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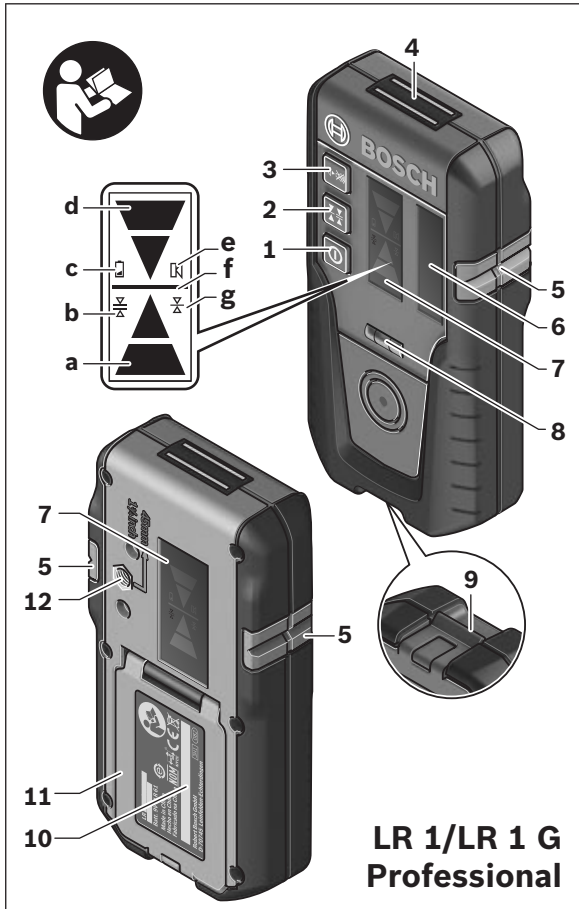
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LR Professional

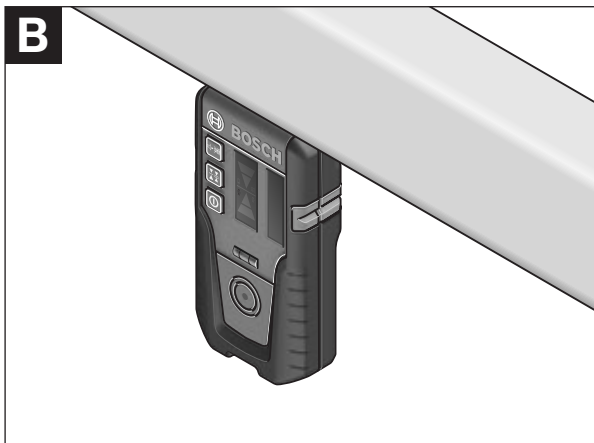
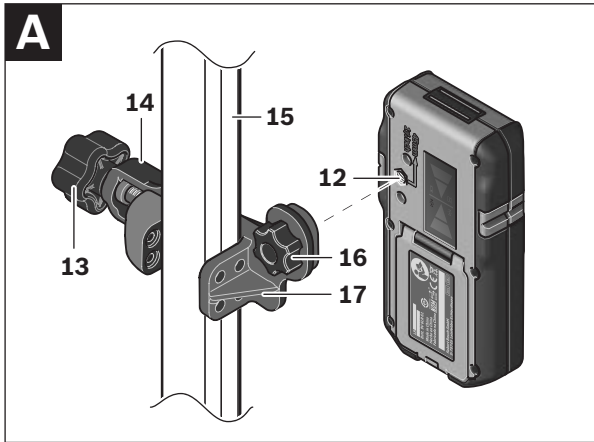
1 | 1 G

 **BOSCH**





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Safety Notes



Read and observe all instructions. SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.



Keep the measuring tool away from cardiac pacemakers. The magnet plate **4** generates a field that can impair the function of cardiac pacemakers.

- ▶ **Keep the measuring tool away from magnetic data medium and magnetically-sensitive equipment.** The effect of the magnet plate **4** can lead to irreversible data loss.
- ▶ **Have the measuring tool repaired only through qualified specialists using original spare parts.** This ensures that the safety of the measuring tool is maintained.
- ▶ **Do not operate the measuring tool in explosive environments, such as in the presence of flammable liquids, gases or dusts.** Sparks can be created in the measuring tool which may ignite the dust or fumes.
- ▶ **Read and strictly observe the safety warnings in the operating instructions of the rotational laser.**



20 | English



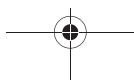
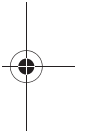
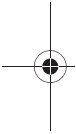
Functional Description

Please unfold the fold-out page with the representation of the measuring tool and leave it unfolded while reading the operating instructions.

