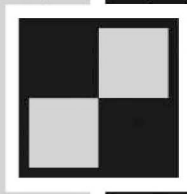


**STABILA®**



...sets standards



# Laser LAPR-150

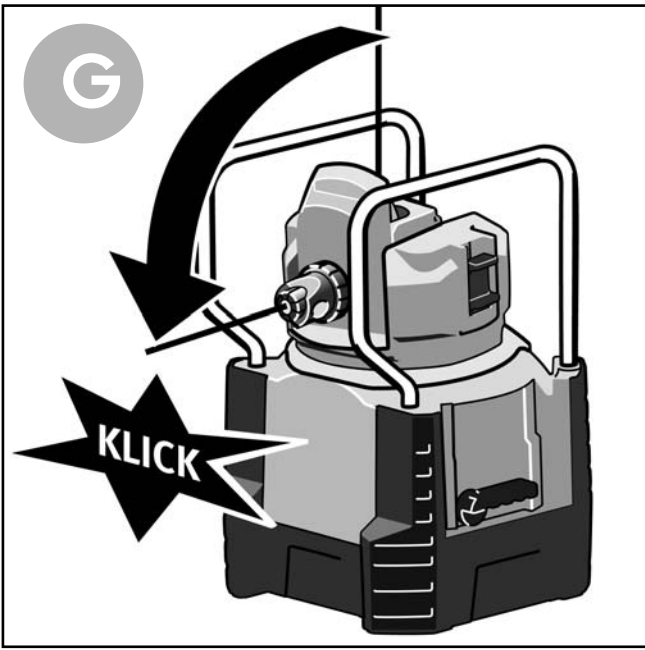
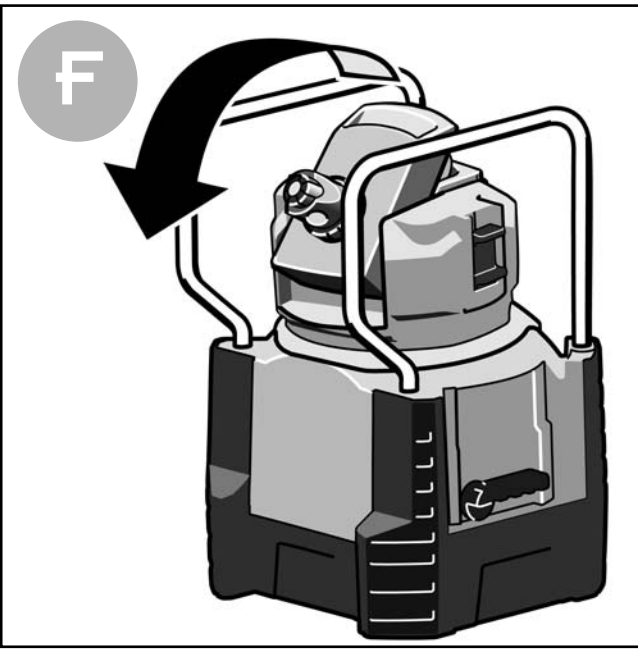
