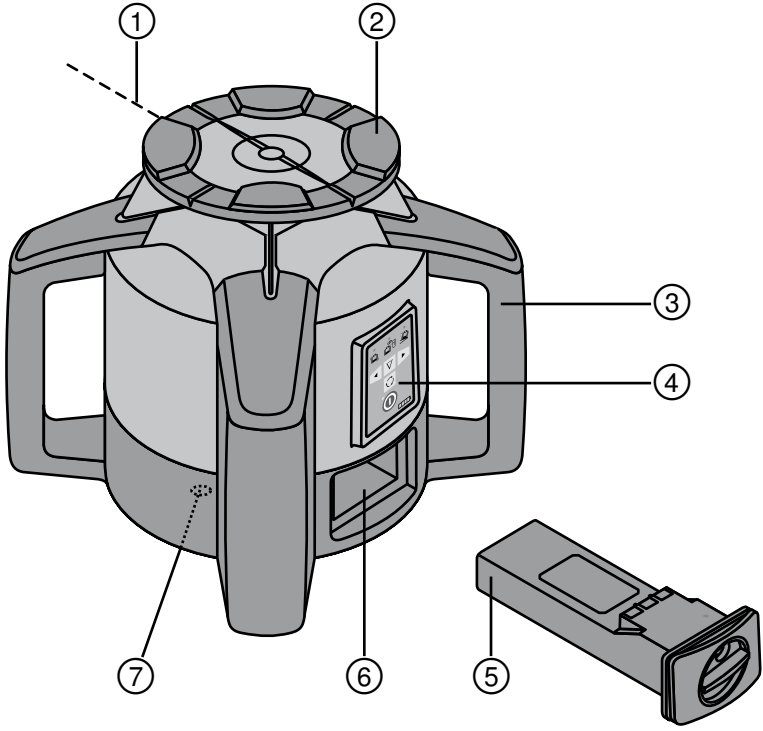
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Manual de instrucciones

