BOSCH

# LR 30 Professional

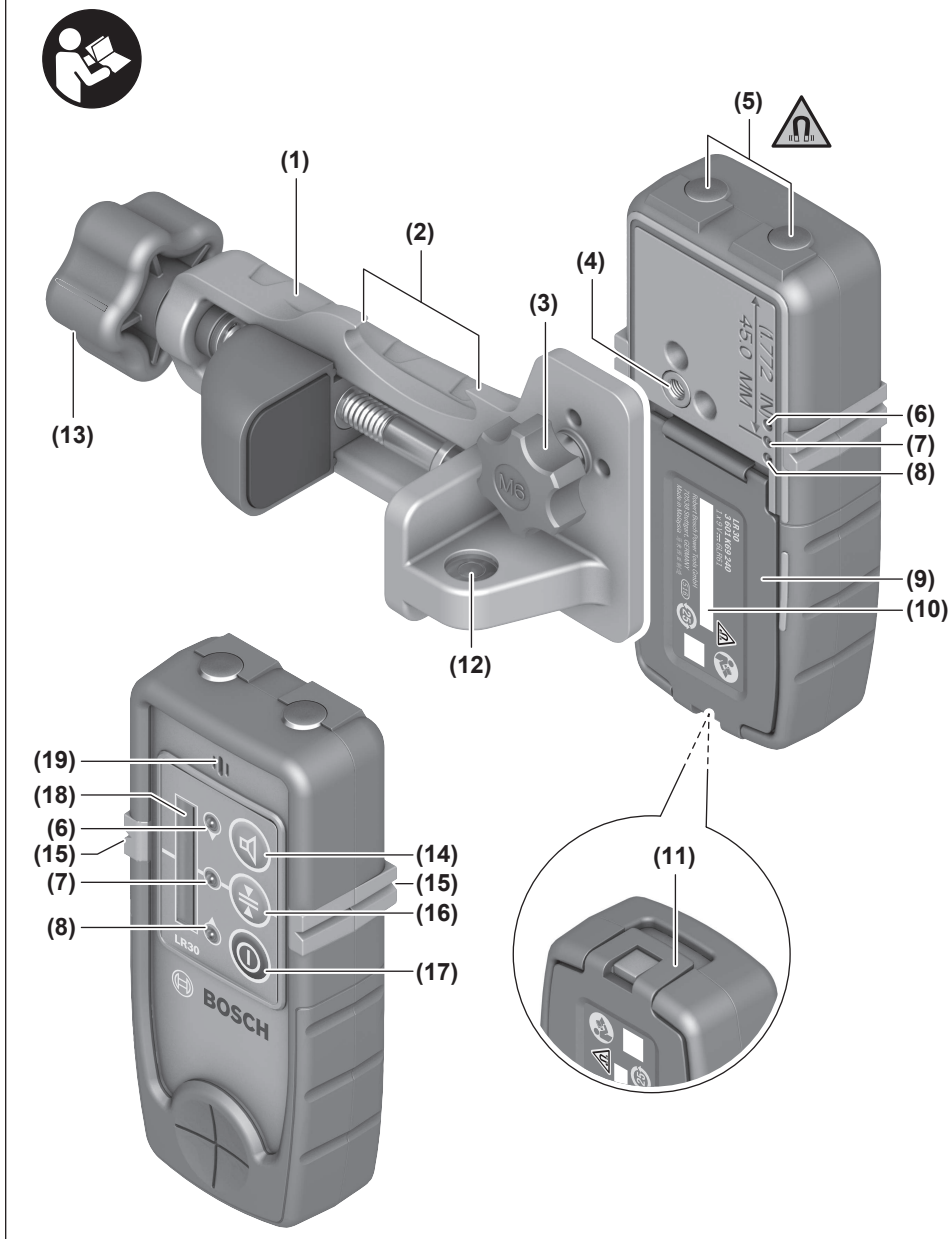

**Robert Bosch Power Tools GmbH**
70538 Stuttgart
GERMANY

**www.bosch-pt.com**

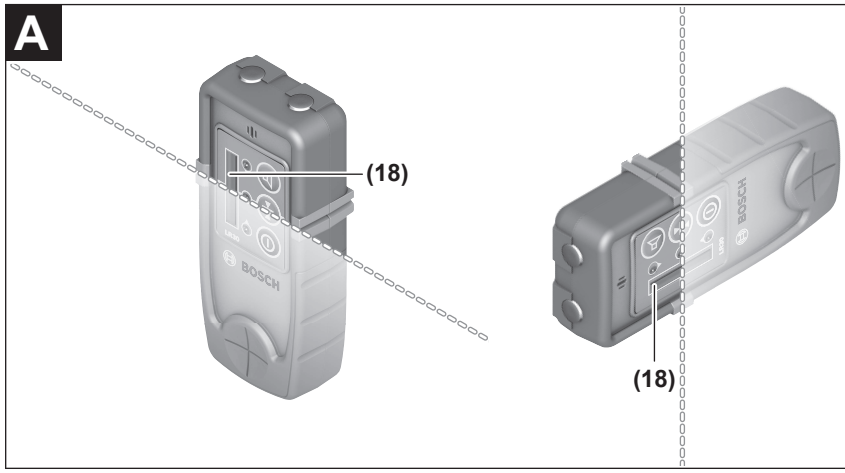
**1 609 92A 52L** (2019.11) T / 26

**1 609 92A 52L**

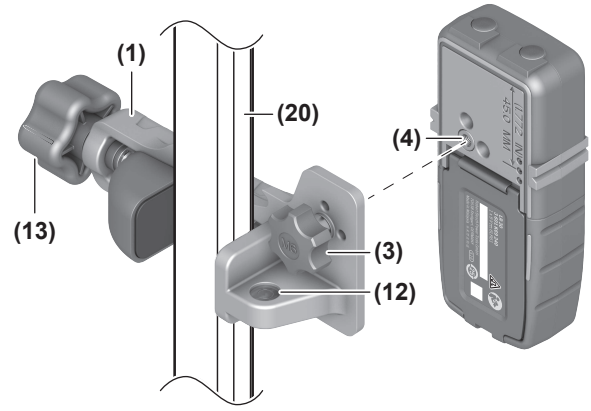
**en** Original instructions
**zh** 正本使用说明书
**zh** 原始使用說明書
**ko** 사용 설명서 원본
**th** หนังสือคู่มือการใช้งานฉบับ ต้นแบบ
**id** Petunjuk-Petunjuk untuk Penggunaan Orisinal
**vi** Bản gốc hướng dẫn sử dụng


(1)
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)
(11)
(12)
(13)
(14)
(15)
(16)
(17)
(18)
(19)
M5
LR30
BOSCH

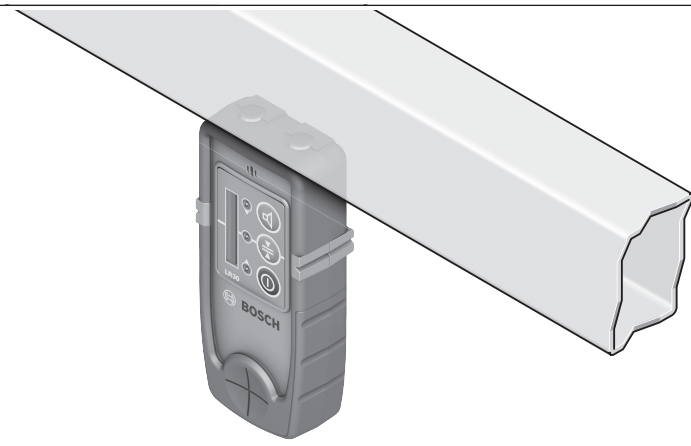
A




B




C



# English

## Safety instructions

**All instructions must be read and observed. The safeguards integrated into the measuring tool may be compromised if the measuring tool is not used in accordance with these instructions. STORE THESE INSTRUCTIONS IN A SAFE PLACE.**

- ▶ **Have the measuring tool serviced only by a qualified specialist using only original replacement parts.** This will ensure that the safety of the measuring tool is maintained.
- ▶ **Do not use the measuring tool in explosive atmospheres which contain flammable liquids, gases or dust.** Sparks may be produced inside the measuring tool, which can ignite dust or fumes.
- ▶ **When operating the measuring tool, loud signal tones may sound under certain circumstances. For this reason, keep the measuring tool away from your ears and from other persons.** The loud sound can damage hearing.

**Keep the magnet away from implants and other medical devices, e.g. pacemakers or insulin pumps.** The magnet generates a field that can impair the function of implants and medical devices.

- ▶ **Keep the measuring tool away from magnetic storage media and magnetically-sensitive devices.** The effect of the magnets can lead to irreversible data loss.

## Product Description and Specifications

Please observe the illustrations at the beginning of this operating manual.

### Intended Use

The laser receiver is intended to quickly find rotating laser beams of the wavelength specified in the technical data.

The laser receiver is suitable for indoor and outdoor use.

### Product Features

The numbering of the product features refers to the illustration of the laser receiver on the graphics page.

**(1)** Holder
**(2)** Centre line reference on the holder
**(3)** Fastening screw of the holder
**(4)** Mount for holder
**(5)** Magnets
**(6)** "Laser beam below centre line" LED direction indicator
**(7)** LED for centre line
**(8)** "Laser beam above centre line" LED direction indicator
**(9)** Battery compartment cover
**(10)** Serial number
**(11)** Battery compartment cover locking mechanism
**(12)** Spirit level for holder
**(13)** Rotary knob of holder
**(14)** Audio signal button
**(15)** Centre mark
**(16)** Button for adjusting the reception accuracy
**(17)** On/off button
**(18)** Laser beam reception area
**(19)** Speaker
**(20)** Measuring rod[A)]

A) **Accessories shown or described are not included with the product as standard. You can find the complete selection of accessories in our accessories range.**

### Technical Data

| Laser receiver | LR 30 |
|---|---|
| Article number | **3 601 K69 2..** |
| Receivable wavelength | 635–650 nm |
| Working range[A)] with rotary laser | 1–150 m |
| Reception angle | 45° |
| Receivable rotation speed | 150/300/600 $min^{-1}$ |
| Reception accuracy[B)C)] | |
| – "Exact" | ±1.5 mm |
| – "Mid-range" | ±3 mm |
| Operating temperature | –10 °C to +50 °C |
| Storage temperature | –20 °C to +70 °C |
| Max. altitude | 2000 m |
| Relative air humidity max. | 90 % |
| Pollution degree according to IEC 61010-1 | 2[D)] |
| Battery | 1 × 9 V 6LR61 |
| Approx. operating time | 30 h |
| Weight according to EPTA-Procedure 01:2014 | 0.34 kg |

| Laser receiver | LR 30 |
|---|---|
| Dimensions (length × width × height) | 131 × 57 × 29 mm |

A) The working range may be reduced by unfavourable environmental conditions (e.g. direct sunlight).

B) Dependent on the distance between the laser receiver and the rotary laser and on the laser class and laser type of the rotary laser

C) The reception accuracy may be reduced by unfavourable environmental conditions (e.g. direct sunlight).

D) Only non-conductive deposits occur, whereby occasional temporary conductivity caused by condensation is expected.

For clear identification of your laser receiver, see the serial number **(10)** on the type plate.

# Fitting

## Inserting/changing the battery

Alkali-manganese batteries are recommended for the laser receiver.

Pull the locking mechanism **(11)** of the battery compartment cover outwards and lift up the battery compartment cover **(9)**. Insert the battery.

Ensure that the polarity is correct.

If the battery becomes weak, an audio signal will sound and all LEDs will flash. The laser receiver then automatically switches itself off.

▶ **Take the battery out of the laser receiver when you are not using it for a prolonged period of time.** When it is stored in the laser receiver for longer periods, the battery can corrode and discharge itself.

# Operation

## Starting operation

▶ **Protect the laser receiver against moisture and direct sunlight.**

▶ **Do not subject the laser receiver 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 laser receiver to adjust to the ambient temperature before putting it into operation. In case of extreme temperatures or variations in temperature, the accuracy of the laser receiver can be impaired.

### Setting up the laser receiver (see figure A)

Place the laser receiver at least **1** m away from the rotary laser. For rotary lasers with multiple operating modes, select the horizontal or vertical operation with the highest rotational speed.

Position the laser receiver so that the laser beam can reach the reception area **(18)**. Align it so that the laser beam runs straight through the reception area (as shown in the figure).

### Switching On and Off

▶ **A loud audio signal sounds when switching on the laser receiver. Therefore, keep the laser receiver away from your ear or other persons when switching it on.** The loud sound can damage hearing.

To **switch on** the laser receiver, press the on/off button **(17)**. All LEDs light up briefly and an audio signal sounds.

Once the laser receiver has been switched on, the audio signal is switched on and the measuring accuracy is set to "exact".

To **switch off** the laser receiver, press the on/off button **(17)** again. Before the tool switches off, all the LEDs will light up briefly.

If no button on the laser receiver is pressed for approx. **6** min and no laser beam reaches the reception area **(18)** for **6** min, the laser receiver will automatically switch itself off to preserve battery life. Switch-off is indicated by all the LEDs lighting up briefly.

### Selecting the setting of the centre line indicator

You can use the button for adjusting the reception accuracy **(16)** to specify the accuracy with which the position of the laser beam is indicated as "centred" on the reception area:

– **Reception accuracy "exact":** An audio signal sounds and the centre line LED **(7)** flashes for confirmation.

– **Reception accuracy "mid-range":** Two audio signals sound and the LED direction indicators "Laser beam above centre line" **(8)** and "Laser beam below centre line" **(6)** flash for confirmation.

### Direction Indicators

The position of the laser beam in the reception area **(18)** is indicated as follows:

– By the direction LEDs "Laser beam above centre line" **(8)**, "Laser beam below centre line" **(6)** or centre line indicator **(7)** on the front and back of the laser receiver,

– optionally by the audio signal.