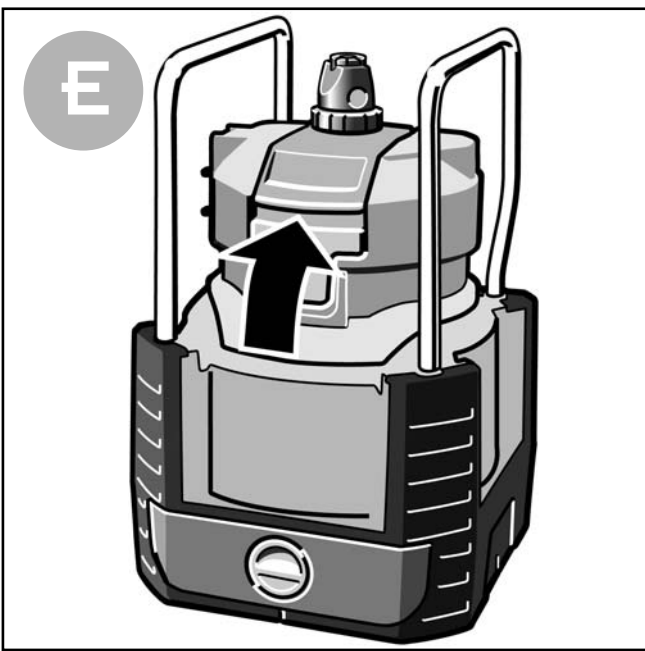
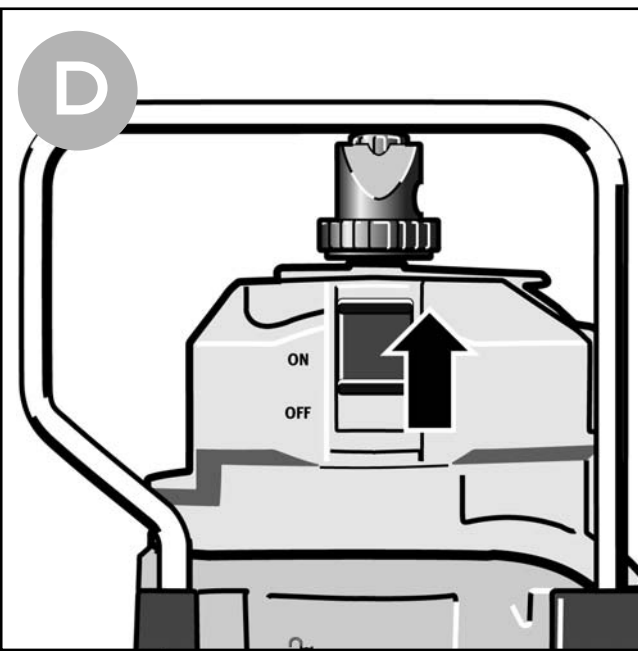
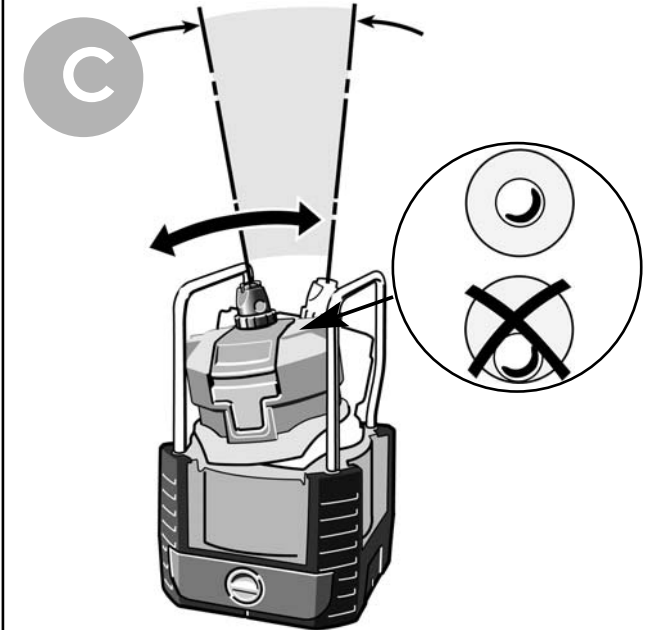
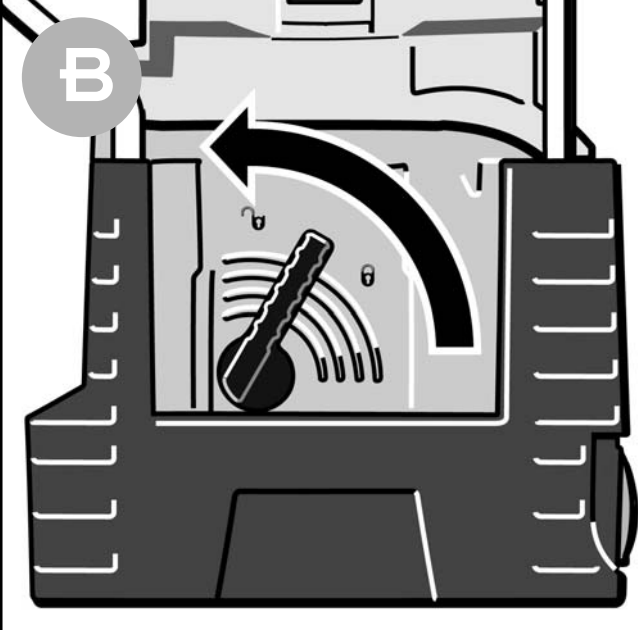
**GB** Operating instructions