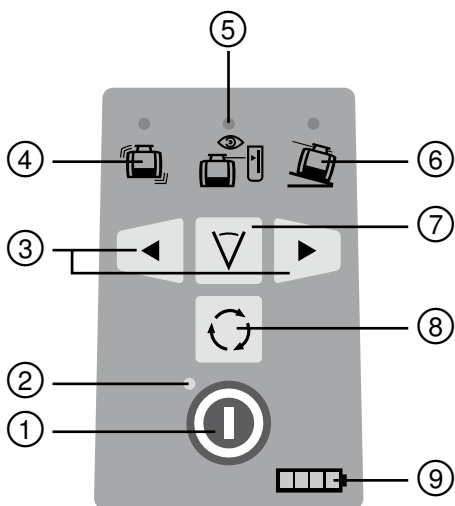
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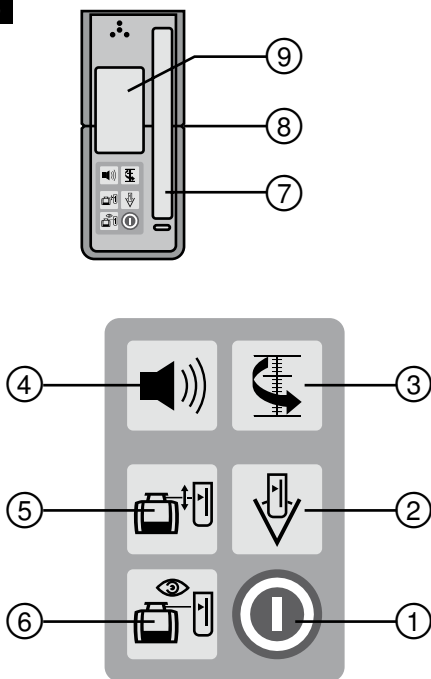
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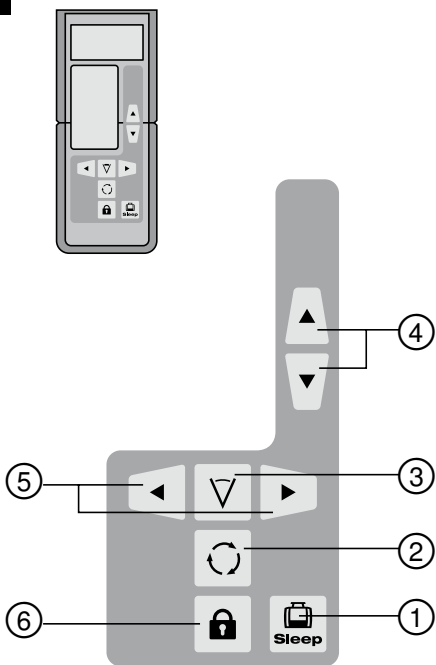
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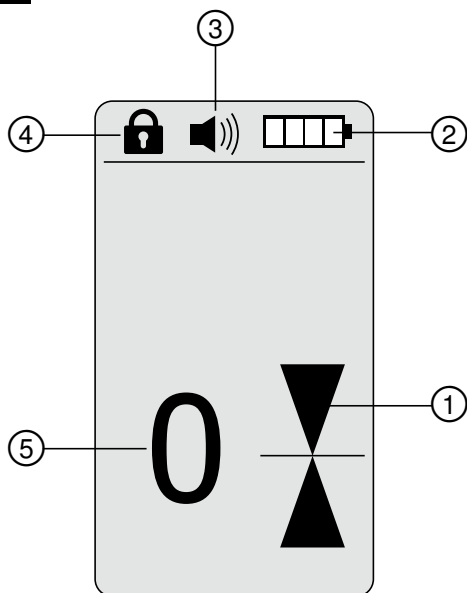
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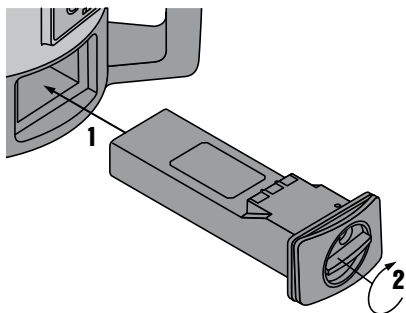
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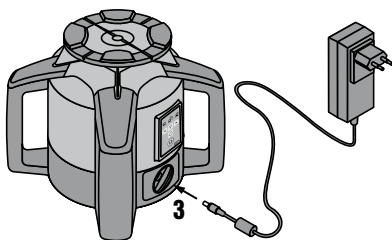
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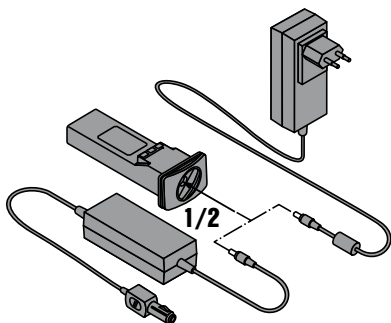
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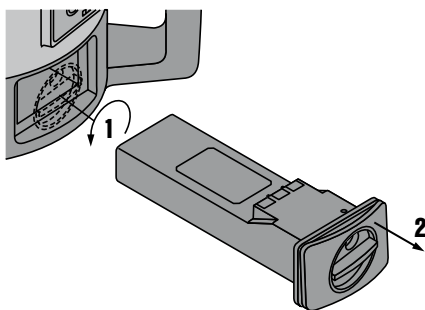
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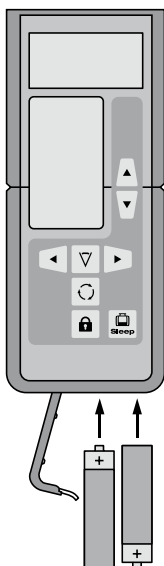
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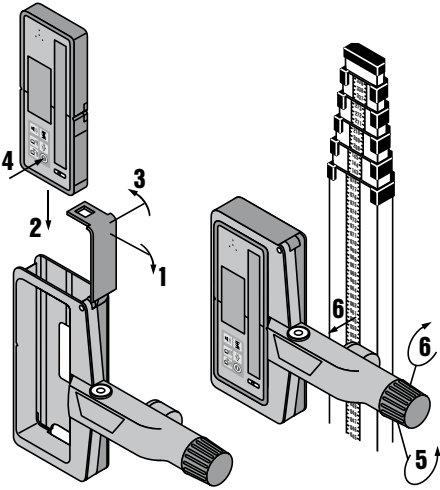
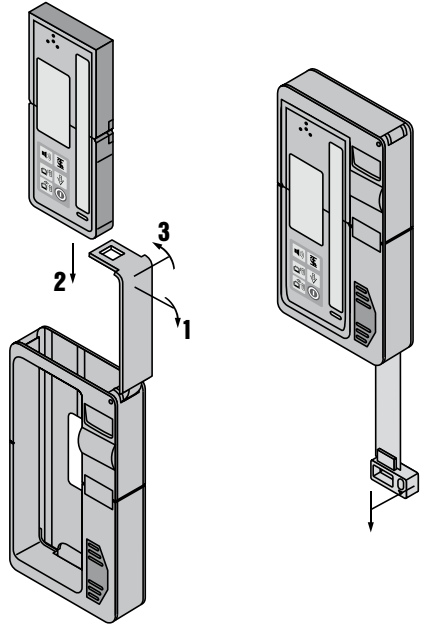
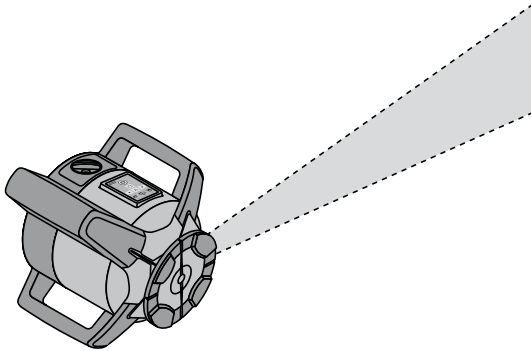


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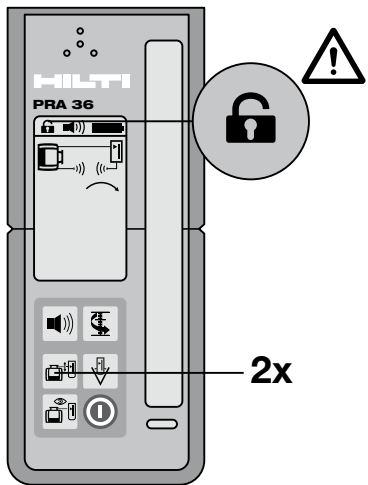


