ORIGINAL OPERATING INSTRUCTIONS

PR 2-HS 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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These numbers refer to the illustrations. You can find the illustrations at the beginning of the operating instructions.

In these operating instructions, the designation “the tool” or “the rotating laser” always refers to the Hilti PR 2-HS rotating laser. “Laser receiver” or “receiver” always refers to the PRA 20 (02) laser receiver.

PR 2-HS rotating laser

1 Laser beam (plane of rotation)
2 Rotating head
3 Grip
4 Control panel
5 Base plate with ⁵/₈" thread
6 PRA 84 Li-Ion battery

Inserting and removing the battery

1 PRA 84 Li-Ion battery
2 Battery compartment
3 Catch

Charging the battery in the tool

1 PUA 81 AC adapter
2 Charging socket

Charging the battery after removal from the tool

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

Rotating laser control panel

1 On/off button
2 Auto-leveling LED
3 Shock warning function deactivation button and LED
4 Manual inclined plane mode button and LED
5 Battery charge status LED

PRA 20 laser receiver control panel

1 On/off button
2 Units button
3 Volume button
4 Receiving window
5 Marking notch
6 Display

PRA 20 laser receiver display

1 Indicator showing the position of the receiver relative to the height of the laser plane
2 Battery status
3 Indication of distance from laser plane
4 Volume
5 Low battery indicator for the rotating laser
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
- Return materials for recycling
- Do not look into the beam.
- For indoor use only
- Warning: caustic substances
- Warning: electricity
- Warning: explosive substances
- KCC-REM-HLT-PR2HS

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 PR 2-HS is a rotating laser that projects a rotating, visible laser beam. The rotating laser can be used horizontally and for inclined planes. The tool is designed to be used for determining, transferring and checking references in the horizontal and inclined planes. Examples of uses are the transferring of datum lines and heights. 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 switched on 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 Digital distance measurement display
The laser receiver displays digitally the distance between the laser plane and the marking notch on the laser receiver. This allows the user to determine the exact position of the receiver relative to the laser plane, with millimeter accuracy, in a single operation.

2.4 Horizontal plane
After switching on, the tool levels itself automatically by way of two built-in servo motors.

2.5 Inclined plane (manual alignment in the desired plane of inclination)
The desired inclination can be set with the aid of the PRA 79 slope adapter. For further information on using the slope adapter, please refer to the instruction sheet supplied with the PRA 79.

2.6 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).

2.7 Automatic cut-out
The laser does not switch on and all LEDs blink if the tool is set up outside its self-leveling range (±5°) 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.

2.8 Items supplied

1 PR 2-HS rotating laser
1 PRA 20 (02) laser receiver
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
2.9 Operating status indicators

The tool is equipped with the following operating status indicators: auto-leveling LED, battery charge status LED, shock warning deactivation LED and inclined plane mode LED.

2.10 LED indicators

<table>
<thead>
<tr>
<th>LED indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-leveling LED</td>
<td>The green LED blinks. The tool is in the leveling phase.</td>
</tr>
<tr>
<td></td>
<td>The green LED lights constantly. The tool has leveled itself/is operating</td>
</tr>
<tr>
<td></td>
<td>normally.</td>
</tr>
<tr>
<td>Shock warning deactivation LED</td>
<td>The orange LED lights constantly. The shock warning function is deactivated.</td>
</tr>
<tr>
<td>Inclined plane mode LED</td>
<td>The orange LED lights constantly. Manual inclined plane mode is active.</td>
</tr>
<tr>
<td>All LEDs</td>
<td>All LEDs blink. The tool has been bumped, knocked off level or is exhibiting some error.</td>
</tr>
</tbody>
</table>

