



PR 40G-22 (01)

English

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Original operating instructions

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1 Information about the operating instructions

1.1 About these operating instructions

- **Warning!** Read and understand all accompanying documentation, including but not limited to instructions, safety warnings, illustrations, and specifications provided with this product. Familiarize yourself with all the instructions, safety warnings, illustrations, specifications, components, and functions of the product before use. Failure to do so may result in electric shock, fire, and/or serious injury. Save all warnings and instructions for future reference.
- products are designed for professional users and only trained, authorized personnel are permitted to operate, service and maintain the products. This personnel must be specifically informed about the possible hazards. The product and its ancillary equipment can present hazards if used incorrectly by untrained personnel or if used not in accordance with the intended use.
- The accompanying documentation corresponds to the current state of the art at the time of printing. Please always check for the latest version on the product's page on Hilti's website. To do this, follow the link or scan the QR code in this documentation, marked with the symbol .
- Ensure that these operating instructions are with the product when it is given to other persons.

1.2 Explanation of symbols

1.2.1 Warnings

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

DANGER

DANGER !

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

WARNING

WARNING !

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

CAUTION

CAUTION !

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

1.2.2 Symbols in the operating instructions

The following symbols are used in these operating instructions:

	Comply with the operating instructions
	Instructions for use and other useful information
	Dealing with recyclable materials
	Do not dispose of electric equipment and batteries as household waste
	Hilti Li-ion battery
	Hilti charger

1.2.3 Symbols in illustrations

The following symbols are used in illustrations:

- 2** These numbers refer to the illustrations at the beginning of these operating instructions.

3	The numbers in illustrations refer to important work steps or to components important for the work steps. In the text, the corresponding numbers draw attention to these work steps or components, e.g. (3).
11	Item reference numbers are used in the overview illustration and refer to the numbers used in the key in the product overview section.
	This symbol is intended to draw your special attention to certain points for handling the product.

1.3 Product-dependent symbols

1.3.1 General symbols

Symbols used in relation to the product.

	The product supports near-field communication (NFC) technology compatible with iOS and Android platforms.
Li-Ion	Li-ion battery
	Never use the battery as a striking tool.
	Do not drop the battery. Never use a battery that has suffered an impact or is damaged in any other way.
	Hilti Li-ion battery type series used. Observe the information given in the section headed Intended use .
	If applied on the product, the product has been certified by this certification body for the US and Canadian markets according to the applicable standards.

1.4 On the product

Laser information

	<p>LASER RADIATION! DO NOT LOOK INTO THE LASER BEAM!</p> <p>The product corresponds to laser class 2, based on the standard IEC60825-1/EN60825-1:2014, and corresponds to CFR 21 § 1040 (Laser Notice 56). This product is a consumer laser product and satisfies the requirements of EN 50689:2021.</p>
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2 Safety

2.1 General safety instructions, measuring tools

⚠ WARNING! Read all safety precautions and other instructions. Measuring tools can present hazards if handled incorrectly. Failure to observe the safety instructions and other instructions can result in damage to the measuring tool and/or serious injury.

Keep all safety precautions and instructions for future reference.

Work area safety

- ▶ **Keep your workplace clean and well lit.** Cluttered or poorly lit workplaces invite accidents.
- ▶ **Do not operate the product in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.**
- ▶ **Keep children and other persons clear when the product is in use.**
- ▶ **Use the product only within its specified limits.**
- ▶ **Comply with your national accident prevention regulations.**

Electrical safety

- ▶ **Do not expose the product to rain or moisture.** Penetrating moisture can cause short circuits, electrical shock, burns or explosions.
- ▶ **Although the product is protected against the entry of moisture, it should be wiped dry before being put away in its transport container.**

Personal safety

- ▶ **Stay alert, watch what you are doing and use common sense when operating a measuring tool. Do not use a measuring tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating the measuring tool can result in serious personal injury.
- ▶ **Avoid unusual body positions. Keep proper footing and balance at all times.**
- ▶ **Wear personal protective equipment.** Wearing personal protective equipment reduces the risk of injury.
- ▶ **Do not render safety devices ineffective and do not remove information and warning notices.**
- ▶ **Avoid accidental starting.** Make sure that the measuring tool is switched off before connecting it to the battery and before picking it up or carrying it.
- ▶ **Use the product and accessories in accordance with these instructions and in the way specified for this special type of tool. Take the working conditions and the work to be performed into account.** Use of products for applications different from those intended could result in hazardous situations.
- ▶ **Do not lull yourself into a false sense of security and do not flout the safety rules for measuring tools, even if you are familiar with the measuring tool after using it many times.** Carelessness can result in serious injury within a fraction of a second.
- ▶ **Do not use the measuring tool in the vicinity of medical devices.**

Using and handling the measuring tool

- ▶ **Use the product and accessories only when they are in perfect working order.**
- ▶ **Store measuring tools out of reach of children when not in use. Do not allow persons who are not familiar with the product or these instructions to operate it.** Measuring tools are dangerous in the hands of inexperienced persons.
- ▶ **Measuring tools need care and attention. Check that moving parts operate satisfactorily and do not jam, and make sure that no parts are broken or damaged in such a way that the measuring tool might no longer function correctly. Have damaged parts repaired before using the measuring tool.** Many accidents are caused by poorly maintained measuring tools.
- ▶ **Do not under any circumstances modify or tamper with the product.** Changes or modifications not expressly approved by Hilti may restrict the user's authorization to operate the product.
- ▶ **Check the accuracy of the measuring tool before using it for important measurements, and if it has been dropped or subjected to other mechanical stresses.**
- ▶ **Due to the measuring principle employed, the results of measurements can be negatively affected by certain ambient conditions.** These include, for example, the proximity of devices that produce strong magnetic or electro-magnetic fields, vibrations and temperature changes.
- ▶ **Rapidly changing measuring conditions can falsify the results.**
- ▶ **When the product is brought into a warm environment from very cold conditions, or vice-versa, allow it to become acclimatized before use.** Big differences in temperature can lead to incorrect operation and incorrect results.
- ▶ **When adapters or accessories are used, make sure they are mounted securely.**
- ▶ **The measuring tool is designed for the tough conditions of jobsite use, but as with other optical and electrical products (e.g. binoculars, spectacles, cameras) it must be handled with care.**
- ▶ **The specified operating and storage temperatures must be observed.**

2.2 Additional safety instructions for laser measuring tools

- ▶ **Laser radiation in excess of Class 2 can be emitted if the product is opened without correct procedure being followed.** Have the product repaired only by Hilti Service.
- ▶ **Secure the area in which you will be taking measurements. While setting up the product, make sure that you do not direct the laser beam toward yourself or others.** Laser beams should be projected well above or well below eye height.
- ▶ **Keep the laser exit window clean in order to avoid measurement errors.**
- ▶ **Check the accuracy of the product before use and several times during use.**
- ▶ **Readings taken in the vicinity of reflective objects or surfaces, through panes of glass or similar materials can falsify the result of measurement.**
- ▶ **Mount the product on a suitable holder or bracket or on a tripod, or set it on a smooth, level surface.**
- ▶ **Do not work with surveyor's staffs in the vicinity of high-voltage electricity cables.**
- ▶ **Make sure that no other laser measuring tool that can influence your measurements is in use in the vicinity.**
- ▶ **Do not permit the laser beam to project beyond the controlled area.**

2.3 Additional safety instructions

- ▶ Use the product and accessories only when they are in perfect working order.
- ▶ Never tamper with or modify the product or accessories in any way.
- ▶ Risk of injury by falling tools and/or accessories. Before starting work, check that the battery and installed accessories are secure.

2.4 Electromagnetic compatibility

Although the tool complies with the strict requirements of the applicable directives, **Hilti** cannot exclude the following possibilities:

- The tool may cause interference to other devices (e.g. aircraft navigation equipment).
- The tool may be negatively affected by powerful electromagnetic radiation, possibly leading to incorrect operation.

In these cases, or if you are otherwise unsure, confirmatory measurements should be made by other means.

2.5 Careful handling and use of batteries

- ▶ **Comply with the following safety instructions for the safe handling and use of Li-ion batteries.** Failure to comply can lead to skin irritation, severe corrosive injury, chemical burns, fire and/or explosion.
- ▶ Use only batteries that are in perfect working order.
- ▶ Treat batteries with care in order to avoid damage and prevent leakage of fluids that are extremely harmful to health!
- ▶ Do not under any circumstances modify or tamper with batteries!
- ▶ Do not disassemble, crush or incinerate batteries and do not subject them to temperatures over 80 °C (176 °F).
- ▶ Never use or charge a battery that has suffered an impact or been damaged in any other way. Check your batteries regularly for signs of damage.
- ▶ Never use recycled or repaired batteries.
- ▶ Never use the battery or a battery-operated power tool as a striking tool.
- ▶ Never expose batteries to the direct rays of the sun, elevated temperature, sparking, or open flame. This can lead to explosions.
- ▶ Do not touch the battery poles with your fingers, tools, jewelry, or other electrically conductive objects. This can damage the battery and also cause material damage and personal injury.
- ▶ Keep batteries away from rain, moisture and liquids. Penetrating moisture can cause short circuits, electric shock, burns, fire and explosions.
- ▶ Use only chargers and power tools approved for the specific battery type. Read and follow the relevant operating instructions.
- ▶ Do not use or store the battery in explosive environments.
- ▶ If the battery is too hot to touch, it may be defective. Put the battery in a place where it is clearly visible and where there is no risk of fire, at an adequate distance from flammable materials. Allow the battery to cool down. If it is still too hot to touch after an hour, the battery is faulty. Consult **Hilti** Service or read the document entitled "Instructions on safety and use for **Hilti** Li-ion batteries".