Intended Use

The measuring tool is intended for swift finding of rotating laser beams in the wavelength listed in the "Technical Data".

The measuring tool is suitable for indoor and outdoor use.



Product Features

The numbering of the product features shown refers to the illustration of the measuring tool on the graphic page.

- 1 On/Off button
- 2 Button for adjustment of the measuring accuracy
- 3 Audio signal button
- 4 Magnet plate
- 5 Centre mark
- 6 Reception area for the laser beam
- 7 Display
- 8 Laser receiver spirit level
- 9 Latch of battery lid
- 10 Serial number
- 11 Battery lid
- 12 Retainer openings for holder
- 13 Locking screw for holder
- 14 Holder upper edge
- 15 Construction laser measuring rod*
- 16 Fastening screw of holder
- 17 Holder

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

Display Elements

- a Direction indicator, down
- b “Medium” adjustment indicator
- c Battery indicator
- d Direction indicator, up
- e Audio signal indicator
- f Centre indicator
- g “Fine” adjustment indicator

22 | English

Technical Data

Laser Receiver	LR 1 Professional
Article number	3 601 K15 400
Receivable wavelength	635–650 nm
Suitable for rotational laser level	GRL 250 HV, GRL 300 HV, GRL 400 H

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 **10** on the type plate.

Laser Receiver	LR 1 G Professional
Article number	3 601 K69 700
Receivable wavelength	532–535 nm
Suitable for rotational laser level	GRL 300 HVG

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 **10** on the type plate.

LR 1/LR 1 G

Working range¹⁾ with rotational laser level:

- GRL 250 HV	125 m
- GRL 300 HV/HVG	150 m
- GRL 400 H	200 m

Receiving angle 120°

Receivable rotation speed >200 min⁻¹

Measuring accuracy²⁾

- "Fine" adjustment	±1 mm
- "Medium" adjustment	±3 mm

Operating temperature - 10 °C ... +50 °C

Storage temperature - 20 °C ... +70 °C

Battery 1 x 9 V 6LR61

Operating life time, approx. 50 h

Weight according to EPTA-Procedure 01/2003 0.36 kg

Dimensions 148 x 73 x 30 mm

Degree of protection IP 65 (dust-proof and protected against powerful water jets)

1) The working range (radius) can be reduced due to unfavourable ambient conditions (e.g. direct sunlight).

2) depends on clearance between laser receiver and rotational laser level

Assembly

Inserting/Replacing the Battery

Alkali-manganese batteries are recommended for the measuring tool. Press the latch **9** of the battery lid outward and open the battery lid **11**.

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

When the battery indication **c** appears for the first time on the display **7**, the measuring tool can still be operated for approx. 3 h.

- ▶ **If the measuring tool is not used for a long period of time, the battery must be removed.** The battery can corrode or discharge itself over long periods.

Operation

Initial Operation

- ▶ **Protect the measuring tool against moisture and direct sun light.**
- ▶ **Do not subject the measuring 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 measuring 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 measuring tool can be impaired.

Position the measuring tool at least 50 cm away from the rotational laser level. Position the measuring tool in such a manner that the laser beam can reach the reception area **6**. Set the highest rotational speed on the rotational laser level.

Switching On and Off

- ▶ **A loud audio signal sounds when switching on the measuring tool.** “The A-weighted sound pressure level of the audio signal at a distance of one meter is 95 dB(A).”
- ▶ **Do not hold the measuring tool close to your ear!** The loud audio signal can cause hearing defects.

To **switch on** the measuring tool, press the On/Off button **1**. Two audio signals sound and all display indicators light up briefly.

To **switch off** the measuring tool, press the On/Off button **1** again.

When no button is pressed on the measuring tool for approx.

10 minutes and when no laser beam reaches the reception area **6** for 10 minutes, the measuring tool automatically switches off in order to save the battery. The switching off is indicated by an audio signal.

