

WEU

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1 619 929 L48 (2013.03) T / 118 **WEU**



1 619 929 L48

PLL 1 P

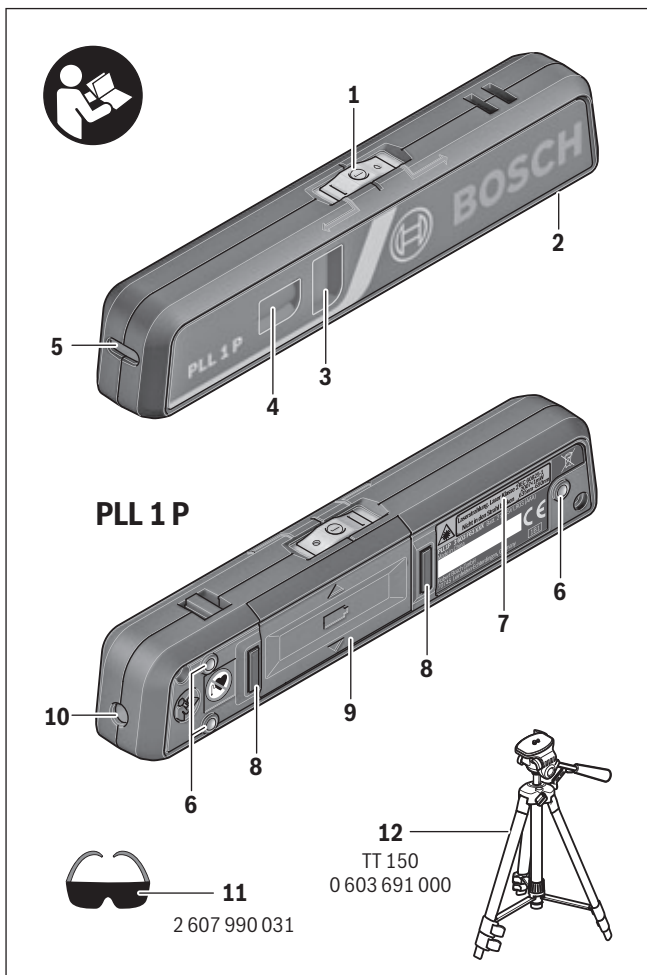


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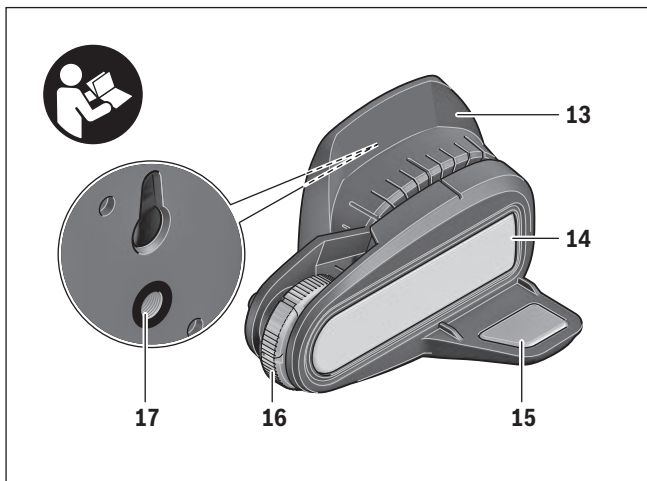
de Originalbetriebsanleitung
en Original instructions
fr Notice originale
es Manual original
pt Manual original
it Istruzioni originali
nl Oorspronkelijke gebruiksaanwijzing
da Original brugsanvisning
sv Bruksanvisning i original

no Original driftsinstruks
fi Alkuperäiset ohjeet
el Πρωτότυπο οδηγιών χρήσης
tr Original işletme talimatı
ar تعليمات التشغيل الأصلية