2.11 Charge status of the Li-ion battery during operation

<table>
<thead>
<tr>
<th>LEDs light constantly</th>
<th>LEDs blink</th>
<th>Charge status C</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED 1, 2, 3, 4</td>
<td></td>
<td>C ≥ 75 %</td>
</tr>
<tr>
<td>LED 1, 2, 3</td>
<td></td>
<td>50% ≤ C &lt; 75%</td>
</tr>
<tr>
<td>LED 1, 2</td>
<td></td>
<td>25% ≤ C &lt; 50%</td>
</tr>
<tr>
<td>LED 1</td>
<td></td>
<td>10% ≤ C &lt; 25%</td>
</tr>
<tr>
<td>-</td>
<td>LED 1</td>
<td>C &lt; 10%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>LEDs light constantly</th>
<th>LEDs blink</th>
<th>Charge status C</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED 1, 2, 3, 4</td>
<td>LED 4</td>
<td>C = 100%</td>
</tr>
<tr>
<td>LED 1, 2</td>
<td>LED 3</td>
<td>75% ≤ C &lt; 100%</td>
</tr>
<tr>
<td>LED 1</td>
<td>LED 2</td>
<td>50% ≤ C &lt; 75%</td>
</tr>
<tr>
<td>-</td>
<td>LED 1</td>
<td>25% ≤ C &lt; 50%</td>
</tr>
<tr>
<td>-</td>
<td></td>
<td>C &lt; 25%</td>
</tr>
</tbody>
</table>

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

If the red charging activity 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

<table>
<thead>
<tr>
<th>Designation</th>
<th>Short designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser receiver</td>
<td>PRA 20 (02)</td>
</tr>
<tr>
<td>Laser receiver holder</td>
<td>PRA 80</td>
</tr>
<tr>
<td>Laser receiver holder</td>
<td>PRA 83</td>
</tr>
<tr>
<td>Height transfer device</td>
<td>PRA 81</td>
</tr>
<tr>
<td>Slope adapter</td>
<td>PRA 79</td>
</tr>
<tr>
<td>AC adapter</td>
<td>PUR 81</td>
</tr>
<tr>
<td>Car charging connector</td>
<td>PUR 82</td>
</tr>
<tr>
<td>Battery</td>
<td>PRA 84</td>
</tr>
</tbody>
</table>
Designation | Short designation
--- | ---
Battery | PRA 84G
Tripod | PUA 20
Crank tripod (elevator tripod) | PUA 30
Crank tripod (elevator tripod) | PA 921
Automatic tripod | PRA 90
Telescopic staffs | PUA 50, PUA 55

### 4 Technical data

Right of technical changes reserved.

**PR 2-HS**

- **Receiving range (diameter)**: With PRA 20 (02) laser receiver: 2...600 m
- **Accuracy**:
  - At 10 meters: ± 0.5 mm
- **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**: 300/min ± 10%
- **Self-leveling range**: ± 5°
- **Power source**: 7.4 V / 5.0 Ah Li-ion battery
- **Battery life**: Temperature +25°C, Li-ion battery: ≥ 30 h
- **Operating temperature range**: -20...+50°C
- **Storage temperature range (dry)**: -25...+60°C
- **Protection class**: IP 66 (in accordance with IEC 60529); Not in “charging during operation” mode
- **Tripod thread**: ⁵⁄₈” x 18
- **Weight (including the PRA 84)**: 2.3 kg
- **Dimensions (L x W x H)**: 200 mm x 200 mm x 230 mm
- **Drop test height**:
  - 1.5 m

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 20 (02)**

- **Detection range (area diameter)**: With the PR 2-HS (typical): 2...600 m
- **Signaltone 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 receiving window**: 120 mm
- **Center indication from top edge of casing**: 75 mm
- **Marking notches**: On both sides
- **Time without detection before automatic power off**: 15 min

