IMPORTANT: Read Before Using	IMPORTANT : Lire avant usage	IMPORTANTE: Leer antes de usar

Operating/Safety Instructions
Consignes de fonctionnement/sécurité
Instrucciones de funcionamiento y seguridad

GRL 240 HV
GRL 245 HV
GRL 250 HV
GRL 300 HV
GRL 300 HVG

BOSCH

Call Toll Free for Consumer Information & Service Locations

Pour obtenir des informations et les adresses de nos centres de service après-vente, appelez ce numéro gratuit

Llame gratis para obtener información para el consumidor y ubicaciones de servicio

For English Version
See page 6

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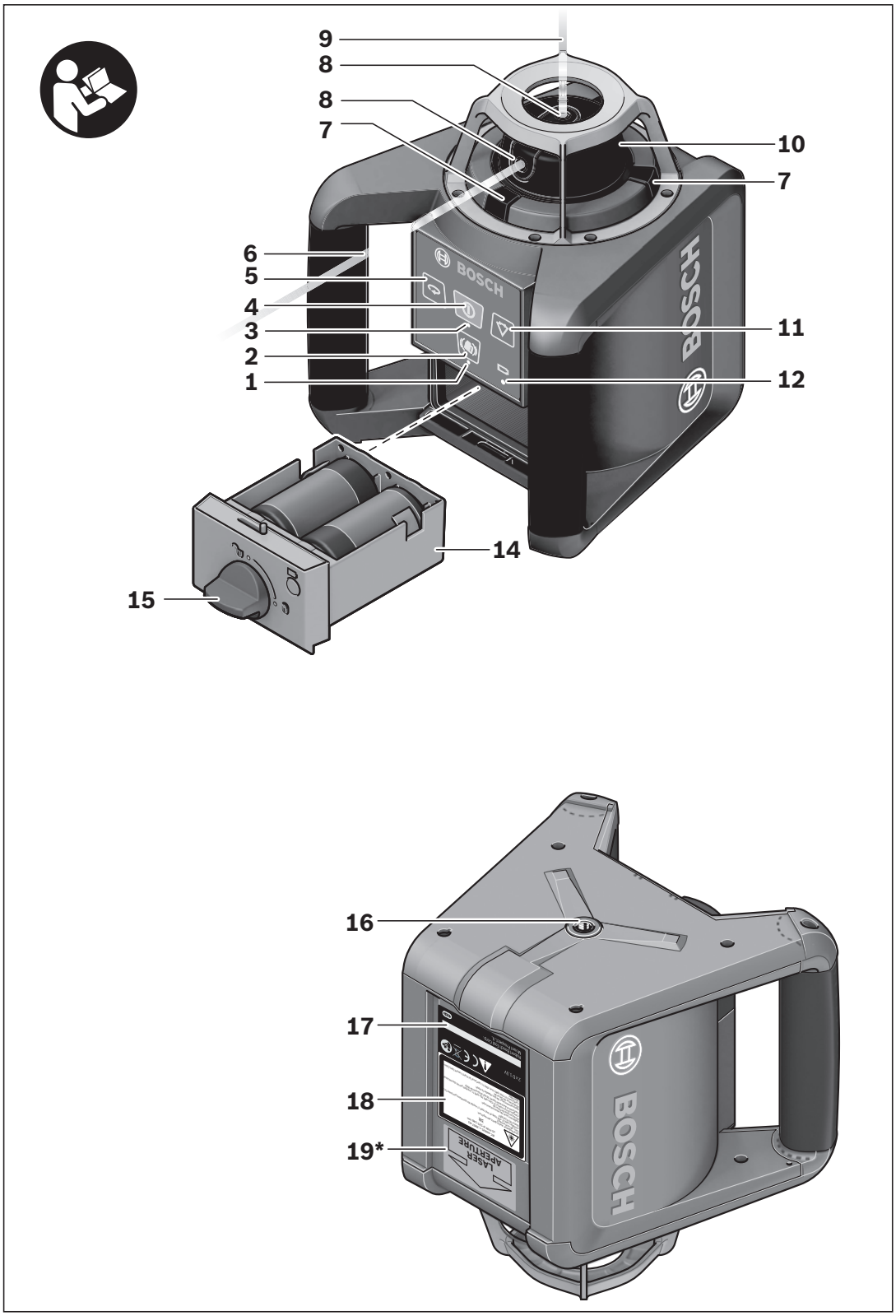

*3R aperture warning applies only to GRL 250 HV, GRL 300 HV, GRL 300 HVG
*L'avertissement relatif à l'ouverture 3R ne s'applique qu'aux modèles GRL 250 HV, GRL 300 HV et GRL 300 HVG
*La advertencia de apertura 3R se aplica sólo a los modelos GRL 250 HV, GRL 300 HV y GRL 300 HVG

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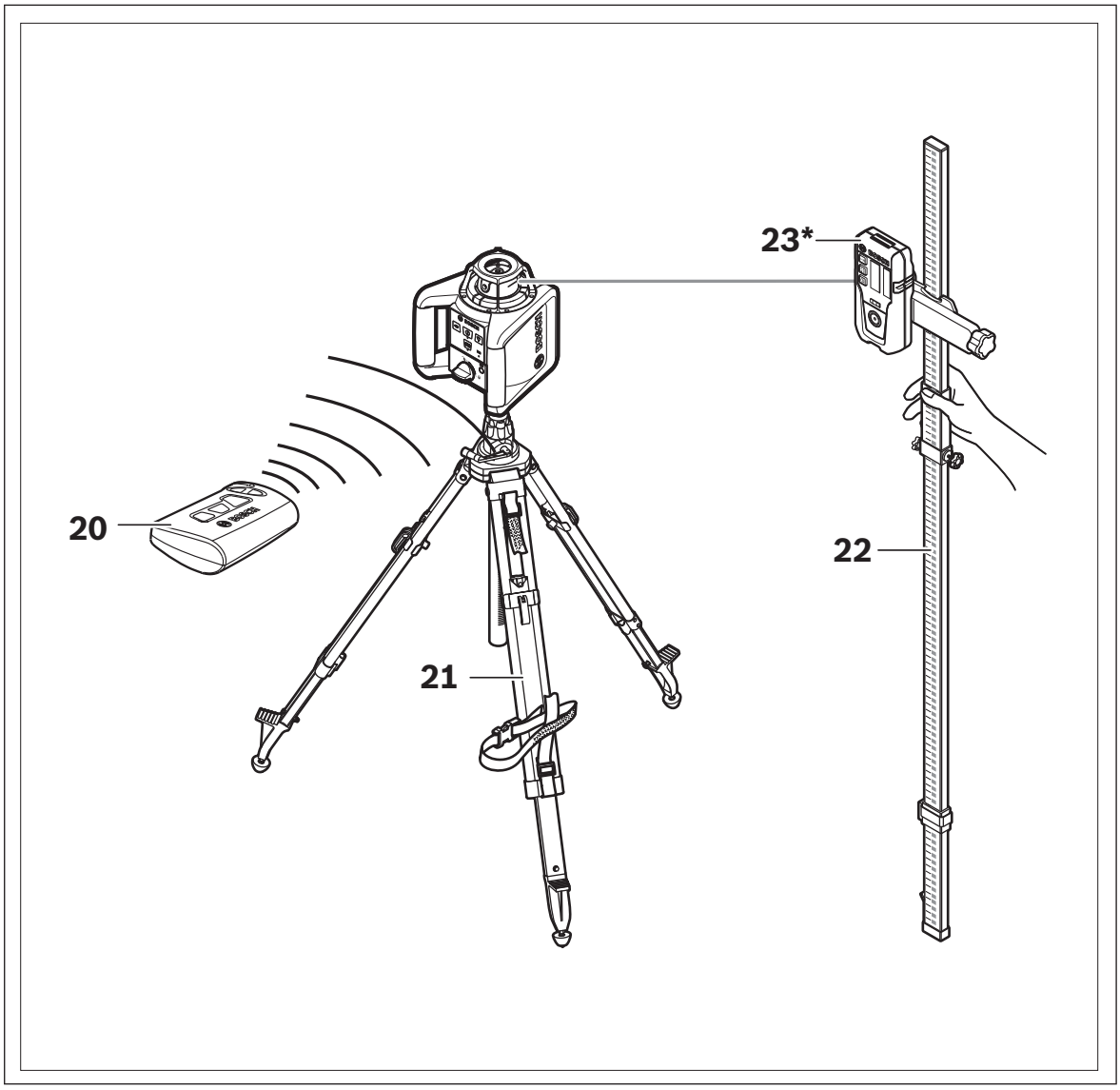