**Laser receiver too low:** If the laser beam hits the upper half of the reception area **(18)**, the "Laser beam above centre line" LED direction indicators **(8)** light up.
If the audio signal is switched on, it will be emitted in a slow rhythm.
Move the laser receiver upwards in the direction of the arrow.

**Laser receiver too high:** If the laser beam hits the lower half of the reception area **(18)**, the "Laser beam below centre line" LED direction indicators **(6)** light up.
If the audio signal is switched on, it will be emitted as a fast beeping sound.
Move the laser receiver downwards in the direction of the arrow.

**Laser receiver centred:** If the laser beam hits the reception area **(18)** at the height of the centre mark **(15)**, then the centre line LEDs **(7)** light up.
If the audio signal is switched on, a continuous tone sounds.

### Laser Beam Indicator Audio Signal

The position of the laser beam on the reception area **(18)** can also be indicated by an audio signal.

To switch the audio signal on or off, press the audio signal button **(14)**.

Independent of the audio signal setting, a short audio signal sounds each time a button is pressed on the laser receiver.

### Practical Advice

**Marking**

You can mark the height of the laser beam at the centre mark **(15)** on the left and right of the laser receiver when the beam hits the centre of the reception area **(18)**.

When marking, take care to align the laser receiver so that it is exactly vertical (with a horizontal laser beam) or horizontal (with a vertical laser beam), as otherwise the marks are offset with respect to the laser beam.

**Attaching using the holder (see figure B)**

You can use the holder **(1)** to attach the laser receiver to a measuring rod **(20)** (accessory) as well as to other auxiliary tools with a width of up to **65** mm.

Screw the holder **(1)** to the mount **(4)** on the rear side of the laser receiver with the fastening screw **(3)**.

Loosen the rotary knob **(13)** on the holder, slide the holder onto the measuring rod **(20)** and retighten the rotary knob **(13)**.

You can use a spirit level **(12)** to ensure that the holder **(1)** is horizontally aligned along with the laser receiver. If a laser receiver is mounted at an angle, it will give incorrect measurements.

The centre line reference **(2)** on the holder is situated at the same height as the centre marking **(15)** and can be used for marking the laser beam.

**Attaching using a magnet (see figure C)**

If an attachment is not required to be especially secure, the laser receiver can be attached to steel parts using the magnets **(5)**.

## Maintenance and Service

### Maintenance and Cleaning

Always keep the laser receiver clean.

Do not immerse the laser receiver in water or other liquids.

Wipe off any dirt using a damp, soft cloth. Do not use any detergents or solvents.

### 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. You can find explosion drawings and information on spare parts at: **www.bosch-pt.com**

The Bosch product use advice team will be happy to help you with any questions about our products and their accessories.

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

**Cambodia**
Robert Bosch (Cambodia) Co., Ltd
Unit 8BC, GT Tower, 08th Floor, Street 169,
Czechoslovakia Blvd, Sangkat Veal Vong
Khan 7 Makara, Phnom Penh
VAT TIN: 100 169 511
Tel.: +855 23 900 685
Tel.: +855 23 900 660
www.bosch.com.kh

**People's Republic of China**
**China Mainland**
Bosch Power Tool (China) Co. Ltd.
Bosch Service Center
567, Bin Kang Road
Bin Kang District
Hangzhou, Zhejiang Province
China 310052
Tel.: (0571) 8887 5566 / 5588
Fax: (0571) 8887 6688 x 5566# / 5588#
E-Mail: bsc.hz@cn.bosch.com
www.bosch-pt.com.cn

**HK and Macau Special Administrative Regions**
Robert Bosch Co. Ltd.
Flat B, 2/F, Yeung Yiu Chung No. 6 Industrial Building,
19 Cheung Shun Street
Cheung Sha Wan
Kowloon, Hong Kong
Customer Service Hotline: +852 2101 0235
Fax: +852 2590 9762
E-Mail: info@hk.bosch.com
www.bosch-pt.com.hk

**India**
Bosch Service Center
69, Habibullah Road, (Next to PSBB School), T. Nagar
Chennai–600077
Phone: (044) 64561816

Bosch Service Center
18, Community Center
Phase 1, Mayapuri
New Delhi–110064
Phone: (011) 43166190

**Indonesia**
PT Robert Bosch
Palma Tower 10th Floor
Jalan RA Kartini II-S Kaveling 6
Pondok Pinang, Kebayoran Lama
Jakarta Selatan 12310
Tel.: (21) 3005-5800
www.bosch-pt.co.id

**Malaysia**
Robert Bosch Sdn. Bhd.(220975-V) PT/SMY
No. 8A, Jalan 13/6
46200 Petaling Jaya
Selangor
Tel.: (03) 79663194
Toll-Free: 1800 880188
Fax: (03) 79583838

E-Mail: kiathoe.chong@my.bosch.com
www.bosch-pt.com.my

**Pakistan**
Robert Bosch Middle East FZE – Pakistan Liaison Office
2nd Floor Plaza # 10, CCA Block, DHA Phase 5
Lahore, 54810
Phone: +92(303)4444311
Email: Faisal.Khan@bosch.com

**Philippines**
Robert Bosch, Inc.
28th Floor Fort Legend Towers,
3rd Avenue corner 31st Street,
Fort Bonifacio, Global City,
1634 Taguig City
Tel.: (632) 8703871
Fax: (632) 8703870
www.bosch-pt.com.ph

**Singapore**
Powerwell Service Centre Ptd Ltd
Bosch Authorised Service Centre (Power Tools)
4012 Ang Mo Kio Ave 10, #01-02 TECHplace
Singapore 569628
Tel.: 6452 1770
Fax: 6452 1760
E-Mail: ask@powerwellsc.com
www.powerwellsc.com
www.bosch-pt.com.sg

**Thailand**
Robert Bosch Ltd.
FYI Center Tower 1, 5th Floor,
2525 Rama IV Road, Klongtoei,
Bangkok 10110
Tel.: 02 0128888
Fax: 02 0645802
www.bosch.co.th
Bosch Service – Training Centre
La Salle Tower Ground Floor Unit No.2
10/11 La Salle Moo 16
Srinakharin Road
Bangkaew, Bang Plee
Samutprakarn 10540
Tel.: 02 7587555
Fax: 02 7587525

**Vietnam**
Branch of Bosch Vietnam Co., Ltd in HCMC
14th floor, Deutsches Haus, 33 Le Duan
Ben Nghe Ward, District 1, Ho Chi Minh City
Tel.: (028) 6258 3690
Fax: (028) 6258 3692 - 6258 3694
Hotline: (028) 6250 8555
Email: tuvankhachhang-pt@vn.bosch.com
www.bosch-pt.com.vn

**Bahrain**
EA Juffali and Brothers for Technical Equipment Company.
Kingdom of Bahrain, Al Aker - Block 0624 - Road 2403 -
Building 0055D
Phone: +97317704537
Fax: +973177045257
Email: h.berjas@eajb.com.sa

**Egypt**
RBEG-LLC
22 Kamal Eldin Hussein
Sheraton Heliopolis
11799 Cairo
E-mail: boschegypt.powertools@eg.bosch.com

**Iran**
Robert Bosch Iran
3rd Floor, No 3, Maadiran Building
Aftab St., Khodami St., Vanak Sq.
Tehran 1994834571
Phone: +9821- 86092057

**Iraq**
Sahba Technology Group
Al Muthana airport road
Baghdad
Phone Bagdad: +964 (0) 7 901 930366
Phone Dubai: +971 (0) 4 422 1898
Email: duraid@sahbatechnology.com

**Jordan**
Roots Arabia – Jordan
Al-Hurriyah Street, Al-Muqabalein
Amman 11623, Jordan
P.O. Box: 110068
Tel. : +962 6 4398990
E-mail: bosch@rootsjordan.com

**Kuwait**
Shuwaikh Industrial Area, Block 1, Plot 16, Street 3rd
P.O. Box 164 – Safat 13002
Phone: +965 - 2496 88 88
Fax: +965 - 2481 08 79
E-mail: josephkr@aaalmutawa.com

**Lebanon**
Tehini Hana & Co. S.A.R.L.
P.O. Box 90-449
Jdeideh 1202 2040
Dora-Beirut
Phone: +9611255211
Email: service-pt@tehini-hana.com

**Libya**
El Naser for Workshop Tools
Swanee Road, Alfalah Area
Tripoli
Phone: +218 21 4811184

**Oman**
Malatan Trading & Contracting LLC
P.O. Box 131, Ruwi, Muscat
Postal Code: 112, Sultanate of Oman
Phone: +968 2479 4035/4089/4901
Mob: +968-91315465
Fax: +968 2479 4058
E-Mail: sudhirkumar@malatan.net

**Qatar**
International Construction Solutions W L L
P. O. Box 51, Doha
Phone: +974 40065458
Fax: +974 4453 8585
Email: csd@icsdoha.com

**Saudi Arabia**
Juffali Technical Equipment Co. (JTECO)
P.O.Box: 1049 – Jeddah 21431 – KSA
Jeddah: 00966 (0) 12 692 0770 – Ext 433
Riyadh: 00966 (0) 11 409 3976 – Ext-30/34/39
Dammam: 00966 (0) 13 833 9565
E-mail: M.Zreik@eajb.com.sa

**Syria**
Dallal Establishment for Power Tools
Damascus. Baramkeh street - Ibn Amer street,
Phone: +963112241006 or 009631122414009
Mobile: 00963991141005
Email: rita.dallal@hotmail.com

**United Arab Emirates**
Central Motors & Equipment,
P.O. Box 26255, Dubai
Dubai: 00971 (0) 4 3090920/3090930
Abu Dhabi: 00971 (0) 2 4017745
Sharjah: 00971 (0) 6 5932777
Al Ain: 00971 (0) 3 7157419
E- Mail: Mallappa.Madari@centralmotors.ae

**Yemen**
Abu Alrejal Trading Corporation
P.O. Box : 17024 , Zubeiry St.
Sana'a, Yemen
Tel: +967-1-20 20 10
Fax: +967-1-47 19 17
E-mail: tech-tools@abualrejal.com/yahya@abualrejal.com

**Ethiopia**
Forever plc
Kebele 2,754, BP 4806,
Addis Ababa
Phone: +251 111 560 600
Email: foreverplc@ethionet.et

**Ghana**
Robert Bosch Ghana Limited
21 Kofi Annan Road Airport Residential Area Accra
Tel. +233 (0)3027 94616

**Kenya**
Robert Bosch East Africa Ltd
Mpaka Road P.O. Box 856
00606 Nairobi

**Nigeria**
Robert Bosch Nigeria Ltd.
52–54 Isaac John Street P.O. Box
GRA Ikeja – Lagos

**Tanzania**
Diesel & Autoelectric Service Ltd.
117 Nyerere Rd., P.O. Box 70839
Vingunguti 12109, Dar Es Salaam
Phone: +255 222 861 793/794

**Australia, New Zealand and Pacific Islands**
Robert Bosch Australia Pty. Ltd.
Power Tools
Locked Bag 66
Clayton South VIC 3169
Customer Contact Center
Inside Australia:
Phone: (01300) 307044
Fax: (01300) 307045
Inside New Zealand:
Phone: (0800) 543353
Fax: (0800) 428570
Outside AU and NZ:
Phone: +61 3 95415555
www.bosch-pt.com.au
www.bosch-pt.co.nz

**Republic of South Africa**
**Customer service**
Hotline: (011) 6519600
**Gauteng – BSC Service Centre**
35 Roper Street, New Centre
Johannesburg
Tel.: (011) 4939375
Fax: (011) 4930126
E-Mail: bsctools@icon.co.za
**KZN – BSC Service Centre**
Unit E, Almar Centre
143 Crompton Street
Pinetown
Tel.: (031) 7012120
Fax: (031) 7012446
E-Mail: bsc.dur@za.bosch.com
**Western Cape – BSC Service Centre**
Democracy Way, Prosperity Park
Milnerton
Tel.: (021) 5512577
Fax: (021) 5513223
E-Mail: bsc@zsd.co.za
**Bosch Headquarters**
Midrand, Gauteng
Tel.: (011) 6519600
Fax: (011) 6519880
E-Mail: rbsa-hq.pts@za.bosch.com

**Armenia, Azerbaijan, Georgia**
Robert Bosch Ltd.
David Agmashenebeli ave. 61
0102 Tbilisi, Georgia
Tel. +995322510073
www.bosch.com

**Kyrgyzstan, Mongolia, Tajikistan, Turkmenistan, Uzbekistan**
TOO "Robert Bosch" Power Tools, After Sales Service
Muratbaev Ave., 180
050012, Almaty, Kazakhstan

Service Email: service.pt.ka@bosch.com
Official Website: www.bosch.com, www.bosch-pt.com

### Disposal

The laser receiver, accessories and packaging should be recycled in an environmentally friendly manner.

Do not dispose of laser receivers or batteries with household waste.