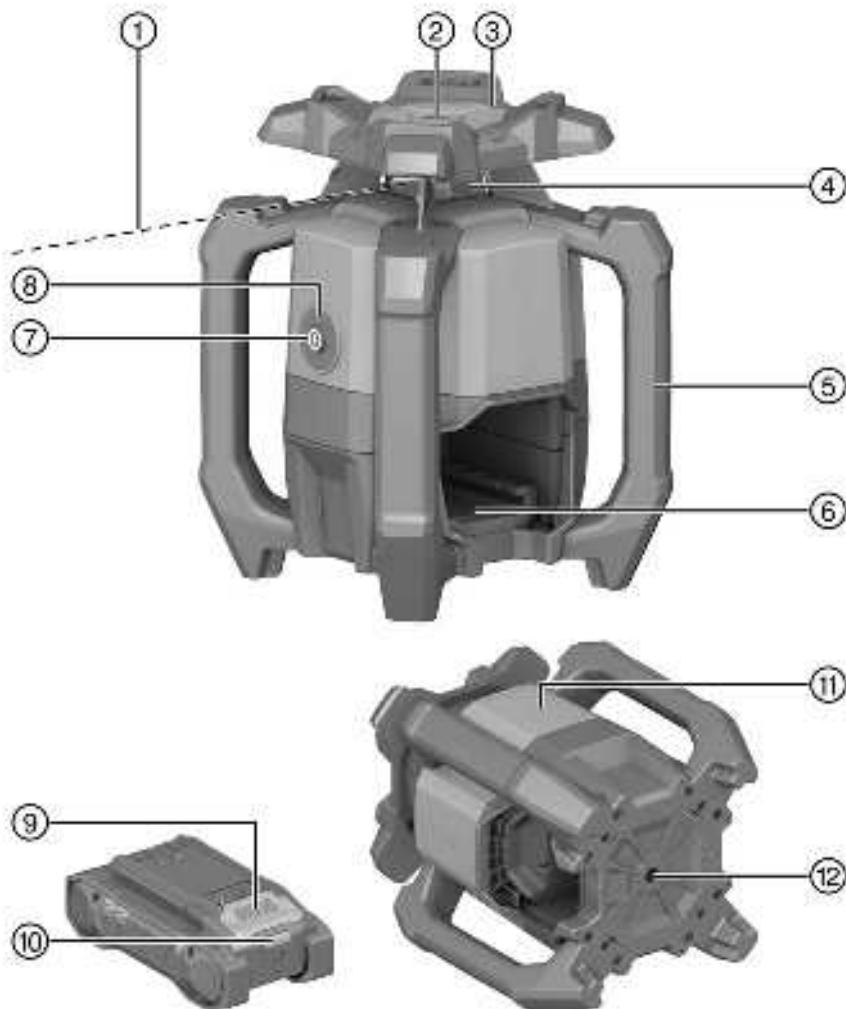
Observe the special guidelines applicable to the transport, storage and use of lithium-ion batteries.



Read the instructions on safety and use of **Hilti** Li-ion batteries that you can access by scanning the QR code at the end of these operating instructions.

3 Description

3.1 Overview



- ① Laser beam (plane of rotation)
- ② Reference beam
- ③ Targeting aid (front and rear sights), X axis
- ④ Laser window
- ⑤ Grip
- ⑥ Battery interface

- ⑦ On/off button ①
- ⑧ Operating status indicator (LED)
- ⑨ Battery release button
- ⑩ Battery status indicator
- ⑪ Position of rating plate
- ⑫ Base plate with 5/8" thread

3.2 Intended use

The product described is a rotating laser tool with a visible green rotating laser beam and a reference beam set at 90° to the main beam. The rotating laser can be used vertically, horizontally and for slopes. The tool is

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

NURON

B 22-55 (01)	0,56 kg	1.23 lb
B 22-85 (01)	0,77 kg	1.70 lb



C 4-22
C 6-22
C 8-22

- For this product, use only the **Hilti** Nuron Li-ion batteries of the B 22 series stated in this table.
- For these batteries, use only **Hilti** chargers of the type series stated in this table.

3.3 Items supplied

Rotating laser, PRA 400 laser receiver, PRA 83 laser receiver holder, 2x AA batteries (not in all markets), operating instructions, manufacturer's certificate, case

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

3.4 Bluetooth

This product has Bluetooth.

Bluetooth is a wireless data transfer system by which two Bluetooth-enabled products can communicate with each other over a short distance.

The **Bluetooth®** word mark and the logo are registered trademarks and the property of **Bluetooth SIG, Inc.** and **Hilti** has been granted a license to use these trademarks.

3.5 Functions of the on/off button

Short-pressing the on/off button switches the rotating laser on or off, as applicable.

In addition, the following functions can be activated by means of the on/off button:

- In horizontal mode: With the rotating laser switched off, press the on/off button for ≥ 10 seconds to activate the slope function. In the laser receiver, the "Set slope digitally" function is called up. 13
- In vertical mode: After successful leveling and projection of the reference point, short-pressing the on/off button again starts rotation. 16
To switch the rotating laser off during projection of the reference point, you must press the on/off button twice.

3.6 Laser receiver / remote control unit

Hilti laser receivers digitally indicate the distance between the marking notch on the laser receiver and the position at which the laser beam (laser plane) strikes the detection area on the receiver. The laser beam can also be received over long distances. The PRA 400 laser receiver also functions as a remote control unit for the rotating laser.

3.7 Automatic switch-off

The tool switches off automatically if it is unable to level itself because the rotating laser:

- Is inclined too greatly relative to the horizontal plane (except when in slope mode).
- Has an internal mechanical problem.

- Has been knocked off level by an impact or vibration.

When the tool has switched itself off, rotation stops and the operating status indicator quick-flashes orange. Switch the rotating laser off and then on again. If the problem persists, consult **Hilti** Service.

3.8 Automatic alignment

Automatic alignment allows the laser plane to be brought into alignment with the laser receiver by a single person.

- Horizontal in conjunction with the PRA 91 automatic tripod and PRA 400 laser receiver.
- Slope in the X-axis in conjunction with the PRA 400 laser receiver.
- Vertical in combination with the PRA 400 laser receiver.

3.9 Surveillance function

The rotating laser monitors alignment of the laser plane in conjunction with the PRA 400 laser receiver. In the event of an alignment deviation the system corrects the direction of the laser plane, keeping it at the zero point of the laser receiver. The rotating laser corrects all errors caused by temperature fluctuations, wind or other such influences.

If the optical connection (line of sight) between the rotating laser and the laser receiver is interrupted for longer than two minutes, the system indicates an error.

The surveillance function is available only in the vertical mode.

3.10 Sleep mode

Sleep mode may be activated on the rotating laser during breaks between work or during other activities. All settings concerning the laser plane or slope are retained while in this state. Sleep mode saves power and extends battery life.

The PRA 400 laser receiver is used to activate/deactivate sleep mode.



Sleep mode remains active for a maximum of 4 hours. The system switches itself off after this time.

3.11 Switching off beam segments

Individual segments of the path of the laser beam can be deactivated in order to:

- Avoid exposing yourself or bystanders to the laser beam.
- Avoid influencing other measuring or alignment work being carried out in the vicinity.

3.12 Shock warning function

If the rotating laser is knocked off level during operation, the built-in shock warning function switches the product to warning mode. The shock warning function is not active until two minutes after completion of self-leveling. If an adjustment to a setting of the rotating laser is made within this two-minute period it will take a further two minutes for the shock warning function to go active.

If the rotating laser is in warning mode:

- The operating status indicator slow-flashes orange.
- The rotary head stops and the laser beam switches off.

The PRA 400 laser receiver enables the sensitivity of the shock warning function to be set or the function to be deactivated if the ground or floor is not free from vibration or when you are working in slope mode.

3.13 Protection against interfering light sources



When the mode is active the maximum receiving range (diameter) is reduced, depending on speed of rotation.

The "protection against interfering light sources" mode minimizes the influence on measurement of flickering light sources such as LEDs, used for example in headlamps and other sources of artificial light.

The mode effectively resolves the problems caused by reflections of the laser beam on glass, metal or other reflective surfaces.

