



Robert Bosch GmbH

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1609 92A OKH (2014.04) I/206 XXX



GLL 2-15 Professional



- de Originalbetriebsanleitungen Original instructions
- Notice originale
- Manual original
- Manual original Istruzioni originali
- nl Oorspronkelijke gebruiksaanwijzing
- da Original brugsanvisning
- sv Bruksanvisning i original
- Original driftsinstruks
- fi Alkuperäiset ohjeet el Πρωτότυπο οδηγιών χρήσης
- tr Orijinal işletme talimatı
- pl Instrukcja oryginalna
 cs Původní návod k používání
- sk Pôvodný návod na použitie

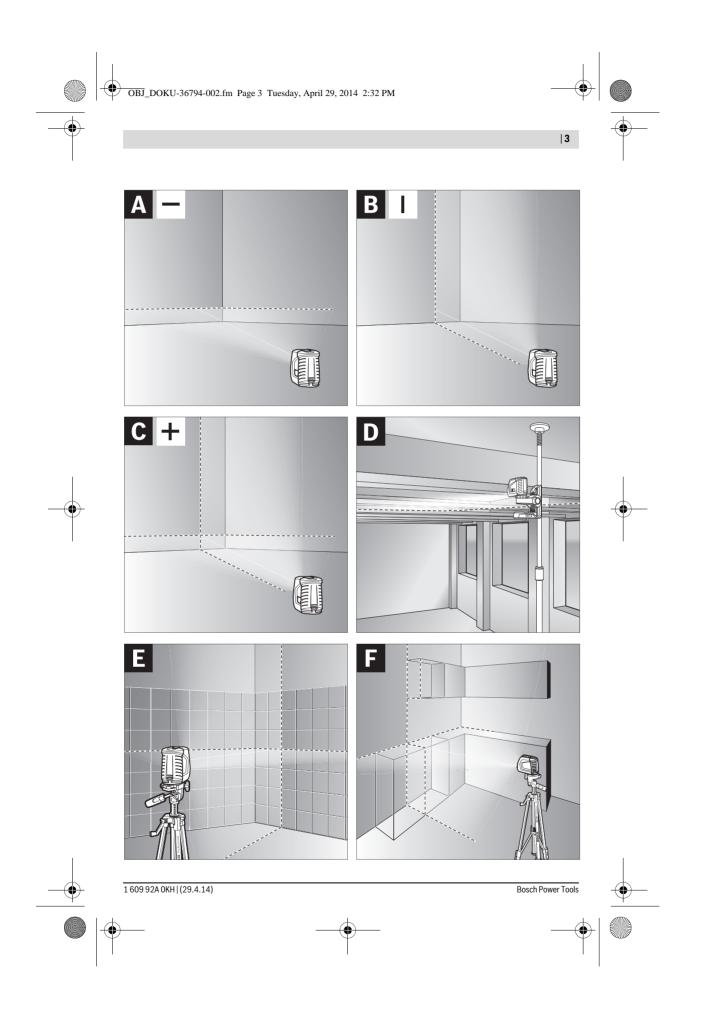
- hu Eredeti használati utasítás
- **ru** Оригинальное руководство по эксплуатации
- **uk** Оригінальна інструкція з експлуатації
- **kk** Пайдалану нұсқаулығының түпнұсқасы
- ro Instrucțiuni originale
- **bg** Оригинална инструкция **mk** Оригинално упатство за работа
- sr Originalno uputstvo za rad
- Izvirna navodila
- Originalne upute za rad
- et Algupärane kasutusjuhend
- Instrukcijas oriģinālvalodā It Originali instrukcija