* For GRL 240 HV, GRL 245 HV and GRL 250 HV refer to LR 24 and LR 30 receiver and bracket
* Pour les modèles GRL 240 HV, GRL 245 HV et GRL 250 HV, référez-vous aux récepteurs et supports LR 24 et LR 30.
* Para los modelos GRL 240 HV, GRL 245 HV y GRL 250 HV, consulte el receptor y soporte LR 24 y LR 30

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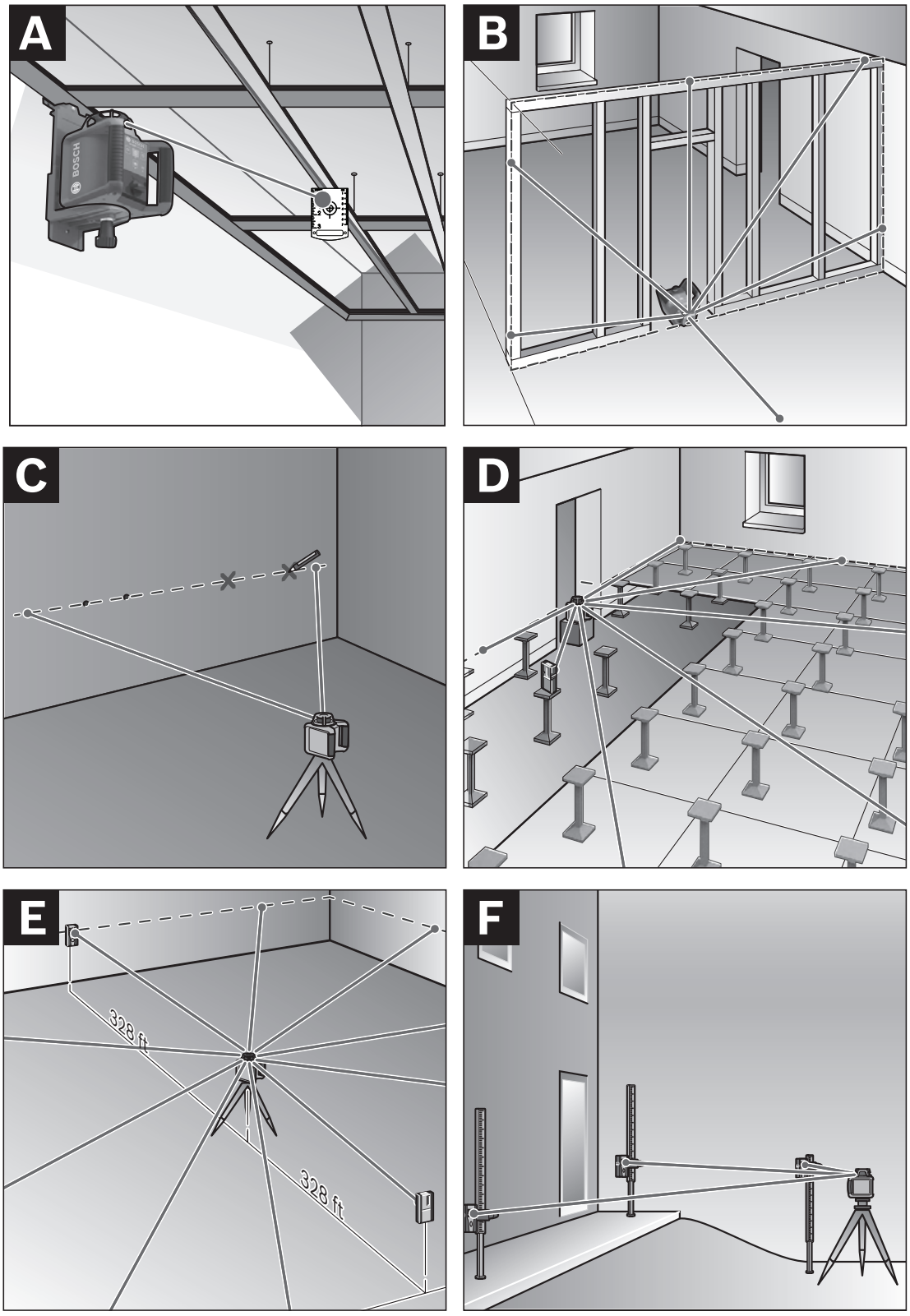

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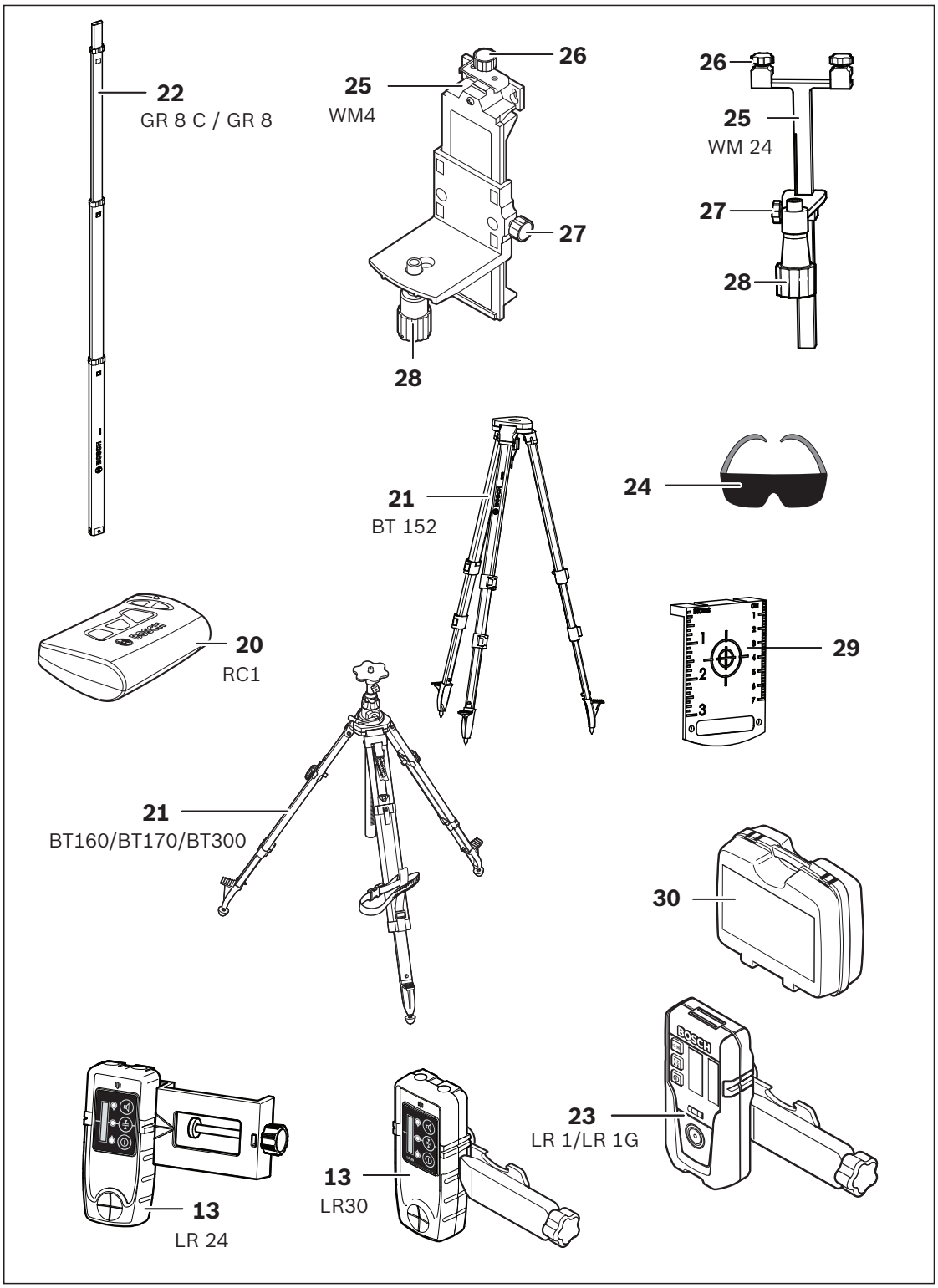

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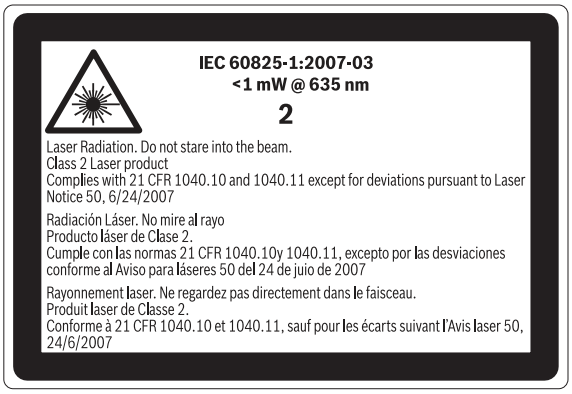
General Safety Rules

⚠ WARNING Read all instructions. Failure to follow all instructions listed below may result in hazardous radiation exposure, electric shock, fire and/or serious injury. The term "tool" in all of the warnings listed below refers to your battery-operated (cordless) tool.