Selecting the Setting of the Centre Indicator

With button **2**, you can specify with which accuracy the position of the laser beam is indicated as central on the reception area:

- “Fine” adjustment, (indication **g** on the display),
- “Medium” adjustment, (indication **b** on the display).

An audio signal sounds when the accuracy setting is changed.

Whenever switching on the measuring tool, the accuracy level “medium” is set.



Direction Indicators

The bottom **a**, centre **f** and top **d** indicators (both on the front and rear side of the measuring tool) indicate the position of the rotating laser beam in the reception area **6**. Additionally, the position can be indicated with an audio signal (see “Audio Signal for Indication of the Laser Beam”, page 27).

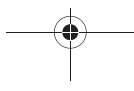
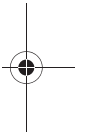
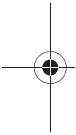
Measuring tool too low: When the laser beam runs through the top half of the reception area **6**, the bottom direction indicator **a** appears on the display.

When the audio signal is switched on, a slow-beat signal sounds. Move the measuring tool upward in the direction of the arrow. When approaching the centre mark **5**, only the tip of the direction indicator **a** is indicated.

Measuring tool too high: When the laser beam runs through the bottom half of the reception area **6**, the top direction indicator **d** appears on the display.

When the audio signal is switched on, a fast-beat signal sounds. Move the measuring tool downward in the direction of the arrow. When approaching the centre mark **5**, only the tip of the direction indicator **d** is indicated.

Measuring tool in centre position: When the laser beam runs through the reception area **6** at the centre mark **5**, the centre indicator **f** lights up. When the audio signal is switched on, a continuous signal sounds.



Audio Signal for Indication of the Laser Beam

The position of the laser beam on the reception area **6** can be indicated via an audio signal.

After the measuring tool has been switched on, the audio signal is always switched off.

When switching on the audio signal, you can choose between two volume levels.

To switch on the audio signal or change the volume level, push the acoustic signal button **3** until the requested volume level is indicated. At medium volume level, the audio signal indicator **e** in the display flashes; at high volume level, the indicator is continuously lit. When the audio signal is set to off, the indicator goes out.

Working Advice

Marking

When the laser beam runs through the center of the reception area **6**, its height can be marked at the centre mark **5** right and left on the measuring tool. The centre mark is located 45 mm away from the top edge of the measuring tool.

Aligning with the Spirit Level

The measuring tool can be aligned vertically (plumb line) with the spirit level **8**. A measuring tool applied out-of-level leads to faulty measurements.

Attaching with the Holder (see figure A)

With the holder **17**, the measuring tool can be fastened to a construction laser measuring rod **15** (accessory) as well as to other auxiliary tools with a width of up to 65 mm.

Screw the holder **17** to the retainer opening **12** on the rear side of the measuring tool with fastening screw **16**.

Loosen the locking screw **13**, slide the holder onto the construction laser measuring rod **15**, for example, and retighten the locking screw **13**.

The upper edge **14** of the holder is located at the same height as the centre mark **5** and can be used for marking of the laser beam.

Attaching with the Magnet (see figure B)

When a positive-lock attachment is not absolutely required, the measuring tool can be attached to steel parts via the face side using the magnet plate **4**.

Maintenance and Service

Maintenance and Cleaning

Keep the measuring tool clean at all times.

Do not immerse the measuring tool in water or other fluids.

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

If the measuring tool should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an authorised after-sales service centre for Bosch power tools. Do not open the measuring tool yourself.

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

After-sales Service and Customer Assistance

Our after-sales service responds to your questions concerning maintenance and repair of your product as well as spare parts. Exploded views and information on spare parts can also be found under:

www.bosch-pt.com

Our customer service representatives can answer your questions concerning possible applications and adjustment of products and accessories.

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Disposal

Measuring tools, accessories and packaging should be sorted for environmental-friendly recycling.

Only for EC countries:



Do not dispose of measuring tools into household waste!

According to the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national right, measuring tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

Battery packs/batteries:

Do not dispose of battery packs/batteries into household waste, fire or water. Battery packs/batteries should, if possible, be discharged, collected, recycled or disposed of in an environmental-friendly manner.

Only for EC countries:

Defective or dead out battery packs/batteries must be recycled according to the guideline 2006/66/EC.

Batteries no longer suitable for use can be directly returned at:

Great Britain

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Subject to change without notice.