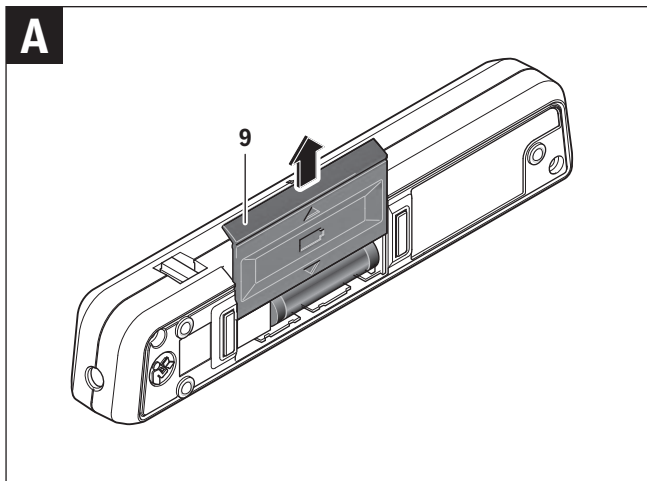




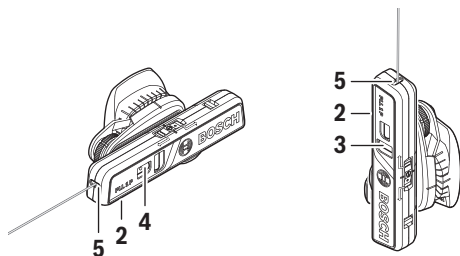
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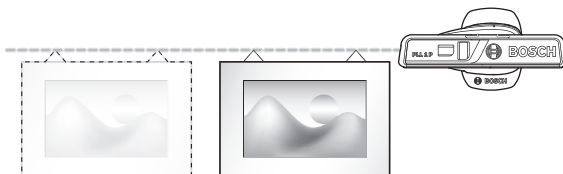
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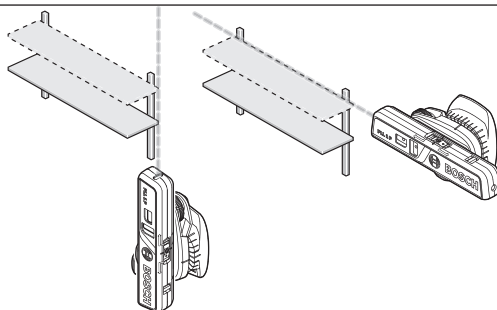
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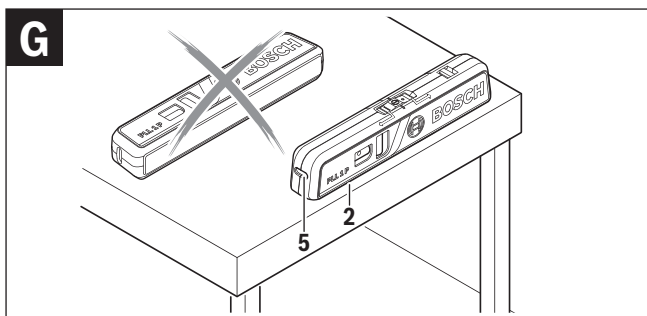
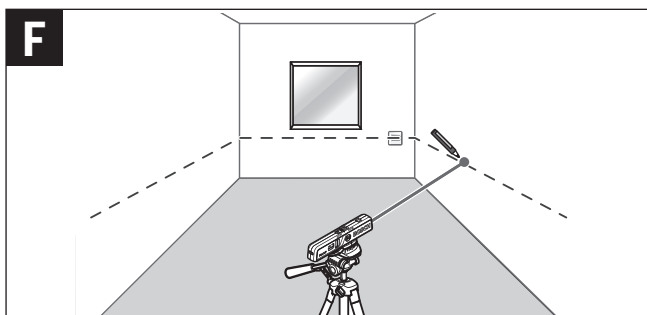
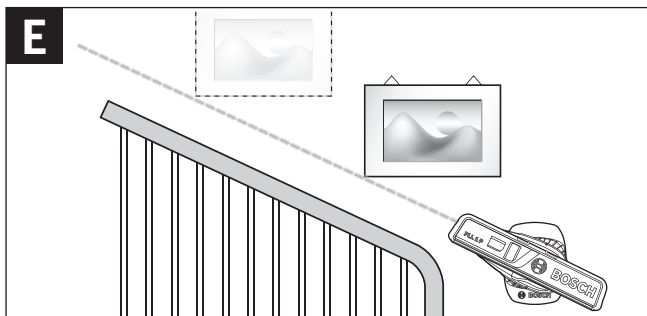
C



D



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Nicht mehr gebrauchsfähige Akkus/Batterien können direkt abgegeben werden bei:

Deutschland

Recyclingzentrum Elektrowerkzeuge
Osteroder Landstraße 3
37589 Kalefeld

Schweiz

Batrec AG
3752 Wimmis BE

Änderungen vorbehalten.

English

Safety Notes



Working safely with the measuring tool 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 measuring tool unrecognisable. **SAVE THESE INSTRUCTIONS.**

- ▶ **Caution** – The use of other operating or adjusting equipment or the application of other processing methods than those mentioned here, can lead to dangerous radiation exposure.
- ▶ The measuring tool is provided with a warning label (marked with number 7 in the representation of the measuring tool on the graphics page).