Interfering light sources and reflected laser beams are largely ignored and false detections by the laser receiver are minimized. This enables work to proceed steadily even in difficult conditions.

3.14 Operating status indicator

The rotating laser has an operating status indicator that can indicate different operating states.

Status	Meaning
The operating status indicator shows steady green.	The rotating laser is switched on, has leveled and is operating normally.
The operating status indicator slow-flashes green.	The rotating laser is leveling itself.
The operating status indicator quick-flashes green 5 times.	A currently triggered setting (leveling, surveillance mode, auto-alignment) has completed successfully.
The operating status indicator shows green with short interruptions.	Slope mode is active.
The operating status indicator slow-pulsates green with interruption.	The rotating laser is in sleep mode.
The operating status indicator quick-pulsates green with interruption.	A current setting (surveillance mode, auto-alignment) has been triggered.
The operating status indicator shows steady orange.	The shock warning function has been deactivated. The rotating laser is switched on, has leveled and is operating normally.
The operating status indicator slow-flashes orange.	The shock warning function has been deactivated. The rotating laser is leveling itself.
The operating status indicator quick-flashes orange.	The rotating laser is experiencing a fault. Check the set-up of the rotating laser (e.g. vibration-free, flat surface, etc.)
The operating status indicator flashes red (3x long, 3x short, 3x long, pause).	The rotating laser is faulty. Consult Hilti Service.
The operating status indicator slow-flashes blue 5x.	The rotating laser and the laser receiver are successfully paired.

3.15 Status indicators of the Li-ion battery

Hilti Nuron Li-ion batteries can indicate state of charge, fault messages and the battery's state of health.

3.15.1 Indicators for state of charge and fault messages

WARNING

Risk of injury by a falling battery!

- If the release button is pressed with a battery inserted in the product, subsequently check that the battery is correctly re-engaged and secure.

Short-press the release button of the battery to get whichever of the following status indications is applicable at the time.

State of charge and, if applicable, faults are indicated constantly as long as the connected product is switched on.

Status	Meaning
Four (4) LEDs show constantly green	State of charge: 100 % to 71 %
Three (3) LEDs show constantly green	State of charge: 70 % to 51 %
Two (2) LEDs show constantly green	State of charge: 50 % to 26 %
One (1) LED shows constantly green	State of charge: 25 % to 10 %
One (1) LED slow-flashes green	State of charge: < 10 %

Status	Meaning
One (1) LED quick-flashes green	The Li-ion battery is completely discharged. Recharge the battery. If the LED again starts quick-flashing after the battery has been charged, consult Hilti Service .
One (1) LED quick-flashes yellow	The Li-ion battery or the product in which it is inserted is overloaded, too hot or too cold, or experiencing some other fault. Bring the product and the battery to the recommended working temperature and do not overload the product when it is in use. If the message persists, consult Hilti Service .
One (1) LED shows yellow	The Li-ion battery and the product in which it is inserted are not compatible. Consult Hilti Service .
One (1) LED quick-flashes red	The Li-ion battery is locked and cannot be used. Consult Hilti Service .

3.15.2 Indicators showing the battery's state of health

To check the battery's state of health, press the release button and hold it down for longer than three seconds. The system does not detect a potential malfunction of the battery due to misuse, for example battery dropped or pierced, external heat damage, etc.

Status	Meaning
All LEDs show in sequence, followed by one (1) LED showing constantly green.	The battery can remain in use.
All LEDs show in sequence, followed by one (1) LED quick-flashing yellow.	The check to ascertain the battery's state of health did not complete. Repeat the procedure, or consult Hilti Service .
All LEDs show in sequence, followed by one (1) LED showing constantly red.	If a connected product can still be used, the remaining battery capacity is below 50 %. If a connected product can no longer be used, the battery has reached the end of its useful life and has to be replaced. Consult Hilti Service .

4 Technical data

4.1 Product information

Product generation		01
Rated voltage		21.6 V
Rated current		160 mA
Reception range with PRA 400 (Diameter)		300 m (984 ft - 3 in)
Communication range with PRA 400 laser receiver (Diameter)		300 m (984 ft - 3 in)
Accuracy at 10 m (under standard ambient conditions in accordance with MIL-STD-810G)		±0.5 mm (±0.02 in)
Laser class		Visible, laser class 2; EN/IEC 60825-1:2014
Wavelength (λ)		510 nm ... 530 nm
Output power (P _o)	Rotary laser beam	< 3.5 mW , ≥ 300 /min
Output power (P _o)	Reference laser beam	< 1 mW
Pulse duration (tp)		560 ns
Pulse frequency (f)		1 MHz

Self-leveling range		±5°
Maximum slope (Tolerance 1.75 % / 1 degree)	X-axis	-15 % ... 8.6 %
Maximum site elevation above datum		2,000 m (6,561 ft - 8 in)
Maximum relative humidity		80 %
Ambient temperature for operation		-20 °C ... 50 °C (-4 °F ... 122 °F)
Storage temperature		-25 °C ... 63 °C (-13 °F ... 145 °F)
Weight		2.60 kg (in accordance with EPTA-Procedure 01 without battery)
Tripod thread		5/8 in
Drop test height (under standard ambient conditions in accordance with MIL-STD-810G)		1.5 m (4 ft - 11.1 in)
Degree of protection in accordance with IEC 60529		IP66 (without battery)
Reference beam		Constant beam, perpendicular to the plane of rotation
Maximum emitted transmission power		10 dBm
Frequency		2,400 MHz ... 2,483.5 MHz
Degree of pollution in accordance with IEC 61010-1		2

4.2 Battery

Battery operating voltage	21.6 V
Weight, battery	See the section headed "Intended use"
Ambient temperature for operation	-17 °C ... 60 °C (1 °F ... 140 °F)
Storage temperature	-20 °C ... 40 °C (-4 °F ... 104 °F)
Battery charging starting temperature	-10 °C ... 45 °C (14 °F ... 113 °F)

5 Preparations at the workplace

WARNING

Risk of injury by inadvertent starting!

- ▶ Before inserting the battery, make sure that the product is switched off.
- ▶ Remove the battery before making any adjustments to the power tool or before changing accessories.

WARNING


Risk of injury by short circuit or falling battery!

- ▶ Before inserting the battery, make sure that the contacts on the battery and the contacts on the product are free of foreign matter.
- ▶ Make sure that the battery always engages correctly.

Observe the safety instructions and warnings in this documentation and on the product.

5.1 Charging the battery

1. Before charging the battery, read the operating instructions for the charger.
2. Make sure that the contacts on the battery and the contacts on the charger are clean and dry.

3. Use an approved charger to charge the battery.  5

5.2 Inserting the battery

1. Charge the battery fully before using it for the first time.
2. Push the battery into the product until it engages with an audible click.
3. Check that the battery is seated securely.



5.3 Removing the battery

1. Press the battery release button.
2. Remove the battery from the product.

5.4 Pairing the rotating laser and the laser receiver



The rotating laser and the laser receiver are already paired when supplied.

- ▶ Press the  buttons on the rotating laser and the laser receiver simultaneously for 3 seconds.
 - ▶ The laser receiver emits an acoustic signal.
 - ▶ On the rotating laser the operating status indicator flashes.
 - ▶ The  symbol appears on the display of the laser receiver
 - ▶ Both products switch off.

5.5 Fall arrest



WARNING

Risk of injury by falling tool and/or accessory!

- ▶ Use only the **Hilti** tool tether recommended for your product.
- ▶ Prior to each use, always check the attachment point of the tool tether for possible damage.



Comply with the national regulations for working at heights.

As drop arrester for this product, use only the **Hilti** tool tether #2261971.



- ▶ Use the loop to secure the tool tether to the product as shown in the illustration. Check that it holds securely.
- ▶ Secure the carabiner to a load-bearing structure. Check that the carabiner holds securely.



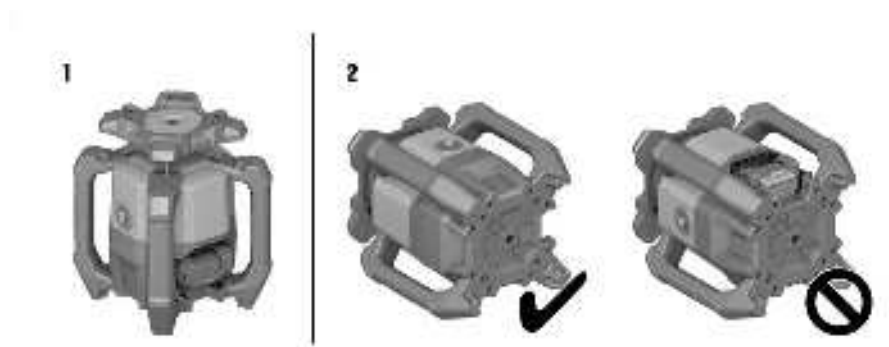
Comply with the operating instructions of the **Hilti** tool tether.

6 Operation

Observe the safety instructions and warnings in this documentation and on the product.