# 中文

## 安全规章

**必须阅读并注意所有说明。如果不按照给出的说明使用测量仪，可能会影响集成在测量仪中的保护功能。请妥善保存这些说明。**

- ▶ **仅允许由具备资质的专业人员使用原装备件修理测量仪。**如此才能够确保测量仪的安全性能。
- ▶ **请勿在有易燃液体、气体或粉尘的潜在爆炸性环境中使用测量仪。**测量仪器内可能产生火花并点燃粉尘和气体。
- ▶ **在某些条件下，测量仪工作时会发出很大的信号声。因此请将测量仪远离耳朵或其他人员。**响亮的声音会损坏听力。

**不要将磁性靠近植入物或其他医疗设备，例如心脏起搏器或胰岛素泵。**磁性会产生磁场，这可能对植入物或医疗设备的功能产生不利影响。

- ▶ **让测量仪远离磁性数据媒体和对磁性敏感的设备。**磁性作用可能会导致不可逆的数据损失。

## 产品和性能说明

请注意本使用说明书开头部分的图示。

### 按照规定使用

本激光接收器用于快速寻找在技术参数中所规定的波长范围内的旋转激光束。

激光接收器适合在户内、户外使用。

### 图示组件

机件的编号和激光接收器详解图上的编号一致。

**(1)** 支架
**(2)** 支架上的中线参考
**(3)** 支架的固定螺栓
**(4)** 支撑接头
**(5)** 磁铁
**(6)** LED方向指示灯“激光束低于中线”
**(7)** LED中线
**(8)** LED方向指示灯“激光束高于中线”
**(9)** 电池盒盖
**(10)** 序列号
**(11)** 电池盒盖的止动件
**(12)** 支架水准仪
**(13)** 支架旋钮
**(14)** 信号音按键
**(15)** 中央记号线
**(16)** 接收精度设置按键
**(17)** 电源开关
**(18)** 激光的接收面
**(19)** 扬声器
**(20)** 测杆[A)]

A) **图表或说明上提到的附件，并不包含在基本的供货范围中。本公司的附件清单中有完整的附件供应项目。**

### 技术数据

| 激光接收器 | LR 30 |
|---|---|
| 物品代码 | **3 601 K69 2..** |
| 可接收波长 | 635–650纳米 |
| 使用旋转激光仪的工作范围[A)] | 1–150米 |
| 接收角度 | 45度 |
| 可接收转速 | 150/300/600转/分钟 |
| 接收精度[B)C)] | |
| – “精密” | ±1.5毫米 |
| – “中等” | ±3毫米 |
| 工作温度 | –10摄氏度至+50摄氏度 |
| 仓储温度 | –20摄氏度至+70摄氏度 |
| 基准高度以上的最大使用高度 | 2000米 |
| 最大相对湿度 | 90 % |
| 脏污程度符合IEC 61010-1 | 2[D)] |
| 电池 | 1 × 9伏特6LR61 |
| 运行时间大约 | 30小时 |
| 重量符合EPTA-Procedure 01:2014 | 0.34千克 |
| 尺寸（长 × 宽 × 高） | 131 × 57 × 29毫米 |

A) 工作范围可能会因为环境条件不利（比如阳光直射）而缩小。

B) 取决于激光接收器和旋转激光仪之间的距离以及旋转激光仪的激光等级和激光种类

C) 接收精度会受到不利环境条件的影响（例如阳光照射）。

D) 仅出现非导电性污染，不过有时会因凝结而暂时具备导电性。

**型号铭牌上的序列号(10)用于唯一识别您的激光接收器。**

# 安装

## 安装/更换电池

建议使用碱性电池运行本激光接收器。

向外拉动电池盒盖的止动件**(11)**，然后翻开电池盒盖**(9)**。装入电池。

同时请注意电极是否正确。

如果电池电量过低，会响起一个信号声且所有LED指示灯闪烁。接着激光接收器自动关闭。

▶ **长时间不用时，请将电池从激光接收器中取出。**在长时间存放于激光接收器中的情况下，蓄电池可能会腐蚀以及自行放电。

# 工作

## 投入使用

▶ **激光接收器必须远离湿气和直接的日照。**

▶ **请勿在极端温度或温度波动较大的情况下使用激光接收器。**比如请勿将激光接收器长时间放在汽车内。如果激光接收器先后曝露在温差相当大的环境中，必须先等待激光接收器的温度恢复正常后再使用仪器。如果激光接收器曝露在极端的气候下或温差相当大的环境中，会影响仪器的测量准确度。

### 安放激光接收器（见图A）

请在离旋转激光仪至少**1**米的地方安放激光接收器。针对具备多种运行模式的旋转激光仪，请选择带最高旋转速度的水平或垂直模式。

放置好激光接收器，使激光束可以投射至接收面**(18)**。适当调整接收器，让激光束横向扫过接收面（如图所示）。

### 接通/关闭

▶ **激光接收器接通时会发出一个较大的信号音。因此在接通时请让激光接收器远离耳朵或其他人员。**响亮的声音会损坏听力。

如要**接通**激光接收器，请按压电源开关**(17)**。所有LED指示灯短暂亮起并且响起一个信号声。

接通激光接收器之后，信号声已处于接通状态，接收精度已设置在“精密”。

如要**关闭**激光接收器，请重新按压电源开关**(17)**。在关闭仪器之前，所有的显示灯都会快闪一下。

如果约**6**分钟不按压激光接收器上的任何按键而且接收面**(18)6**分钟内没有接收到激光束，激光接收器会自动关闭以节约电池。关闭仪器之前，所有的显示灯都会快闪一下。

### 选择中线显示设置

用接收精度设置按键**(16)**可以确定激光束在接收面上的“中间”位置以什么精度显示：

– **“精密”接收精度：**听到一个信号声以及LED中线**(7)**闪烁进行确认。

– **“中等”接收精度：**听到两个信号声以及LED方向指示灯“激光束高于中线”**(8)**以及“激光束低于中线”**(6)**闪烁进行确认。

### 方向指示灯

激光束在接收面**(18)**上的位置显示如图：

– 可以选择通过LED方向指示灯“激光束高于中线”**(8)**、“激光束低于中线”**(6)**或激光接收器正面和背面上的中线**(7)**，

– 也可以选择通过信号音。

**激光接收器太低：**如果激光束照到接收面的上半部**(18)**，则LED方向指示灯“激光束高于中线”**(8)**亮起。

在激活了信号音的情况下，响起一个缓慢节拍的信号声。

将激光接收器朝箭头方向向上移。

**激光接收器太高：**如果激光束照到接收面**(18)**的下半部，则LED方向指示灯“激光束低于中线”**(6)**亮起。

此时如果开动了信号声的功能，仪器会发出快速的提示信号声。

将激光接收器朝箭头方向向下移。

**激光接收器处于中间：**如果激光束照到位于中央记号线**(15)**高度的接收面**(18)**，则LED中线**(7)**亮起。在激活了信号音的情况下，响起一个持续声。

### 激光束指示信号音

激光束在接收面**(18)**上的位置可通过信号音显示。

按压信号声按键**(14)**可关闭和接通信号声。

与信号声的设置无关，每次按压激光接收器上的一个按键都会发出一个短促的声音以进行确认。

## 工作提示

### 标记

当激光束在接收面**(18)**的中间移动时，可在激光接收器的左右侧中央记号线**(15)**上标记激光束的高度。

注意，标记时必须确定激光接收器已经做好垂直找平（在接收水平激光时）或水平找平（在接收垂直激光时）的工作，否则所做的记号与实际的激光位置会有偏差。

### 用支架固定（参见插图B）

您可以借助支架**(1)**将激光接收器固定在测杆**(20)**（附件）或其他宽度最大为**65**毫米的辅助工具上。

请通过固定螺栓**(3)**将支架**(1)**拧紧在激光接收器背面的支座**(4)**上。

松开支架上的旋钮**(13)**，将支架推到测杆**(20)**上，然后再次拧紧旋钮**(13)**。

您可以借助水准仪**(12)**水平找平支架**(1)**和激光接收器。如果未摆正激光接收器，会产生测量误差。

支架上的中线参考**(2)**位于和中央记号线**(15)**相同的高度，可用于标记激光束。

### 用磁铁固定（见图C）

如果不一定需要牢固固定，可将激光接收器用磁铁**(5)**吸附在钢制部件上。

# 维修和服务

## 维修和清洁

请始终保持激光接收器的洁净。

不要将激光接收器浸入水或其他液体中。

使用潮湿，柔软的布擦除仪器上的污垢。切勿使用任何清洁剂或溶剂。

## 客户服务和应用咨询

本公司顾客服务处负责回答有关本公司产品的修理、维护和备件的问题。备件的展开图纸和信息也可查看：**www.bosch-pt.com**

博世应用咨询团队乐于就我们的产品及其附件问题提供帮助。

询问和订购备件时，务必提供机器铭牌上标示的10位数物品代码。

**香港和澳门特别行政区**
罗伯特博世有限公司
香港北角英皇道625号， 21楼
客户服务热线：+852 2101 0235
传真：+852 2590 9762
电子邮件： info@hk.bosch.com
www.bosch-pt.com.hk

**中国大陆**
博世电动工具（中国）有限公司
中国　浙江省　杭州市
滨江区　滨康路567号
102/1F 服务中心
邮政编码：310052
电话：(0571)8887 5566 / 5588
传真：(0571)8887 6688 x 5566# / 5588#
电邮：bsc.hz@cn.bosch.com
www.bosch-pt.com.cn

**制造商地址：**
Robert Bosch Power Tools GmbH
罗伯特· 博世电动工具有限公司
70538 Stuttgart / GERMANY
70538 斯图加特 / 德国

## 废弃处理

必须使用符合环保要求的方式处理废弃的激光接收器、附件和包装材料。

请勿将激光接收器和电池/蓄电池扔到生活垃圾里!

# 繁體中文

## 安全注意事項

**您必須完整詳讀本說明書並確實遵照其內容。若未依照現有之說明內容使用測量工具，測量工具內部所設置的防護措施可能無法發揮應有功效。請妥善保存本說明書。**

- ▶ **本測量工具僅可交由合格的專業技師以原廠替換零件進行維修。**如此才能夠確保本測量工具的安全性能。
- ▶ **請不要在存有易燃液體、氣體或粉塵等易爆環境下操作本測量工具。**測量工具內部產生的火花會點燃粉塵或氣體。
- ▶ **在某些情況下，測量工具運轉時會發出高分貝的聲音訊號。因此，請保持測量工具遠離耳邊及其他人員。**高音量可能造成聽力受損。

**磁鐵不得接近植入裝置或諸如心律調節器或胰島素幫浦等其他醫療器材。** 磁鐵形成的磁場可能干擾植入裝置或醫療器材運作。

- ▶ **請讓測量工具遠離磁性資料儲存裝置和易受磁場干擾的高靈敏器材。**磁鐵所形成的磁場可能造成無法挽救的資料遺失。

## 產品和功率描述

請留意操作說明書中最前面的圖示。

### 依規定使用機器

此雷射接收器是專門設計用來迅速找到技術性數據中所指定之波長的旋轉雷射光束。

雷射接收器同時適用於室內及戶外應用。

### 插圖上的機件

機件的編號和雷射接收器詳解圖上的編號一致。

**(1)** 托架
**(2)** 托架上的中心線基準點
**(3)** 托架的固定螺栓
**(4)** 托架承座
**(5)** 磁鐵
**(6)** 「雷射光束位於中心線下方」LED 方向指示器
**(7)** LED 中心線
**(8)** 「雷射光束位於中心線上方」LED 方向指示器
**(9)** 電池盒蓋
**(10)** 序號
**(11)** 電池盒蓋鎖扣
**(12)** 托架的水平儀
**(13)** 托架轉鈕

**(14)** 聲音訊號按鈕
**(15)** 中心點記號
**(16)** 接收準確度設定按鈕
**(17)** 電源按鈕
**(18)** 雷射光束接收區
**(19)** 喇叭
**(20)** 測量標竿[A)]

A) **圖表或說明上提到的配件，並不包含在基本的供貨範圍中。本公司的配件清單中有完整的配件供應項目。**

### 技術性數據

| 雷射接收器 | LR 30 |
|---|---|
| 產品機號 | **3 601 K69 2..** |
| 可接收的波長 | 635–650 nm |
| 工作範圍[A)]含旋轉式雷射測量儀 | 1–150 m |
| 接收角度 | 45° |
| 可接收的旋轉速度 | 150/300/600 次 / 分 |
| 接收準確度[B)C)] | |
| – 「高」 | ±1.5 mm |
| – 「中」 | ±3 mm |
| 操作溫度 | –10 °C ... +50 °C |
| 儲藏溫度 | –20 °C ... +70 °C |
| 從基準點高度算起的最大可測量高度 | 2000 m |
| 空氣相對濕度最大值 | 90 % |
| 依照 IEC 61010-1，污染等級為 | 2[D)] |
| 電池 | 1 × 9 V 6LR61 |
| 連續工作時間約略值 | 30 小時 |
| 重量符合 EPTA-Procedure 01:2014 | 0.34 kg |
| 尺寸（長 × 寬 × 高） | 131 × 57 × 29 mm |

A) 工作範圍在不利的環境條件下（例如陽光直射），工作範圍將縮小。
B) 取決於雷射接收器與旋轉式雷射測量儀的間距，以及旋轉式雷射測量儀的雷射等級和雷射類型
C) 不利的環境條件（例如陽光直射）會影響接收準確度。
D) 只產生非傳導性污染，但應預期偶爾因水氣凝結而導致暫時性導電。

**從產品銘牌的序號 (10) 即可確定您的雷射接收器機型。**

## 安裝

### 裝入／更換電池

建議使用鹼錳電池來驅動本雷射接收器。

將電池盒蓋的鎖扣 **(11)** 往外側拉，然後掀開電池盒蓋 **(9)**。裝入電池。

此時請您注意正負電極方向要正確。

電池快沒電時，本裝置會發出一個聲音訊號，且所有 LED 燈全部閃爍。本雷射接收器隨即自動關閉。

▶ **長時間不使用時，請將取出雷射接收器中的電池。**電池可能因長時間置於雷射接收器內不使用而腐蝕並自行放電。

## 操作

### 操作機器

▶ **不可以讓濕氣滲入雷射接收器中，也不可以讓陽光直接照射。**

▶ **勿讓雷射接收器暴露於極端溫度或溫度劇烈變化的環境。**例如請勿將它長時間放在車內。雷射接收器歷經較大溫度起伏時，請先讓它回溫後再使用。如果雷射接收器曝露在極端的氣候下或溫差相當大的環境中，會影響其測量準確度。