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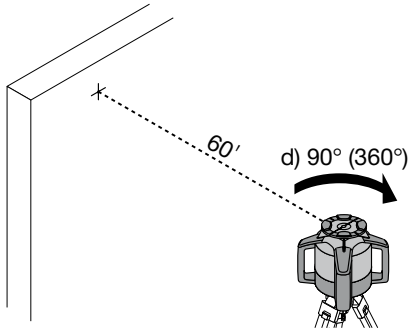
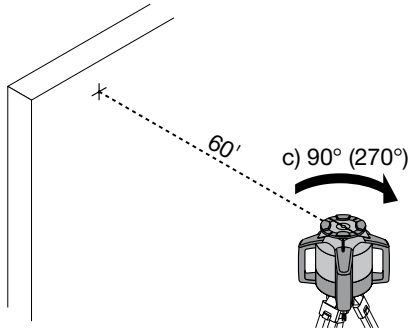
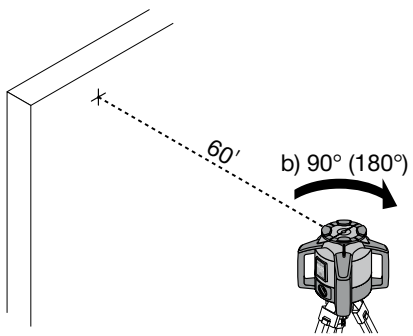
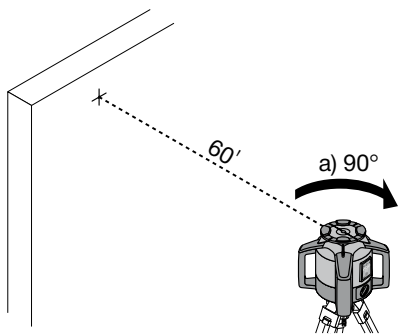
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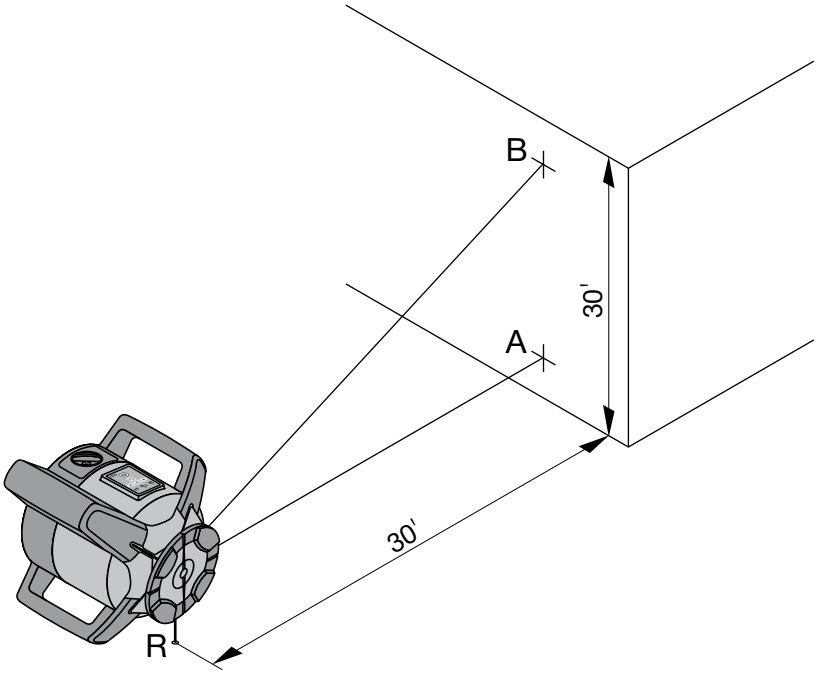
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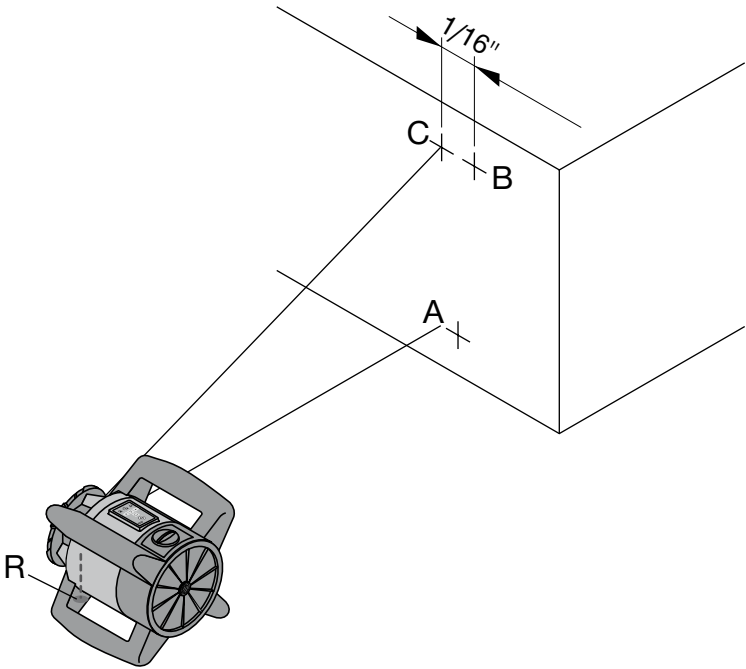
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ORIGINAL OPERATING INSTRUCTIONS

PRI 36 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.

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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 Hilti PRI 36. The designation "remote control / laser receiver" always refers to the Hilti PRA 36.