6.1 Handling the rotating laser and battery correctly

i Hilti Nuron Li-ion batteries have no degree of protection rating. Do not expose the battery to rain or wet conditions.



1. Work in horizontal mode / slope mode.
2. Work in vertical mode and set down or transport in sloped position.
 - For work in vertical mode the rotating laser has to be set down so that the on/off button **ⓘ** faces upward.
 - For transport and when it is not in use, always position the rotating laser so that the battery compartment and the battery **do not** face upward and no moisture can penetrate.

6.2 Switching the rotating laser on/off and working in the horizontal plane

i Check the accuracy of the rotating laser before using it for important tasks, especially if it has been dropped or subjected to unusual influences or impacts, or after long periods of storage.

1. Set the rotating laser on a level, sturdy, vibration-free and shock-free flat or mount it on a suitable holder.
 - A wall bracket or tripod may be used as mounting devices. The angle of inclination of the surface on which it stands should not exceed $\pm 5^\circ$.
2. Press the **ⓘ** button.
 - The rotating laser is leveling itself. The operating status indicator slow-flashes green.
 - The laser beam switches on and starts rotating as soon as the tool has leveled itself. The operating status indicator initially quick-flashes green 5 times and then shows steady green.
3. Press the **ⓘ** again to switch off the rotating laser.

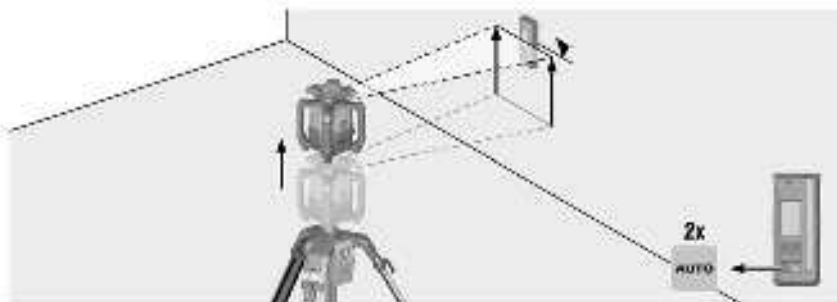
6.3 Automatic horizontal alignment using the PRA 91 tripod






i Preconditions:

- The rotating laser is mounted on the PRA 91 automatic tripod.
- The PRA 400 laser receiver, the rotating laser and the PRA 91 automatic tripod are paired. 11
- The PRA 400 laser receiver and the control panel of the PRA 91 automatic tripod are facing each other and in direct line of sight.

i For this procedure a QR code in the laser receiver enables you to access pictorial instructions illustrating the following work steps. You can also use this link to open the pictorial instructions:

Automatically transferring height with PRA 91 tripod




1. Press the  button on the rotating laser, on the laser receiver and on the automatic tripod.
 - ▶ Successful connection both to the laser and to the automatic tripod is shown on the display of the laser receiver.
 - ▶ If connection cannot be established the  symbol appears on the product concerned, indicating that no connection exists.
 - ▶ The rotating laser is leveling itself. The laser beam switches on and starts rotating as soon as the tool has leveled itself.
2. Keep the marking notch on the laser receiver at the height that is to be set. While this is in progress hold the laser receiver steady or secure it in place.
3. Begin automatic alignment by double-clicking the  button on the laser receiver.
 - ▶ The automatic tripod moves up and down until the position is reached at which the laser plane is aligned with the marking notch of the laser receiver. A signal tone is emitted by the laser receiver repeatedly during this procedure.
 - ▶ The rotating laser levels itself once this position has been reached. Successful completion is indicated on the laser receiver by a continuous signal tone with a duration of 5 seconds. The  symbol appears briefly on the display.
 - ▶ If automatic alignment cannot be completed successfully, the laser receiver emits short signal tones and briefly displays the  symbol.
4. Check the height setting on the display of the laser receiver.
5. When automatic alignment has completed you can remove the laser receiver from the target plane and proceed, for example, to mark other points within the laser plane.

6.4 Setting slope digitally



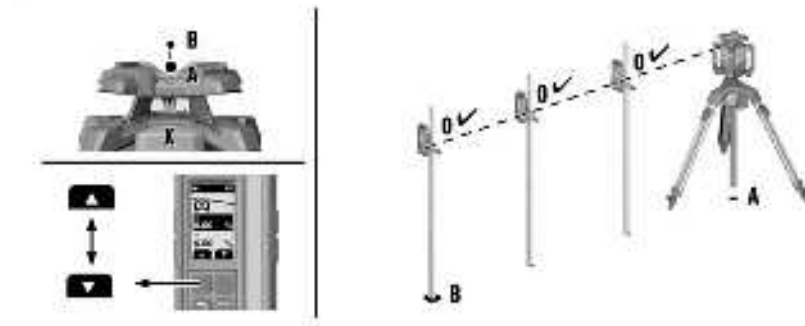
Preconditions:

- The rotating laser, depending on the application, is mounted or positioned securely.
- The PRA 400 laser receiver and the rotating laser are paired.  11



For this procedure a QR code in the laser receiver enables you to access pictorial instructions illustrating the following work steps. You can also use this link to open the pictorial instructions:

Setting slope digitally



1. Position the rotating laser at either the top edge or the bottom edge of the slope plane, point **(A)**.
2. Use the targeting aid (front and rear sights) to orient the rotating laser in the direction of the X axis with point **(B)** on the other edge of the slope plane.
3. Press the **ⓘ** button on the rotating laser and the laser receiver.
 - As soon as the tool has leveled itself, the laser beam switches on and begins to rotate and the operating status indicator shows steady green.
4. At the laser receiver, open the "Slope mode" menu and select the "Set slope" function .
5. Press the button.
6. Use the right or left function buttons to enter the value for slope.
 - To set a negative value, press and/or hold down the left function button until the value drops below 0.
 - As soon you release the function button, the rotating laser directly adjusts slope to the set value. When the set value is reached, the display shows .
7. You can now secure the laser receiver to a measuring rod, for example, and at point **(A)** set the height to 0. You can then proceed to measure other points over the entire slope surface.

i When the angle of inclination is set manually, the rotating laser levels the laser plane once and then fixes it once. Note that this rotating laser does not correct the sloped laser plane for possible deviation occurring due to a change in ambient conditions and/or shift of the mounting. Vibration, changes in temperature or other influences that may occur during the course of the day may affect the position of the laser plane.

6.5 Setting slope digitally with high precision (e-targeting).

Electronic orientation optimizes manual orientation of the rotating laser. The electronic method is more accurate.

i Preconditions:

- The rotating laser, depending on the application, is mounted or positioned securely.
- The PRA 400 laser receiver and the rotating laser are paired. 11
- The minimum spacing between the rotating laser and the laser receiver is 3 m (10 ft).

i For this procedure a QR code in the laser receiver enables you to access pictorial instructions illustrating the following work steps. You can also use this link to open the pictorial instructions:

Setting slope with high precision

1. Position the rotating laser at either the top edge or the bottom edge of the slope plane, point **(A)**.
2. Use the targeting aid (front and rear sights) to orient the rotating laser in the direction of the X axis with point **(B)** on the other edge of the slope plane.
3. Press the **ⓘ** button on the rotating laser and the laser receiver.
 - As soon as the tool has leveled itself, the laser beam switches on and begins to rotate and the operating status indicator shows steady green.
4. At the laser receiver, open the "Slope" menu and select the "High precision" function .

5. Keep the laser receiver aimed exactly and steadily at point **(B)** in the laser plane. The laser beam must hit the detection window.
 - ▶ The rotating laser orients the X axis of the laser plane exactly with the position of the laser receiver. When alignment completes, the display shows



Electronic orientation is possible only up to a maximum angle of $\pm 5^\circ$.

6. Remove the laser receiver from the laser plane and use the right and left function buttons to enter the value for slope for the X axis.
 - ▶ To set a negative value, press and/or hold down the left function button until the value drops below 0.
 - ▶ As soon you release the function button, the rotating laser directly adjusts slope to the set value. When the set value is reached, the display shows
7. You can now secure the laser receiver to a measuring rod, for example, and at point **(A)** set the height to 0. You can then proceed to measure other points over the entire slope surface.



When the angle of inclination is set manually, the rotating laser levels the laser plane once and then fixes it once. Note that this rotating laser does not correct the sloped laser plane for possible deviation occurring due to a change in ambient conditions and/or shift of the mounting. Vibration, changes in temperature or other influences that may occur during the course of the day may affect the position of the laser plane.

6.6 Setting the slope using the PRA 79 slope adapter



Depending on the application, the PRA 79 slope adapter can be mounted on a tripod or on a wall bracket.

1. Mount the rotating laser on the PRA 79 slope adapter in such a way that the rotating laser is lifted on the control panel side. Observe the operating instructions for the slope adapter.
2. Position the rotating laser either at the upper edge or lower edge of the sloping plane.
3. Set the slope adapter to an angle of 0° .
4. Press the button on the rotating laser.
 - ▶ The rotating laser is leveling itself. The laser beam switches on and starts rotating as soon as the tool has leveled itself.
5. On the laser receiver, go to the second page of the Settings menu and select the Slope mode function .
 - ▶ Automatic leveling is deactivated. The display of the laser receiver shows „A“.
6. Set the PRA 79 slope adapter to the desired angle of inclination.