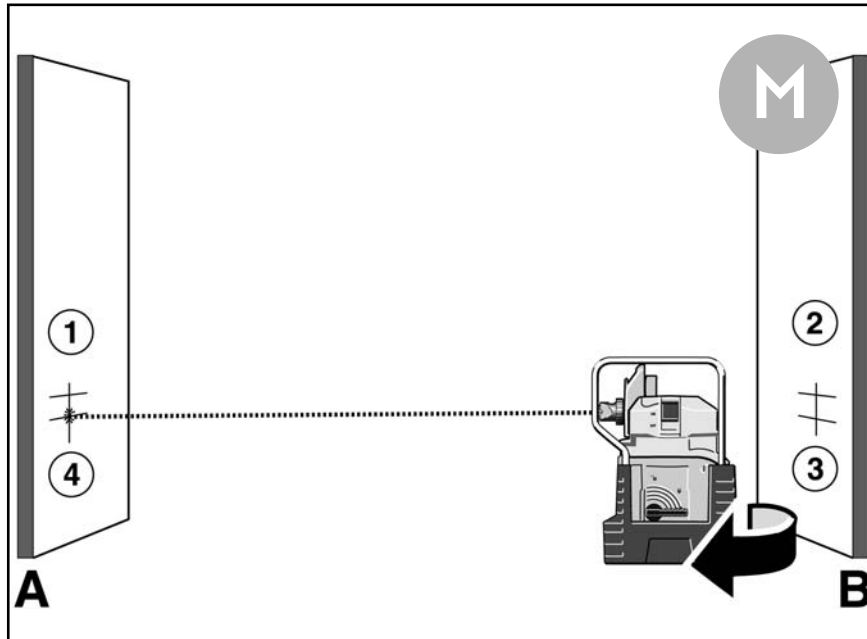
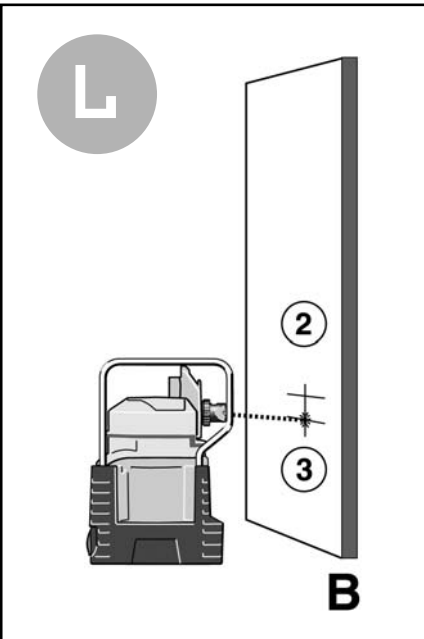
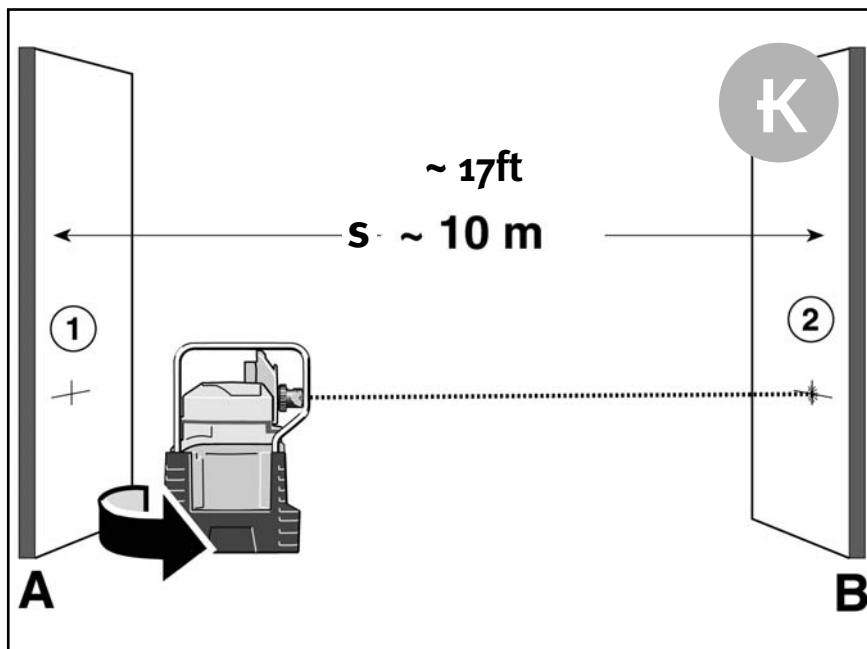