Rotating laser **1**

- 1 Laser beam (plane of rotation)
- 2 Rotating head
- 3 Grip
- 4 Control panel
- 5 Battery
- 6 Battery compartment
- 7 Base plate with 5/8" thread
- 8 Battery status indicator LED

- 9 Catch
- 10 Charging cord socket

Rotating laser control panel **2**

- 1 On / off button
- 2 Auto-leveling LED
- 3 Direction buttons
- 4 Shock warning deactivation LED
- 5 Surveillance mode LED
- 6 Slope LED
- 7 Line function button
- 8 Speed of rotation button
- 9 Battery status

PRA 36 control panel (on the front of the receiver) **3**

- 1 On / off button
- 2 Special line function (double click)
- 3 Units button
- 4 Volume button
- 5 Automatic alignment button (double click)
- 6 Surveillance mode button (double click)
- 7 Receiving window
- 8 Marking notch
- 9 Display

PRA 36 control panel (on the rear of the remote control) **4**

- 1 Sleep mode button
- 2 Speed of rotation button
- 3 Line function button
- 4 Direction buttons (up/down)
- 5 Direction buttons (left / right)
- 6 Button lock (double click)

PRA 36 display **5**

- 1 Position of the receiver relative to the height of the laser plane
- 2 Battery status
- 3 Volume
- 4 Button lock
- 5 Distance of receiver 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



Returning materials for recycling



Laser radiation
Avoid exposing the eyes to direct radiation.

Laser Class 3R according to EN 60825-1:2007.



Do not look into the beam.

On the tool



Laser wave length 532nm, modulation frequency 1MHz, pulse cycle 50%, focussed laser beam diameter at pen-tapism 5mm (0.2"), speed of rotation 300 /min. Average output power under the above conditions is <4.5 mW.

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.

2 Description

2.1 Use of the product as directed

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.

Use of tools or AC adapters which show visible signs of damage is not permissible. Operation outdoors or in damp conditions in "Charging during operation mode" is not permissible.

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 Rotating laser

The PRI 36 is a rotating laser tool featuring a rotating, visible laser beam and a reference beam set at 90° to the plane of rotation. The rotating laser can be used vertically, horizontally and for inclined planes.

2.3 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 tool's current operating status.

The tool is powered by a rechargeable Li-ion battery which can be charged while the tool is in operation.

2.4 PRA 36 combined remote control and laser receiver

The PRA 36 is a combined remote control unit and laser receiver. It can be used to control the PRI 36 rotating laser over great distances. The PRA 36 also serves as a laser receiver and can thus be used to detect and indicate the laser beam at great distance.

2.5 Digital distance measurement display

The PRA 36 displays digitally the distance between the laser plane and the marking notch on the PRA 36. This allows the user to determine the exact position of the receiver relative to the laser plane, with millimeter accuracy, in a single operation.

2.6 Speed of rotation / line function

3 speeds of rotation are available for use (300, 450, 600 /min). It is possible to switch between the individual functions such as rotation and line functions. This is possible with the PRI 36 rotating laser and with the PRA 36.

The line function improves laser beam visibility and limits the laser beam to a certain working area.

2.7 Automatic alignment and surveillance

Using the PRI 36 and the PRA 36, a single person can align the laser plane automatically with a certain point with great accuracy. When required, the laser plane can be checked at regular intervals with the aid of the surveillance function and the PRA 36 in order to avoid possible deviations due to temperature fluctuations, wind or similar.

2.8 Shock warning

The tool goes into warning mode if it is knocked off level (due to vibration or impact) while in operation: all LEDs blink and the laser switches off (the laser head no longer rotates).

2.9 Automatic cut-out

The laser does not switch on and all LEDs blink if the tool is set up outside its self-leveling range or movement is blocked mechanically.

After switching the tool on, the shock warning only becomes active 2 minutes after completion of leveling. If a button is pressed within this time (before 2 minutes has elapsed), the 2 minute delay before activation begins again.

2.10 Items supplied

- 1 Rotating laser
- 1 Remote control / laser receiver
- 1 Operating instructions
- 1 Target plate
- 1 Manufacturer's certificate
- 1 PRA 84 G Li-Ion battery

- 1 AC adapter
- 1 Hilti toolbox

2.11 Operating status indicators

Operating status is indicated as follows: auto-leveling LED, battery status LED, shock warning LED and slope LED.

2.12 LED indicators

Auto-leveling LED (green)	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 LED (orange)	The orange LED lights constantly.	Shock warning mode is deactivated.
Surveillance LED (orange)	The LED lights orange.	The tool is in surveillance mode.
Slope LED (orange)	The orange LED lights constantly.	Slope mode is active.
All LEDs	All LEDs blink	The tool has been bumped, knocked off level or is exhibiting some other error.

2.13 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	$C < 10 \%$

2.14 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	$C \geq 75 \%$
LED 1, 2	LED 3	$50 \% \leq C < 75 \%$
LED 1	LED 2	$25 \% \leq C < 50 \%$
-	LED 1	$C < 25 \%$

2.15 Charge status of the Li-ion battery during charging while not inserted in the tool

If the red LED lights constantly, the battery is being charged.

If the red LED doesn't light, the battery is fully charged.

3 Accessories

Designation	Description
Remote control / laser receiver	PRA 36
Laser receiver	PRA 38
Target plate	PRA 54
Receiver holder	PRA 80
Wall mount	PRA 70/71

Designation	Description
Slope adapter	PRA 76/79
Car charging connector	PUA 82
Height transfer device	PRA 81
AC adapter	PUA 81
Battery	PRA 84 G
Vertical angle	PRA 770
Batter board receiver holder	PRA 751
Batter board adapter	PRA 750
Facade adapter	PRA 760
Various tripods	PRA 90, PUA 20, PUA 30, PA 921, PA 931/2
Telescopic staffs	PUA 50, PUA 55/56, PA 961, PA 962

4 Technical data

Right of technical changes reserved.