- ▶ If the text of the warning label is not in your national language, stick the provided warning label in your national language over it before operating for the first time.
- ▶ **Do not direct the laser beam at persons or animals and do not stare into the laser beam yourself.** This measuring tool produces laser class 2 laser radiation according to IEC 60825-1. This can lead to persons being blinded.
- ▶ **Do not use the laser viewing glasses as safety goggles.** The laser viewing glasses are used for improved visualisation of the laser beam, but they do not protect against laser radiation.

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- ▶ **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 colour perception.
- ▶ **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 allow children to use the laser measuring tool without supervision.** They could unintentionally blind other persons or themselves.
- ▶ **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.



Keep the measuring tool away from cardiac pacemakers. The magnets **8** generate 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 magnets **8** can lead to irreversible data loss.

Product Description and Specifications

Intended Use

The measuring tool is intended for determining and indicating exact horizontal and vertical lines. It is also suitable for checking horizontal partitions and surfaces, as well as for projecting heights.

The measuring tool is suitable exclusively for operation in enclosed working sites.

Product Features

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

- 1 On-/Off switch with operating-mode selector
- 2 Aluminium supporting surface
- 3 Spirit level for vertical alignment
- 4 Spirit level for horizontal alignment
- 5 Laser outlet opening for line operation
- 6 Supporting points

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- 7 Laser warning label
- 8 Magnets
- 9 Battery lid
- 10 Laser outlet opening for point operation
- 11 Laser viewing glasses*
- 12 Tripod*
- 13 Wall holder
- 14 Metal surface for line operation
- 15 Metal surface for point operation
- 16 Adjusting screw of wall holder
- 17 1/4" tripod mount of wall holder

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

Technical Data

Point and line laser		PLL 1 P
Article number		3 603 F63 300
Working range to approx.		
– Line Operation*		5 m
– Point Operation		20 m
Levelling Accuracy**		± 0.5 mm/m
Operating temperature		+ 5 °C... + 40 °C
Storage temperature		– 20 °C... + 70 °C
Relative air humidity, max.		90 %
Laser class		2
Laser type		635 – 650 nm, < 1 mW
Batteries		2 x 1.5 V LR03 (AAA)
Operating life time, approx.		15 h
Weight according to EPTA-Procedure 01/2003		0.1 kg
Dimensions (length x width x height)		154 x 24 x 30 mm

* when using the wall holder **13**; under unfavourable conditions such as intense sun irradiation, the working range is smaller

** when the measuring tool is positioned correctly (see "Positioning the Measuring Tool", page 19)

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Assembly

Inserting/Replacing the Battery (see figure A)

Alkali-manganese batteries are recommended for the measuring tool.

To open the battery lid **9**, slide it in the direction of the arrow away from the battery compartment. Insert the batteries provided. When inserting, pay attention to the correct polarity according to the representation on the inside of the battery compartment.

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

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

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 long time. 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.
- ▶ **Avoid heavy impact to or falling down of the measuring tool.** Damage to the measuring tool can impair its accuracy. After heavy impact or shock, compare the laser lines with a known horizontal or vertical reference line.

Switching On and Off

To **switch on** the measuring tool in line operation, push the On/Off switch **1** to the — position and in point operation to the ● position. Immediately after switching on, the measuring tool sends a laser beam out of outlet opening **5** (line operation) or **10** (point operation), depending on the selected operating mode.

- ▶ **Do not point the laser beam at persons or animals and do not look into the laser beam yourself, not even from a large distance.**

To **switch off** the measuring tool, push the On/Off switch **1** to the centre position.

- ▶ **Do not leave the switched on measuring tool unattended and switch the measuring tool off after use.** Other persons could be blinded by the laser beam.

When not using the measuring tool, switch it off in order to extend the battery life.

Measuring Functions

Note: The specified levelling accuracy applies for the alignment of the laser beam with reference to the spirit levels **3** and **4**.

Positioning the Measuring Tool (see figure B)

For precise alignment with the spirit levels, the position of the measuring tool is important.

The listed levelling accuracy is only achieved when the measuring tool is properly positioned:

- For horizontal alignment with spirit level **4**, the laser outlet opening for line operation **5** must be horizontal and the aluminium supporting surface **2** of the measuring tool must face downward.
- For vertical alignment with spirit level **3**, the laser outlet opening for line operation **5** must face upward and the aluminium supporting surface **2** of the measuring tool must face sideward.