When the angle of inclination is set manually, the rotating laser levels the laser plane once and then fixes it once. Note that this rotating laser does not correct the sloped laser plane for possible deviation occurring due to a change in ambient conditions and/or shift of the mounting. Vibration, changes in temperature or other influences that may occur during the course of the day may affect the position of the laser plane.

6.7 Checking an existing slope (setting slope automatically)



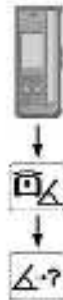
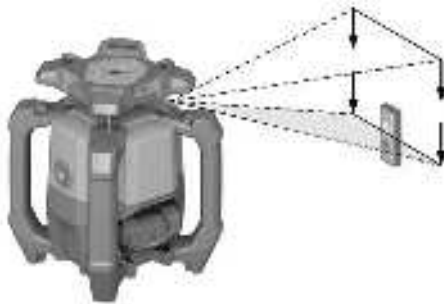
Preconditions:








- The rotating laser, depending on the application, is mounted or positioned securely.
- The PRA 400 laser receiver is secured to a measuring rod (or similar).
- The PRA 400 laser receiver and the rotating laser are paired. 11



For this procedure a QR code in the laser receiver enables you to access pictorial instructions illustrating the following work steps. You can also use this link to open the pictorial instructions:

Check slope





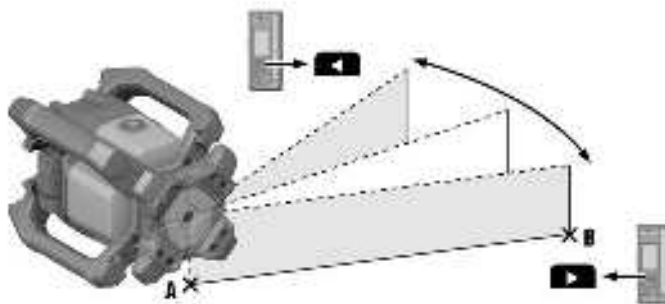
1. Position the rotating laser at either the top edge or the bottom edge of the slope plane, point **(A)**.
2. Use the targeting aid (front and rear sights) to orient the rotating laser in the direction of the X axis with point **(B)** on the other edge of the slope plane.
3. Press the  button on the rotating laser and the laser receiver.
 - ▶ As soon as the tool has leveled itself, the laser beam switches on and begins to rotate and the operating status indicator shows steady green.
4. Open the "Slope" menu  and select the "Check slope" function .
5. Position the laser receiver exactly at point **(A)** and adjust its height until the display shows "0".
6. Press the  button.
7. Then position the laser receiver exactly at point **(B)** without changing the height at the measuring rod.
8. Press the  button.
 - ▶ The rotating laser inclines the laser plane on the X-axis automatically until the mark at the laser receiver is reached. A signal tone is emitted by the laser receiver repeatedly during this procedure.
 - ▶ The rotating laser levels itself on the Y-axis once the position has been reached. Successful completion is indicated by a continuous signal tone with a duration of 5 seconds. The  symbol is displayed briefly.
 - ▶ The value of slope is then shown in the chosen unit.
 - ▶ If automatic alignment cannot be completed successfully, short signal tones are emitted and the  is displayed briefly.
9. You can use the right and left function buttons to change the value if necessary. When the rotating laser has leveled you can remove the laser receiver from the target plane and proceed, for example, to mark other points within the laser plane.

6.8 Manual vertical alignment




Preconditions:

- The rotating laser is securely mounted in the vertical (tripod, wall-mount holder, facade or batter board adapter, or supported on the rear grips). The rotating laser is positioned so that the on/off button  is facing upward.
- A reference point (A) is marked below the laser head (e.g. a nail on a batter board or a spot of paint on the floor or ground).
- The PRA 400 laser receiver and the rotating laser are paired.  11




1. Press the **ⓘ** button on the rotating laser and the laser receiver.
 - ▶ The rotating laser levels itself and then projects a stationary downward-pointing laser beam.
2. Position the rotating laser so that the projected laser beam strikes reference point (A) exactly. Please note: The reference point is not a plumb point!
3. Short-press the **ⓘ** button on the rotating laser or short-press one of the two function buttons, right or left, on the laser receiver.
 - ▶ The rotating laser starts rotating.
4. To shift the laser plane to the right or left, press the right or left function button on the laser receiver, as applicable.
 - ▶ The rotating laser moves the laser plane in the desired direction.

i Use the "Vertical automatic alignment with surveillance"  18 function to achieve the highest accuracy in vertical applications. Note that without the surveillance function the rotating laser fixes the laser plane once and does not subsequently compensate against possible drift caused by change in environmental conditions (vibrations, changes in temperature, etc.). Effects on the position of the laser plane can be compensated by the surveillance function.

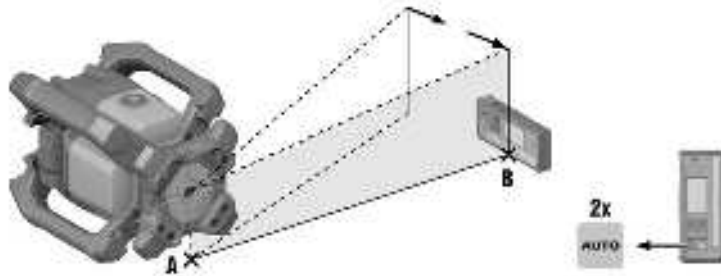
6.9 Automatic vertical alignment

i Preconditions:

- The rotating laser is securely mounted in the vertical (tripod, wall-mount holder, facade or batter board adapter, or supported on the rear grips). The rotating laser is positioned so that the on/off button **ⓘ** is facing upward.
- A reference point (A) is marked below the laser head (e.g. a nail on a batter board or a spot of paint on the floor or ground).
- The PRA 400 laser receiver and the rotating laser are paired.  11

i For this procedure a QR code in the laser receiver enables you to access pictorial instructions illustrating the following work steps. You can also use this link to open the pictorial instructions:

Automatic vertical alignment



- Press the button on the rotating laser and the laser receiver.
 - The rotating laser levels itself and then projects a stationary downward-pointing laser beam.
- Position the rotating laser so that the projected laser beam strikes reference point (A) exactly. Please note: The reference point is not a plumb point!
- Keep the marking notch on the laser receiver on the target plane to be set, point (B). The laser receiver should be held steady or secured in place.
- Start automatic alignment by double-clicking the button on the laser receiver, or open the "Vertical mode" menu and select the "Automatic alignment" function .
 - The laser plane pivots to the left and/or right until point (B) is reached. A signal tone is emitted by the laser receiver repeatedly during this procedure.
 - When point (B) is reached, the symbol is displayed briefly.
 - If automatic alignment cannot be completed successfully, short signal tones are emitted and the is displayed briefly.
- When the rotating laser has successfully reached the position, you can remove the laser receiver from the target plane and proceed, for example, to mark other points within the laser plane.

Use the "Vertical automatic alignment with surveillance" 18 function to achieve the highest accuracy in vertical applications. Note that without the surveillance function the rotating laser fixes the laser plane once and does not subsequently compensate against possible drift caused by change in environmental conditions (vibrations, changes in temperature, etc.). Effects on the position of the laser plane can be compensated by the surveillance function.

6.10 Automatic vertical alignment with surveillance function

Preconditions:

- The rotating laser is securely mounted in the vertical (tripod, wall-mount holder, facade or batter board adapter, or supported on the rear grips). The rotating laser is positioned so that the on/off button is facing upward.
- A reference point (A) is marked below the laser head (e.g. a nail on a batter board or a spot of paint on the floor or ground).
- The PRA 400 laser receiver and the rotating laser are paired. 11

For this procedure a QR code in the laser receiver enables you to access pictorial instructions illustrating the following work steps. You can also use this link to open the pictorial instructions:

Automatic vertical alignment with surveillance function

Use vertical automatic alignment with the surveillance function to achieve the highest accuracy in vertical applications. Note that without the surveillance function the rotating laser fixes the laser plane once and does not subsequently compensate against possible drift caused by change in environmental conditions (vibrations, changes in temperature, etc.). Effects on the position of the laser plane can be compensated by the surveillance function.