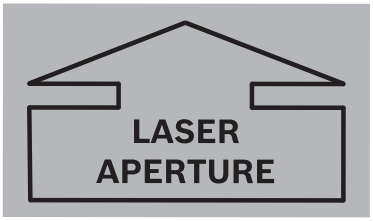
The following labels are on your laser tool for your convenience and safety. They indicate where the laser light is emitted by the tool. ALWAYS BE AWARE of their location when using the tool.

GRL 240 HV / GRL 245 HV

The measuring tool is provided with a warning label in English (marked with number **18** in the representation of the measuring tool on the graphics page).

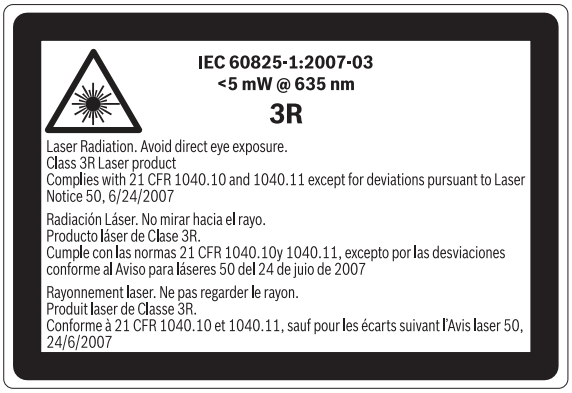


The following labels are on your laser tool for your convenience and safety. They indicate where the laser light is emitted by the tool. ALWAYS BE AWARE of their location when using the tool.



GRL 250 HV / GRL 300 HV

The measuring tool is provided with a warning label in English (marked with number **18** and **19** in the representation of the measuring tool on the graphics page).



GRL 300 HVG

Complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to laser notice No. 50, dated June 24, 2007.

DO NOT direct the laser beam at persons or animals and do not stare into the laser beam yourself. This tool produces laser class 2 laser radiation and complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. This can lead to persons being blinded.

DO NOT remove or deface any danger, warning or caution labels. Removing labels increases the risk of exposure to laser radiation.

Use of controls or adjustments or performance of procedures other than those specified in this manual, may result in hazardous radiation exposure.

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ALWAYS make sure that any bystanders in the vicinity of use are made aware of the dangers of looking directly into the laser tool.

DO NOT place the laser tool in a position that may cause anyone to stare into the laser beam intentionally or unintentionally. Serious eye injury could result.

ALWAYS position the laser tool securely. Damage to the laser tool and/or serious injury to the user could result if the laser tool falls.

ALWAYS use only the accessories that are recommended by the manufacturer of your laser tool. Use of accessories that have been designed for use with other laser tools could result in serious injury or unsatisfactory performance.

DO NOT use this laser tool for any purpose other than those outlined in this manual. This could result in serious injury or unsatisfactory performance.

DO NOT leave the laser tool "ON" unattended in any normal operating mode.

DO NOT disassemble the laser tool. There are no user serviceable parts inside. Do not modify the product in any way. Modifying the laser tool may result in hazardous laser radiation exposure.

SAVE THESE INSTRUCTIONS

FCC Statement

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

SAVE THESE INSTRUCTIONS

Declaration of Conformity

We declare under our sole responsibility that the product described under "Technical Data" is in conformity with the following standards or standardization documents: EN 61010-1, EN 60825-1 (measurement tool) according to the provisions of the directives 2006/95/EC, 2004/108/EC, 2006/42/EC.

WORK AREA SAFETY

Keep work area clean and well lit. Cluttered or dark areas invite accidents.

DO NOT operate the laser tool around children or allow children to operate the laser tool. Serious eye injury could result.

DO NOT use measuring tools, attachments and accessories outdoors when lightening conditions are present.

DO NOT operate the measuring tool in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.

ELECTRICAL SAFETY

Batteries can explode or leak, cause injury or fire. To reduce this risk, always follow all instructions and warnings on the battery label and package.

Do not short any battery terminals.

Do not charge alkaline batteries.

Do not mix old and new batteries.

Replace all old batteries at the same time with new batteries of the same brand and type.

Do not mix battery chemistries.

Dispose of or recycle batteries per local code.

Do not dispose of batteries in fire.

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Keep batteries out of reach of children.

Remove the batteries from the tool when not using for extended periods. When storing for extended periods, the batteries can corrode and discharge themselves.

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 using a measuring tool may result in serious personal injury or incorrect measurement results.

Use safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

DO NOT use the laser viewing glasses as safety goggles. The laser viewing glasses are used for improved visualization of the laser beam, but they do not protect against laser radiation.

DO NOT use the laser viewing glasses as sun glasses or in traffic. The laser viewing glasses do not afford complete UV protection and reduce color perception.

DO NOT use any optical tools such as, but not limited to, telescopes or transits to view the laser beam. Serious eye injury could result.

DO NOT stare directly at the laser beam or project the laser beam directly into the eyes of others. Serious eye injury could result.

Use caution when using measuring tools in the vicinity of electrical hazards.

Wear eye protection. If Spirit Level leaks, soak up with appropriate absorbent material and dispose of safely. Spirit Level contains flammable liquid that may cause respiratory tract, eye and skin irritation.

NOISE INFORMATION

⚠ WARNING **Do not hold the measuring tool close to your ear! Typically, the A-weighted sound pressure level of the audio signal at one meter distance is 75-85 db(A).** Measured sound values determined according to EN60745. Serious injury can result.

USE AND CARE

Use the correct measuring tool for your application. The correct measuring tool will do the job better and safer.

Do not use the measuring tool if the switch does not turn it on and off. Any measuring tool that cannot be controlled with the switch is dangerous and must be repaired.

Store idle measuring tools out of the reach of children and do not allow persons unfamiliar with the measuring tool or these instructions to operate the measuring tool. Measuring Tools are dangerous in the hands of untrained users.

Maintain measuring tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the measuring, detection and layout tools operation. If damaged, have the measuring tool repaired before use. Many accidents are caused by poorly maintained measuring tools.

Use the measuring tool, accessories, etc., in accordance with these instructions and in the manner intended for the particular type of measuring tool, taking into account the working conditions and the work to be performed. Use of the measuring tool for operations different from those intended could result in a hazardous situation.

SERVICE

Have your measuring tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the tool is maintained.

Develop a periodic maintenance schedule for tool. Follow checking and recalibration procedures outlined in the instruction manual.

When cleaning a tool be careful not to disassemble any portion of the tool since internal wires may be misplaced or pinched or may be improperly mounted. Certain cleaning agents such as gasoline, carbon tetrachloride, ammonia, etc. may damage plastic parts.

SAVE THESE INSTRUCTIONS.

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Intended Use

Rotational Laser Level

The measuring tool is intended for determining and checking precise horizontal partitions, vertical lines, building lines and plumb points.

The measuring tool is suitable for indoor and outdoor use.

⚠ WARNING **Working safely with the rotary laser is possible only when the operating and safety information are read completely and the instructions contained therein are strictly followed. Never make warning labels on the rotary laser unrecognizable.**

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

The use of optical instruments with this product will increase risk of eye injury.

Have the rotary laser repaired only through qualified specialist using original spare parts. This ensures that the safety of the rotary laser is maintained.

Do not allow children to use the rotary laser without supervision. They could unintentionally blind other persons.

Do not use the laser viewing glasses as safety goggles. The laser viewing glasses are used for improved visualization of the laser beam, but they do not protect against laser radiation.