1 The drop test was carried out using the PRA 83 receiver holder, dropped onto flat concrete under standard ambient conditions (MIL-STD-810G).
<table>
<thead>
<tr>
<th><strong>Dimensions (L x W x H)</strong></th>
<th>160 mm x 67 mm x 24 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight (including batteries)</strong></td>
<td>0.25 kg</td>
</tr>
<tr>
<td><strong>Power source</strong></td>
<td>2 AA batteries</td>
</tr>
<tr>
<td><strong>Battery life</strong></td>
<td>Temperature +20°C: Approx. 50 h (depending on the quality of the alkaline batteries used)</td>
</tr>
<tr>
<td><strong>Operating temperature range</strong></td>
<td>-20...+50°C</td>
</tr>
<tr>
<td><strong>Storage temperature range</strong></td>
<td>-25...+60°C</td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td>IP 66 (in accordance with IEC 60529); Except the battery compartment</td>
</tr>
<tr>
<td><strong>Drop test height¹</strong></td>
<td>2 m</td>
</tr>
</tbody>
</table>

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)** | 7.4 V |
| **Maximum voltage (during operation or during charging while in operation)** | 13 V |
| **Rated current** | 140 mA |
| **Charging time** | Temperature +32°C: 2 h 10 min (battery 80% charged) |
| **Operating temperature range** | -20...+50°C |
| **Storage temperature range (dry)** | -25...+60°C |
| **Charging temperature range (also for charging during operation)** | +0...+40°C |
| **Weight** | 0.3 kg |
| **Dimensions (L x W x H)** | 160 mm x 45 mm x 36 mm |

### 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 |
| **Storage temperature range (dry)** | -25...+60°C |
| **Weight** | 0.23 kg |
| **Dimensions (L x W x H)** | 110 mm x 50 mm x 32 mm |

### 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.
1. Stay alert, watch what you are doing and use common sense when operating the tool. Don’t use the tool when you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating tools may result in serious personal injury.


3. 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.

4. 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.

5. (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.

6. 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.

7. Check the condition of the tool before use. If the tool is found to be damaged, have it repaired at a Hilti service center.

8. Maintain the tool carefully. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the tool’s operation. If damaged, have the tool repaired before use. Poor maintenance is the cause of many accidents.

9. The user must check the accuracy of the tool after it has been dropped or subjected to other mechanical stresses.

10. Check the tool before using it for important measuring work.

11. Check the accuracy of the measurements several times during use of the tool.

12. When the tool is brought into a warm environment from very cold conditions, or vice-versa, allow it to become acclimatized before use.

13. If mounting on an adapter, check that the tool is screwed on securely.

14. Keep the laser exit aperture clean to avoid measurement errors.

15. 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.

16. 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.

17. Keep the electrical contacts dry (protect from rain or dampness).

18. Use the mains adapter only for connecting to the mains supply.

19. Check to ensure that the tool and mains adapter do not present an obstacle that could lead to a risk of tripping and personal injury.

20. Ensure that the workplace is well lit.

5.2.1 Battery tool use and care

a) Do not expose batteries to high temperatures and keep them away from 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. This presents a risk of fire, explosion or injury through contact with caustic substances.

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) Use only batteries of the type approved for use with the applicable tool. Use of other batteries or use of the batteries for purposes for which they are not intended presents a risk of fire and explosion.

f) Observe the special guidelines 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 terminals. Check that the battery terminals and the terminals in the device are free from foreign objects before inserting.
the battery in the device. Short circuiting the battery terminals presents a risk of fire, explosion and chemical burns.

i) Do not charge or continue to use damaged batteries (e.g. batteries with cracks, broken parts, 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) When working in “charging during operation” mode, attach the AC adapter in a secure position, e.g. on a tripod.

g) 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.

h) Use of the telescopic staff in the vicinity of overhead high voltage cables is not permissible.

5.3.1 Electromagnetic compatibility

NOTE
Only for Korea: This device is suitable for the electromagnetic radiation encountered in residential environments (Class B). It is intended mainly for use in residential environments but may also be used in other environments.

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 tools

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

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

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

6.2 Removing the battery

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

6.3 Charging the battery

DANGER
Use only the Hilti batteries and Hilti AC adapters listed under “Accessories”. Use of tools or AC adapters which show visible signs of damage is not permissible.

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

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

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

6.4.1 Charging the battery in the tool
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
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

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.

6.6 Switching the tool on
Press the on/off button.

NOTE
After switching on, the tool begins to level itself automatically. The laser switches on when leveling is complete.