PRI 36

PRI 36 receiving range (diameter)	With PRA 36: 2...300 m (6.56...984.25 ft)
Range of remote control (circle diameter)	With PRA 36: 0...200 m (0...656.17 ft)
Accuracy	± 1 mm (0.04") per 10 m (33 ft) at a temperature of 25°C (77°F)
Plumb beam	Continuous, perpendicular to the plane of rotation
PRI 36 laser class	Class 3R, visible 532 nm, < 4.5 mW (IEC 60825-1 / EN 60825-1:2007), Class IIIa, visible, 532 nm, < 4.5 mW (CFR 21; § 1040 (FDA))
Speed of rotation	300, 450, 600 /min
Slope range	±8.6% (±5°) per axis
Self-leveling range	±5°
Power source	7.2V/ 6Ah Li-ion battery
Battery life	Temperature +23°C (+73 °F), Li-ion battery: 24 h
Operating temperature range	-20... +45°C (-4... +113 °F)
Storage temperature range (dry)	-25... +60°C (-13... +140 °F)
Protection class	IP 56 (in accordance with IEC 60529) (except for the battery compartment and not when in "charging while running" mode)
Tripod thread	5/8" x 11
Weight (including PRA 84 G)	2.4 kg (5.29 lb)
Dimensions (L x W x H)	252 mm (9.92") x 252 mm (9.92") x 209 mm (8.23")

PRA 36

Detection range (area diameter)	2...300 m (6.56...984.25 ft)
Signal tone generator	3 volume levels plus mute setting
Liquid crystal display	On both sides
Indicator range, distance from zero	± 52 mm (2.05")
Laser plane indication accuracy	± 0.5 mm (0.02")
Width of receiving window	120 mm (4.72")

Center indication from top edge of casing	75 mm (2.95")
Marking notches	On both sides
Automatic power-off	When no beam is detected: 15 min
Dimensions	160 mm (6.3") X 67 mm (2.64") X 24 mm (0.94")
Weight (including batteries)	0.25 kg (0.55 lb)
Power source	2 AA batteries
Battery life (alkaline-manganese)	Temperature +20°C (+68 °F): Approx. 40h (depending on battery quality)
Operating temperature range	-20...+50°C (-4...+122 °F)
Storage temperature range	-25...+60°C (-13...+140 °F)
Protection class	IP 56 (in accordance with IEC 60529) except battery compartment

PUA 81 AC adapter for PSA 81, PRA 84, PRA 84 G batteries and PSA 100 monitor

Rated supply current	115...230 V
AC frequency	47...63 Hz
Rated power	36 W
Rated voltage	12 V
IP protection class	IP 56
Operating temperature range	+0...+40°C (+32...+104 °F)
Storage temperature range (dry)	-25...+60°C (-13...+140 °F)
Charging temperature	+0...+40°C (+32...+104 °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")

PRA 84 G Li-Ion battery

Rated voltage (normal mode)	7.2 V
Maximum voltage (during operation or during charging while in operation)	13 V
Rated current	270 mA@7.2 V
Capacity	7.2 V/ 6 Ah
Charging time	3 h / +32°C (+90 °F) / Battery is 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")

5 Safety instructions

5.1 Basic information concerning safety

NOTE

Keep all safety instructions and information for future reference.

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 3R / Class IIIa. **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) **The user must check the accuracy of the tool after it has been dropped or subjected to other mechanical stresses.**
- j) **When the tool is brought into a warm environment from very cold conditions, or vice-versa, allow it to become acclimatized before use.**
- k) **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.
- l) Make sure that the tool is mounted securely when adapters or accessories are used.
- m) **Keep the laser exit aperture clean to avoid measurement errors.**
- n) **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.**
- o) **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.**
- p) **Keep the electrical contacts dry (protect from rain or dampness).**
- q) **Check the tool before using it for important measuring work.**
- r) **Check the accuracy of the measurements several times during use of the tool.**
- 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 75°C (167°F).** A risk of fire, explosion or injury through contact with caustic substances may otherwise result.
- c) **Use only the rechargeable battery and batteries specified for use with the tool.** Use of other rechargeable batteries or unspecified batteries may result in injury and present a risk of fire.
- d) **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.
- e) 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.
- f) **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.

- g) **Observe the special instructions applicable to the transport, storage and use of Li-ion batteries.**
- h) **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.
- 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 or PUA 82 motor vehicle power adapter to power the tool or charge the battery.** Failure to observe these points may result in damage to the tool.
- k) **Use only the battery chargers recommended by the manufacturer to charge the batteries.** 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) Measurements taken through panes of glass or other objects may be inaccurate.
- 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) Check that your PRI 36 is responding only to your PRA 36 and not to other PRA 36s that may be in use on the job site.

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 tools of the Laser Class 3R / Class IIIa

- a) This tool complies with Laser Class 3R in accordance with IEC60825-1 / EN60825-1:2007 and Class IIIa in accordance with CFR 21 § 1040 (FDA). In the event of direct eye contact with the laser beam, close your eyes and move your head out of the path of the beam. Do not look directly into the light source. Do not direct the laser beam toward persons.
- b) Tools of the laser class 3R and class IIIa should be operated by trained personnel only.
- c) The area in which the tool is in use must be marked with laser warning signs.
- d) The plane of the laser beam should be well above or well below eye height.
- e) Precautions must be taken to ensure that the laser beam does not unintentionally strike highly reflective surfaces.
- f) Precautions must be taken to ensure that persons do not stare directly into the beam.
- g) The laser beam must not be allowed to project beyond the controlled area.
- h) When not in use, laser tools should be stored in an area to which unauthorized persons have no access.
- i) Switch the laser tool off when it is not in use.

6 Before use

NOTE

The PRI 36 may be powered only by the Hilti PRA 84 G battery.

6.1 Charging the battery



DANGER

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

6.1.1 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.

6.1.2 Charging a previously used battery

Ensure that the outer surfaces of the battery are clean and dry before inserting it in the tool.