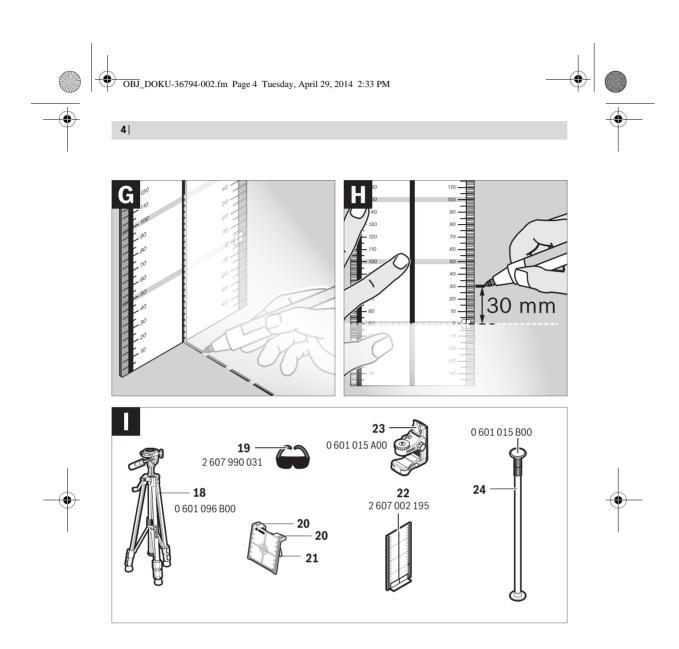
- cn 正本使用说明书
- tw 原始使用說明書
- ko 사용 설명서 원본
- th หนังสือคู่มือการใช้งานฉบับต้นแบบ
- Petunjuk-Petunjuk untuk Penggunaan Orisinal
- vi Bản gốc hướng dẫn sử dụng
- ar تعليمات التشغيل الأصلية
- د فتزچه راهنمای اصلی

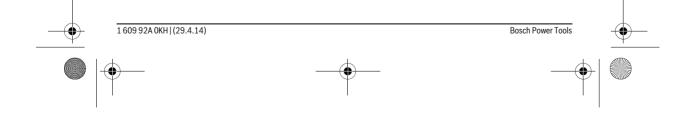


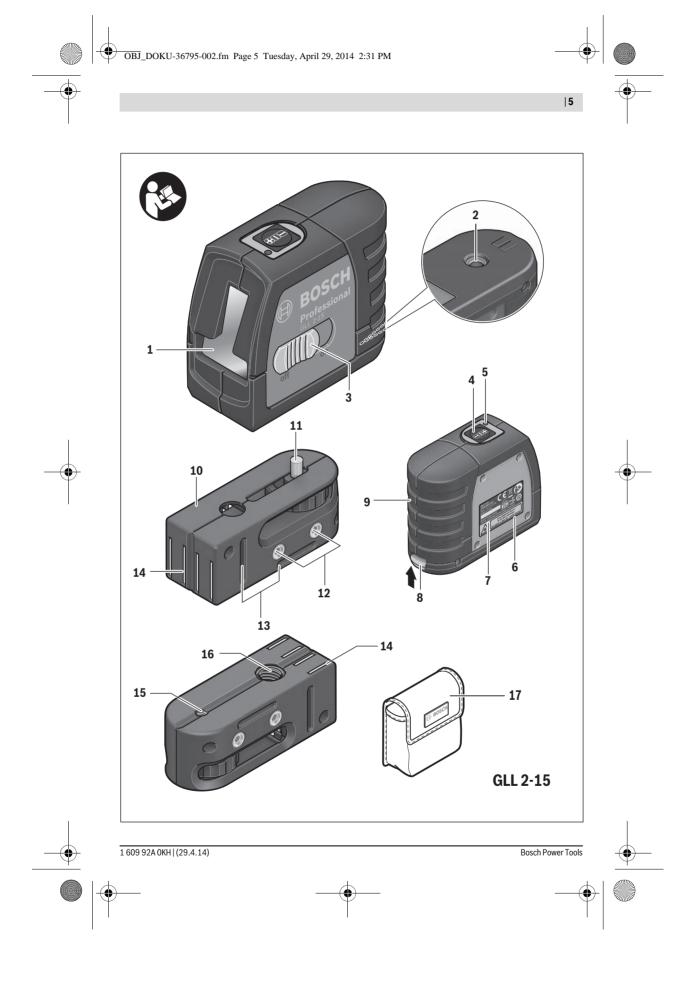




















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Entsorgung

Messwerkzeuge, Zubehör und Verpackungen sollen einer umweltgerechten Wiederverwertung zugeführt werden.

Werfen Sie Messwerkzeuge und Akkus/Batterien nicht in den Hausmüll



Nur für EU-Länder: Gemäß der europäischen Richtlinie 2012/19/EU müssen nicht mehr gebrauchsfähige Messwerkzeuge und gemäß der europäischen Richtlinie 2006/66/EG müssen defekte oder verbrauchte Akkus/Batterien getrennt gesammelt und einer umweltgerechten Wiederverwendung zugeführt werden.