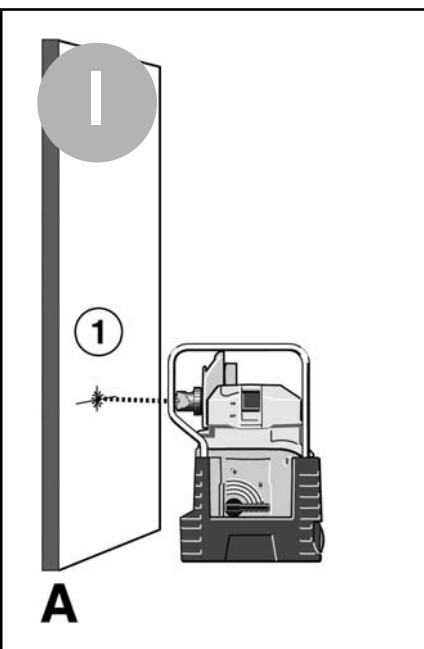
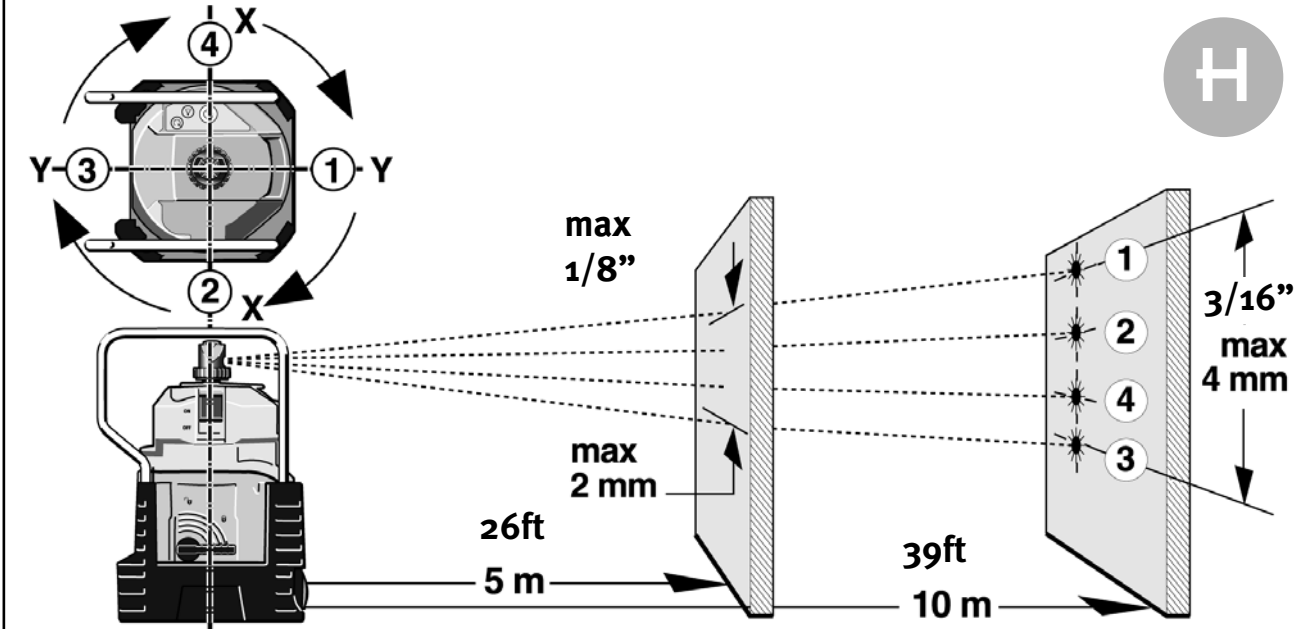
0