6.7 LED indicators
Please refer to section 2 “Description”.

6.8 Inserting the batteries in the laser receiver
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 laser receiver 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.
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 laser receiver
The laser receiver can be used at distances (radiuses) of up to 300 m. The laser beam is indicated by visual and audible signals.

7.3.1 Working with the laser receiver as a handheld unit
1. Press the on/off button.
2. Hold the laser receiver with the receiving window directly in the plane of the rotating laser beam.

7.3.2 Working with the laser receiver in the PRA 80 receiver holder
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 receiver with the receiving window in the plane of the rotating laser beam.

7.3.3 Working with the laser receiver in the PRA 83 receiver holder
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 receiving window and the buttons are facing the front.
2. Fit the receiver, complete with the rubber sleeve, onto the grip section. The cover 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 receiver with the receiving window in the plane of the rotating laser beam.

7.3.4 Working with the PRA 81 height transfer device
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 receiving window 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
The “Units” button can be used to set the desired accuracy of the digital display (mm/cm/off).

7.3.6 Volume adjustment
When the receiver is switched on, the volume is set to “normal”. The volume can be adjusted by pressing the “Volume” button. One of four settings can be selected: “Low”, “Normal”, “High” or “Off”.

7.3.7 Menu options
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 “Measuring units” button to select metric or imperial measuring units.
3. Use the “Volume” button to assign the more rapid signal tone to the upper or lower area of the receiving window.
4. 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.

7.4 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
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 ±5°.
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.

7.6 Working with slopes (manual settings)

**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).

**7.6.1 Setting up**
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 bring it into alignment with the inclined plane, i.e. parallel to the slope. The control panel of the PR 2-HVS should face away from the direction of inclination.
4. Make sure that the slope adapter is in the zero position (0°).

**7.6.2 Switching on**
1. Switch the tool on (see 7.2).
2. Press the “Inclined plane manual mode” button. The “Inclined plane mode” LED then lights on the control panel of the rotating laser.
3. The tool then begins automatic self-leveling. The laser switches on and begins to rotate as soon as this is complete.
4. Now set the slope adapter to the desired angle of inclination.
5. To return to standard operating mode, switch the tool off and then switch it back on again.

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 overstressing. 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 tool 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**

Remove the batteries from the tool and receiver before transport or shipping.

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).

### 8.6.1 Checking the main and transverse horizontal axes

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 laser 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 2 mm (at 20 m).

If the deviation is greater than this, the tool should be returned to a Hilti Service Center for calibration.

9 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.
For EC countries only

Do not dispose of electronic measuring tools or appliances together with household waste.

In observance of the European Directive on waste electrical and electronic equipment and its implementation in accordance with national law, electrical appliances and batteries that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

Dispose of the batteries in accordance with national regulations. Please help us to protect the environment.

10 Manufacturer’s warranty - tools

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

11 EC declaration of conformity (original)

<table>
<thead>
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<th>Designation:</th>
<th>Rotating laser</th>
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<tr>
<td>Type:</td>
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</tr>
<tr>
<td>Generation:</td>
<td>01</td>
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<tr>
<td>Year of design:</td>
<td>2013</td>
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We declare, on our sole responsibility, that this product complies with the following directives and standards:

- until 19th April 2016: 2004/108/EC, from 20th April 2016:
- 2014/30/EU, 2011/65/EU, 2006/66/EC, 2006/42/EC,
- EN ISO 12100.

Hilti Corporation, Feldkircherstrasse 100, FL-9494 Schaan

Paolo Luccini
Head of BA Quality and Process Management

Edward Przybylowicz
Head of BU Measuring Systems

Business Area Electric Tools & Accessories

Technical documentation filed at:

Hilti Entwicklungsgesellschaft mbH
Zulassung Elektrowerkzeuge
Hilistrasse 6
86916 Kaufering
Deutschland

HiltiCorporation, Feldkircherstrasse 100,
FL-9494 Schaan

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