Do not use the laser viewing glasses as sun glasses or in traffic. The laser viewing glasses do not afford complete UV protection and reduce color perception.

Preparation

Inserting/Replacing the Battery

⚠ WARNING **ALWAYS turn off the laser and the main power switch before removing and replacing batteries.**

Alkaline batteries are recommended for the tool.

Always replace all batteries at the same time. Use only batteries from one brand and with the identical capacity.

Remove the batteries from the tool when not using for extended periods. When storing for extended periods, the batteries can corrode and discharge themselves.

When inserting, pay attention to the correct polarity according to the representation of the inside battery lid.

It is the user's responsibility to periodically check the accuracy of the measuring tool as work progresses. Always check the accuracy of the measuring tool after it has been dropped or subject to extreme temperatures and temperature variations.

To open the battery compartment **14**, turn the locking knob **15** to position 🔓 and pull out the battery compartment.

Always replace all batteries at the same time. Only use batteries from one brand and with the identical capacity.

Shut the battery compartment **14** and turn the locking knob **15** to the 🔒 position.

In case the batteries have been inserted incorrectly, the measuring tool cannot be switched on. Insert the batteries with correct polarity.

Remove the batteries from the tool when not using it for extended periods. When storing for extended periods, the batteries can corrode and discharge themselves.

Low Battery Indicator

When the charge-control indicator **12** flashes

red for the first time, the measuring tool can still be operated for approx. 2 h.

When the charge-control indicator **12** lights up red continuously, measurements are no longer possible. The measuring tool switches off automatically after 1 minute.

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Technical Data

Rotational Laser Level	GRL 240 HV	GRL 245 HV	GRL 250 HV
Working range (Diameter) –without laser receiver –with laser receiver	approx. 200 ft approx. 60 m approx. 800 ft approx. 240 m	approx. 200 ft approx. 60 m approx. 800 ft approx. 240 m	approx. 200 ft approx. 60 m approx. 1000 ft approx. 300 m
Levelling Accuracy [1) 2)]	± 1/4" @ 100 ft ± 2.0 mm @ 10 m	± 1/8" @ 100 ft ± 1.0 mm @ 10 m	± 1/8" @ 100 ft ± 1.0 mm @ 10 m
Self-levelling range, typ.	± 8% (± 5°)	± 8% (± 5°)	± 8% (± 5°)
Levelling duration, typically	15 s	15 s	15 s
Rotational speed	150/300/600min^{-1}	150/300/600min^{-1}	150/300/600min^{-1}
Scan angle for line operation	10°/25°/50°	10°/25°/50°	10°/25°/50°
Operating temperature	0...+50°C	0...+50°C	0...+50°C
Storage temperature	–20...+70°C	–20...+70°C	–20...+70°C
Relative air humidity, max.	90 %	90%	90 %
Laser class Laser type	2 635nm, <1mW	2 635nm, <1mW	3R 635nm, <5mW
Laser beam Ø at the exit opening, approx. [1)]	5mm	5mm	5mm
Tripod mount (horizontal)	5/8"-11	5/8"-11	5/8"-11
Batteries (alkali-manganese)	2 x 1.5 VD (LR20)	2 x 1.5 VD (LR20)	2 x 1.5 VD (LR20)
Operating life time, approx. –Batteries (alkali-manganese) [1)]	50 h	50 h	50 h
Weight according to EPTA-Procedure 01/2003	3.9 lbs	3.9 lbs	3.9 lbs
Dimensions	190 x 180 x 170 mm	190 x 180 x 170 mm	190 x 180 x 170 mm
Degree of protection	IP54 (dust and splash water protected)	IP54 (dust and splash water protected)	IP54 (dust and splash water protected)

1) at 68° F (20 °C)

2) alongside the axies

Please observe the article number on the type plate of your measuring tool. The trade names of the individual measuring tools may vary.

The measuring tool can be clearly identified with the serial number **17** on the type plate.

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Rotational Laser Level	GRL 300 HV	GRL 300 HVG
Working range (Diameter) –without laser receiver	approx. 200 ft approx. 60 m	approx. 330 ft approx 100 m
–with laser receiver	approx. 1000 ft approx. 300 m	approx. 1000 ft approx. 300 m
Levelling Accuracy [1) 2)]	± 1/8" @ 100 ft ± 1.0 mm @ 10 m	± 1/8" @ 100 ft ± 1.0 mm @ 10 m
Self-levelling range, typ.	± 8% (± 5°)	± 8% (± 5°)
Levelling duration, typically	15 s	15 s
Rotational speed	150/300/600min^{-1}	150/300/600min^{-1}
Scan angle for line operation	10°/25°/50°	10°/25°/50°
Operating temperature	0...+50°C	0...+40°C
Storage temperature	–20...+70°C	–20...+70°C
Relative air humidity, max.	90 %	90 %
Laser class Laser type	3R 635nm, <5mW	3R 532nm, <5mW
Laser beam Ø at the exit opening, approx. [1)]	5mm	5mm
Tripod mount (horizontal)	5/8"-11	5/8"-11
Batteries (alkali-manganese)	2 x 1.5 VD (LR20)	2 x 1.5 VD (LR20)
Operating life time, approx. –Batteries (alkali-manganese) [1)]	50 h	30 h
Weight according to EPTA-Procedure 01/2003	3.9 lbs	3.9 lbs
Dimensions	190 x 180 x 170 mm	190 x 180 x 170 mm
Degree of protection	IP54 (dust and splash water protected)	IP54 (dust and splash water protected)

Features

The numbering of the product features shown refers to the illustration of the tool on page 2, 3 and 5.

Rotational Laser Level

1 Shock-warning indicator
2 Shock-warning button
3 Automatic leveling indicator
4 On/Off button
5 Rotational speed selection
6 Variable laser beam
7 Reception lens for remote control
8 Exit opening for laser beam
9 Plumb beam
10 Rotation head
11 Line operation and length selection
12 Low Battery indicator
13 LR 24/LR 30 Laser Receiver*
14 Battery compartment
15 Battery compartment lock
16 5/8-11 tripod mount
17 Serial number
18 Laser warning label
19 Warning label, laser radiation exit opening (GRL 250 HV, GRL 300 HV, GRL 300 HVG only)
20 Remote control*
21Tripod*
22 Leveling rod*
23 LR 1/LR 1 G Laser receiver*
24 Laser viewing glasses*
25 Wall mount/ alignment unit*
26 Wall mount fastening screw*
27 Wall mount locking screw*
28 5/8-11 instrument mount*
29 Ceiling measurement plate*
30 Case

***Illustrated accessory may be optional on some models and not included in standard package.**

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Operation

Initial Operation

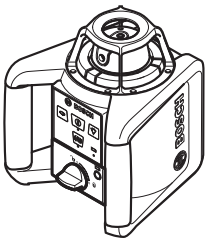
⚠ WARNING Protect the tool against moisture and direct sun irradiation.

Do not subject the tool to extreme temperatures or variations in temperature. As an example, do not leave it in vehicles for longer periods. In case of large variations in temperature, allow the tool to adjust to the ambient temperature before putting it into operation. In case of extreme temperatures or variations in temperature, the accuracy of the tool can be impaired.

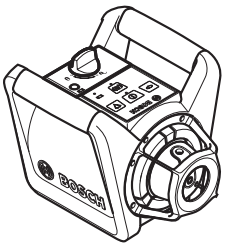
It is the user's responsibility to periodically check the accuracy of the measuring tool as work progresses. Always check the accuracy of the measuring tool after it has been dropped or subject to extreme temperatures and temperature variations.

Avoid heavy impact or and prevent the tool from falling. After heavy exterior impact on the tool, an accuracy check should always be carried out before continuing to work (see "Leveling Accuracy").

Setting Up the Tool



Horizontal position



Vertical position

Set up the laser tool on a sturdy surface in the horizontal or vertical position; mount it on a tripod **21** or to the wall mount with alignment unit **25**.

Due to the high leveling accuracy, the laser tool reacts sensitively to ground vibrations and position changes. Therefore, pay attention that the position of the laser tool is stable in order to avoid operational interruptions due to re-leveling.

Turning on the Tool

⚠ WARNING DO NOT direct the laser beam at persons or animals and do not stare into the laser beam yourself, not even from a large distance.

Do not leave the switched on laser tool unattended and switch the laser tool off after use. Serious eye injury could result from the laser beam.