A







## Operating instructions

The STABILA LAPR-150 rotation laser is an easy to operate rotation laser for horizontal and vertical levelling and plumb lines. It is self-levelling in a range of  $\pm 1^\circ$ . The laser beam can be received at distances of up to 90 m (570 ft) with the use of a receiver, even when it is no longer visible to the naked eye.

We have endeavoured to explain the unit's handling and functioning in as clear and comprehensible manner as possible. If, however, you still have any unanswered questions, we should be pleased to provide advice over the telephone at any time on the following telephone number:

0049 / 63 46 / 3 09-0

### A Main components

Splitter pentaprism SP:

- (1) SP1: vertical beam emission aperture
- (2) SP2: rotation beam emission aperture
- (3a) ON switch

(3b) OFF switch (for protecting during transport)

(4a) Selector switch: Rotation function

(4b) Selector switch: Scan function

(5a) LEDs for displaying:

(5b) LED red : battery voltage and overheat

(5c) LED green : Operating mode ON or READY / OK

(6) Shock protection

(7) Battery compartment cover

(8) 5/8" threaded connector for tripod

(9) Rough adjustment vial

(10) Rough alignment clamp

(11) Motor housing

(12) Deflection optics

(13) Protection and carrying frame

# Main applications:

## Leveling

Set the unit on a firm base or tripod so that the bubble in the enclosed vial (9) does not touch the sides of the vial. This vial is used only for rough adjustment.


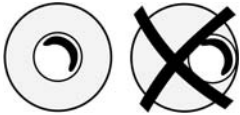

**Tip:** It is useful to set up the rotation laser safely at the same distance to the subsequent measurement points.

## Getting started

Move the slider switch (3a) upwards to switch the laser ON.

If the unit is outside its self-leveling range, the laser starts to flash.


## Aligning:

1. Release the clamp. 
2. Tilt the upper part of the casing until the bubble in the vial no longer touches the edge of the vial. 
3. Re-fasten the clamp. 


## Adjusting and aligning the laser beam

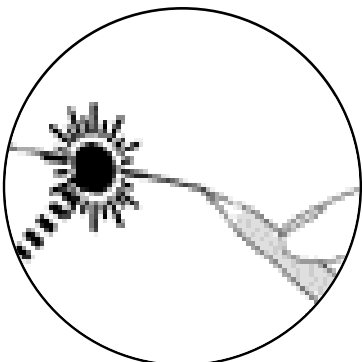
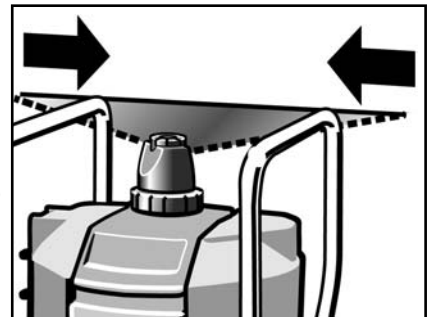
The LAPR 150 can be used in 2 operating modes.

1. Switch (4a) : Rotation function **1 x** 

**3 x**  Reduce rotation speed **→ = 0**

2. Switch(4b) : Scan function **1 x** 

**3 x**  scanning line is longer **→ = 0**



Please note that the center of laser dot is marked!

D

B

C

## Marking out vertical areas (vertical leveling)

**E** Tilt the motor head  $90^\circ$  in its end position and engage the deflection optics in the end position. Align the unit so that the vertical plane described by the optics is parallel or at right angles to a line of reference. Switch the laser on via the sliding switch 3). Align the casing by turning the unit on the base plate. Because of the vibration that this may cause, the monitoring function may cause the laser beam to flash.

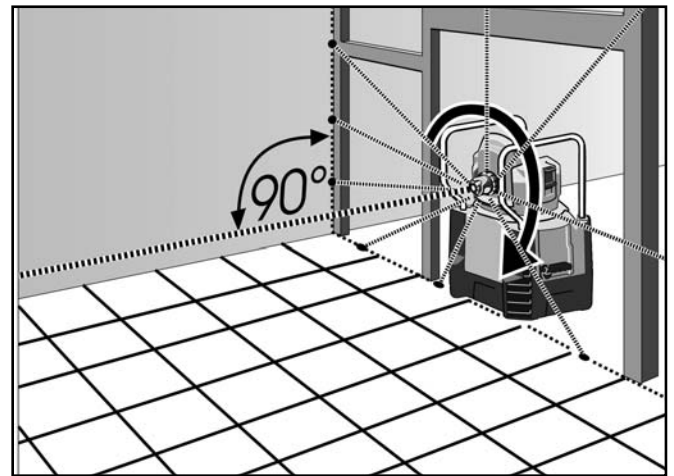
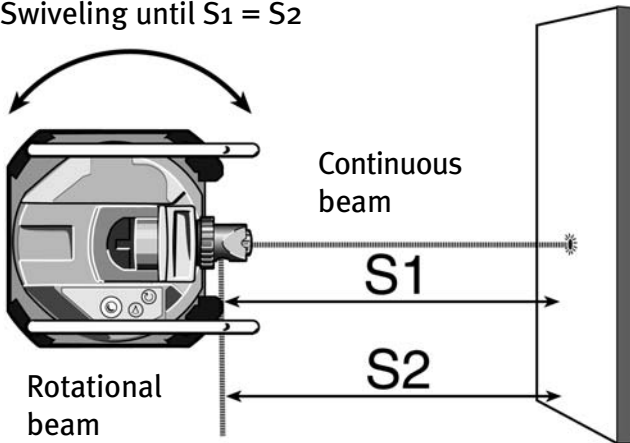
**F**