Li-ion batteries are ready for use at any time, even when only partly charged. During charging, progress is indicated by the LEDs on the tool.

6.2 Options for charging the battery



DANGER

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

6.2.1 Charging the battery in the tool 6 7

NOTE

When charging, check that the temperature is within the recommended charging temperature range (0 to 40°C/32 to 104°F).

1. Insert the battery in the battery compartment.
2. Turn the catch so that the charging cord socket on the battery pack is visible.
3. Plug the charging cord from the AC adapter or motor vehicle power adapter into the battery.
The battery begins to charge.
4. If you switch the tool on, the state of charge will be shown by the battery status display on the tool while charging is taking place.

6.2.2 Charging the battery outside the tool 8

NOTE

When charging, check that the temperature is within the recommended charging temperature range (0 to 40°C/32 to 104°F).

1. Remove the battery from the tool and connect it to the AC adapter or motor vehicle power adapter.
2. The red LED on the battery lights while charging is in progress.

6.2.3 Charging the battery while the tool is in operation

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. Swing the cover to the side so that the charging cord socket becomes accessible.
2. Connect the charging cord from the AC adapter to the battery.
3. The tool continues to operate while charging is in progress.
4. During charging, the charging status is indicated by the LEDs on the tool.

6.3 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.

6.4 Fitting the battery 6

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. Push the battery into the tool.
2. Turn the catch in a clockwise direction to the second detent (the "locked" symbol is displayed).

6.5 Removing the battery 9

1. Turn the catch in a counterclockwise direction from the second position back to the "open" position (the "unlocked" symbol is displayed).
2. Pull the battery out of the tool.

6.6 Switching the tool on

Press the on / off button.

NOTE

After switching on, the tool begins the automatic leveling process (takes max. 40 seconds). After completion of the leveling process, the laser beam switches on and begins to rotate in the normal direction. When leveling in the horizontal plane the laser head rotates automatically at medium speed and, when working in the vertical plane, a reference point is projected downwards.

6.7 LED indicators

Please refer to section 2 "Description".

6.8 Inserting batteries in the PRA 36 10

CAUTION

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 36 may be powered only by batteries manufactured in accordance with the applicable international standards.

6.9 Pairing 11

The PRI 36 rotating laser and the PRA 36 must be set to operate as a pair before they can be used together. Pairing the tools means that the rotating laser and PRA 36 remote control unit are configured to communicate with each other. The PRI 36 rotating laser then receives signals only from the PRA 36 with which it has been paired. Pairing makes it possible to work alongside other rotating lasers without risk of settings being altered inadvertently by these tools.

1. Press the on / off buttons on the PRI 36 rotating laser and on the PRA 36 simultaneously and keep them pressed for at least 3 seconds.
When pairing has been carried out successfully, a signal tone is emitted by the PRA 36 and all LEDs on the PRI 36 rotating laser blink.
At the same time, a chain symbol appears briefly in the PRA 36 display. Both appliances switch off automatically after pairing.
2. Switch on the paired tools.
The "paired" symbol appears in the display (see "Troubleshooting" section).

7 Operation



7.1 Switching the tool on

Press the on / off button.

NOTE

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

7.2 Working with the PRA 36

The PRA 36 is a laser receiver (front) and, at the same time, a remote control unit (rear). The remote control makes working with the rotating laser more convenient and is required in order to make use of certain functions.

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

1. Press the on / off button.
2. Hold the PRA 36 in the plane of the rotating laser beam.
The laser beam is indicated by visual and audible signals.

7.2.2 Using the PRA 36 in the PRA 80 receiver holder 12

1. Open the catch on the PRA 80.
2. Place the PRA 36 in the PRA 80 receiver holder.
3. Close the catch on the PRA 80.
4. Switch the laser 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 by tightening the clamping knob.
7. Hold the PRA 36 with the receiving window in the plane of the rotating laser beam.
The laser beam is indicated by visual and audible signals.

7.2.3 Working with the PRA 81 height transfer device 13

1. Open the catch on the PRA 81.
2. Insert the PRA 36 in the PRA 81 height transfer device.
3. Close the catch on the PRA 81.
4. Switch the PRA 36 on by pressing the on / off button.

5. Hold the PRA 36 with the receiving window in the plane of the rotating laser beam.
6. Position the PRA 36 so that the distance display shows "0".
7. Use the measuring tape to measure the desired distance.

7.2.4 Menu options 3 4

Press the on / off button for two seconds when switching the PRA 36 on.

The menu then appears in the display.

Use the "Measuring units" button to select metric or imperial measuring units.

Use the volume button to assign the more rapid signal tone to the upper or lower area of the receiving window. To access the extended menu, press the "Button lock" button on the rear of the PRA 36. Use the direction buttons (left/right) to make further selections from the menu: e.g. adjust PRI 36 shock sensitivity, cancel pairing or switch off wireless operation.

Settings that affect the PRI 36 become effective only when the PRI 36 is switched on and in wireless contact. The direction buttons (up/down) are used to change the settings. Each setting then becomes effective and remains effective the next time the tool is switched on.

To save the settings, switch the PRA 36 off.

7.2.5 Setting the measuring unit

The "Units" button can be used to set the desired unit, corresponding to the country-specific version (mm / cm / in / ft / off).

7.2.6 Setting the volume of the signal tone 3

The tool is set to "Normal" volume when switched on. The volume can be adjusted by pressing the "Signal tone" button. One of the following 4 settings can be selected: "Low", "Normal", "High" or "Off".