Immediately after switching on, the laser tool sends out the vertical plumb beam **9** and the variable laser beam **6**.

For **switching on** the laser tool, press the On/Off button **4**. The indicators **1**, **3** and **12** light up briefly. The laser tool immediately starts the automatic leveling. During the leveling, the leveling indicator **3** lights up green and the laser flashes in point operation.

The laser tool is leveled in as soon as leveling indicator **3** lights up green continuously and the laser beam is steady. After the leveling is completed, the laser tool automatically starts in rotational operation.

With the operating mode buttons **5** and **11**, the operating modes can already be specified during leveling in (see "Operating Modes, page 13). In this case, the laser tool starts in the set operating mode upon completion of leveling in.

Turning off the Tool

To **switch off** the laser tool, press the On/Off button **4** again.

- **Do not leave the switched on laser tool unattended and switch the laser tool off after use.**

To save the batteries, the laser tool is automatically switched off when not within the self-leveling range for more than 2 h or when the shock warning is actuated for more than 2 h (see "Automatic Leveling"). Reposition the laser tool and switch it on again.

Working Advice

Always use the center of the laser point for marking. The size of the laser point changes with the distance.

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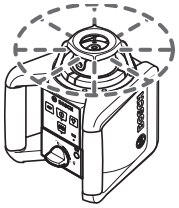
Operating Modes

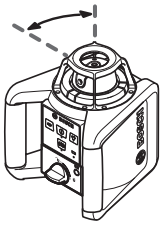
Overview

All three operating modes are possible with the laser tool in horizontal and vertical position.



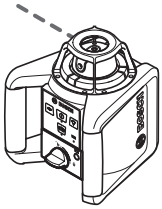
Rotational Operation

Rotational operation is especially recommended when using the laser receiver. You can select between different rotational speeds.



Line Operation

In this operation mode, the variable laser beam moves within a limited aperture angle. This increases the visibility of the laser beam in comparison to rotational operation. You can select between different aperture angles.



Point Operation

This operation mode enables the best visibility of the variable laser beam. As an example, it is used for easy projecting of heights or checking
building lines.

Rotation Mode (150/300/600 min $^{-1}$)

Each time after switching on, the laser tool is in rotational operation mode with average rotational speed.

To switch from line operation to rotational operation, press the rotational operation button **5**.

Rotational operation starts with average rotational speed.

To change the rotational speed, press the rotational operation button **5** again until the requested speed is reached.

When working with the laser receiver, the highest rotational speed should be set. When working without laser receiver, reduce the rotational speed for improved visibility of the laser beam and use the laser viewing glasses **24**.

Line Operation, Point Operation (10°/25°/50°, 0°)

To switch to line or point operation, press the line operation button **11**. The laser tool switches to line operation with the smallest aperture angle.

To change the aperture angle, press the line operation button **11**. The aperture angle is increased in two steps; at the same time, the rotational speed is increased with each step.

When pressing the line operation button **11** a third time, the laser tool switches to point operation after brief post-pulsation. Pressing button **11** again takes you back to line operation with the smallest aperture angle.

Note: Due to inertia, it is possible for the laser to slightly move beyond the end point of the laser line.

To position the laser line or the laser point within the rotational plane, manually turn the rotation head **10** to the requested position or use the remote control **20**.

Turning the Rotational Plane when in the Vertical Position

When the laser tool is in the vertical position, it is possible to rotate the laser point, laser line or rotational plane around the vertical axis with help of the remote control **20**. For this, observe the operating instructions of the remote control.

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Leveling Accuracy

Automatic leveling

Overview

After switching on, the laser tool automatically detects the horizontal or vertical position. To change between the horizontal and vertical position, switch the laser tool off, reposition it and switch on again.

After switching on, the laser tool checks the horizontal and vertical position and automatically levels out any unevenness within the self-leveling range of approx. 8 % (5°).

When the laser tool is inclined by more than 8 % after switching on or after a position change, leveling in is no longer possible. In this case, the rotor is stopped, the laser flashes and leveling indicator **3** continuously lights up red. Reposition the laser tool and wait for it to re-level. Without repositioning, the laser is automatically switched off after 2 minutes and the laser tool after 2 hours.

When the laser tool is leveled in, it continuously checks the horizontal and vertical position. Automatic re-leveling takes place after position changes. To avoid faulty measurements, the rotor stops during the leveling process, the laser flashes and the leveling indicator **3** flashes green.

Shock-warning Function

The laser tool has a shock-warning function; after position changes or shock to the laser tool, or in case of ground vibrations, it keeps the laser tool from leveling in at changed heights, and thus prevents vertical errors.

To **switch on** the shock-warning function, press the shock-warning button **2**. The shock-warning indicator **1** continuously lights up green, and the shock-warning function is activated after 30 seconds.

When the leveling-accuracy range is exceeded after a position change of the laser tool or when heavy ground vibrations are detected, the shock-warning function is actuated: The rotation is stopped, the laser flashes, the leveling indicator **3** goes out and the shock-warning indicator **1** flashes red. The current operating mode is stored.

After the shock-warning function has actuated, press the shock-warning button **2**.

The shock-warning function is restarted and the laser tool starts the leveling. As soon as the laser tool is leveled in (leveling indicator **3** continuously lights up green), it starts in the stored operating mode. Now, check the height of the laser beam with a reference point and correct the height, if required.

When the function is not restarted by pressing button **2** after the shock-warning function has actuated, the laser is automatically switched off after 2 minutes and the laser tool after 2 hours.

To switch off the shock-warning function, press shock-warning button **2** once, or, when the shock warning is actuated (shock-warning indicator **1** flashing red) press it twice. When the shock-warning function is shut off, the shock warning indicator **1** goes out.

Influences on Accuracy

The ambient temperature has the greatest influence. Especially temperature differences occurring from the ground upward can divert the laser beam.

The deviations play a role in excess of approx. 65 ft measuring distance and can easily reach two to four times the deviation at 328 ft.

Because the largest difference in temperature layers is close to the ground, the laser tool should always be mounted on a tripod when measuring distances exceeding 65 ft. If possible, also set up the laser tool in the center of the work area.

Accuracy Check

Apart from exterior influences, device-specific influences (such as heavy impact or falling down) can lead to deviations. Therefore, check the accuracy of the laser tool each time before starting your work.

For the accuracy check, an unobstructed measuring distance of 65 ft on firm ground between two walls A and B is required. With the laser tool in the horizontal position, a transit measurement is to be carried out across both axes X and Y (both positive and negative) (altogether 4 complete measurements).

– Mount the laser tool in the horizontal position onto a tripod **21** (accessory) or place it on a firm and level surface near wall A. Switch the laser tool on.

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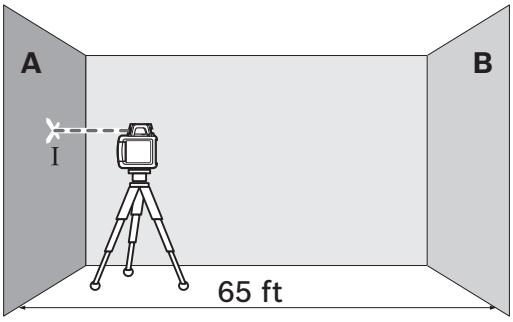
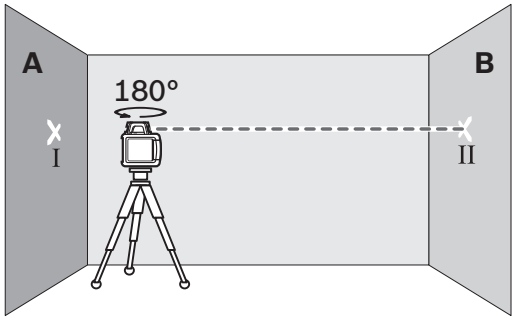
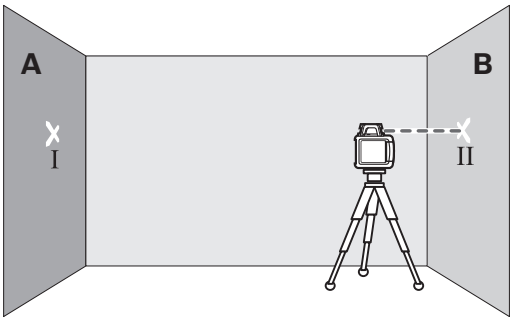


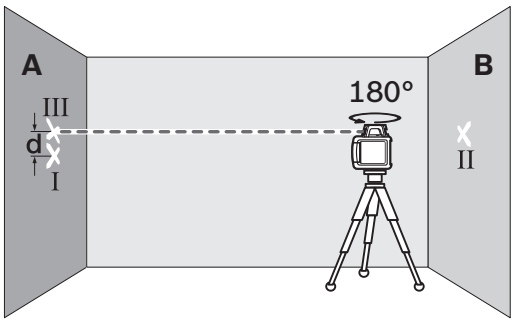
– After leveling, direct the laser beam in point operation onto the close wall A. Mark the center point of the laser beam on the wall (point I).