#### 架設雷射接收器（請參考圖 A）

請您將雷射接收器豎立在與旋轉式雷射測量儀相隔至少 **1** 公尺的位置上。旋轉式雷射測量儀若是具有多種操作模式，請選擇水平模式或垂直模式，並旋轉速度調至最高。

請調整雷射接收器的位置，使雷射光束能對準接收區 **(18)**。適度地調整儀器讓雷射橫向穿過接收區（如圖所示）。

#### 啟動／關閉

▶ **啟動雷射接收器時，您會聽見一個很響的聲音訊號。因此，啟動時請保持雷射接收器遠離耳邊及其他人員。**高音量可能造成聽力受損。

若要**啟動**雷射接收器，請按一下開關按鈕 **(17)**。所有 LED 燈將全部亮起一下後消失，並聽見機器發出一個聲音訊號。

雷射接收器啟動後，聲音訊號功能為啟動狀態且接收準確度設為「高」。

若要**關閉**雷射接收器，請再按一次電源按鈕 **(17)**。儀器關閉之前，所有 LED 燈會快閃一下。

若您未在雷射接收器上按下任一按鍵的時間已長達 **6** 分鐘左右，且雷射光束也已有 **6** 分鐘不曾進入接收區 **(18)** 內，則雷射接收器將自動關機，以維護電池壽命。儀器關機之前，所有 LED 燈會快閃一下。

#### 選擇中心線的顯示設定

您可利用接收準確度設定按鈕 **(16)** 來設定，雷射光束位置認定為在接收區內「置中」時所使用的準確度：

– **接收準確度「高」：**將聽見聲音訊號且 LED 中心線 **(7)** 也會閃爍，以示確認。
– **接收準確度「中」：**將聽見兩個聲音訊號且「雷射光束位於中心線上方」**(8)** 以及「雷射光束位於中心線下方」**(6)** 這兩個 LED 方向指示器也會閃爍，以示確認。

#### 方向指示器

雷射光束在接收區 **(18)** 內的位置透過下列方式表示：

– 雷射接收器正面及背面上的「雷射光束位於中心線上方」**(8)**、「雷射光束位於中心線下方」 **(6)** LED 方向指示器，或是中心線 **(7)**，
– 另外還可選擇是否要以聲音訊號來示意。

**雷射接收器太低：**雷射光束穿越過接收區的上半部 **(18)** 時，「雷射光束位於中心線上方」LED 方向指示器 **(8)** 隨即亮起。
若有開啟聲音訊號功能，此時儀器會發出慢速節奏的提示音。
請沿箭頭方向將雷射接收器往上移。

**雷射接收器太高：**雷射光束穿越過接收區的下半部 **(18)** 時，「雷射光束位於中心線下方」LED 方向指示器 **(6)** 隨即亮起。
若有開啟聲音訊號功能，此時儀器會發出節奏和緩的提示音。
請沿箭頭方向將雷射接收器往下移。

**雷射接收器位於正中央：**雷射光束穿越過接收區 **(18)** 中心點記號 **(15)** 的高度時，LED 中心線 **(7)** 隨即亮起。
聲音訊號功能啟動時，將發出持續音。

**示意雷射光束位置的聲音訊號**

雷射光束在接收區 **(18)** 上的位置可透過聲音訊號來示意。

若要關閉或開啟聲音訊號，請按聲音訊號按鈕 **(14)**。
每按一下雷射接收器上的按鈕時都會發出一個短音，以示確認，但此項功能與聲音訊號的設定無關。

### 作業注意事項

**標示記號**

當雷射光束穿過接收區 **(18)** 中心點時，您可利用雷射接收器上左右兩側的中心點記號 **(15)** 標示雷射光束的高度。

請注意：進行標示時，雷射接收器應要精準調成垂直（使用水平雷射光束時）或水平（使用垂直雷射光束時），否則記號會與雷射光束發生錯位。

**利用托架進行固定（請參考圖 B）**

藉由托架 **(1)**，您可將雷射接收器固定在測量標竿 **(20)**（配件）上，或者也可以將它固定在寬度 **65** mm 以下的其他輔助工具上。

利用承座 **(4)** 中的固定螺栓 **(3)**，將托架 **(1)** 鎖緊在雷射接收器背面上。

鬆開托架轉鈕 **(13)**，將托架推到例如測量標竿 **(20)** 上，然後再重新將轉鈕 **(13)** 轉緊。

藉由水平儀 **(12)** 即可為托架 **(1)** 進行水平校正，雷射接收器也會隨之位於水平位置。雷射接收器安裝若有歪斜，將導致測量發生錯誤。

托架上的中心線基準點 **(2)** 與中心點記號 **(15)** 的高度切齊，因此可做為雷射光束位置的參考標記。

**使用磁鐵固定（請參考圖 C）**

如果沒有要求必須採取牢靠的固定方式，您可以利用磁鐵 **(5)** 將本雷射接收器吸附在鐵件上。

## 維修和服務

### 維修和清潔

雷射接收器必須隨時保持清潔。

不可以把雷射接收器放入水或其他的液體中。

使用柔軟濕布擦除儀器上的污垢。切勿使用清潔劑或溶液。

### 顧客服務處和顧客咨詢中心

本公司顧客服務處負責回答有關本公司產品的維修、維護和備用零件的問題。以下的網頁中有分解圖和備用零件相關資料：**www.bosch-pt.com**
如果對本公司產品及其配件有任何疑問，博世應用諮詢小組很樂意為您提供協助。

當您需要諮詢或訂購備用零件時，請務必提供本產品型號銘牌上 10 位數的產品機號。

**中國香港和澳門特別行政區**
羅伯特．博世有限公司
香港北角英皇道625號21樓
客戶服務熱線：+852 2101 0235
傳真：+852 2590 9762
電子郵件： info@hk.bosch.com
www.bosch-pt.com.hk

**台灣**
台灣羅伯特博世股份有限公司
建國北路一段90 號6 樓
台北市10491
電話: (02) 7734 2588
傳真: (02) 2516 1176
www.bosch-pt.com.tw

**制造商地址:**
Robert Bosch Power Tools GmbH
羅伯特· 博世電動工具有限公司
70538 Stuttgart / GERMANY
70538 斯圖加特/ 德國

### 廢棄物處理

必須以符合環保要求的方式處理廢棄的雷射接收器、配件和包裝材料。

不得將雷射接收器與電池當成一般垃圾丟棄！

# 한국어

## 안전 수칙

**제시된 모든 지침을 숙지하고 이를 준수해야 합니다. 측정공구를 해당 지침에 따라 사용하지 않으면, 측정공구에 내장되어 있는 안전장치에 안 좋은 영향을 미칠 수 있습니다. 본 설명서를 잘 보관하시기 바랍니다.**

- ▶ **측정공구의 수리는 해당 자격을 갖춘 전문 인력에게 맡기고, 수리 정비 시 순정 부품만 사용하십시오.** 이 경우에만 측정공구의 안전성을 오래 유지할 수 있습니다.

- ▶ **가연성 유체나 가스 혹은 분진 등 폭발 위험이 있는 곳에서 측정공구를 사용하지 마십시오.** 측정 공구에 분진이나 증기를 점화하는 스파크가 생길 수 있습니다.
- ▶ **측정공구 작동 시 일정한 조건이 되면 신호음이 크게 울립니다. 그러므로 측정공구가 귀 또는 다른 사람 가까이에 위치하지 않도록 거리를 멀리 유지하십시오.** 큰 신호음으로 인해 청력에 손상을 입을 수 있습니다.

**자석을 심장 박동 조절장치 또는 인슐린 펌프와 같은 삽입물 또는 기타 의학 기기 근처로 가져오지 마십시오.** 자석으로 인해 자기장이 형성되어 삽입물 또는 의학 기기의 기능에 장애를 일으킬 수 있습니다.

- ▶ **측정공구를 자기 데이터 매체나 자력에 예민한 기기에서 멀리 두십시오.** 자석의 영향으로 인해 데이터가 손실되어 복구 불가능할 수 있습니다.

# 제품 및 성능 설명

사용 설명서 앞 부분에 제시된 그림을 확인하십시오.

## 규정에 따른 사용

본 레이저 수광기는 기술자료에 제시된 파장에서 회전하는 레이저빔을 신속하게 찾기 위한 용도로 사용됩니다.

레이저 수광기는 안쪽 및 바깥쪽 영역에 모두 사용 가능합니다.

## 제품의 주요 명칭

제품의 주요 명칭에 표기되어 있는 번호는 레이저 수광기의 그림이 나와있는 면을 참고하십시오.

**(1)** 홀더
**(2)** 홀더의 기준 중앙선
**(3)** 홀더의 고정 나사
**(4)** 홀더 끼우는 부위
**(5)** 자석
**(6)** “중앙선 아래쪽 레이저빔” LED 방향 표시기
**(7)** LED 중앙선
**(8)** “중앙선 위쪽 레이저빔” LED 방향 표시기
**(9)** 배터리 케이스 덮개
**(10)** 일련 번호
**(11)** 배터리 케이스 덮개 잠금쇠
**(12)** 홀더 레벨기
**(13)** 홀더 로터리 버튼
**(14)** 신호음 버튼
**(15)** 중심점 표시
**(16)** 수신 정확도 조절 버튼
**(17)** 전원 버튼
**(18)** 레이저빔 수신 부위
**(19)** 스피커
**(20)** 측량 막대[A)]

A) **도면이나 설명서에 나와있는 액세서리는 표준 공급부품에 속하지 않습니다. 전체 액세서리는 저희 액세서리 프로그램을 참고하십시오.**

## 제품 사양

| 레이저 수광기 | LR 30 |
|---|---|
| 제품 번호 | **3 601 K69 2..** |
| 수신 가능한 파장 | 635–650 nm |
| 작업 범위[A)]회전 레이저를 이용 | 1–150 m |
| 수신 각도 | 45° |
| 수신 가능한 회전 속도 | 150/300/600 $min^{-1}$ |
| 수신 정확도[B)C)] | |
| – "미세" | ±1.5 mm |
| – “중간” | ±3 mm |
| 작동 온도 | –10 °C ... +50 °C |
| 보관 온도 | –20 °C ... +70 °C |
| 기준 높이를 초과한 최대 사용 높이 | 2000 m |
| 상대 습도 최대 | 90 % |
| IEC 61010-1에 따른 오염도 | 2[D)] |
| 배터리 | 1 × 9 V 6LR61 |
| 작동 시간, 약 | 30 h |
| EPTA-Procedure 01:2014에 따른 중량 | 0.34 kg |
| 치수(길이 × 폭 × 높이) | 131 × 57 × 29 mm |

A) 직사광선 등의 불리한 환경 조건에서는 작업 범위가 줄어들 수 있습니다.

B) 레이저 수광기와 회전 레이저 사이의 간격 및 회전 레이저의 레이저 등급 및 레이저 유형에 따라 달라짐

C) 수신 정확도는 부적절한 환경 조건(예: 직사광선)에 영향을 받을 수 있습니다.

D) 비전도성 오염만 발생하지만, 가끔씩 이슬이 맺히면 임시로 전도성이 생기기도 합니다.

**형식판에 적힌 일련 번호 (10) 를 통해 레이저 수광기를 식별할 수 있습니다.**

# 조립

## 배터리 삽입하기/교환하기

레이저 수광기를 사용할 때 알칼리 망간 배터리를 사용하는 것이 좋습니다.

배터리 케이스 커버의 잠금쇠 **(11)** 를 바깥쪽으로 잡아당겨 배터리 케이스 커버 **(9)** 를 젖히십시오. 배터리를 끼우십시오.

극성이 올바른지 확인하십시오.

배터리가 약하면, 신호음이 울리고 모든 LED가 깜박입니다. 그 이후 레이저 수광기가 자동으로 꺼집니다.

▶ **오랜 기간 사용하지 않을 경우 레이저 수광기의 배터리를 분리해 두십시오.** 레이저 수광기의 배터리는 오래 두면 부식되고 방전됩니다.

# 작동

## 기계 시동

▶ **레이저 수광기가 물에 젖거나 직사 광선에 노출되지 않도록 하십시오.**

▶ **레이저 수광기가 극한 온도 또는 온도 차이가 심한 곳에 노출되지 않도록 하십시오.** 예를 들어 오랜 기간 차량 안에 두지 마십시오. 온도 변화가 심한 경우 레이저 수광기를 사용하기 전에 우선 적당한 온도가 되도록 하십시오. 극심한 온도에서나 온도 변화가 심한 환경에서 사용하면 레이저 수광기의 정확도가 떨어질 수 있습니다.

### 레이저 수광기 설치하기(그림 A 참조)

레이저 수광기를 회전 레이저에서 최소 **1** m 이상 떨어진 곳에 설치하십시오. 회전 레이저에 작동 모드가 여러 개인 경우 회전 속도가 가장 높은 수평 및 수직 작동 모드를 선택하십시오.

레이저빔이 수신 부위 **(18)** 에 도달할 수 있는 위치에 레이저 수광기를 놓으십시오. 이때 레이저빔이 수신 부위를 가로질러 통과하도록 레이저 수광기를 맞추어야 합니다(그림 참조).

### 전원 스위치 작동

▶ **레이저 수광기를 켤 때 큰 신호음이 울립니다. 그러므로 전원을 켤 때 레이저 수광기가 귀 또는 다른 사람 가까이에 위치하지 않도록 거리를 멀리 유지하십시오.** 큰 신호음으로 인해 청력에 손상을 입을 수 있습니다.

레이저 수광기의 **전원을 켜려면** 전원 버튼 **(17)** 을 누르십시오. 잠깐 동안 모든 LED에 불이 들어오고, 신호음이 울립니다.

레이저 수광기를 켜면 신호음이 켜져 있고 수신 정확도는 “미세” 로 설정되어 있습니다.

레이저 수광기의 **전원을 끄려면** 전원 버튼 **(17)** 을 다시 누르십시오. 스위치가 꺼지기 전에 모든 LED에 잠깐 불이 켜집니다.

약 **6** min 동안 레이저 수광기의 아무 버튼도 누르지 않고 수신 부위 **(18) 6** min 동안 아무런 레이저빔도 닿지 않으면 레이저 수광기는 배터리 절약을 위해 자동으로 꺼지게 됩니다. 모든 LED가 잠깐 켜지며 스위치가 꺼지는 것을 나타냅니다.