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



All instructions must be read and observed in order to work safely with the measuring tool. Never make warning signs on the measuring tool unrecognisable. SAVE THESE INSTRUCTIONS FOR FUTURE REFER-**ENCE AND INCLUDE THEM WITH THE MEAS-**URING TOOL WHEN GIVING IT TO A THIRD PARTY.

- ► 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 delivered with a warning label in English language (marked with the number 6 in the representation of the measuring tool on the graphic page).



Laser Radiation Class 2 IEC 60825-1:2007-03 <1mW, 635 nm

▶ 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 direct or reflected laser beam yourself, not even from a distance. You could blind somebody, cause accidents or damage your eyes.

- ▶ Do not make any modifications to the laser equipment.
- ▶ If laser radiation strikes your eve, you must deliberately close your eyes and immediately turn your head away from the beam.
- ▶ 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
- ▶ 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.



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Keep the measuring tool, the laser target plate 21 and the holder 10 away from cardiac pacemakers. The magnets inside the measuring tool, the laser target plate and the holder generate a field that can impair the function of cardiac pacemakers.

► Keep the measuring tool, the laser target plate 21 and the holder 10 away from magnetic data carriers and magnetically sensitive devices. The effect of the magnets inside the measuring tool, the laser target plate and the holder can lead to irreversible data loss.

Product Description and Specifications

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 determining and checking horizontal and vertical lines.

Technical Data

Cross-line Laser	GLL 2-15
Article number	3 601 K63 7
Working range, min. 1)	15 m
Levelling Accuracy	± 0.3 mm/m
Self-levelling range, typically	±4°
Levelling duration, typically	<4s
Operating temperature	-10 °C +50 °C
Storage temperature	-20 °C +70 °C
Relative air humidity, max.	90 %
Laser class	2
Laser type	635 nm, < 1 mW
C ₆	1
Tripod mount	
 Cross-line Laser 	1/4"
 Holder 	1/4"; 5/8"
Batteries	3 x 1.5 V LR06 (AA)
Operating time, approx.	15 h
Automatic switch-off after approx.	120 min
Weight according to	
EPTA-Procedure 01/2003	0.3 kg
Dimensions	80 x 42 x 96 mm
Degree of protection	IP 5X (dust protected)

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

The measuring tool can be clearly identified with the serial number 7 on the type plate.

Product Features

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

- 1 Exit opening for laser beam
- 2 Tripod mount 1/4"
- 3 On/Off switch
- 4 Operating mode button
- 5 Automatic levelling indicator
- 6 Laser warning label
- 7 Serial number
- 8 Latch of battery lid
- Battery lid
- 10 Holder
- 11 Locking screw for holder
- 12 Screw holes of holder
- **13** Opening for strap attachment
- 14 Magnets
- 15 1/4" tripod mount on holder
- 16 5/8" tripod mount on holder
- 17 Protective pouch
- 18 Tripod*
- 19 Laser viewing glasses*
- 20 Magnets laser target plate
- 21 Laser target plate*
- 22 Measuring plate with stand
- 23 Universal holder BM 1*
- 24 Telescopic rod*
- * The accessories illustrated or described are not included as standard delivery.

Assembly

Inserting/Replacing the Batteries

Alkali-manganese batteries are recommended for the measuring tool.

To open the battery lid 9, press the latch of the battery lid 8 in the direction of the arrow and remove the battery lid. Insert the supplied batteries. When inserting, pay attention to the correct polarity according to the representation on the inside of the battery compartment.

When the batteries become weak, the laser beams flash rapidly for about 5 s (while the measuring tool is switched on).

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 self-discharge.



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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 a 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 or falling of the measuring tool. After heavy exterior impact on the measuring tool, an accuracy check should always be carried out before continuing to work (see "Levelling Accuracy").
- ► Switch the measuring tool off during transport. When switching off, the levelling unit, which can be damaged in case of intense movement, is locked.

Switching On and Off

To **switch on** the measuring tool, push the On/Off switch **3** to the "On" position. Immediately after switching on, the measuring tool sends two laser beams out of the exit opening 1.

▶ 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, slide the On/Off switch 3 to the "Off" position. When switching off, the levelling unit is locked.

Deactivating the Automatic Shut-off

The measuring tool switches off automatically after an operating duration of 120 minutes. To deactivate the automatic switch-off, keep the operating mode button 4 pressed for 3 s while switching on the measuring tool. When the automatic switch-off is deactivated, the laser lines briefly flash after 3 s.

▶ 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.