Alignment with Laser Line (Line Operation)

Fasten the measuring tool to wall holder **13** (see "Fastening/Aligning with the Wall Holder", page 20), place it against a wall via the three supporting points **6** or fasten it to another magnetic surface with the magnets **8**.

Horizontal Alignment (see figures C–D): The laser outlet opening for line operation **5** must be horizontal and the aluminium supporting surface **2** of the measuring tool must face downward. Horizontally align the measuring tool with spirit level **4**. As an example, you can align picture frames or shelves alongside the horizontal laser line.

Note: Horizontal alignment with the laser line is only possible on the surface, against which the measuring tool was placed. Even when the measuring tool was aligned with the spirit level, the laser line **on a transverse wall** does not necessarily run horizontal, and is thus not suitable for levelling.

Vertical Alignment (see figure D): The laser outlet opening for line operation **5** must face upward and the aluminium supporting surface **2** of the measuring tool must face sideward. Vertically align the measuring tool with spirit level **3**. As an example, you can align top and base cabinets alongside the vertical laser line.

Alignment off of Reference Points (see figure E): Turn the measuring tool to any required angle in order to align the laser line alongside your reference points. As an example, this can be used to hang picture frames parallel to stairs or to the incline of a roof.

Projecting/Checking Heights via Laser Point (Point Operation) (see figure F)

Place the measuring tool on the wall holder and horizontally align it (see "Fastening/Aligning with the Wall Holder", page 20).

As an example, you can use the laser point to align socket outlets on different walls or hang up wardrobe hooks at the same height. For this, turn the upper part of the wall

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holder **13** with the measuring tool, and not the measuring tool on the wall holder. When turning, pay attention not to touch the measuring tool, otherwise its position could be changed. After turning the upper part of the wall holder **13**, check if the spirit level for horizontal alignment **4** is still centred. If this is not the case, correct the alignment of the wall holder **13** with adjusting screw **16** until spirit level **4** is centred again. Working with tripod (recommended): Align the laser beam to the requested height. Project or check the height at the target location.

Working without tripod: Determine the height difference between the laser beam and the height at the reference point. Project or check the measured height difference at the target location.

Checking Horizontal/Vertical Lines with the Spirit Levels (see figure G)

The measuring tool can also be used as a carpenter's spirit level for checking vertical and horizontal lines, for example to align a washing machine or a refrigerator. Position the measuring tool with the aluminium supporting surface **2** on the surface to be checked. When placing on horizontal surfaces, the aluminium supporting surface **2** must face downward, when placing against vertical surfaces, the laser outlet opening for line operation **5** must face upward.

Working Advice

- **For marking, always use only the centre of the laser point or the laser line.** The size of the laser point as well as the width of the laser line change with distance.

Fastening/Aligning with the Wall Holder

With the wall holder **13**, the measuring tool can be fastened as follows:

- **Line operation:** Place the wall holder via its recess on the backside onto a screw head slightly projecting out of a wall. Fasten the measuring tool with the magnets **8** to the metal surface for line operation **14** of the wall holder. Turn the upper part of the wall holder to align the measuring tool as required.
- **Point operation:** Place the wall holder via the tripod mount **17** onto the 1/4" male thread of the tripod and screw the locking screw of the tripod tight. Align the tripod roughly. When working without tripod, place the wall holder on a surface that is as horizontal as possible.

Position the measuring tool with the aluminium supporting surface **2** facing down on the wall holder. Attach it via the left magnet **8** (viewed from the front side of the measuring tool) to the metal surface for point operation **15** of the wall holder.

Horizontally align the upper part of the wall holder with adjusting screw **16** of the wall holder and spirit level **4** of the measuring tool. Turn the upper part of the wall holder by 90° and repeat the alignment.

Laser Viewing Glasses (Accessory)

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 visualisation 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 colour perception.

Maintenance and Service

Maintenance and Cleaning

- ▶ **Check the measuring tool each time before use.** In case of visible damage or loose components inside the measuring tool, safe function can no longer be ensured.

Keep the measuring tool clean and dry at all times to ensure proper and safe working. 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 Application Service

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

Bosch's application service team will gladly answer questions concerning our products and their accessories.

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Disposal

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

Do not dispose of measuring tools and batteries/rechargeable batteries into household waste!

Only for EC countries:



According to the European Guideline 2012/19/EU, measuring tools that are no longer usable, and according to the European Guideline 2006/66/EC, defective or used battery packs/batteries, must be collected separately and disposed of in an environmentally correct manner.