1. Press the button on the rotating laser and the laser receiver.
 - ▶ The rotating laser levels itself and then projects a stationary downward-pointing laser beam.
2. Position the rotating laser so that the projected laser beam strikes reference point **(A)** exactly. Please note: The reference point is not a plumb point!
3. Keep the marking notch on the laser receiver on the target plane to be set, point **(B)**. The laser receiver should be held steady or secured in place.
4. In the "Vertical mode" menu , select the "Automatic alignment with surveillance" function .
 - ▶ The laser plane pivots to the left and/or right until point **(B)** is reached. A signal tone is emitted by the laser receiver repeatedly during this procedure.
 - ▶ When point **(B)** is reached, the symbol is displayed briefly.
 - ▶ The rotating laser switches to the surveillance function. Small deviations due to external influences are then compensated automatically and the laser beam is kept at the height of the marking notch on the laser receiver.
 - ▶ If automatic alignment cannot be completed successfully, short signal tones are emitted and the is displayed briefly.
5. Do **NOT** remove the laser receiver from the target plane so long as surveillance mode is active.
6. Either manually or with the aid of a second laser receiver, you can now for example align elements on the basis of the laser plane or mark points within the laser plane.

6.11 Manual scan line function

1. Press the button on the rotating laser and the laser receiver.
2. Adjust the laser plane to the desired position / height. The scan line function can be used in horizontal, vertical and inclined plane mode.
3. In the Settings menu on the laser receiver, select the Scan line submenu .
 - ▶ The menu items for scan line are also to be found in the Horizontal mode menu and in the Vertical mode menu.
4. The Scan line width menu item enables you to activate the scan line, set the width of the scan line or return to full rotation (Dot, Narrow, Medium, Wide, Rotation).



The narrower the scan line is set, the brighter it will appear.

5. The Scan line position menu item enables you to move the scan to right or left using the function buttons. The laser receiver does not require to be within the path of laser beam in order to do this.

6.12 Automatic scan line function

The automatic scan line function enables you to align the scan line quickly and easily with the position of the laser receiver.

1. Press the button on the rotating laser and the laser receiver.
2. Adjust the laser plane to the desired position / height. The scan line function can be used in horizontal, vertical and inclined plane mode.
3. Start the automatic scan line function by double-clicking the button on the laser receiver.
4. Start the automatic scan line function .
5. Bring the laser receiver into the desired position. The rotating laser automatically concentrates the beam along a shortened line in the area of the laser receiver.
6. To change the width and/or the position of the scan line, proceed as described in the section headed "Manual scan line function". 19

7 Laser receiver PRA 400



The detailed operating instructions for the PRA 400 laser receiver can be found → **here**.

7.1 Operation of the laser receiver

- ▶ Press the button on the laser receiver.
 - ▶ The display of the PRA 400 laser receiver shows the rotating laser and the tripod in light gray visualization. As soon as connection to the rotating laser and/or tripod is established, the connected product is visualized black.
- ▶ The laser receiver has two function buttons enabling different operations (up/down, right/left, plus/minus) depending on the visualization shown on the display. The currently possible assignment of the function buttons is shown at the bottom edge of the display.
- ▶ Use the function buttons to select a symbol on the display of the laser receiver and press the button to confirm your choice.
 - ▶ The symbol currently selected is shown with a black background.
- ▶ To return to the previous screen, press the button.

7.2 Using the laser receiver to detect the laser beam

1. Hold the laser receiver with the receiving window directly in the plane of the laser beam.
 - ▶ Reception of the laser beam is indicated by visual and acoustic signals.
 - ▶ The laser receiver shows the distance of the laser plane from the marking notch.
 - ▶ Depending on the situation, move the laser receiver or the rotating laser up or down until the rotation plane is aligned with the marking notch. The laser receiver shows the value "0".
2. While alignment is in progress hold the laser receiver steady or secure it in place. Make sure that there is a clear line of sight between laser receiver and rotating laser.

7.3 Menu options

To display the main menu, press the button.



Symbols in the menus show the values currently set on your product, so they might differ from those shown in these operating instructions.

The menu items shown on the laser receiver depend on the rotating laser with which the laser receiver is paired. Not all menu items are available on all rotating lasers.

Main menu

	Horizontal mode
	Slope mode
	Vertical mode
	General settings
	Switch sleep mode on / switch sleep mode off
	Set the volume of the laser receiver (off, level 1/2/3)

Horizontal mode menu

	Automatic scan line function
	Activate / deactivate scan line and set width of scan line (point, 3 width settings, rotation)
	Move scan line (right/left by function buttons)
	QR code → Automatically transfer height with PRA 91 tripod.

Slope mode menu

	Set slope
	Check slope
	Call up saved slope settings (favorites) or change settings
	Set slope with high precision
	QR code → link to overview of all slope functions

Vertical mode menu

	Automatic vertical alignment
	Automatic vertical alignment with surveillance function
	Automatic scan line function
	Activate / deactivate scan line and set width of scan line (point, 3 width settings, rotation)
	Move scan line (right/left by function buttons)
	QR code → link to overview of all functions in vertical mode

Settings menu

	Accuracy (5 stages) Select a stage in accordance with your requirements or, as applicable, the distance between rotating laser and laser receiver.
	Speed of rotation (3 stages)
	Activate/deactivate "protection against interfering light sources" mode
	Shock warning (off, stages 1/2/3) 21
	Service indicator
	More settings 21

Shock warning submenu

Select the stage, depending on possible vibrations at the site of the rotating laser.

	Stage 1, high sensitivity to shocks/vibrations
	Stage 2, medium sensitivity to shocks/vibrations
	Stage 3, low sensitivity to shocks/vibrations
	Shock warning deactivated

More settings menu

	Deactivate automatic leveling (for manual slope adjustment)
	Change sequence of acoustic signals

	Firmware version, rotating laser/laser receiver
	Activate/deactivate QR codes
	Scan line function
	Select the unit for the distance between the laser plane and the center mark and the unit for slope. <ul style="list-style-type: none"> • Millimeters degrees, percent or per mille • Inches degrees, percent or per mille (not available in all markets) • Feet degrees, percent or per mille (not available in all markets)

8 Care and maintenance

WARNING

Risk of injury with battery inserted !

- Always remove the battery before carrying out care and maintenance tasks!

Care of the product

- Carefully remove stubborn dirt.
- Use only a slightly damp cloth to clean the housing. Do not use cleaning agents containing silicone as these can attack the plastic parts.
- Use a dry, clean cloth to clean the contacts of the product.

Cleaning the laser exit window

- Blow dust off the laser exit window.
- Do not touch the laser exit window with your fingers.



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

Care of the Li-ion batteries

- Never use a battery with clogged air vents. Clean the air vents carefully using a dry, soft brush.
- Avoid unnecessary exposure of the battery to dust and dirt. Never expose the battery to high levels of moisture (e.g. by being dipped in water or left in the rain).
If a battery has been soaked by moisture, treat it as a damaged battery. Isolate it in a non-flammable container and consult **Hilti Service**.
- Keep the battery free of extraneous oil and grease. Do not permit dust or dirt to accumulate unnecessarily on the battery. Clean the battery with a dry, soft brush or a clean, dry cloth. Do not use cleaning agents containing silicone as these can attack the plastic parts.
Do not touch the contacts of the battery and do not remove the factory-applied grease from the contacts.
- Use only a slightly damp cloth to clean the housing. Do not use cleaning agents containing silicone as these can attack the plastic parts.

Maintenance

WARNING

Danger of electric shock! Improper repairs to electrical components may lead to serious injuries including burns.

- Repairs to the electrical section of the tool or appliance may be carried out only by trained electrical specialists.
- Check all visible parts and controls for signs of damage at regular intervals and make sure that they all function correctly.
- Do not use the product if signs of damage are found or if parts malfunction. Immediately have the product repaired by **Hilti Service**.
- After cleaning and maintenance, install all guards and protective devices and check that they are in full working order.

i To help ensure safe and reliable operation, use only genuine Hilti spare parts, consumables and accessories. Spare parts, consumables and accessories approved by Hilti for use with your product can be found at your **Hilti Store** or online at: www.hilti.group

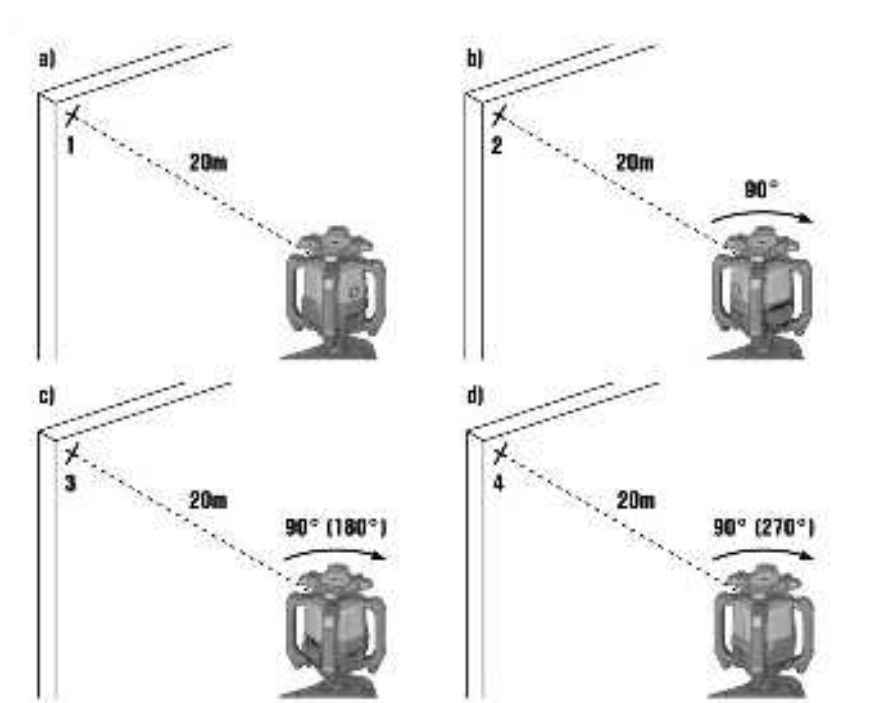
8.1 Checking accuracy

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

After falling from considerable height, the tool should be checked for correct, accurate operation. When the following conditions are fulfilled it can be assumed that the tool is operating faultlessly:

- The height of the fall did not exceed the height given in the technical data.
- The tool operated faultlessly before the fall.
- The tool suffered no obvious mechanical damage from the fall (e.g. breakage of the pentaprism).
- The tool projects a rotating laser beam when in operation.