**G**

## 2 basic methods of vertical leveling

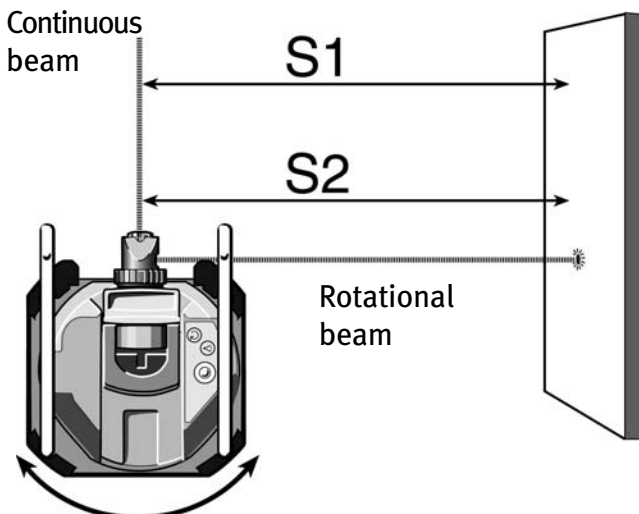
### Generating parallel planes:

Swiveling until  $S_1 = S_2$

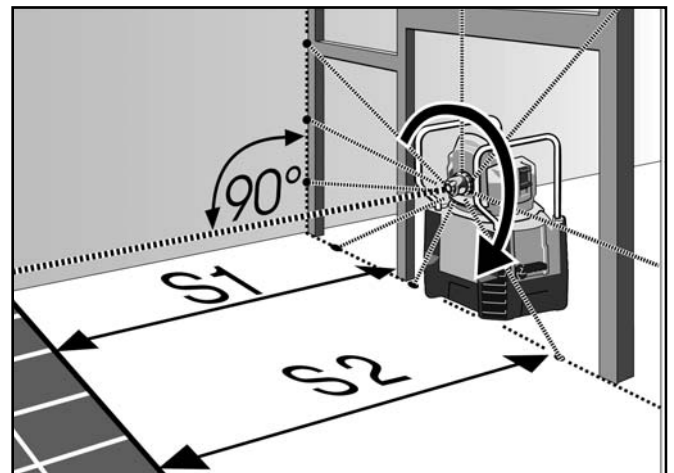


Creating vertical reference areas, e.g. measuring dividing walls.

### At right angles to the wall:



Swiveling until  $S_1 = S_2$



Measuring tiles, panels, parquet (floors, ceilings, walls), measuring right angles simply by swiveling the unit.



# Checking the calibration

The LAPR-150 rotation laser has been designed for building site use and leaves our factory perfectly calibrated. As with any precision instrument, however, its calibration must be regularly checked. The unit should be checked before starting any new tasks, particularly when the unit has been exposed to strong vibrations. After an impact, the unit should be checked throughout its whole self-leveling range.

## Horizontal check

1. Set up the rotation laser on a smooth, level surface or on a tripod 5m ( 26 ft ) or 10m ( 39ft ) from a wall with the front side facing the wall. H
2. Roughly align the laser using the built-in vial, i.e. set the bubble roughly in the centre of the vial. Turn the deflector prism's beam emission opening by hand in the direction of the wall. C
3. Mark the position of the visible laser dot on the wall - Measurement 1 (Point 1). Because the diameter of the beam depends on the distance, you must always only use the center of the dot! H1
4. Turn the complete unit 90° without altering the height of the laser (i.e. the tripod must not be altered) and turn the deflection prism in the direction of the wall again in the area of measurement point 1. H2
5. Mark the position of the visible laser dot on the wall (Point 2).
6. Repeat steps 4 and 5 to obtain Points 3 and 4. H3
7. If the difference between the control points is less than 2mm ( 1/8" ) at 5m ( 26ft ) distance and 4mm ( 3/16" ) at 10m ( 39ft ) distance the permissible tolerance of  $\pm 0.2 \text{ mm/m}$  (  $\pm 1/4"$  over 100ft ) is being maintained. H4