### 중앙선 표시기 설정 선택하기

수신 정확도 설정 버튼 **(16)** 을 눌러 수신 부위에서 레이저빔의 위치가 "중심점으로" 표시되는 정확도를 정할 수 있습니다.

– **“미세” 수신 정확도:** 확인을 위해 신호음이 울리고 LED 중앙선 **(7)** 이 깜박입니다.

– **“중간” 수신 정확도:** 확인을 위해 신호음이 두 번 울리고, “중앙선 위쪽 레이저빔” LED 방향 표시기 **(8)** 및 “중앙선 아래쪽 레이저빔” 방향 표시기 **(6)** 가 깜박입니다.

### 방향 표시기

수신 부위 **(18)** 의 레이저빔 위치는 다음과 같이 표시됩니다.

– “중앙선 위쪽 레이저빔” LED 방향 표시기 **(8)**, “중앙선 아래쪽 레이저빔” LED 방향 표시기 **(6)** 또는 레이저 수광기의 앞면 및 뒷면의 중앙선 **(7)** 을 통해,

– 옵션으로 신호음을 통해.

**레이저 수광기가 너무 낮은 곳에 위치한 경우:** 레이저빔이 수신 부위 **(18)** 의 위쪽을 지나는 경우, “중앙선 위쪽 레이저빔” LED 방향 표시기 **(8)** 가 점등됩니다.

신호음 기능이 작동할 경우 느린 속도로 신호가 납니다.

레이저 수광기를 화살표 방향에 따라 위쪽으로 이동시키십시오.

**레이저 수광기가 너무 높은 곳에 위치한 경우:** 레이저빔이 수신 부위 **(18)** 의 아래쪽을 지나는 경우, “중앙선 아래쪽 레이저빔” LED 방향 표시기 **(6)** 가 점등됩니다.

신호음 기능이 켜진 상태이면 빠른 속도가 신호가 납니다.

레이저 수광기를 화살표 방향으로 아래로 움직이십시오.

**측정공구가 중간에 위치하는 경우:** 레이저빔이 수신 부위 **(18)** 의 중심점 표시 **(15)** 를 지나는 경우, LED 중앙선 **(7)** 이 점등됩니다.

신호음이 켜진 상태에서 연속음이 울립니다.

### 레이저빔 표시기에 관한 신호음

수신 부위 **(18)** 에 닿은 레이저빔의 위치를 신호음으로 표시할 수 있습니다.

신호음을 껐다가 켜려면 신호음 버튼 **(14)** 을 누르십시오.

신호음 설정과 관계 없이 레이저 수광기 버튼을 누를 때마다 확인을 위해 짧게 신호음이 울립니다.

## 사용 방법

### 표시하기

레이저빔이 수신 부위 **(18)** 의 중심을 지나는 경우 레이저 수광기의 좌측 및 우측의 중심점 표시 **(15)** 에 레이저빔의 높이를 표시할 수 있습니다.

표시할 때 레이저 수광기가 정확하게 수직(레이저빔이 수평으로 작동하는 경우)으로 또는 수평(레이저빔이 수직으로 작동하는 경우)으로 정렬되도록 하십시오. 그렇지 않으면 레이저빔 맞은편의 표시가 옮겨질 수 있습니다.

### 홀더를 사용하여 고정하기(그림 B 참조)

두께가 최대 **65** mm에 이르는 홀더 **(1)** 를 이용하여 측량 막대 **(20)** (액세서리) 및 다른 보조 도구에 레이저 수광기를 고정할 수 있습니다.

홀더 **(1)** 를 고정 나사 **(3)** 를 이용하여 레이저 수광기의 뒷면에 있는 홀더 끼우는 부위 **(4)** 에 고정시키십시오.

홀더의 로터리 버튼 **(13)** 을 풀고, 홀더를 측량 막대 **(20)** 쪽으로 밀어 로터리 버튼 **(13)** 을 다시 돌려 잠그십시오.

레벨기 **(12)** 를 이용하여 홀더 **(1)** 와 레이저 수광기를 수평으로 정렬할 수 있습니다. 레이저 수광기가 비스듬히 장착된 경우 측정 시 에러가 생길 수 있습니다.

홀더의 기준 중앙선 **(2)** 은 중심점 표시 **(15)** 와 동일한 높이에 있으므로 레이저빔을 표시하는 데 사용할 수 있습니다.

**자석을 사용하여 고정하기(그림 C 참조)**

반드시 안전하게 고정할 필요가 없는 경우, 레이저 수광기를 자석 **(5)** 을 이용하여 강철 부품에 부착할 수 있습니다.

## 보수 정비 및 서비스

### 보수 정비 및 유지

레이저 수광기는 항상 깨끗한 상태로 유지하십시오.

레이저 수광기를 물이나 다른 액체에 넣지 마십시오.

물기있는 부드러운 천으로 오염된 부위를 깨끗이 닦으십시오. 세척제 또는 용제를 사용하지 마십시오.

### AS 센터 및 사용 문의

AS 센터에서는 귀하 제품의 수리 및 보수정비, 그리고 부품에 관한 문의를 받고 있습니다. 대체 부품에 관한 분해 조립도 및 정보는 인터넷에서도 찾아 볼 수 있습니다 - **www.bosch-pt.com**

보쉬 사용 문의 팀에서는 보쉬의 제품 및 해당 액세서리에 관한 질문에 기꺼이 답변 드릴 것입니다.

문의나 대체 부품 주문 시에는 반드시 제품 네임 플레이트에 있는 10자리의 부품번호를 알려 주십시오.

콜센터
080-955-0909

### 처리

레이저 수광기, 액세서리 및 포장재는 환경 규정에 따라 재활용해야 합니다.

레이저 수광기 및 배터리를 가정용 쓰레기에 버리지 마십시오!

# ไทย

## คำเตือนเพื่อความปลอดภัย

**ต้องอ่านและปฏิบัติตามคำแนะนำทั้งหมด**
**หากไม่ใช้เครื่องมือวัดตามคำแนะนำเหล่านี้ ระบบป้องกันเบ็ดเสร็จในเครื่องมือวัดอาจได้รับผลกระทบ เก็บรักษาคำแนะนำเหล่านี้สำหรับใช้อ้างอิงในภายหลัง**

- ▶ **ส่งเครื่องมือวัดให้ช่างผู้เชี่ยวชาญตรวจซ่อมและใช้อะไหล่เปลี่ยนของแท้เท่านั้น** ทั้งนี้เพื่อให้มั่นใจได้ว่าจะสามารถใช้งานเครื่องมือวัดได้อย่างปลอดภัยเสมอ
- ▶ **อย่าใช้เครื่องมือวัดในสภาพแวดล้อมที่เสี่ยงต่อการระเบิด ซึ่งเป็นที่ที่มีของเหลว แก๊ซ หรือฝุ่นที่ติดไฟได้** ในเครื่องมือวัดสามารถเกิดประกายไฟซึ่งอาจจุดฝุ่นละอองหรือไอระเหยให้ติดไฟได้
- ▶ **ภายใต้เงื่อนไขบางประการ ในขณะที่ใช้เครื่องมือวัดจะมีสัญญาณเสียงดังออกมา ดังนั้นต้องเอาเครื่องมือวัดออกห่างจากหูของท่านหรือบุคคลอื่น** เสียงดังอาจทำให้การได้ยินบกพร่องได้

**ต้องกันแม่เหล็กให้ห่างจากวัตถุปลูกถ่ายในร่างกายและอุปกรณ์ทางการแพทย์อื่นๆ เครื่องปรับจังหวะการเต้นของหัวใจด้วยไฟฟ้าหรือปั๊มอินซูลิน** ระบบจะสร้างสนามแม่เหล็กซึ่งสามารถทำให้วัตถุปลูกถ่ายในร่างกายและอุปกรณ์ทางการแพทย์อื่นๆ ทำงานบกพร่องได้

- ▶ **ต้องกันเครื่องมือวัดให้ห่างจากสื่อข้อมูลที่มีคุณสมบัติเป็นแม่เหล็กและอุปกรณ์ที่ไวต่อแรงดึงดูดแม่เหล็ก** แม่เหล็กสามารถทำให้ข้อมูลสูญหายอย่างเรียกกลับไม่ได้

## รายละเอียดผลิตภัณฑ์และข้อมูลจำเพาะ

กรุณาดูภาพประกอบในส่วนหน้าของคู่มือการใช้งาน

### ประโยชน์การใช้งานของเครื่อง

อุปกรณ์รับแสงเลเซอร์นี้ใช้สำหรับค้นหาลำแสงเลเซอร์ที่หมุนอยู่ได้อย่างรวดเร็วในความยาวคลื่นที่ระบุไว้ในข้อมูลทางเทคนิค

อุปกรณ์รับแสงเลเซอร์ เหมาะสำหรับใช้ทั้งภายในและภายนอกอาคาร

### ส่วนประกอบผลิตภัณฑ์

ลำดับเลขของส่วนประกอบผลิตภัณฑ์อ้างถึงส่วนประกอบของอุปกรณ์รับแสงเลเซอร์ที่แสดงในหน้าภาพประกอบ

**(1)** ฐานจับเครื่อง

**(2)** เส้นกลางอ้างอิงในฐานจับเครื่อง

**(3)** สกรูยึดของฐานจับเครื่อง

**(4)** รูประกอบสำหรับฐานจับเครื่อง

**(5)** แม่เหล็ก

**(6)** สัญลักษณ์ทิศทาง LED "เส้นกลางอ้างอิงใต้แสงเลเซอร์"

**(7)** เส้นกลาง LED

**(8)** สัญลักษณ์ทิศทาง LED "เส้นกลางอ้างอิงเหนือแสงเลเซอร์"

**(9)** ฝาช่องใส่แบตเตอรี่

**(10)** หมายเลขเครื่อง

**(11)** ตัวล็อคฝาช่องใส่แบตเตอรี่

**(12)** ระดับน้ำของฐานจับเครื่อง

**(13)** ลูกบิดของฐานจับ

**(14)** ปุ่มสัญญาณเสียง

**(15)** เครื่องหมายกึ่งกลาง

**(16)** ปุ่มตั้งความแม่นยำในการรับ

**(17)** ปุ่มเปิด-ปิด

**(18)** บริเวณรับลำแสงเลเซอร์

**(19)** ลำโพง

**(20)** ระดับวัด[A)]

A) **อุปกรณ์ประกอบที่แสดงภาพหรืออธิบายไม่รวมอยู่ในการจัดส่งมาตรฐาน**
**กรุณาดูอุปกรณ์ประกอบทั้งหมดในรายการแสดงอุปกรณ์ประกอบของเรา**

### ข้อมูลทางเทคนิค

| อุปกรณ์รับแสงเลเซอร์ | LR 30 |
|---|---|
| หมายเลขสินค้า | **3 601 K69 2..** |
| ความยาวคลื่นที่รับได้ | 635–650 นาโนเมตร |
| ช่วงการใช้งาน[A)]ด้วยเลเซอร์แบบหมุน | 1–150 ม. |
| มุมการรับแสง | 45° |
| ความเร็วการหมุนที่ได้รับ | 150/300/600 นาที$^{-1}$ |
| ความแม่นยำในการรับ[B)C)] | |
| – "ละเอียด" | ±1.5 มม. |
| – "ปานกลาง" | ±3 มม. |
| อุณหภูมิใช้งาน | −10 °C ... +50 °C |
| อุณหภูมิเก็บรักษา | −20 °C ... +70 °C |
| ความสูงใช้งานเหนือระดับอ้างอิงสูงสุด | 2000 ม. |
| ความชื้นสัมพัทธ์ สูงสุด | 90 % |
| ระดับมลพิษตาม IEC 61010-1 | 2[D)] |
| แบตเตอรี่ | 1 × 9 V 6LR61 |
| ระยะเวลาทำงาน ประมาณ | 30 ชม. |
| น้ำหนักตามระเบียบการ EPTA-Procedure 01:2014 | 0.34 กก. |
| ขนาด (ความยาว x ความกว้าง x ความสูง) | 131 × 57 × 29 มม. |

A) ย่านการทำงานอาจลดลงหากมีสภาวะแวดล้อมที่ไม่เหมาะสม (ต.ย. เช่น แสงอาทิตย์ส่องโดยตรง)

B) ขึ้นอยู่กับระยะห่างระหว่างอุปกรณ์รับแสงเลเซอร์และเลเซอร์แบบหมุน และระดับเลเซอร์และชนิดเลเซอร์ของเลเซอร์แบบหมุน

C) ความแม่นยำในการรับอาจลดลงหากมีสภาวะแวดล้อมที่ไม่เหมาะสม (ต. ย. เช่น แสงอาทิตย์ส่องโดยตรง)

D) เกิดขึ้นเฉพาะมลพิษที่ไม่นำไฟฟ้า ยกเว้นบางครั้งนำไฟฟ้าได้ชั่วคราวที่มีสาเหตุจากการกลั่นตัวที่ได้คาดว่าจะเกิดขึ้น

หมายเลขเครื่อง **(10)** บนแผ่นป้ายรุ่นมีไว้เพื่อระบุอุปกรณ์รับแสงเลเซอร์ของท่าน

## การติดตั้ง

### การใส่/การเปลี่ยนแบตเตอรี่

สำหรับการใช้งานอุปกรณ์รับแสงเลเซอร์ของท่าน ขอแนะนำให้ใช้แบตเตอรี่อัลคาไลน์แมงกานีส

ดึงล็อค **(11)** ของฝาช่องใส่แบตเตอรี่ออกไปข้างนอกและเปิดฝาช่องใส่แบตเตอรี่ **(9)** ใส่แบตเตอรี่เข้าไป

ตรวจสอบให้ขั้วแบตเตอรี่อยู่ในตำแหน่งที่ถูกต้อง

หากแบตเตอรี่ต่ำ สัญญาณเสียงจะดังขึ้นและไฟ LED ทั้งหมดจะกะพริบ จากนั้นอุปกรณ์รับแสงเลเซอร์จะปิดสวิทช์โดยอัตโนมัติ