To activate the automatic shut-off, switch the measuring tool off and then on again (without the operating mode button 4

Operation Modes (see figures A - C)

The measuring tool has four operating modes between which you can switch at any time:

- Horizontal operation "-" (with automatic levelling): Produces a horizontal laser line,
- Vertical operation "I" (with automatic levelling): Produces a vertical laser line,
- Cross-line operation "+" (with automatic levelling): Produces a horizontal and vertical laser line,
- Cross-line operation "+" (without automatic levelling): Produces a horizontal and vertical laser line.

Once the measuring tool has been switched on, it is in crossline operation with automatic levelling. To change the operating mode, press the operating mode button 4.

If the automatic levelling indicator 5 lights up, the measuring tool is in the operating mode without automatic levelling. In this operating mode the respective laser lines are permanently displayed, regardless of the inclination of the measuring

Working with Automatic Levelling

Position the measuring tool on a level and firm support, attach it to the holder 10 or to the tripod 18.

After switching on, the levelling function automatically compensates irregularities within the self-levelling range of $\pm 4^{\circ}$. The levelling is finished as soon as the laser beams do not move any more.

If the automatic levelling function is not possible, e.g. because the surface on which the measuring tool stands deviates by more than 4° from the horizontal plane, the laser beams flash slowly. In this case, bring the measuring tool to the level position and wait for the self-levelling to take place. As soon as the measuring tool is within the self-levelling range of $\pm 4^{\circ}$, the laser lines light up continuously again.

In case of ground vibrations or position changes during operation, the measuring tool is automatically levelled in again. To avoid errors, check the position of the horizontal and vertical laser line with regard to the reference points upon re-levelling.

Levelling Accuracy

Influences on Accuracy

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

As thermal fluctuation is largest close to the ground, the measuring tool, if possible, should be mounted on a commercially available tripod and placed in the centre of the working

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

First, check both the height as well as the levelling accuracy of the horizontal laser line, then the levelling accuracy of the vertical laser line.

Should the measuring tool exceed the maximum deviation during one of the tests, please have it repaired by a Bosch after-sales service.

Checking the Height Accuracy of the Horizontal Line

For this check, a free measuring distance of 5 m on a firm surface between two walls A and B is required.

Mount the measuring tool onto the holder or a tripod, or place it on a firm and level surface close to wall A. Switch the measuring tool on.



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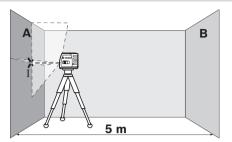




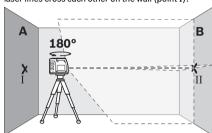




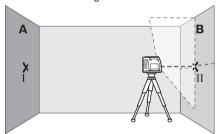
14 | English



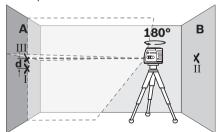
- Direct the laser against the close wall A and allow the measuring tool to level in. Mark the centre of the point where the laser lines cross each other on the wall (point I).



- Turn the measuring tool by 180°, allow it to level in and mark the cross point of the laser lines on the opposite wall B (point II).
- Without turning the measuring tool, position it close to wall B. Switch the measuring tool on and allow it to level in.



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



- Without changing the height, turn around the measuring tool by 180°. Direct it against the wall A in such a manner that the vertical laser line runs through the already marked point I. Allow the measuring tool to level in and mark the cross point of the laser lines on the wall A (point III).

The difference **d** of both marked points I and III on wall A indicates the actual height deviation of the measuring tool.

The maximum permitted deviation d_{max} is calculated as

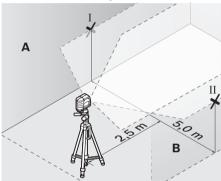
d_{max} = double distance of the walls x 0.3 mm/m Example: With a 5 metre distance between the walls, the maximum deviation must not exceed

 d_{max} = 2 x 5 m x 0.3 mm/m = 3 mm. Thus, the marks must not be more than 3 mm apart.

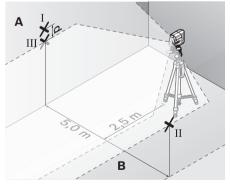
Checking the Levelling Accuracy of the Horizontal Line

For the check, a free surface of approx. 5 x 5 metres is required.

- Mount the measuring tool between both walls A and B onto the holder or a tripod, or place it on a firm and level surface. Allow the measuring tool to level in.