7.2.7 Button lock and double click 4 5

The button lock function of the PRA 36 prevents unintentional entries being made and is indicated at the upper left edge of the display on both sides of the PRA 36. The lock symbol is either open (unlocked) or closed (locked). Both sides of the remote control / laser receiver cannot be used at the same time. If one side of the remote control / laser receiver is in use, the other side is disabled.

(locked) automatically. The enabled side can be changed by double-clicking the lock symbol.

In order to avoid incorrect operation, the “Automatic alignment”, “Surveillance” and “Special line” commands must be confirmed by a double click. For the sake of simplicity, this is not mentioned each time in further sections of these operating instructions.

7.3 Basic functions of the PRI 36

The tool is designed to be used to determine, transfer and check levels, verticals, slopes and right angles.

7.3.1 Setting the speed of rotation 2 4

NOTE

The speed of rotation can be adjusted by pressing the “Speed of rotation” button (on the control panel of the rotating laser or on the PRA 36). The speeds of rotation are 300, 450 and 600 /min.

7.3.2 Selecting the line function 2 4

NOTE

When the “Line” button is pressed, the rotating laser projects a line which can be lengthened or shortened by further presses of the button.

NOTE

With the aid of the PRA 36 laser receiver it is also possible to stop rotation of the laser and to project a line at the position of the PRA 36. To do this, move the PRA 36 laser receiver into the plane of the laser beam and press the “Special line” button twice (double click).

7.3.3 Moving the laser line

The laser line can be moved to the left or right by pressing the “Direction” buttons (PRI 36 or PRA 36). Holding down the button results in continuous movement and increases the speed of movement of the laser line.

7.4 Working in the horizontal plane 3 4

1. Depending on the application, the rotating laser may, for example, be mounted on a tripod or, alternatively, on a wall mount. The angle of inclination of the surface on which it stands should not exceed $\pm 5^\circ$.
2. Press the on / off button.
3. The laser beam switches on and the head begins to rotate at a speed of 300 /min as soon as the tool has leveled itself.

7.5 Working in the vertical plane 14

1. When working in the vertical plane, place the tool on its metal feet so that the control panel faces upwards. Alternatively, the rotating laser may also be mounted on a suitable tripod, wall bracket, facade adapter or batter board adapter.
2. Adjust the tool so that its vertical axis is positioned in the required direction.

3. 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.
4. Press the on / off button.
After the tool has leveled itself automatically, it projects a stationary laser beam vertically downwards. This projected point is the reference point and is used to position the tool.
5. The speed of rotation can be adjusted by pressing the “Speed of rotation” button (on the control panel of the rotating laser or on the PRA 36).

7.5.1 Manual alignment

Manual alignment of the vertical plane is carried out by pressing the direction buttons (up/down) on the rear of the PRA 36.

7.5.2 Auto-alignment 15

Hold the PRA 36 at the point to be aligned, with the receiving side facing the PRI 36, and then press the “Automatic alignment” button twice in quick succession.

NOTE

Check to ensure that the receiving side of the receiver is not disabled (locked). Double-click the lock symbol to unlock the side of the receiver.

The laser plane alignment procedure then begins. Short signal tones are emitted while this is taking place.

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

The alignment procedure can be canceled by a double click.

As soon as the laser beam strikes the receiving window of the PRA 36, the beam moves to the position of the marking notch (reference plane).

A continuous signal tone is emitted, indicating the end of the procedure, as soon as the laser beam finds the position of the marking notch.

If the automatic alignment process was not successful (takes more than 2 min.), short signals sound and the automatic alignment symbol goes out. This indicates that the automatic alignment process was aborted.

7.6 Working with slopes

NOTE

For optimum results, check that the PRI 36 is correctly aligned. The best way to do this is by selecting 2 points on the left and right of the tool, each at 5 m (16.4 ft), but parallel to the tool axis. Mark the height of the horizontal plane and then, after setting the slope, mark the heights. The tool is aligned optimally only when these heights are identical at both points.

7.6.1 Setting up

NOTE

The slope can be set manually, automatically, or by using the PRA 76/78 slope adapter.

1. Set up the rotating laser in a suitable position for the application, e.g. on a tripod.
2. Position the rotating laser and tripod either at the upper edge or lower edge of the inclined plane. If the rotating laser is positioned at the upper edge of the inclined plane, check that the control panel on the PRI 36 faces away from the direction of inclination. If the rotating laser is positioned at the lower edge of the inclined plane, check that the control panel on the PRI 36 faces toward the direction of inclination.
3. Press and hold the on / off button for at least 8 seconds until the "inclined plane mode" indicator lights at top right of the control panel.
4. The laser beam switches on as soon as the tool has leveled itself. The PRA 36 can then be set to the desired slope.

7.6.2 Setting the slope manually 4

Press the direction buttons (up/down) on the PRA 36 remote control to alter the angle of inclination quickly. Pressing the arrow buttons for longer causes the values to change more quickly.

NOTE

The angle of inclination cannot be read digitally.

7.6.3 Setting the slope automatically 15

NOTE

The slope can be set automatically only when slope mode is active and when a PRA 36 laser receiver is used.

Nevertheless, bring the laser to the required angle of inclination (as described in section 7.5.2).

NOTE

The angle of inclination cannot be read digitally.

7.6.4 Setting the slope with the aid of the PRA 76/79 slope adapter

1. With the aid of the target notch on the head of the PRI 36, bring the tool into alignment until parallel with the inclined plane.
2. Press and hold the on / off button for at least 8 seconds until the "inclined plane mode" indicator lights at top right of the control panel.
3. Set the desired angle of inclination on the slope adapter.