▶ **เมื่อไม่ใช้งานอุปกรณ์รับแสงเลเซอร์เป็นเวลานาน ต้องถอดแบตเตอรี่ออก** เมื่อเก็บรักษาในอุปกรณ์รับแสงเลเซอร์เป็นเวลานาน แบตเตอรี่สามารถผุกร่อนและคายประจุออกมาเอง

## การปฏิบัติงาน

### การเริ่มต้นปฏิบัติงาน

▶ **ป้องกันอุปกรณ์รับแสงเลเซอร์จากความชื้นและการถูกแสงแดดโดยตรง**

▶ **ไม่ตั้งอุปกรณ์รับแสงเลเซอร์ในบริเวณที่มีอุณหภูมิสูงหรือความผันผวนของอุณหภูมิ** ไ.เช่น ไม่เก็บอุปกรณไว้เป็นเวลานานในรถยนต์ ใน กรณีที่อุณหภูมิมีการเปลี่ยนแปลงมาก ต้องปล่อยให้อุปกรณ์รับแสงเลเซอร์ปรับเข้ากับอุณหภูมิรอบด้านก่อนใช้งาน ในกรณีที่ได้รับอุณหภูมิที่สูงมาก หรือรับอุณหภูมิที่เปลี่ยนแปลงมาก อุปกรณ์รับแสงเลเซอร์อาจมีความแม่นยำน้อยลง

**ตั้งอุปกรณ์รับแสงเลเซอร์ (ดูภาพประกอบ A)**

รักษาอุปกรณ์รับแสงเลเซอร์ให้อยู่ห่างเลเซอร์แบบหมุนเป็นระยะห่างอย่างน้อย **1** ม. สำหรับเลเซอร์หมุนที่มีหลายโหมด ให้เลือกโหมดการทำงานในแนวนอนหรือแนวตั้งที่ความเร็วการหมุนสูงสุด

วางอุปกรณ์รับแสงเลเซอร์เพื่อให้ลำแสงเลเซอร์ถึงสนามรับสัญญาณ **(18)** ได้ จัดแนวเครื่อง

มีอวัดในลักษณะให้ลำแสงวิ่งขวางผ่านบริเวณรับแสง (ดังแสดงในภาพประกอบ)

**การเปิด-ปิดเครื่อง**

▶ **เมื่อเปิดสวิทช์อุปกรณ์รับแสงเลเซอร์จะมีสัญญาณเสียงดังปล่อยออกมา ดังนั้นต้องให้อุปกรณ์รับแสงเลเซอร์ห่างจากหูหรือจากบุคคลอื่นเมื่อเปิดสวิทช์** เสียงดังอาจทำให้การได้ยินบกพร่องได้

**เปิดสวิทช์** อุปกรณ์รับแสงเลเซอร์โดยกดปุ่มเปิด-ปิด **(17)** ไฟ LED ทั้งหมดส่องสว่างเป็นเวลาสั้นๆ และสัญญาณเสียงดังขึ้น เมื่อเปิดสวิทช์อุปกรณ์รับแสงเลเซอร์สัญญาณเสียงจะเปิดอยู่เสมอ

**ปิดสวิทช์**อุปกรณ์รับแสงเลเซอร์โดยกดปุ่มเปิด-ปิด **(17)** ก่อนปิดสวิทช์ ไฟ LED ทั้งหมดจะติดขึ้นสั้นๆ

หากไม่มีการกดปุ่มใดๆ บนเครื่องมือวัดนานประมาณ **6** นาที และไม่มีลำแสงเลเซอร์ตกที่บริเวณรับแสง **(18)** 6 เป็นเวลานาน อุปกรณ์รับแสงเลเซอร์จะปิดสวิทช์โดยอัตโนมัติเพื่อประหยัดแบตเตอรี่ ไฟ LED ทั้งหมดจะติดขึ้นสั้นๆ เพื่อบ่งบอกถึงการปิดสวิทช์

**การเลือกการตั้งแถบแสดงสัญลักษณ์กึ่งกลาง**

ท่านสามารถใช้ปุ่มตั้งความแม่นยำในการรับ **(16)** เพื่อกำหนดว่าจะใช้ความแม่นยำใดแสดงตำแหน่งของลำแสงเลเซอร์เป็น “กึ่งกลาง” บนบริเวณรับแสง:

– **ความแม่นยำในการรับ "ละเอียด":** เพื่อยืนยันว่าได้ยินเสียงสัญญาณ และเส้นกลาง LED **(7)** กะพริบ
– **ความแม่นยำในการรับ "ปานกลาง":** เพื่อยืนยันว่าได้ยินเสียงสองสัญญาณและ "สัญลักษณ์ทิศทาง LED "เส้นกลางอ้างอิงเหนือแสงเลเซอร์" **(8)** และ "แสงเลเซอร์ใต้เส้นกลาง" **(6)** กะพริบ

**สัญลักษณ์ทิศทาง**

ตำแหน่งของลำแสงเลเซอร์ในบริเวณรับแสง **(18)** จะแสดง:

– ทิศทาง LED "แสงเลเซอร์เหนือเส้นกลาง" **(8)** "แสงเลเซอร์ใต้เส้นกลาง" **(6)** หรือเส้นกลาง **(7)** ที่ด้านหน้าและหลังอุปกรณ์รับแสงเลเซอร์
– ผ่านสัญญาณเสียงซึ่งเป็นอีกตัวเลือกหนึ่ง

**อุปกรณ์รับแสงเลเซอร์ต่ำเกินไป:** หากลำแสงเลเซอร์วิ่งผ่านครึ่งบนของบริเวณรับ **(18)** ทิศทาง LED "แสงเลเซอร์ใต้เส้นกลาง" **(8)** จะส่องสว่างขึ้น

หากสัญญาณเสียงเปิดสวิทช์อยู่ จะมีสัญญาณปล่อยออกมาเป็นจังหวะช้าๆ

ให้เลื่อนอุปกรณ์รับแสงเลเซอร์ไปตามทิศทางลูกศรขึ้นข้างบน

**อุปกรณ์รับแสงเลเซอร์สูงเกินไป:** หากลำแสงเลเซอร์วิ่งผ่านครึ่งล่างของบริเวณรับ **(18)** ทิศทาง LED "แสงเลเซอร์ใต้เส้นกลาง" **(6)** จะส่องสว่างขึ้น

หากสัญญาณเสียงเปิดสวิทช์อยู่ จะมีสัญญาณปล่อยออกมาเป็นจังหวะเร็วๆ

ให้เลื่อนอุปกรณ์รับแสงเลเซอร์ไปตามทิศทางลูกศรลงข้างล่าง

**อุปกรณ์รับแสงเลเซอร์อยู่กึ่งกลาง:** หากลำแสงเลเซอร์วิ่งผ่านบริเวณรับ **(18)** ในระดับจุดกึ่งกลาง **(15)** สัญลักษณ์กึ่งกลาง LED **(7)**

เมื่อสัญญาณเสียงเปิดอยู่ จะมีเสียงดังขึ้นอย่างต่อเนื่อง

**สัญญาณเสียงสำหรับแสดงลำแสงเลเซอร์**

ตำแหน่งของลำแสงเลเซอร์บนบริเวณรับแสง **(18)** สามารถแสดงผ่านสัญญาณเสียง

เมื่อต้องการเปิดหรือปิดสัญญาณเสียง ให้กดปุ่มสัญญาณเสียง **(14)**

ทุกครั้งเมื่อกดปุ่มบนอุปกรณ์รับแสงเลเซอร์ จะมีเสียงสั้นๆ ดังขึ้นเพื่อเป็นการยืนยัน ทั้งนี้โดยไม่คำนึงถึงการตั้งค่าของสัญญาณเสียง

## ข้อแนะนำในการทำงาน

**การทำเครื่องหมาย**

ท่านสามารถทำเครื่องหมายระดับของลำแสงที่เครื่องหมายกึ่งกลาง **(15)** ที่อยู่ทางด้านซ้ายและขวาบนเครื่องมือวัด เมื่อลำแสงเลเซอร์วิ่งผ่านตรงกลางของบริเวณรับแสง **(18)** ขณะทำเครื่องหมาย ต้องอุปกรณ์รับแสงเลเซอร์ให้อยู่ในแนวตั้ง (สำหรับลำแสงเลเซอร์แนวนอน) หรือแนวนอน (สำหรับลำแสงเลเซอร์แนวตั้ง) อย่างแม่นยำ มิฉะนั้นเครื่องหมายจะอยู่ไม่ตรงกับจุดที่ลำแสงเลเซอร์ผ่าน

**การยึดกับฐานจับเครื่อง (ดูภาพประกอบ B)**

ท่านสามารถยึดเครื่องมือวัดโดยใช้อุปกรณ์รับแสงเลเซอร์โดยใช้ฐานจับเครื่อง **(1)** ที่ไม้วัด **(20)** (อุปกรณ์ประกอบ) และอุปกรณ์ช่วยอื่นๆ ที่มีความกว้างถึง **65**

ติดตั้งฐานจับเครื่อง **(1)** โดยขันสกรูยึด **(3)** เข้าในรูประกอบ **(4)** ที่ด้านหลังของอุปกรณ์รับแสงเลเซอร์ให้แน่น

คลายปุ่มหมุน **(13)** ของฐานจับ เลื่อนฐานจับ เช่นบนไว้ด **(20)** และหมุนปุ่มหมุน **(13)** ให้แน่นอีกครั้ง

ใช้ระดับน้ำ **(12)** ปรับฐานยึด **(1)** และปรับอุปกรณ์รับแสงเลเซอร์ให้ตั้งตรง อุปกรณ์รับแสงเลเซอร์ที่ตั้งไม่ตรงนำส่งผลให้เกิดข้อผิดพลาดในการวัด

เส้นกลางอ้างอิง **(2)** ของฐานจับเครื่องจะอยู่ในระดับเดียวกันกับจุดกึ่งกลาง **(15)** และสามารถใช้ทำเครื่องหมายตำแหน่งลำแสงเลเซอร์ได้

**การยึดติดด้วยแม่เหล็ก (ดูภาพประกอบ C)**

หากไม่จำเป็นต้องยึดติดอย่างมั่นคง ท่านสามารถยึดอุปกรณ์รับแสงเลเซอร์กับส่วนที่เป็นเหล็กด้วยแผ่นแม่เหล็ก **(5)**

## การบำรุงรักษาและการบริการ

### การบำรุงรักษาและการทำความสะอาด

รักษาอุปกรณ์รับแสงเลเซอร์ให้สะอาด

อย่าจุ่มอุปกรณ์รับแสงเลเซอร์ในน้ำหรือของเหลวอื่นๆ

เช็ดสิ่งสกปรกออกด้วยผ้านุ่มที่เปียกหมาดๆอย่าใช้สารซักฟอกหรือตัวทำละลาย

### การบริการหลังการขายและการให้คำปรึกษาการใช้งาน

ศูนย์บริการหลังการขายของเรายินดีตอบคำถามของท่านที่เกี่ยวกับการบำรุงรักษาและการซ่อมแซมผลิตภัณฑ์รวมทั้งเรื่องอะไหล่ ภาพเขียนแบบการประกอบและข้อมูลเกี่ยวกับอะไหล่ กรุณาดูใน: **www.bosch-pt.com**

ทีมงานที่ปรึกษาของ บ๊อช ยินดีให้ข้อมูลเกี่ยวกับผลิตภัณฑ์ของเราและอุปกรณ์ประกอบต่างๆ

เมื่อต้องการสอบถามและสั่งซื้ออะไหล่ กรุณาแจ้งหมายเลขสินค้า 10 หลักบนแผ่นป้ายรุ่นของผลิตภัณฑ์ทุกครั้ง

**ไทย**

ไทย บริษัท โรเบิร์ต บ๊อช จำกัด
เอฟวายไอ เซ็นเตอร์ อาคาร 1 ชั้น 5
เลขที่ 2525 ถนนพระราม 4
แขวงคลองเตย เขตคลองเตย กรุงเทพฯ 10110
โทร: +66 2012 8888
แฟกซ์: +66 2064 5800
www.bosch.co.th
ศูนย์บริการซ่อมและฝึกอบรม บ๊อช
อาคาร ลาซาลทาวเวอร์ ชั้น G ห้องเลขที่ 2
บ้านเลขที่ 10/11 หมู่ 16
ถนนศรีนครินทร์ ตำบลบางแก้ว อำเภอบางพลี
จังหวัดสมุทรปราการ 10540
ประเทศไทย
โทรศัพท์ 02 7587555
โทรสาร 02 7587525

### การกำจัดขยะ

อุปกรณ์รับแสงเลเซอร์ อุปกรณ์ประกอบ และหีบห่อ ต้องนำไปแยกประเภทวัสดุเพื่อนำกลับมาใช้ใหม่โดยไม่ทำลายสภาพแวดล้อม

อย่าทิ้งอุปกรณ์รับแสงเลเซอร์และแบตเตอรี่ลงในขยะบ้าน!

# Bahasa Indonesia

## Petunjuk Keselamatan

**Semua petunjuk harus dibaca dan diperhatikan. Apabila alat ukur tidak digunakan sesuai dengan petunjuk yang disertakan, keamanan alat ukur dapat terganggu. SIMPAN PETUNJUK INI DENGAN BAIK.**

- ▶ **Perbaiki alat ukur hanya di teknisi ahli resmi dan gunakan hanya suku cadang asli.** Dengan demikian, keselamatan kerja dengan alat ukur ini selalu terjamin.
- ▶ **Jangan mengoperasikan alat ukur di area yang berpotensi meledak yang di dalamnya terdapat cairan, gas, atau serbuk yang dapat terbakar.** Di dalam alat pengukur dapat terjadi bunga api, yang lalu menyulut debu atau uap.
- ▶ **Nada sinyal akan berbunyi keras pada kondisi tertentu saat alat ukur beroperasi. Oleh karena itu, jagalah jarak alat ukur dari telinga atau orang lain.** Bunyi yang keras dapat menyebabkan pendengaran terganggu.