– Turn the laser tool around by 180°, allow it to level in and mark the center point of the laser beam on the opposite wall B (point II).
– Without turning the laser tool, position it close to wall B. Switch the laser tool on and allow it to level in.



– Align the height of the laser tool (using the tripod or by underlaying, if required) in such a manner that the center point of the laser beam is projected exactly against the previously marked point II on wall B.



– Rotate the laser tool by 180° without changing the height. Allow it to level in and mark the center point of the laser beam on wall A (point III). Take care that point III is as vertical as possible above or below point I.
– The difference d of both marked points I and III on wall A amounts to the actual deviation of the laser tool for the measured axis.

Repeat the measuring procedure for the other three axes. For this, turn the laser tool prior to each measuring procedure by 90°.

On the measuring section of 2 x 65 ft = 130 ft, the maximum allowable deviation is: 130 ft x ±0.0012 in/ft = ± 0.157 in (For the GRL 240 HV, the maximum allowable deviation is: 130 ft x ±0.0024 in/ft = ± 0.314 in).

Consequently, the difference d between points I and III for each of the four individual measurements may not exceed 0.314 in max (For the GRL 240 HV, 0.628 in max).

If the laser tool should exceed the maximum deviation in anyone of the four measuring procedures, have it checked at a Bosch aftersales service agent.

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Applications

Indicating a Plumb Line/Vertical Plane (see figure B)

To indicate a plumb line or a vertical plane, set up the laser tool in the vertical position.

When the vertical plane is supposed to run at a right angle to a reference line (e.g. a wall), then align the plumb beam **9** with this reference line.

The plumb line is indicated by the variable laser beam **6**.

Working without Laser Receiver (see figure C)

Under favorable light conditions (dark environment) and for short distances, it is possible to work without the laser receiver. For better visibility of the laser beam, either select line operation, or select point operation and manually rotate the rotation head **10** to the target location.

Working with the Laser Receiver (see figure D)

Under unfavorable light conditions (bright environment, direct sunlight) and for larger distances, use the laser receiver for improved finding of the laser beam. When working with the laser receiver, select rotational operation with the highest rotational speed.

Measuring Over Long Distances (see figure E)

When measuring over long distances, the laser receiver must be used to find the laser beam. In order to reduce interferences, the laser tool should always be set up in the center of the work surface and on a tripod.

Working Outdoors (see figure F)

The laser receiver should always be used when working outdoors.

When working on unstable ground, mount the laser tool onto the tripod **21**. Activate the shock-warning function in order to avoid faulty measurements in case of ground vibrations or shock to the laser tool.

Overview of Indications

	Laser beam	Rotation of the laser*	green	red	green	red	
Switching on the measuring tool (1 s self-check			●			●	●
Leveling in or re-leveling	**2x/s**	❍	**2x/s**				
Measuring tool leveled in/ready for operation	●	●	●				
Self-leveling range exceeded	**2x/s**	❍		●			
Shock-warning function activated					●		
Shock warning actuated	**2x/s**	❍				**2x/s**	
Battery voltage for ≤2 h operation							**2x/s**
Battery empty	❍	❍					●

* for line and rotational operation

2x/s Flashing frequency (twice per second)

● Continuous operation

❍ Function stopped

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Use with Accessories

Laser Viewing Glasses (Accessory)

⚠ WARNING **DO NOT use the laser viewing glasses as safety goggles.** The laser viewing glasses are used for improved visualization of the laser beam, but they do not protect against laser radiation.

DO NOT use the laser viewing glasses as sun glasses or in traffic. The laser viewing glasses do not afford complete UV protection and reduce color perception.

The laser viewing glasses filter out the ambient light. This makes the red light of the laser appear brighter for the eyes.

- Do not use the laser viewing glasses as safety goggles. The laser viewing glasses are used for improved visualization of the laser beam, but they do not protect against laser radiation.
- Do not use the laser viewing glasses as sun glasses or in traffic. The laser viewing glasses do not afford complete UV protection and reduce color perception.

Working with the Laser Receiver (Accessory)

⚠ WARNING **Have your measuring tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the tool is maintained.

Read and strictly observe the safety warnings in the operating instructions of the rotational laser.

Under unfavorable light conditions (bright environment, direct sunlight) and for larger distances, use the laser receiver for improved finding of the laser beam **23** and **13**.

When working with the laser receiver, select rotational operation with the highest rotational speed.

Before working with the laser receiver, read and observe the laser receiver operating instructions.

Working with the Remote Control (Accessory)

While pressing the operator buttons, the laser tool can be brought out of alignment so that the rotation is briefly stopped. This effect is avoided when using the remote control **20**.

Reception lenses **7** for the remote control are located on three sides of the laser tool (GRL 240 HV / GRL 245 HV has a single reception lens located on the front of the laser tool), among other locations above the control panel on the front side.

Working with the Tripod (Accessory)

The laser tool is equipped with a 5/8" tripod mount for horizontal operation on a tripod.

Place the laser tool via the tripod mount **16** onto the 5/8" male thread of the tripod and screw the locking screw of the tripod tight.

On a tripod **21** with a measuring scale on the elevator column, the height difference can be adjusted directly.

Working with Wall Mount/Alignment Unit (Accessory) (see figure A)

You can also mount the laser tool to the wall mount with alignment unit **25**. For this, screw the 5/8" screw **28** of the wall mount into the tripod mount **16** of the laser tool.

Mounting to a wall: Mounting to a wall is recommended, e.g., for work above the elevation height of tripods or for work on unstable surfaces and without tripod. For this, fasten the wall mount **25**, with the laser tool mounted, as vertical as possible to a wall.

For mounting to the wall, you can either fasten the wall mount **25** with fastening screw **26** to a lath (width maximal 8 mm) or hang it up with two hooks.

Mounting on a tripod: The wall mount **25** can also be screwed onto a tripod with the tripod mount on the back side. This method of fastening is especially recommended for work where the rotational plane is to be aligned with a reference line.

With the alignment unit, the mounted laser tool can be moved vertically (when mounted to the wall) or horizontally (when mounted to a tripod) within a range of approx. 16 cm. For this, loosen screw **27** on the alignment unit, move the laser tool to the desired position, and retighten screw **27** again.

Working with the Ceiling Measurement Plate (see figure A)

As an example, the ceiling measurement plate **29** can be used for easy height adjustment of drop ceilings. Fasten the ceiling measurement plate with the magnetic holder, e.g., to a beam.

The reflecting half of the ceiling measurement plate improves the visibility of the laser beam in unfavorable conditions; the laser beam can also be seen from the rear side through the transparent half.

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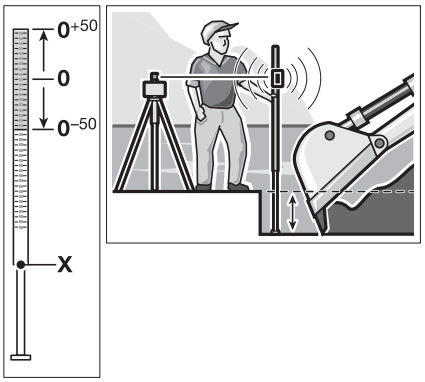
Working with the Measuring Rod (Accessory) (see figure F)

⚠ DANGER **Do not operate during storms or near high voltage.** Risk of being struct by lightning or electrocution.

Keep at a safe distance from electrical installations. When it is essential to work in this environment, first contact the safety authorities responsible for the electrical installations and follow their instructions.

For checking irregularities or projecting gradients, it is recommended to use the measuring rod **22** together with the laser receiver.



A relative millimeter scale (±50 cm) is marked on the top of the measuring rod **22**. Its zero height can be preset at the bottom of the elevator column. This allows for direct reading of deviations from the specified height.

Maintenance and Service

⚠ WARNING **Store and transport the tool only in the supplied protective case.**

Check the tool each time before using.