8.2 Checking the main and transverse horizontal axes

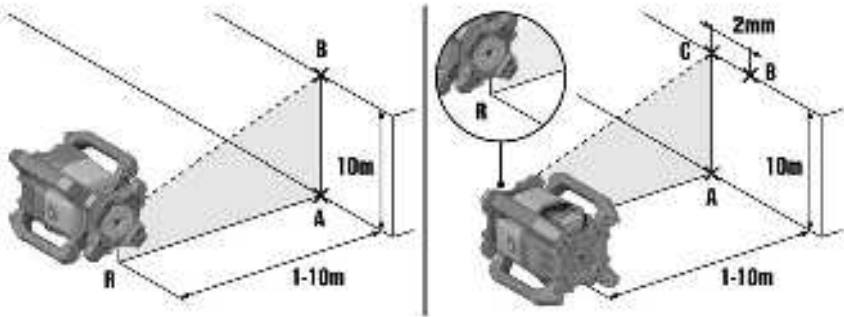



1. Set up a tripod approx. 20 m (66 ft) from a wall and align the tripod head horizontally with a spirit level.
2. Mount the rotating laser on the tripod and use the visual sighting method to aim the rotating laser at the wall.
3. Fig. a: Use the laser receiver to catch the laser beam for point **(1)** and mark this point on the wall.
4. Turn the rotating laser clockwise through 90° round its center axis. In doing so, make sure that the height of the rotating laser does not change.
5. Fig. b: Use the laser receiver to catch the laser beam for a second point **(2)** and mark this point on the wall.

6. Fig. c and d: Repeat the two preceding steps two more times. Use the laser receiver to catch the laser beam for points **(3)** and **(4)** and mark the points on the wall.

i If the procedure has been carried out accurately, the vertical distance between the two marked points **(1)** and **(3)** (main axis) and between points **(2)** and **(4)** (transverse axis) should each be <2 mm (at 20 m) (<0.08 in at 66 ft). If the deviation is greater than this, return the rotating laser to **Hilti Service** for calibration.

8.3 Checking the vertical axis



1. Set up the rotating laser in the vertical position on a floor that is as flat as possible, approx. 1 to 10 m from a wall.
2. Align the grips parallel to the wall.
3. Switch the rotating laser on and mark the reference point **(R)** on the floor.
4. With the aid of the laser receiver, mark point **(A)** at the base of the wall.
5. With the aid of the receiver, mark point **(B)** at a height of approx. 10 m (33 ft).
6. Turn the rotating laser through 180° and align it with reference point **(R)** on the floor and bottom marked point **(A)** on the wall. This can also be done using the automatic alignment function.  17
7. With the aid of the receiver, mark point **(C)** at a height of approx. 10 m (33 ft).
 - If the procedure has been carried out accurately, the horizontal distance between the two marked points **(B)** and **(C)** should be < 2 mm (at 10 m) (<0.08 in at 33 ft). If the deviation is greater than this, return the rotating laser to **Hilti Service** for calibration.

8.4 Hilti Measuring Systems Service

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

- Choose a test/inspection interval that matches usage of the device.
- Have the product checked by **Hilti Measuring Systems Service** after exceptionally heavy use or subsection to unusual conditions or stress, before important work or at least once a year.

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

9 Transport and storage

Transport of cordless power tools and batteries

CAUTION

Accidental starting during transport !

- Always transport your products with the batteries removed!
- Remove the battery/batteries.
- Never transport batteries loose and unprotected. During transport, batteries should be protected from excessive shock and vibration and isolated from any conductive materials or other batteries that may

come in contact with the terminals and cause a short circuit. **Comply with the locally applicable regulations for transporting batteries.**

- ▶ Do not send batteries through the mail. Consult your shipper for instructions on how to ship undamaged batteries.
- ▶ Prior to each use and before and after prolonged transport, check the product and the batteries for damage.

Storage of cordless power tools and batteries

WARNING

Accidental damage caused by defective or leaking batteries !












- ▶ Always store your products with the batteries removed!
-
- ▶ Store the product and the batteries in a cool and dry place. Comply with the temperature limits stated in the technical data 9.
 - ▶ Do not store batteries on the charger. Always remove the battery from the charger when the charging operation has completed.
 - ▶ Never leave batteries in direct sunlight, on sources of heat, or behind glass.
 - ▶ Store the product and batteries where they cannot be accessed by children or unauthorized persons.
 - ▶ Prior to each use and before and after prolonged storage, check the product and the batteries for damage.




10 Troubleshooting

If a problem occurs, always observe the status indicator of the battery. See the section headed **Status indicators of the Li-ion battery** 8.

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

Trouble or fault	Possible cause	Action to be taken
LEDs of the battery show nothing	Battery faulty.	▶ Contact Hilti Service .
Battery does not engage with an audible click.	The retaining lug on the battery is dirty.	▶ Clean the retaining lug and re-insert the battery.
The product or battery gets very hot.	Electrical fault.	▶ Switch the product off immediately, remove the battery, keep it under observation, allow it to cool down and contact Hilti Service .
 The battery is exhausted	The battery of the laser receiver is empty.	▶ Replace the batteries in the laser receiver.
Low battery in the rotating laser.	Low battery in the rotating laser.	▶ Charge the battery.

Trouble or fault	Possible cause	Action to be taken
Low battery in the tripod.	Low battery in the tripod.	<ul style="list-style-type: none"> ▶ Charge the battery.
  Laser beam not detected	Laser beam outside the detection area.	<ul style="list-style-type: none"> ▶ Align the laser receiver at the height of the laser plane. The detection area must face toward the rotating laser.
Surveillance mode warning	The surveillance function is not possible or is interrupted.	<ul style="list-style-type: none"> ▶ Check the positions of the rotating laser and laser receiver and reposition if necessary. ▶ Remove obstacles from the path of the laser beam (laser plane). ▶ Then restart the surveillance function.
  Slope not possible	Laser receiver is outside the possible automatic slope range.	<ul style="list-style-type: none"> ▶ Set the desired slope with the aid of the PRA 79 slope adapter.  15
 Laser position warning	The laser is too steeply inclined, leveling not possible.	<ul style="list-style-type: none"> ▶ Bring the rotating laser into as upright a position as possible. ▶ Switch the rotating laser off and then on again.  12
  Shock warning triggered	Excessive vibration of the rotating laser.	<ul style="list-style-type: none"> ▶ Position the rotating laser at a low-vibration location.
  Connection interrupted	Pairing with the rotating laser was not successful or the connection was interrupted.	<ul style="list-style-type: none"> ▶ Pair the two products again.


Trouble or fault	Possible cause	Action to be taken
Pairing was unsuccessful	Pairing with the automatic tripod was not successful or was interrupted.	► Pair the two products again.
 Temperature	Temperature outside the permissible range or temperature change too rapid.	► Move the system to a location where the temperature is constant. Observe the permissible operating temperature.
 Restart necessary	The rotating laser has to be restarted.	► Switch the rotating laser off and then on again.  12


11 Disposal

WARNING

Risk of injury due to incorrect disposal! Health hazards due to escaping gases or liquids.

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


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

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

12 Manufacturer's warranty

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

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

 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 can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause 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:

- Re-orient 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 the dealer or an experienced TV/radio technician for assistance.

This equipment complies with the respective radiation exposure limits. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation.

Canada: This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). The device is a class B device CAN ICES (B) / NMB (B). Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.



Changes or modifications not expressly approved by **Hilti** can restrict the user's right to operate the device.

Contains FCC ID: SDL-PR4X

Contains IC: 5228A-PR4X

The FCC Suppliers Declaration of Conformity procedure is used for the appliance. The responsible party is Hilti, Inc.

7250 Dallas Parkway, Suite 1000

US-Plano, TX 75024

www.hilti.com

14 Further information

Accessories, system products and more information about your product can all be found → **here**.