At a distance of 2.5 metres from the measuring tool, mark the centre of the laser line (point I on wall A and point II on wall B) on both walls.



- Set up the measuring tool 5 metres away turned by 180° and allow it to level in.
- Align the height of the measuring tool (using a tripod or by underlaying, if required) in such a manner that the centre of the laser line is projected exactly against the previously marked point II on wall B.























- Mark the centre of the laser line as point III (vertically above or below point I) on the wall A.
- The difference **d** of both marked points I and III on wall A indicates the actual deviation of the measuring tool from the level plane.

The maximum permitted deviation d_{max} is calculated as

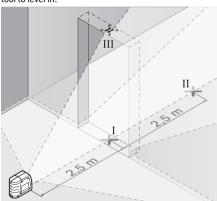
d_{max} = double distance of the walls x 0.3 mm/m Example: With a 5 metre distance between the walls, the maximum deviation must not exceed

 d_{max} = 2 x 5 m x 0.3 mm/m = 3 mm. Thus, the marks must not be more than 3 mm apart.

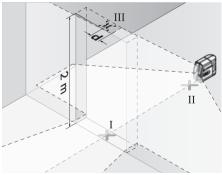
Checking the Levelling Accuracy of the Vertical Line

For this check, a door opening is required with at least 2.5 m of space (on a firm surface) to each side of the door.

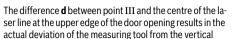
- Position the measuring tool on a firm, level surface (not on a tripod) 2.5 m away from the door opening. Direct the laser beams at the door opening and allow the measuring tool to level in.



Mark the centre of the vertical laser line at the floor of the door opening (point I), at a distance of 5 m beyond the other side of the door opening (point II) and at the upper edge of the door opening (point III).



Position the measuring tool on the other side of the door opening directly behind point II. Allow the measuring tool to level in and align the vertical laser line in such a manner that its centre runs exactly through points I and II.



Measure the height of the door opening.

The maximum permitted deviation d_{max} is calculated as

d_{max} = double height of the door opening x 0.3 mm/m Example: With a door opening height of 2 metres, the maximum permitted deviation is $d_{max} = 2 \times 2 \times 0.3 \text{ mm/m}$ = 1.2 mm. Thus, the marks must not be more than 1.2 mm

Working Advice

plane.

▶ Always use the centre of the laser line for marking. The width of the laser line changes with the distance.

Attaching with the Holder

To fasten the measuring tool on the holder 10, screw the locking screw 11 of the holder into the 1/4" tripod mount 2 on the measuring tool and tighten. To rotate the measuring tool on the holder, slightly loosen the screw 11.

With the holder 10, the measuring tool can be attached as follows:

- Mount the holder 10 to the tripod 18 or a commercially available camera tripod via the 1/4" tripod mount 15. For fastening to a commercially available construction tripod, use the 5/8" tripod mount 16.
- The holder 10 can be fastened to steel parts via the magnets 14.
- The holder 10 can be fastened to drywalls or wood walls with screws. For this, insert screws with a minimum length of 50 mm into the screw holes 12 of the holder.
- The holder 10 can also be fastened to pipes or similar beams using a commercially available strap by threading it through the opening 13 for strap attachment.

Working with the Tripod (Accessory)

A tripod offers a stable, height-adjustable measuring support. Place the measuring tool via the tripod mount 2 onto the 1/4" male thread of the tripod and screw the locking screw of the tripod tight.

Working with the Measuring Plate (Accessory) (see figures G-H)

With the measuring plate 22, it is possible to project the laser mark onto the floor or the laser height onto a wall.

With the zero field and the scale, the offset or drop to the required height can be measured and projected at another location. This eliminates the necessity of precisely adjusting the measuring tool to the height to be projected.

The measuring plate 22 has a reflective coating that enhances the visibility of the laser beam at greater distances or in intense sunlight. The brightness intensification can be seen only when viewing, parallel to the laser beam, onto the measuring plate.



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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.

Work Examples (see figures D - F)

Applicational examples for the measuring tool can be found on the graphics pages.

Maintenance and Service

Maintenance and Cleaning

Store and transport the measuring tool only in the supplied protective pouch.

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.

Regularly clean the surfaces at the exit opening of the laser in particular, and pay attention to any fluff or fibres.

In case of repairs, send in the measuring tool packed in its protective pouch 17.

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.

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

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Robert Bosch Vietnam Co. Ltd

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.













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