## Vertical check (motor head tilted 90°)

- K** Two parallel wall surfaces at least 5m ( 17 ft ) apart are required for the vertical check.
- I** 1. Set up the rotation laser on a tripod directly in front of wall A.
  - E** 2. Tilt the motor head 90° in the direction of wall A.  
**F** The deflection optics should be set in the end position.  
**G**
  - C** 3. Roughly align the laser using the built-in vial, i.e. set the bubble roughly in the center of the vial.
  - I** 4. Direct the laser beam on wall A.
  5. Switch the unit on.
  6. Mark the position of the visible laser dot on wall A (Point 1).
  - K** 7. Switch the unit off. Turn the complete unit 180° without altering the height of the laser. The tripod must not be altered.
  8. Switch the unit on.
  9. Mark the position of the visible laser dot on wall B (Point 2).
  - L** 10. Now place laser unit on its tripod directly in front of wall B.
  - C** 11. Roughly align the laser using the built-in vial, i.e. set the bubble roughly in the center of the vial. Set the tripod height approximately as it was for position 1.
  12. Direct the laser beam on wall B.
  13. Switch the unit on.
  14. Mark the position of the visible laser dot on wall B (Point 3), plumb to Point 2)
  - M** 15. Switch the unit off. Turn the complete unit 180° without altering the height of the laser. The tripod must not be altered.
  16. Switch the unit on.
  17. Mark the center of the laser dot on wall A for Point 4.
  18. Measure the corresponding heights of the points , either in relation to the floor or to the point below, which is classed as being at 0 mm.

It is essential that the plus or minus signs are calculated correctly.

$$0,3 \frac{\text{mm}}{\text{m}} \gtrsim \frac{(P_4 - P_1) - (P_3 - P_2)}{2S}$$

$$23/64 \text{“ over 100ft or } 1/272 \text{”} \frac{\text{inch}}{\text{ft}} \gtrsim \frac{(P_4 - P_1) - (P_3 - P_2)}{2S}$$

## Operating status display and error messages via the LEDs

Illuminated **green** LED -> laser in operation

**Flashing green** LED -> laser outside the self-leveling range  
+ laser beam **flashing**

Illuminated **yellow** LED -> battery voltage very low  
-> battery replacement required imminently

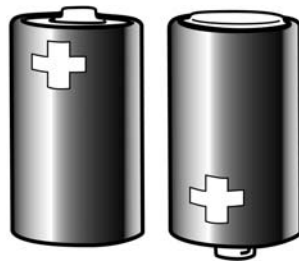
**Flashing yellow** LED -> battery voltage very low and the laser is also outside  
+ laser beam **flashing** the self-leveling range

Illuminated **red** LED -> The temperature in the unit is over 122°F / 50°C  
-> The laser diodes have been switched off to protect  
against overheating  
-> Place the unit in the shade to be able to continue working.