7.7 Surveillance 16

The surveillance function checks at regular intervals whether an aligned plane (vertical or horizontal (horizontal only in conjunction with the PRA 90 tripod)) has shifted (e.g. due to vibration or temperature fluctuation). If this is the case, the projected plane will be realigned to the zero point (i.e. the marking notch on the PRA 36) (so long as it is still within the receiving window). A PRA 36 is required for use of the surveillance function. An additional

laser receiver can be used to detect the laser beam while the laser beam is being monitored.

1. Preparation for activation of the surveillance function is basically the same as the procedure for activation of automatic alignment mode (see 7.5.2).
 2. Position the tool at the desired starting point 1 and switch it on.
 3. Position the PRA 36 laser receiver at the reference point (point 2) on the axis and secure it there. The tool (point 1) and the PRA 36 (point 2) then form anchor points on the plane. Take care to ensure that the marking notch on the PRA 36 is at exactly the height at which the rotating laser is later to project the laser line or point. The green laser receiving surface on the PRA 36 must face the rotating laser.
 4. Take care to ensure there are no obstructions between the rotating laser and the PRA 36 laser receiver which could interfere with communication between the devices. Glass and other translucent materials may also interfere with communication between the devices. Reflections from windows may also cause interference.
 5. Switch the PRI 36 and the PRA 36 on. Surveillance mode can be activated by double clicking the "Surveillance mode" button on the PRA 36. A further click is used to change the search direction and a double click ends surveillance mode. After the position has been reached (the marking notch has been found) no further signal tone is emitted.
 6. The system is then in surveillance mode. The mode is indicated in display of the PRA 36.
 7. The surveillance system 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 laser plane shifts to a position outside the laser receiving window or direct line of sight between the rotating laser and the laser receiver is obstructed for a long period (>2 min), the laser stops rotating, a warning triangle appears in the laser receiver display and short signal tones are emitted.
- NOTE** In order to ensure that the regular surveillance process can be repeated automatically and of its own accord, the PRA 36 should not be removed from its position.

7.8 Returning to standard mode

In order to return to standard mode, horizontal alignment, 300 /min, the tool must be switched off and restarted.

7.9 Sleep mode

The PRI 36 can save power when in sleep mode. The laser is switched off, thereby extending battery life.

Activate sleep mode by pressing the "Sleep mode" button on the PRA 36.

Deactivate sleep mode by pressing the "Sleep mode" button on the PRA 36 again.

After reactivating the PRI 36, check the laser settings in order to ensure accuracy.

7.10 Working with the target plate

The target plate improves laser beam visibility. The target plate should be used in bright conditions or whenever

improved laser beam visibility is desired. Simply bring the target plate into the plane of the projected laser beam. The target plate is made from a material that makes the laser beam more easily visible.

8 Care and maintenance

8.1 Cleaning and drying

1. Blow dust off the lenses.
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. Observe the temperature limits when storing your equipment. This is particularly important in winter / summer if the equipment is kept inside a motor vehicle (-30°C to +60°C / -22°F to +144°F).

8.2 Storage

Remove the appliance from its case if it has become wet. The appliance, its carrying case and accessories should be cleaned and dried (at maximum 40°C (104°F)). Repack the equipment only once it is completely dry.

Check the accuracy of the equipment before it is used after a long period of storage or transportation.

Remove the batteries from the tool. Leaking batteries may damage the tool.

8.3 Transport

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

CAUTION

Remove the batteries from the tool before transporting or shipping it.

8.4 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, but checking at least once a year is recommended. 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.

The tool will be readjusted if deviations from the manufacturer's specification are found. 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.

Your local Hilti Center or representative will be pleased to provide further information.

8.4.1 Checking accuracy

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

8.4.1.1 Checking the main and transverse horizontal axes 17

1. Set up the tripod approx. 20 m (60 ft) from a wall and adjust the tripod head horizontally 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 is done carefully, the vertical distance between the two marked points, i.e. points 1 and 3 (main axis) or points 2 and 4 (transverse axis) should be < 5 mm (at 20 m) (1/8" at 60 ft) in each case. If the deviation is greater than this, the tool should be returned to a Hilti Service Center for calibration.

8.4.1.2 Checking the vertical axis 18 19

1. Set up the tool in the vertical position on the floor or flat ground at a distance of approx. 10 m (30 ft) 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) at the base of the wall (set the rotating laser to medium speed).
5. With the aid of the receiver, mark point (B) at a height of approx. 10 m (30 ft).
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 (30 ft).

NOTE When this is done carefully, the horizontal distance between the two points (B) and (C) marked at a height of 10 meters (30 ft) should be less than 1.5 mm (at 10 m) (1/16" at approx. 30 ft). 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 button lock is active.	Deactivate the button lock. NOTE Both sides of the remote control / laser receiver cannot be used at the same time .
The display shows this symbol 	The PRA 36 has not been paired with the PRI 36. In this case, the PRI 36 is not shown in the display.	Pair the tools (see section 6.9)
The display shows this symbol 	Invalid entry; the command is not possible.	Press a valid button.
The display shows this symbol 	The tools are out of wireless communication range. The command is valid but the tool doesn't react.	Check to ensure there are no obstructions between the tools. Do not exceed the maximum wireless communication range. For good wireless communication the PRI 36 should be positioned at least 10 cm (4") above ground level.
The display shows this symbol 	The tool is in sleep mode (it remains in sleep mode for max. 4 h and then switches itself off).	Activate the tool by pressing the "Sleep" button. Activate the tool settings after activating the tool.
The display shows this symbol 	Fault.	Contact Hilti Service.

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

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

en

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 could limit the user's right 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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