RoHS (Restriction of Hazardous Substances)

Substance	Concentration (%)	Restriction
Cadmium	< 0.01	Not restricted
Lead	< 0.1	Not restricted
Mercury	< 0.001	Not restricted
Polybrominated biphenyls (PBBs)	< 0.1	Not restricted
Polybrominated diphenyl ethers (PBDEs)	< 0.1	Not restricted

This table is valid for the China market.

15 Hilti Li-ion batteries

Instructions for safety and use

This documentation uses the term battery to describe rechargeable Hilti Li-ion battery packs containing several Li-ion cells joined together. These batteries are to be used in Hilti power tools exclusively. Use only genuine **Hilti** batteries!

Description

Hilti batteries have cell-management and cell-protection systems.

The batteries are composed of cells that contain lithium-ion storage materials capable of providing high specific energy density. Li-ion cells have a minimal memory effect, but they are very susceptible to external impact, deep discharge, and high temperatures.

The products approved for use with **Hilti** batteries can be found in your **Hilti Store** or at: www.hilti.group

Safety

- ▶ **Comply with the following safety instructions for the safe handling and use of Li-ion batteries.** Failure to comply can lead to skin irritation, severe corrosive injury, chemical burns, fire and/or explosion.
- ▶ Treat batteries with care in order to avoid damage and prevent leakage of fluids that are extremely harmful to health!
- ▶ Do not under any circumstances modify or tamper with batteries!
- ▶ Do not disassemble, crush or incinerate batteries and do not subject them to temperatures over 80 °C.
- ▶ Never use or charge a battery that has suffered an impact or been damaged in any other way. Check your batteries regularly for signs of damage.
- ▶ Never use recycled or repaired batteries.
- ▶ Never use the battery or a battery-operated power tool as a striking tool.
- ▶ Never expose batteries to the direct rays of the sun, elevated temperature, sparking, or open flame. This can lead to explosions.
- ▶ Do not touch the battery poles with your fingers, tools, jewelry, or other electrically conductive objects. This can damage the battery and also cause material damage and personal injury.
- ▶ Keep batteries away from rain, moisture and liquids. Penetrating moisture can cause short circuits, electric shock, burns, fire and explosions.
- ▶ Use only chargers and power tools approved for the specific battery type. Read and follow the relevant operating instructions.
- ▶ Do not use or store the battery in explosive environments.
- ▶ If the battery is too hot to touch it may be defective. Put the battery in a place where it is clearly visible and where there is no risk of fire, at an adequate distance from flammable materials. Allow the battery to cool down. If it is still too hot to touch after an hour, the battery is faulty. Follow the instructions in the section headed **What to do in case of a battery fire**.

What to do in case of damaged batteries

- ▶ Always contact **Hilti** when a battery is damaged.
- ▶ Never use a battery that is leaking fluid.
- ▶ Avoid direct eye and/or skin contact with fluid leaking from a battery. Always wear protective gloves and eye protection when undertaking tasks involving battery fluid.
- ▶ Use a chemical spill cleanup kit to remove leaked battery fluid. Comply with the locally applicable cleanup regulations for battery fluid.
- ▶ To store a damaged battery, place the battery in a non-flammable container and cover the battery with dry sand, chalk powder (CaCO₃) or silicate (Vermiculite). Then seal the lid air-tight and store the container away from flammable gases, liquids or objects.
- ▶ Dispose of the container at your **Hilti Store**, or consult your local governmental garbage disposal or public health and safety resources for disposal instructions. **Comply with the locally applicable regulations for transporting damaged batteries!**

What to do in case of dysfunctional batteries

- ▶ Watch for abnormal battery behavior, such as faulty charging, unusually long charging times, noticeable power loss, unusual LED activity, or leaking fluids. These are signs of an internal problem.
- ▶ If you suspect an internal battery problem, contact **Hilti Service**.
- ▶ A battery that no longer works, cannot be recharged or leaks fluid has to be disposed of correctly. See the section headed **Maintenance and disposal**.

What to do in case of a battery fire



WARNING

Battery fire hazard! A burning battery releases hazardous and potentially explosive liquids and fumes that can lead to corrosion injuries, burns or explosions.

- ▶ Wear your personal protective equipment when you tackle a battery fire.
- ▶ Provide sufficient venting to permit hazardous and potentially explosive fumes to escape.
- ▶ Leave the room immediately in case of intense smoke emission.
- ▶ Consult a doctor in case of any skin or respiratory irritation.

- ▶ Alert the fire service before you start tackling the fire.
- ▶ Use only water to tackle a battery fire and keep as far from the fire as effective extinguishing permits. Powder fire extinguishers and fire blankets are ineffective with Li-ion batteries. Fire in nearby materials can be extinguished with appropriate extinguishing agents.
- ▶ Do not try to move large quantities of burning batteries. Instead, isolate the batteries by removing unaffected materials from the immediate vicinity.

In the case of a battery that does not cool down, or a smoking or burning battery:

- ▶ Scoop the battery up with a shovel and drop it into a bucket of water, which will reduce the risk of igniting adjacent cells that have not yet reached run-away temperature.
- ▶ Leave the battery in the bucket for at least 24 hours until it has cooled down completely.
- ▶ See the section headed **What to do in case of damaged batteries**.

Shipping and storage

- ▶ Ambient operating temperature to be kept between -17°C and +60°C / 1°F and 140°F.
- ▶ Storage temperature to be kept between -20°C and +40°C / -4°F and 104°F.
- ▶ Do not store batteries on the charger. Always remove the battery from the charger when the charging operation has completed.
- ▶ Store batteries in a cool and dry place. Cool storage will increase battery life. Never store batteries where they are exposed to direct sunlight, on sources of heat or behind glass.
- ▶ Do not send batteries through the mail. Consult your shipper for instructions on how to ship undamaged batteries.
- ▶ Never transport batteries in bulk form (loose, unprotected). During transport, batteries should be protected from excessive shock and vibration and isolated from any conductive materials or other batteries that may come in contact with the terminals and cause a short circuit. **Comply with the locally applicable regulations for transporting batteries.**

Maintenance and disposal

- ▶ Keep the battery free of oil and grease. Do not permit dust or dirt to accumulate unnecessarily on the battery. Clean the battery with a dry, soft brush or a clean, dry rag.
- ▶ Never use a battery with clogged ventilation slots. Clean the ventilation slots carefully using a dry, soft brush.
- ▶ Prevent unnecessary exposure of the battery to dust or debris and never subject the battery to soaking moisture (e.g., submerged in water or left out in the rain).
- ▶ If a battery is exposed to soaking moisture, treat it as a damaged battery and isolate it in a non-flammable container.
 - ▶ See the section headed **What to do in case of damaged batteries**.
- ▶ Improper disposal may cause health hazards from leaking gases or fluids. Dispose of the battery at your **Hilti Store**, or consult your local governmental garbage disposal or public health and safety resources for disposal instructions. **Comply with the locally applicable regulations for transporting damaged batteries!**
- ▶ Do not dispose of batteries as household waste.
- ▶ Dispose of your battery out of the reach of children. Cover the terminals with a non-conductive material (such as electrical tape) to prevent short circuiting.

en Declaration of conformity

Declaration of conformity

The manufacturer declares, on his sole responsibility, that the product described here complies with the applicable legislation and standards.

The technical documentation is filed here:

Hilti Entwicklungsgesellschaft mbH | Tool Certification | Hiltistrasse 6 | D-86916 Kaufering, Germany

Product information

Rotating laser	PR 40G-22
Generation	01
Serial no.	1-99999999999

Hilti Corporation
 Industriestraße 100
 8494 Schwan (Untermerzbach)
 PR 40-22 (01), PR 40G-22 (01), PR 400-22 (01)



2006/42/EC
 2014/53/EU
 2011/65/EU

EN 61010-1:2010, A1:2015, A2:2019
 EN 62479:2010

EN 300 328 V2.2.2
 EN 301 428-1 V2.2.2
 EN 301 428-17 V2.2.1

Schwer: 20.05.2024

Dr. Tahir Zülfi
 Head of Quality and Process Management
 Business Area Electric Tools & Accessories

Siram Mukincedi
 Head of EU Marketing System
 Business Unit Measuring Systems

en UK Declaration of Conformity

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Manufacturer:
Hilti Corporation
 Industriestraße 100
 8494 Schwan (Untermerzbach)

UK importer:
Hilti (Gt. Britain) Limited
 No. 1 Circle Square, 2 Symphony Park
 Manchester, England, M1 7FS



PR 40-22 (01), PR 40G-22 (01), PR 400-22 (01)

Supply of Machinery (Safety) Regulations
 2008

EN 61010-1:2010, A1:2015, A2:2019
 EN 62479:2010

EN 300 328 V2.2.2
 EN 301 428-1 V2.2.2
 EN 301 428-17 V2.2.1

Radio Equipment Regulations 2017
 The Restriction of the Use of Certain
 Hazardous Substances (RoHS) and
 Electronic Equipment Regulations 2012

Schwer: 20.05.2024

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