Keep the tool clean and dry at all times to ensure proper and safe operation.

Do not immerse the tool into water or other fluids.

Wipe off debris using a moist and soft cloth. Do not use any cleaning agents or solvents.

Regularly clean the surfaces at the exit opening of the laser.

In case of visible damage or loose components in the interior of the tool, the safe function is no longer ensured.

If the tool should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an authorized after-sales service center for Bosch power tools.

In all correspondence and spare parts orders, please always include the 10-digit article number given on the type plate of the tool.

In case of repairs, send in the tool packed in its protective case **30**.

ENVIRONMENT PROTECTION

Recycle raw materials & batteries instead of disposing of waste. The unit, accessories, packaging & used batteries should be sorted for environmentally friendly recycling in accordance with the latest regulations.

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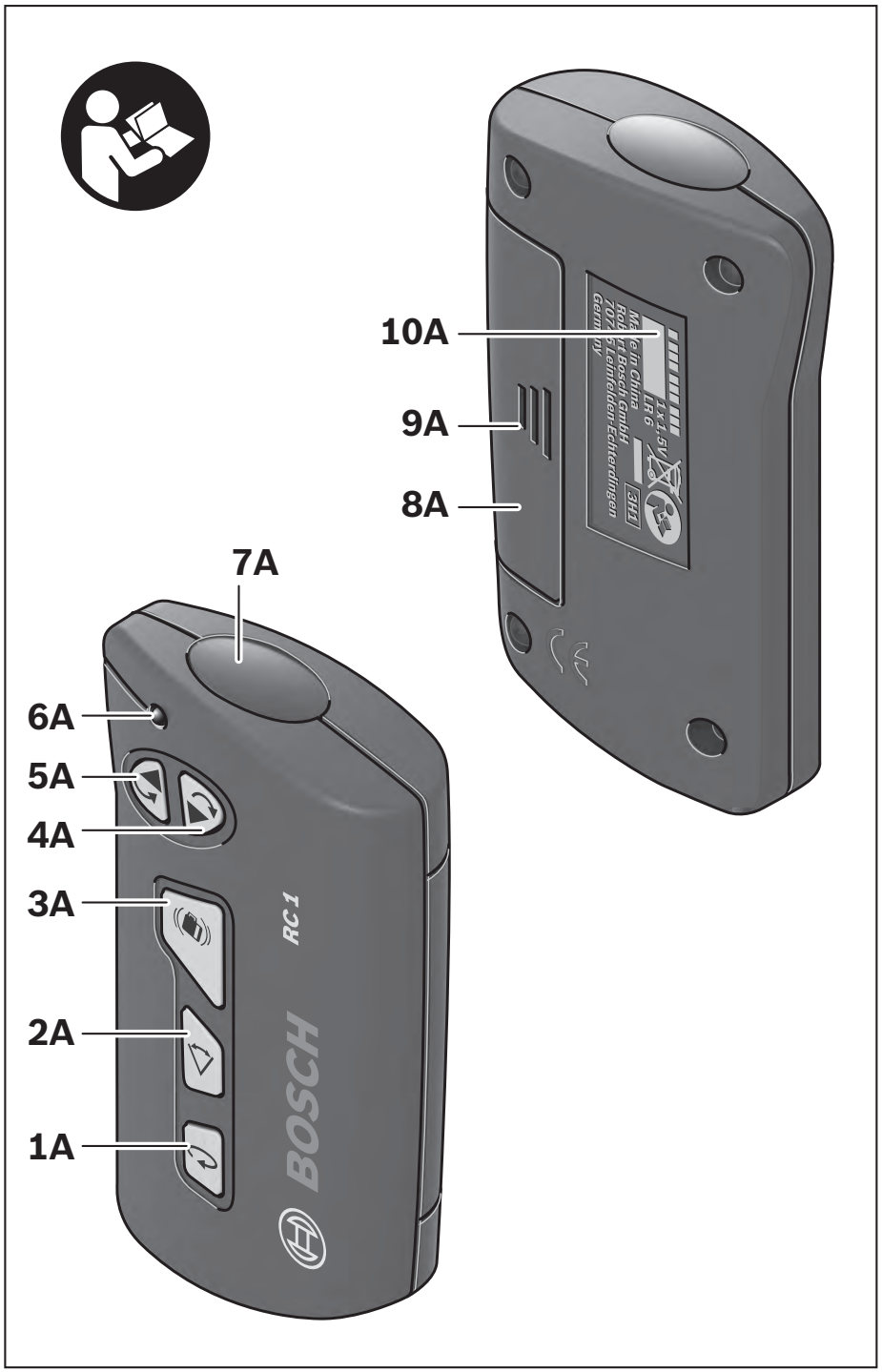
RC1 Remote Control

(Optional accessory for the GRL 240 HV)



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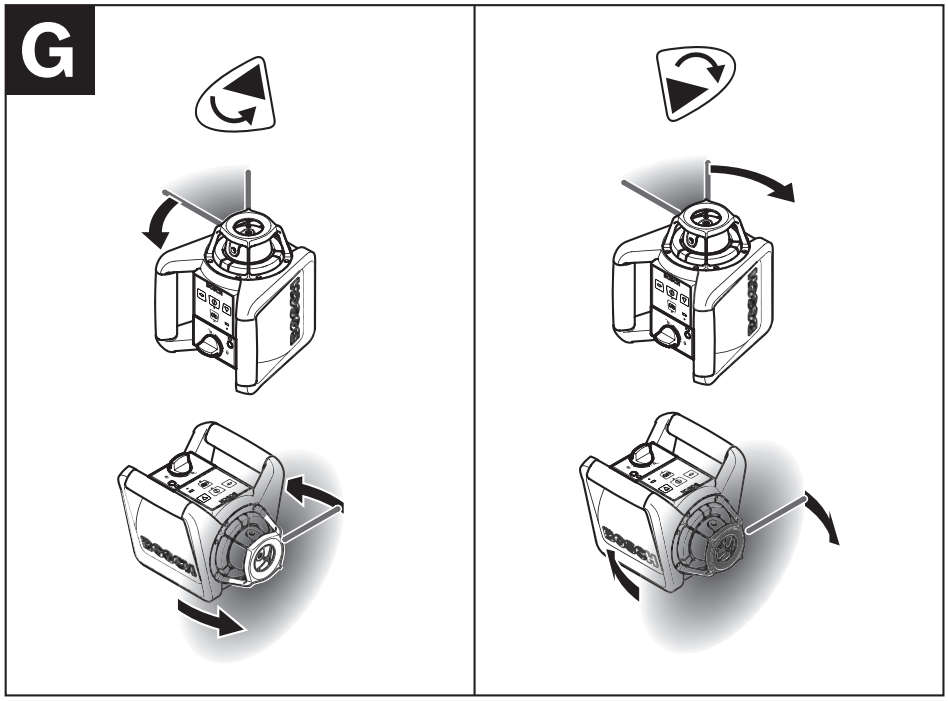

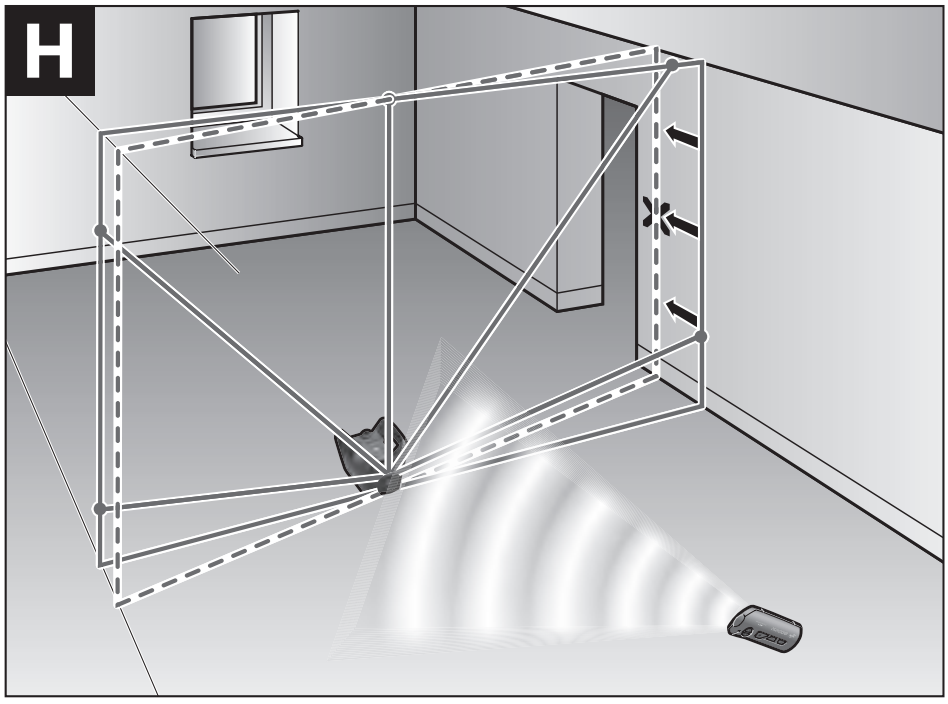

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RC1 General Safety Rules

Read and observe all instructions.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