**Jauhkan magnet dari alat implan atau perangkat medis semacamnya, seperti misalnya alat pacu jantung atau pompa insulin.** Magnet menciptakan medan yang dapat memengaruhi fungsi alat implan atau perangkat medis.

- ▶ **Jauhkan alat pengukur dari media data magnetis dan perangkat yang sensitif terhadap magnet.** Daya magnet dapat mengakibatkan data-data hilang secara permanen.

## Spesifikasi produk dan performa

Perhatikan ilustrasi yang terdapat pada bagian depan panduan pengoperasian.

### Tujuan penggunaan

Penerima laser cocok untuk menemukan dengan cepat sinar laser yang berputar pada panjang gelombang yang tertera di dalam data teknis.

Penerima laser cocok untuk digunakan di dalam maupun luar ruangan.

### Ilustrasi komponen

Nomor-nomor pada ilustrasi komponen mengacu pada gambar penerima laser pada halaman gambar.

**(1)** Penahan
**(2)** Garis tengah acuan pada braket
**(3)** Baut untuk mengencangkan braket
**(4)** Dudukan untuk braket
**(5)** Magnet
**(6)** Indikator arah LED "Sinar laser di bawah garis tengah"
**(7)** Garis tengah LED
**(8)** Indikator arah LED "Sinar laser di atas garis tengah"
**(9)** Tutup kompartemen baterai
**(10)** Nomor seri
**(11)** Penguncian tutup kompartemen baterai
**(12)** Waterpas pada braket
**(13)** Switch putar pada braket
**(14)** Tombol untuk suara sinyal
**(15)** Tanda di bagian tengah
**(16)** Tombol untuk pengaturan akurasi penerimaan
**(17)** Tombol on/off
**(18)** Bidang penerima sinar laser
**(19)** Pengeras suara
**(20)** Stik pengukur[A)]

A) **Aksesori yang ada pada gambar atau yang dijelaskan tidak termasuk dalam lingkup pengiriman standar. Semua aksesori yang ada dapat Anda lihat dalam program aksesori kami.**

### Data teknis

| Penerima laser | LR 30 |
|---|---|
| Nomor seri | **3 601 K69 2..** |
| Panjang gelombang yang dapat diterima | 635–650 nm |
| Area kerja[A)] dengan laser putar | 1–150 m |
| Sudut penerimaan | 45° |
| Kecepatan rotasi yang dapat diterima | 150/300/600 $min^{-1}$ |
| Akurasi penerimaan[B)C)] | |
| – "baik" | ±1,5 mm |
| – "sedang" | ±3 mm |
| Suhu pengoperasian | −10 °C ... +50 °C |
| Suhu penyimpanan | −20 °C ... +70 °C |
| Tinggi penggunaan maks. di atas tinggi acuan | 2000 m |
| Kelembapan relatif maks. | 90 % |
| Tingkat polusi sesuai dengan IEC 61010-1 | 2[D)] |
| Baterai | 1 × 9 V 6LR61 |
| Ketahanan baterai sekitar | 30 h |
| Berat sesuai dengan EPTA-Procedure 01:2014 | 0,34 kg |
| Dimensi (panjang × lebar × tinggi) | 131 × 57 × 29 mm |

A) Area kerja dapat berkurang akibat keadaan lingkungan yang tidak menguntungkan (seperti sinar matahari langsung).

B) bergantung pada jarak antara penerima laser dengan laser putar serta bergantung pada kelas dan jenis laser pada laser putar

C) Akurasi penerimaan dapat dipengaruhi oleh kondisi lingkungan yang tidak menguntungkan (seperti sinar matahari langsung).

D) Hanya polusi nonkonduktif yang terjadi, namun terkadang muncul konduktivitas sementara yang disebabkan oleh kondensasi.

Nomor seri **(10)** pada label tipe berfungsi sebagai identifikasi penerima laser Anda.

## Cara memasang

### Memasang/mengganti baterai

Untuk pengoperasian penerima laser, direkomendasikan memakai baterai mangan alkali.

Tarik pengunci **(11)** pada penutup kompartemen baterai ke arah luar lalu buka penutup kompartemen baterai **(9)**. Masukkan baterai.

Pastikan baterai terpasang pada posisi kutub yang benar.

Jika daya baterai lemah, suara sinyal akan berbunyi dan semua LED akan berkedip. Lalu, penerima laser akan mati secara otomatis.

► **Keluarkan baterai dari penerima laser jika alat tersebut tidak digunakan untuk waktu yang lama.** Baterai dapat mengalami korosi jika disimpan di dalam penerima laser untuk waktu yang lama dan dayanya dapat berkurang dengan sendirinya.

## Penggunaan

### Cara penggunaan

► **Lindungi penerima laser dari cairan dan sinar matahari langsung.**

► **Jauhkan penerima laser dari suhu atau perubahan suhu yang ekstrem.** Jangan biarkan penerima laser berada terlalu lama di dalam kendaraan. Jika ada perubahan suhu yang besar, biarkan alat penerima laser mencapai suhu yang merata dahulu sebelum Anda mulai menggunakannya. Pada suhu yang luar biasa atau jika ada perubahan suhu yang luar biasa, ketelitian penerima laser dapat terganggu.

**Menyetel penerima laser (lihat gambar A)**

Posisikan penerima laser setidaknya **1** m dari laser putar. Untuk laser putar dengan beberapa mode pengoperasian, pilih pengoperasian horizontal atau vertikal dengan kecepatan putaran tertinggi.

Posisikan penerima laser sehingga sinar laser dapat mencapai bidang penerima **(18)**. Arahkan penerima laser sehingga sinar laser melalui bidang penerima secara menyilang (seperti terlihat pada gambar).

**Menyalakan/mematikan**

▶ **Suara sinyal yang keras akan berbunyi saat penerima laser dinyalakan. Oleh karena itu, jauhkan penerima laser dari telinga atau dari orang lain saat penerima laser dinyalakan.** Suara keras dapat merusak pendengaran.

Untuk **menyalakan** penerima laser, tekan tombol on/off **(17)**. Semua LED akan menyala secara singkat dan sinyal suara akan berbunyi.

Setelah penerima laser dinyalakan, suara sinyal akan diaktifkan dan akurasi penerimaan diatur ke "baik".

Untuk **mematikan** penerima laser, tekan kembali tombol on/off **(17)**. Semua LED menyala singkat sebelum alat mati.

Jika tombol pada penerima laser tidak ditekan selama sekitar **6** menit dan sinar laser tidak mencapai bidang penerima **(18)** selama **6** menit, penerima laser akan mati secara otomatis untuk menghemat baterai. Matinya alat ditandai dengan semua LED yang menyala singkat.

**Memilih pengaturan indikator garis tengah**

Akurasi posisi sinar laser dapat diatur dengan tombol pengaturan akurasi pengukuran **(16)** yang ditampilkan pada bidang penerima di posisi "tengah":

- **Akurasi penerimaan "bagus":** Suara sinyal akan terdengar untuk menandakan konfirmasi dan garis tengah LED **(7)** akan berkedip.
- **Akurasi penerimaan "sedang":** Dua suara sinyal akan terdengar untuk menandakan konfirmasi dan indikator arah LED "Sinar laser di atas garis tengah" **(8)** serta "Sinar laser di bawah garis tengah" **(6)** akan berkedip.

**Indikator arah**

Posisi sinar laser pada bidang penerima **(18)** ditampilkan:

- melalui indikator arah LED "Sinar laser di atas garis tengah" **(8)**, "Sinar laser di bawah garis tengah" **(6)** atau garis tengah **(7)** pada sisi depan dan belakang penerima laser,
- secara opsional melalui suara sinyal.

**Penerima laser terlalu rendah:** Saat sinar laser melewati bagian atas bidang penerima **(18)**, indikator arah LED "Sinar laser di atas garis tengah" **(8)** akan menyala.
Jika suara sinyal diaktifkan, terdengar satu sinyal lambat.
Gerakkan penerima laser ke atas sesuai arah panah.

**Penerima laser terlalu tinggi:** Saat sinar laser melewati bagian bawah bidang penerima **(18)**, indikator arah LED "Sinar laser di bawah garis tengah" **(6)** akan menyala.
Jika suara sinyal diaktifkan, terdengar satu sinyal cepat.
Gerakkan penerima laser ke bawah sesuai arah panah.

**Penerima laser di tengah:** Saat sinar laser melewati bidang penerima **(18)** pada ketinggian penanda tengah **(15)**, garis tengah LED **(7)** akan menyala.
Suara akan terus berbunyi saat suara sinyal diaktifkan.

**Suara sinyal untuk menunjukkan sinar laser**

Posisi sinar laser pada bidang penerima **(18)** dapat ditampilkan melalui suara sinyal.

Untuk menonaktifkan dan mengaktifkan suara sinyal, tekan tombol suara sinyal **(14)**.

Suara singkat akan berbunyi pada saat tiap tombol pada penerima laser ditekan untuk menandakan konfirmasi terlepas dari pengaturan suara sinyal.

### Petunjuk pemakaian

**Memberi tanda**

Pada penanda tengah **(15)** sisi kanan dan kiri penerima laser, ketinggian sinar laser dapat ditandai jika sinar laser melewati posisi tengah bidang penerima **(18)**.

Saat menandai, pastikan penerima laser diatur secara vertikal (dengan sinar laser horizontal) atau secara horizontal (dengan sinar laser vertikal), karena jika tidak, tanda akan tergeser terhadap sinar laser.

**Mengencangkan dengan braket (lihat gambar B)**

Penerima laser dapat dipasang dengan bantuan braket **(1)** serta stik pengukur **(20)** (aksesori) serta alat-alat lain dengan lebar hingga **65** mm.

Kencangkan braket **(1)** dengan baut pengencang **(3)** pada dudukan **(4)** di bagian belakang penerima laser.

Longgarkan knop putar **(13)** pada braket, geser penahan pada stik pengukur **(20)** dan kencangkan kembali knop putar **(13)**.

Dengan bantuan waterpas **(12)**, braket **(1)** dapat diatur secara horizontal dan demikian juga penerima laser. Penerima laser yang digunakan secara miring dapat menyebabkan kesalahan pada pengukuran.

Garis tengah acuan **(2)** pada braket terletak pada tinggi yang sama seperti penanda tengah **(15)** dan dapat digunakan untuk menandai sinar laser.

**Mengencangkan dengan magnet (lihat gambar C)**

Apabila tidak diperlukan pemasangan yang kuat, penerima laser dapat diletakkan pada elemen baja dengan bantuan magnet **(5)**.

## Perawatan dan servis

### Perawatan dan pembersihan

Selalu jaga kebersihan penerima laser.

Jangan memasukkan penerima laser ke dalam air atau cairan lainnya.

Jika alat kotor, bersihkan dengan lap yang lembut dan lembap. Jangan gunakan bahan pembersih atau zat pelarut.

### Layanan pelanggan dan konsultasi penggunaan

Layanan pelanggan Bosch menjawab semua pertanyaan Anda tentang reparasi dan perawatan serta tentang suku cadang produk ini. Gambaran teknis (exploded view) dan informasi mengenai suku cadang dapat ditemukan di:
**www.bosch-pt.com**
Tim konsultasi penggunaan Bosch akan membantu Anda menjawab pertanyaan seputar produk kami beserta aksesorinya.

Jika Anda hendak menanyakan sesuatu atau memesan suku cadang, selalu sebutkan nomor model yang terdiri dari 10 angka dan tercantum pada label tipe produk.

**Indonesia**
PT Robert Bosch
Palma Tower 10th Floor
Jalan RA Kartini II-S Kaveling 6
Pondok Pinang, Kebayoran Lama
Jakarta Selatan 12310
Tel.: (021) 3005 5800
Fax: (021) 3005 5801
E-Mail: boschpowertools@id.bosch.com
www.bosch-pt.co.id

### Cara membuang

Penerima laser, aksesori dan kemasan sebaiknya didaur ulang secara ramah lingkungan.

Jangan membuang penerima laser dan baterai bersama dengan sampah rumah tangga!

# Tiếng Việt

## Hướng dẫn an toàn

**Đọc và tuân thủ tất cả các hướng dẫn. Khi sử dụng dụng cụ đo không phù hợp với các hướng dẫn ở trên, các thiết bị bảo vệ được tích hợp trong dụng cụ đo có thể bị suy giảm. HÃY BẢO QUẢN CÁC HƯỚNG DẪN NÀY MỘT CÁCH CẨN THẬN.**

- ▶ **Chỉ để người có chuyên môn được đào tạo sửa dụng cụ đo và chỉ dùng các phụ tùng gốc để sửa chữa.** Điều này đảm bảo cho sự an toàn của dụng cụ đo được giữ nguyên.
- ▶ **Không làm việc với dụng cụ đo trong môi trường dễ nổ, mà trông đó có chất lỏng, khí ga hoặc bụi dễ cháy.** Các tia lửa có thể hình thành trong dụng cụ đo và có khả năng làm rác cháy hay ngún khói.
- ▶ **Khi vận hành máy đo, âm tín hiệu sẽ kêu lớn theo các điều kiện nhất định. Vì thế hãy giữ máy đo cách xa tai mình cũng như người khác.** Âm thanh lớn có thể làm suy giảm thính giác.

**Không để nam châm ở gần mô cấy hoặc các thiết bị y tế khác, ví dụ như máy trợ tim hoặc bơm insulin.** Từ tính có thể tạo ra một trường ảnh hưởng xấu đến chức năng của mô cấy hoặc các thiết bị y tế.

- ▶ **Để dụng cụ đo tránh xa các phương tiện nhớ từ tính và các thiết bị nhạy từ.** Ảnh hưởng của từ tính có thể gây ra mất dữ liệu không phục hồi được.