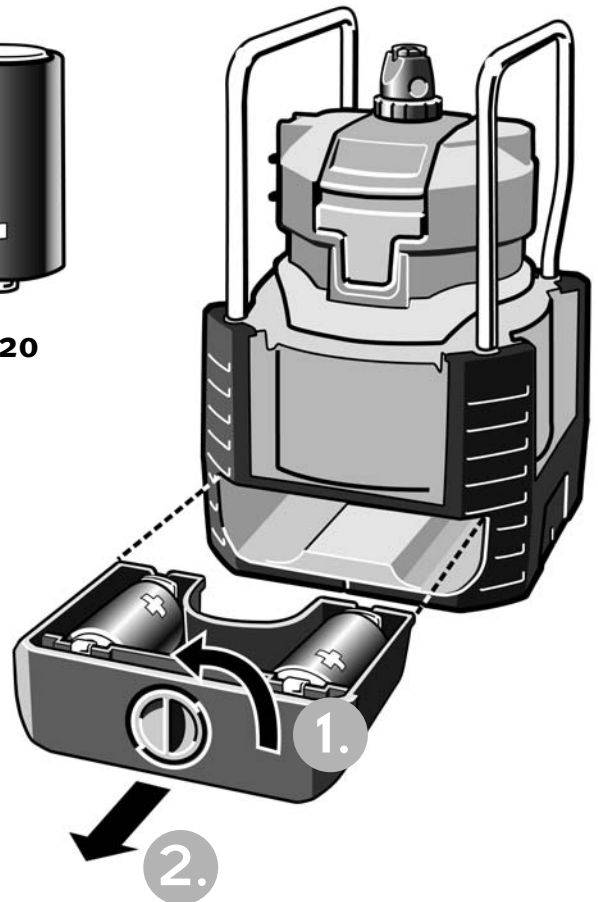
## Replacing the batteries

Open the battery compartment (7) by moving it in the direction of the arrow. Insert new batteries following the instructions in the battery compartment. Only use 1.5V mono cells (size D)!

Suitable rechargeable batteries can also be used.



**Mono, D , LR20**



### **Tip:**

Remove the batteries if the unit will not be used for a long period !

## Recycling programme for our EU customers:

In accordance with the WEEE regulations, STABILA provides a disposal programme for electronic products at the end of their service life.

For more details, please contact:

0049 / 6346 / 309-0



Do not store the laser when wet.  
Dry the laser and case before  
putting the laser away.



Do not submerge the laser.

Do not unscrew !



### NB:

In Class II laser equipment, your eyes are protected from accidental, short-term exposure to the laser beam by the lid-closing reflex and/or the reflex reaction to turn one's head. This equipment can therefore be used without additional protective measures. Nevertheless, you should not look directly into the laser beam.



**LASER RADIATION**  
DO NOT STARE  
INTO BEAM  
LASER CLASS 2

EN 60825-1 : 08 05

**CAUTION**  
LASER RADIATION  
DO NOT STARE  
INTO BEAM  
 630-680 nm / < 1mW  
CLASS II  
LASER PRODUCT

**Do not let the unit  
fall into children's  
hands!**

The laser goggles enclosed with these units are not safety goggles. They are designed to make the laser light easier to see.

The use of operating and adjustment equipment other than that indicated here or the use of other procedures can lead to dangerous exposure to radiation.

## Care and maintenance

- Dirty lens glass on the beam emitter detracts from the quality of the beam. It should be cleaned with a soft cloth.
- Clean the laser unit with a damp cloth. Do not spray or immerse the unit! Do not use solvents or thinners!

The LAPR-150 rotation laser must be handled carefully, in the same way as any precision optical instrument.

## Technical data

Laser type:	Red diode laser, wavelength 635 nm
Output:	< 1 mW, Laser Class 2 to EN 60825-1:08-05
Self-leveling range : (horizontal)	ca. $\pm 1^\circ$
Leveling accuracy:	horizontal: $\pm 0,2$ mm/m / $\pm 1/4''$ over 100ft vertical: $\pm 0,3$ mm/m / $\pm 23/64''$ over 100ft
Batteries:	2 x 1,5 V Mono cells Alkaline, Size D, LR20
Operating life:	Approx. 80 hours
Operating temperature range:	$0^\circ\text{C}$ to $+50^\circ\text{C}$ / or $32^\circ\text{F}$ to $+122^\circ\text{F}$ At temperatures $> 50^\circ\text{C}$ ( $122^\circ\text{F}$ ), the unit begins to regulate automatically.
Storage temperature range:	$-20^\circ\text{C}$ to $+60^\circ\text{C}$ / or $-4^\circ\text{F}$ to $+140^\circ\text{F}$
Protection against splashes and dust	IP 54
Subject to technical modifications.	

## Guarantee terms and conditions

Stabila provides a guarantee against deficiencies and faults in the assured characteristics because of material or manufacturing faults for a period of 24 months from date of purchase. Any faults will be eliminated at Stabila's own discretion either by repairing or replacing the unit. Stabila accepts no wider claims.

No liability is accepted for any faults due to inappropriate treatment (e.g. damage caused by the unit falling, operation with the wrong voltage or type of current, use of unsuitable current supply sources) or for any autonomous changes made to the unit by the purchaser or a third party.

Also no claims under guarantee are accepted for natural wear and tear or any small faults that do not significantly affect the unit's operation.

Any guarantee claims must be made via the dealer on the duly completed guarantee form (see last page) to be returned with the unit.