- **Have the remote control repaired only through a qualified repair person and only using identical replacement parts. This will ensure that the functionality of the remote control is maintained.**
- **Do not operate the remote control in explosive atmospheres, such as in the presence of flammable liquids, gases or dusts.** Sparks can be created in the remote control which may ignite the dust or fumes.
- **Read and strictly observe the safety warnings in the operating instructions of the rotational laser.**

RC1 Intended Use

The remote control is intended for controlling rotational laser levels in indoor and outdoor use.

RC1 Preparation

Inserting/Replacing the Battery

Using alkali-manganese batteries is recommended for operation of the remote control.

To open the battery lid **8A**, press the latch **9A** in the direction of the arrow and remove the battery lid. Insert the battery provided.

When inserting, pay attention to the correct polarity according to the representation on the inside of the battery compartment.

- **Remove the battery from the remote control when not using it for longer periods.** When storing for longer periods, the battery can corrode and discharge itself.

RC1 Technical Data

Remote control	RC1
Working range[1)]	100 ft (30 m)
Operating temperature	−10 °C ~ +50 °C
Storage temperature	−20 °C ~ +70 °C
Battery	1 x 1.5 V LR06 (AA)
Weight according to EPTA-Procedure 01/2003	2.4 oz. (69 g)

1) The working range can be decreased by unfavorable environmental conditions (e.g. direct sun irradiation).

Please observe the article number on the type plate of your remote control.

The trade names of individual remote controls may vary.

For clear identification of your remote control, see the serial number **10A** on the type plate.

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RC1 Features

The numbering of the product features refers to the illustrations on the remote control graphics page 18.

1A Button for rotational operation and selection of the rotation speed
2A Button for line operation and line length selection
3A Shock-warning reset button
4A Button for “rotation in clockwise direction”
5A Button for “rotation in anticlockwise direction”
6A Operation indicator
7A Outlet opening for infra-red beam
8A Battery lid
9A Latch of battery lid
10A Serial number

The accessories illustrated or described are not included as standard delivery.

RC1 Operation

Initial Operation

- **Protect the remote control against moisture and direct sunlight.**
- **Do not subject the remote control to extreme temperatures or variations in temperature.** As an example, do not leave it in vehicles for longer periods. In case of large variations in temperature, allow the remote control to adjust to the ambient temperature before putting it into operation.

The remote control remains ready for operation as long as a battery with sufficient voltage is inserted.

Set up the rotational laser in such a manner that the signals of the remote control directly reach one of the reception lenses on the rotational laser (for this, see the operating instructions of the rotational laser). When the remote control cannot be pointed directly against a reception lens, the working range is reduced. By reflecting the signal (e.g. against walls), the working range can be improved, even for indirect signals.

After pressing a button on the remote control, the illuminated operation indicator **6A** indicates that a signal was sent out.

Switching the rotational laser on/off with the remote control is not possible.

RC1 Operating Modes

For detailed information of the rotational laser functions, see the operating instructions of the rotational laser.

Rotational Operation (150/300/600 min-1)

The function of the button for rotational operation **1A** on the remote control is identical with that on the rotational laser.

Each time after switching on, the rotational laser is in rotational operation mode with average rotational speed.

To switch from line operation to rotational operation, press the rotational operation button **1A**. Rotational operation starts with average rotational speed.

To change the rotational speed, press the rotational operation button **1A** again until the requested speed is reached.

Line Operation, Point Operation (10°/25°/50°, 0°)

The function of the button for line operation **2A** on the remote control is identical with that on the rotational laser.

To switch to line or point operation, press the line operation button **2A**. The rotational laser switches to line operation with the smallest aperture angle.

To change the aperture angle, press the line operation button **2A**. The aperture angle is increased in two steps; at the same time, the rotational speed is increased with each step. When pressing the line operation button **2A** a third time, the rotational laser switches to point operation after brief post-pulsation. Pressing button **2A** again takes you back to line operation with the smallest aperture angle.

Note: Due to inertia, it is possible for the laser to slightly move beyond the end point of the laser line.

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Rotating the Laser Line/ Laser Dot or the Rotational Plane (see figure G)

Rotating the laser line/laser dot or the rotational plane is possible only with the remote control.

When the rotational laser is in the **horizontal position**, the laser line (in line operation) or the laser dot (in point operation) can be positioned within the rotational plane of the laser. Rotation is possible by 360°.

Press button **4A** to rotate in clockwise direction, and button **5A** to rotate in counter-clockwise direction. In rotational operation, pressing the buttons has no effect.

When the rotational laser is in the **vertical position**, it is possible to rotate the laser point, laser line or rotational plane around the vertical axis. Rotating is possible only within the self-leveling range (5° toward the left or right).

Press button **4A** to rotate in clockwise direction, and button **5A** to rotate in counter-clockwise direction.

Reset Shock-warning Function

The rotational laser has a shock-warning function; after position changes or shock to the rotational laser, or in case of ground vibrations, it keeps the rotational laser from leveling in at changed heights, and thus prevents vertical errors.

Switching the shock-warning function on and off is possible only on the rotational laser. Once the shock-warning function has actuated, is can be restarted via the remote control.

After actuation of the shock-warning function, the rotation of the laser is stopped, the laser flashes, the leveling indicator goes out, and the shock-warning indicator flashes red. The current operating mode is stored.

After the shock-warning function has actuated, press the shock warning reset button **3A**. The shock-warning function is restarted and the rotational laser starts leveling. As soon as the rotational laser is levelled in (the leveling indicator on the rotational laser continuously lights up green), it starts in the stored operating mode. Now, check the height of the laser beam with a reference point and correct the height, if required.

RC1 Applications

Application Example

Turning the Rotational Plane when in the Vertical Position (see figure H)

To align the vertical laser line or the rotational plane against a reference point on a wall, set up the rotational laser in the vertical position, and roughly align the laser line or the rotational plane with the reference point. For precise alignment with the reference point, press button **4A** (clockwise rotation) or **5A** (counterclockwise rotation).

RC1 Maintenance and Service

Maintenance and Cleaning

Keep the remote control clean at all times.

Do not immerse the remote control into water or other fluids.

Wipe off debris using a moist and soft cloth. Do not use any cleaning agents or solvents.

If the remote control should fail despite the care taken in manufacture and testing, repair should be carried out by an authorized customer services agent for Bosch power tools. Do not open the remote control yourself.

In all correspondence and spare parts orders, please always include the 10-digit article number given on the type plate of the remote control.

ENVIRONMENT PROTECTION

Recycle raw materials & batteries instead of disposing of waste. The unit, accessories, packaging & used batteries should be sorted for environmentally friendly recycling in accordance with the latest regulations.

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30 Day Money Back Refund or Replacement -
If you are not completely satisfied with the performance of your laser and measuring tools, for any reason, you can return it to your Bosch dealer within 30 days of the date of purchase for a full refund or replacement. To obtain this 30-Day Refund or Replacement, your return must be accompanied by the original receipt for purchase of the laser or optical instrument product. A maximum of 2 returns per customer will be permitted.

SELLER'S SOLE OBLIGATION AND YOUR EXCLUSIVE REMEDY under this Limited Warranty and, to the extent permitted by law, any warranty or condition implied by law, shall be the repair or replacement of parts, without charge, which are defective in material or workmanship and which have not been misused, carelessly handled, or misrepaired by persons other than Seller or Authorized Service Center. To make a claim under this Limited Warranty, you must return the complete Bosch laser or measuring tool, transportation prepaid, to any BOSCH Factory Service Center or Authorized Service Center. Please include a dated proof of purchase with your tool. For locations of nearby service centers, please use our on-line service locator or call

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