## Mô Tả Sản Phẩm và Đặc Tính Kỹ Thuật

Xin lưu ý các hình minh hoạt trong phần trước của hướng dẫn vận hành.

### Sử dụng đúng cách

Bộ thu laser được qui định để tìm nhanh các tia laze quay của các bước sóng đã được nêu trong dữ liệu kỹ thuật.

Bộ thu laser phù hợp để sử dụng trong vùng bên ngoài và bên trong.

### Các bộ phận được minh họa

Sự đánh số các biểu trưng của sản phẩm là để tham khảo hình minh họa của bộ tiếp nhận laze trên trang hình ảnh.

**(1)** Giá Đỡ
**(2)** Tham chiếu đường trung bình ở giá đỡ
**(3)** Vít bắt cố định khuôn đỡ
**(4)** Khuôn đỡ
**(5)** Nam châm
**(6)** Hiển thị hướng LED „Tia laser dưới đường trung bình“
**(7)** LED đường trung bình
**(8)** Hiển thị hướng LED „Tia Laser trên đường trung bình“
**(9)** Nắp đậy pin
**(10)** Mã seri sản xuất
**(11)** Lẫy cài nắp đậy pin
**(12)** Ống nivô của giá đỡ
**(13)** Núm xoay của giá đỡ
**(14)** Phím tín hiệu âm thanh
**(15)** Dấu chỉ điểm giữa
**(16)** Phím điều chỉnh độ thu nhận chính xác
**(17)** Phím Bật/tắt
**(18)** Trường tiếp nhận luồng laze
**(19)** Loa

**(20)** Thanh đo[A)]

A) **Phụ tùng được trình bày hay mô tả không phải là một phần của tiêu chuẩn hàng hóa được giao kèm theo sản phẩm. Bạn có thể tham khảo tổng thể các loại phụ tùng, phụ kiện trong chương trình phụ tùng của chúng tôi.**

### Thông số kỹ thuật

| Thiết bị thu laze | LR 30 |
|---|---|
| Mã số máy | **3 601 K69 2..** |
| Bước sóng có thể nhận | 635–650 nm |
| Phạm vi làm việc[A)] với laser xoay | 1–150 m |
| Góc tiếp nhận | 45° |
| Vận tốc quay có thể tiếp nhận | 150/300/600 $min^{-1}$ |
| Độ thu nhận chính xác[B)C)] | |
| – "tinh" | ±1,5 mm |
| – „trung bình“ | ±3 mm |
| Nhiệt độ hoạt động | −10 °C ... +50 °C |
| Nhiệt độ lưu kho | −20 °C ... +70 °C |
| Chiều cao ứng dụng tối đa qua chiều cao tham chiếu | 2000 m |
| Độ ẩm không khí tương đối tối đa | 90 % |
| Mức độ bẩn theo IEC 61010-1 | 2[D)] |
| Ắc quy | 1 × 9 V 6LR61 |
| Thời gian vận hành khoảng | 30 h |
| Trọng lượng theo Qui trình EPTA-Procedure 01:2014 | 0,34 kg |
| Kích thước (Chiều dài × Chiều rộng × Chiều cao) | 131 × 57 × 29 mm |

A) Phạm vi làm việc có thể được giảm thông qua các điều kiện môi trường không thuận lợi (ví dụ như tia mặt trời chiếu trực tiếp).

B) Phụ thuộc vào khoảng cách giữa thiết bị thu tia la – ze và tia la-ze quay cũng như vào mức la-ze và kiểu la-ze của la-ze xoay

C) Độ thu nhận chính xác có thể bị ảnh hưởng do điều kiện môi trường không thuận lợi (ví dụ như tia mặt trời chiếu trực tiếp).

D) Chỉ có chất bẩn không dẫn xuất hiện, nhưng đôi khi độ dẫn điện tạm thời gây ra do ngưng tụ.

Số xêri **(10)** đều được ghi trên nhãn mác, để dễ dàng nhận dạng loại bộ thu laser.

## Sự lắp vào

### Lắp/thay ắc quy

Khuyến nghị sử dụng các pin kiềm mangan để vận hành bộ thu laser.

Kéo lẫy cài **(11)** của nắp đậy pin ra ngoài và gấp nắp đậy ngăn chứa pin lên **(9)**. Lắp ắc quy vào. Hãy chú ý sự phân cực chính xác.

Nếu pin yếu dần, thì sẽ có một tiếng bíp âm thanh và tất cả các đèn LED nhấp nháy. Sau đó, bộ thu laser tự động tắt.

- ▶ **Tháo ắc quy ra khỏi bộ thu laser nếu bạn không muốn sử dụng thiết bị trong thời gian dài.** Pin có thể hư mòn sau thời gian bảo quản lâu trong bộ thu laser và tự xả điện.

## Vận Hành

### Bắt Đầu Vận Hành

- ▶ **Bảo vệ bộ thu laser tránh khỏi ẩm ướt và không để bức xạ mặt trời chiếu trực tiếp vào.**
- ▶ **Không cho bộ thu laser tiếp xúc với nhiệt độ khắc nghiệt hoặc dao động nhiệt độ.** Không để nó trong chế độ tự động quá lâu. Trong trường hợp có sự thay đổi nhiệt độ thái quá, hãy để cho bộ tiếp nhận laze điều chỉnh theo nhiệt độ chung quanh trước khi đưa vào hoạt động. Trong trường hợp ở trạng thái nhiệt độ cực đoan hay nhiệt độ thay đổi thái quá, sự chính xác của bộ tiếp nhận laze có thể bị hư hỏng.

#### Lắp bộ thu laser (xem hình A)

Bạn hãy đặt bộ thu laser cách ít nhất **1** m so với laser xoay. Đối với các laser xoay với nhiều chế độ vận hành hãy chọn vận hành ngang hoặc dọc với tốc độ xoay cao nhất.

Đặt bộ thu laser để tia laser có thể tới được trường nhận **(18)**. So chỉnh dụng cụ đo cách sao cho luồng laze lệch qua một bên xuyên qua phạm vi tiếp nhận (như trong hình minh họa).

#### Bật Mở và Tắt

- ▶ **Khi bật bộ thu laser, một âm tín hệu to phát ra. Vì thế hãy giữ bộ thu laser cách xa tai mình cũng như người khác khi bật.** Âm thanh lớn có thể làm suy giảm thính giác.

Để **Bật** bộ thu laser, bạn hãy ấn phím bật/tắt **(17)**. Tất cả các đèn LED chớp tắt và có tín hiệu âm thanh phát ra.

Sau khi bật bộ thu laser, âm tín hiệu được bật và độ thu nhận chính xác „tinh“ được điều chỉnh.

Để **Tắt** bộ thu laser, bạn hãy ấn lại phím bật/tắt **(17)**. Trước khi tắt, tất cả đèn LED chớp tắt.

Nếu khoảng **6** phút mà không phím nào ở bộ thu laser được nhấn và không có tia laser nào tới được trường nhận **(18) 6** phút, thì bộ thu laser sẽ tự động ngắt để tiết kiệm ắc quy. Sự ngắt mạch được báo hiệu bằng sự chớp tắt của tất cả các đèn LED.

**Chọn cài đặt hiển thị đường trung bình**

Bằng nút cài đặt độ thu nhận chính xác **(16)** bạn có thể xác định với độ chính xác nào vị trí của tia laser được hiển thị trên trường nhận như „ở giữa“:

– **Độ thu nhận chính xác „tinh“:** Để xác nhận phải nghe thấy âm cảnh báo và LED đường trung bình nhấp nháy **(7)**.
– **Độ thu nhận chính xác „trung bình“:** Để xác nhận, phải nghe thấy hai âm cảnh báo và các hiển thị hướng LED „Tia laser trên đường trung bình“ **(8)** cũng như „Tia laser dưới đường trung bình“ **(6)** nhấp nháy.

**Hình Chỉ Hướng**

Vị trí tia laser ở trường nhận **(18)** sẽ được hiển thị:

– bằng các hiển thị hướng LED „Tia lsser trên đường trung bình“ **(8)**, „Tia laser dưới đường trung bình“ **(6)** hoặc đường trung bình **(7)** trên mặt trước và mặt sau của bộ thu laser,
– tùy chọn thông qua âm tín hiệu.

**Bộ thu laser quá sâu:** tia la-ze đi xuyên qua nửa phần trên của trường nhận **(18)**, sau đó các thiết bị hiển thị hướng LED „Tia laser trên đường trung bình“ sẽ chiếu sáng **(8)**.
Khi tín hiệu âm thanh được mở, tín hiệu phát ra có nhịp chậm.
Hãy di chuyển bộ thu laser theo hướng mũi tên hướng lên trên.

**Bộ thu laser quá cao:** tia la-ze đi xuyên qua nửa phần dưới của trường nhận **(18)**, sau đó các thiết bị hiển thị hướng LED „Tia laser dưới đường trung bình“ sẽ phát sáng **(6)**.
Khi tín hiệu âm thanh được mở, tín hiệu phát ra có nhịp nhanh.
Hãy di chuyển bộ thu laser theo hướng mũi tên hướng xuống dưới.

**Bộ thu laser ở giữa:** tia la-ze đi xuyên qua trường nhận **(18)** trên độ cao phần đánh dấu ở giữa **(15)**, sau đó các đèn LED đường trung bình sẽ phát sáng **(7)**.
Khi bật âm tín hiệu, sẽ phát ra một âm kéo dài.

**Tín Hiệu Âm Thanh Chỉ Luồng Laze**

Vị trí của tia laser trên trường nhận **(18)** có thể được hiển thị bằng môt âm tín hiệu.

Để bật và tắt âm tín hiệu, hãy nhấn phím âm tín hiệu **(14)**.

Không phụ thuộc vào việc điều chỉnh âm tín hiệu, mỗi lần nhấn phím trên bộ thu laser để xác nhận sẽ phát ra một âm thanh ngắn hơn.

## Hướng Dẫn Sử Dụng

**Đánh dấu**

Ở dấu chỉ điểm giữa **(15)** bên phải và bên trái ở bộ thu laser, bạn có thể đánh dấu chiều cao của tia laser, nếu nó đi qua điểm giữa của trường nhận **(18)**.

Khi đánh dấu, lưu ý việc chỉnh sửa để bộ thu laser chính xác thẳng góc ở vị trí dọc (đối với luồng laze ngang), hay ở vị trí ngang (đối với luồng laze dọc), nếu không thực hiện như vậy, các dấu sẽ nằm lệch so với luồng laze.

**Cố định với giá đỡ (xem hình B)**

Bằng giá đỡ **(1)** bạn có thể gắn bộ thu laser vào thước đo **(20)** (Phụ tùng) cũng như vào các phương tiện trợ giúp khác có chiều rộng lên tới **65** mm.

Siết chặt giá đỡ **(1)** bằng vít định vị **(3)** vào khuôn đỡ **(4)** ở mặt sau của bộ thu laser.

Hãy nới lỏng núm xoay **(13)** của giá đỡ, trượt giá đỡ lên thanh đo **(20)** và vặn chặt núm xoay **(13)** trở lại.

Nhờ ống nivô **(12)** bạn có thể căn chỉnh giá đỡ **(1)** và căn chỉnh ngang bộ thu laser. Bộ thu laser bị lắp đặt sai sẽ cho ra các kết quả sai lệch.

Tham chiếu đường trung bình **(2)** của giá đỡ có chiều cao bằng với dấu chỉ điểm giữa **(15)** và có thể được sử dụng để đánh dấu tia laze.

**Cố định bằng nam châm (xem hình C)**

Nếu việc siết chặt không cần thiết, có thể đính tạm bộ thu laser với chi tiết kim loại bằng nam châm **(5)**.

# Bảo Dưỡng và Bảo Quản

## Bảo Dưỡng Và Làm Sạch

Luôn giữ sạch bộ thu laser.

Không được nhúng bộ thu laser vào nước hoặc các chất lỏng khác.

Lau sạch bụi bẩn bằng một mảnh vải mềm và ẩm. Không được sử dụng chất tẩy rửa.

## Dịch vụ hỗ trợ khách hàng và tư vấn sử dụng

Bộ phận phục vụ hàng sau khi bán của chúng tôi trả lời các câu hỏi liên quan đến việc bảo dưỡng và sửa chữa các sản phẩm cũng như phụ tùng thay thế của bạn. Sơ đồ mô tả và thông tin về phụ tùng thay thế cũng có thể tra cứu theo dưới đây:
**www.bosch-pt.com**
Đội ngũ tư vấn sử dụng của Bosch sẽ giúp bạn giải đáp các thắc mắc về sản phẩm và phụ kiện.

Trong tất cả các phản hồi và đơn đặt phụ tùng, xin vui lòng luôn luôn nhập số hàng hóa 10 chữ số theo nhãn của hàng hóa.

**Việt Nam**
CN CÔNG TY TNHH BOSCH VIỆT NAM TẠI TP.HCM
Tầng 14, Ngôi Nhà Đức, 33 Lê Duẩn
Phường Bến Nghé, Quận 1, Thành Phố Hồ Chí Minh
Tel.: (028) 6258 3690
Fax: (028) 6258 3692 - 6258 3694
Hotline: (028) 6250 8555

Email: tuvankhachhang-pt@vn.bosch.com
www.bosch-pt.com.vn
www.baohanhbosch-pt.com.vn

**Campuchia**
Công ty TNHH Robert Bosch (Campuchia)
Đơn nguyên 8BC, GT Tower, Tầng 08, Đường 169,
Tiệp Khắc Blvd, Sangkat Veal Vong,
Khan 7 Makara, Phnom Penh
VAT TIN: 100 169 511
Tel.: +855 23 900 685
Tel.: +855 23 900 660
www.bosch.com.kh

## Sự thải bỏ

Bộ thu laser, phụ kiện và bao bì phải được phân loại để tái chế theo hướng thân thiện với môi trường.

Không vứt bộ thu laser và pin cùng trong rác thải của gia đình!