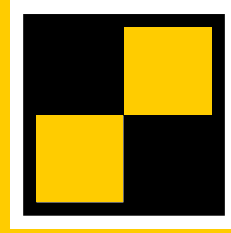


STABILA®



LAR 350

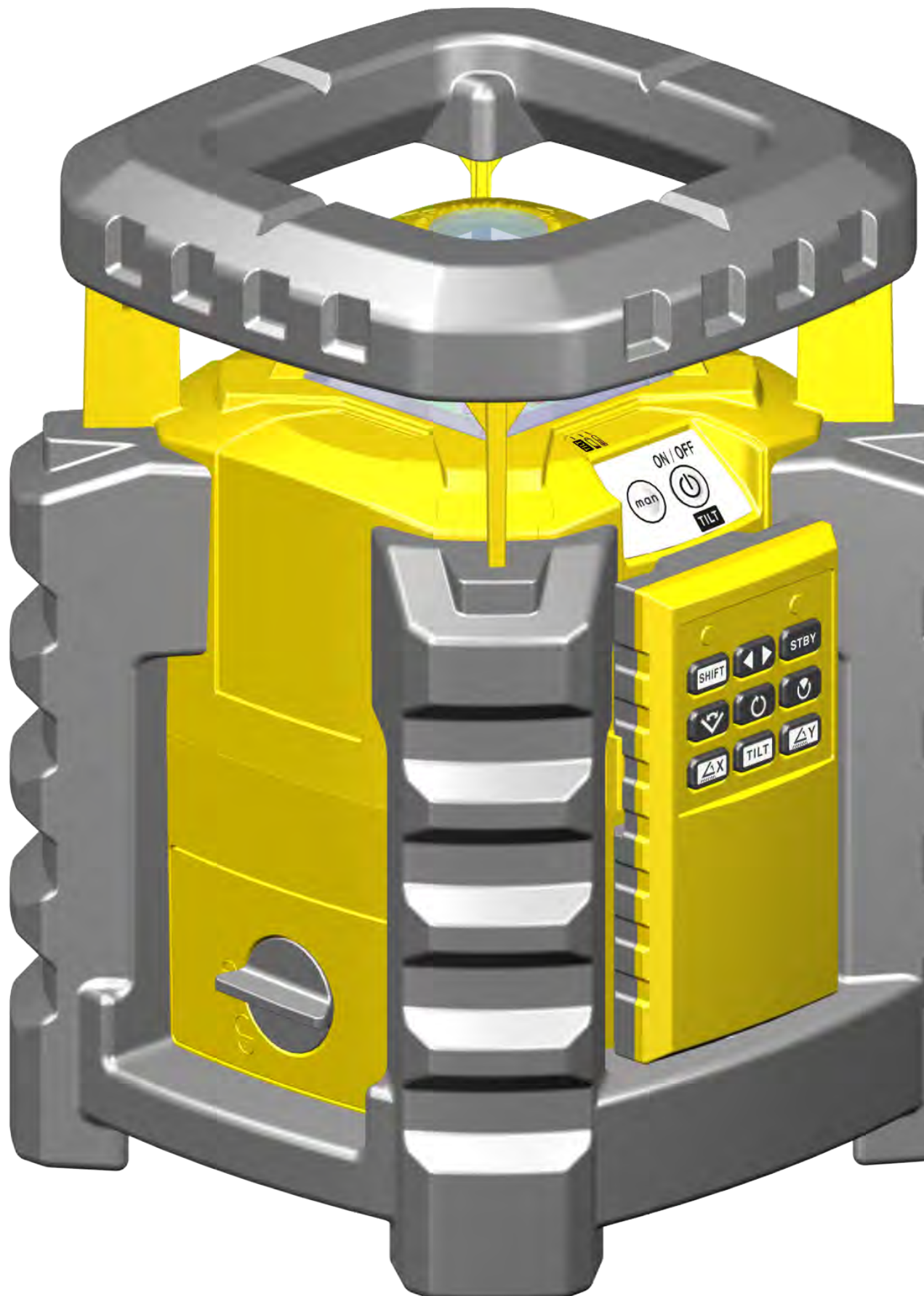
Operating Instructions

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LAR 350

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1. Intended Use

The STABILA LAR-350 is an easy-to-use rotation laser for horizontal and vertical levelling, including obtaining plumb lines. The LAR-350 has a sealed enclosure (IP 65) for use on construction sites. It is self-levelling within a range of $\pm 5^\circ$. The laser beam can be picked up using a receiver even where it can no longer be discerned with the naked eye.

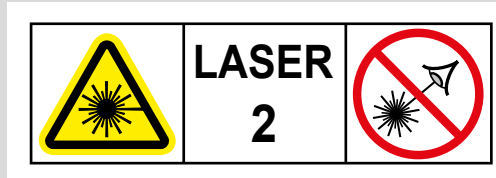


If you still have questions after reading through the operating instructions, you can obtain advice by telephone:



+49 / 63 46 / 3 09 - 0

2. Safety Information



IEC 60825-1:2014



Warning:

With class 2 laser devices it is usual, in the event of an accidental brief glance into the laser beam, for the eye to protect itself by the lid closure reflex and/or by a natural reaction of turning away. If laser radiation enters your eye, you should deliberately close your eyes and immediately move your head away from the beam. Do not look into the direct or reflected beam. The STABILA laser goggles available for our laser devices do not constitute safety eyewear; their function is to improve the visibility of the laser beam.

- Do not aim the laser beam directly at people.
- Avoid dazzling other people with the unit.
- Keep the unit out of the reach of children.
- If other operating or adjustment equipment is used than that specified here or if the unit is operated in ways other than described here, this may result in hazardous exposure to laser radiation.
- No manipulation (modification) of the laser unit is permitted.
- If the unit is dropped or subjected to strong vibrations it may malfunction.
- Always check that the unit is functioning correctly and accurately before you start work, particularly if it has been exposed to heavy vibrations.
- Do not use in explosive or corrosive environments.
- Do not dispose of the batteries or unit with domestic waste.
- Keep this user manual in a safe place. If the laser unit is passed or sold on to another person, ensure that the manual is included with the unit.



3. Before First Use

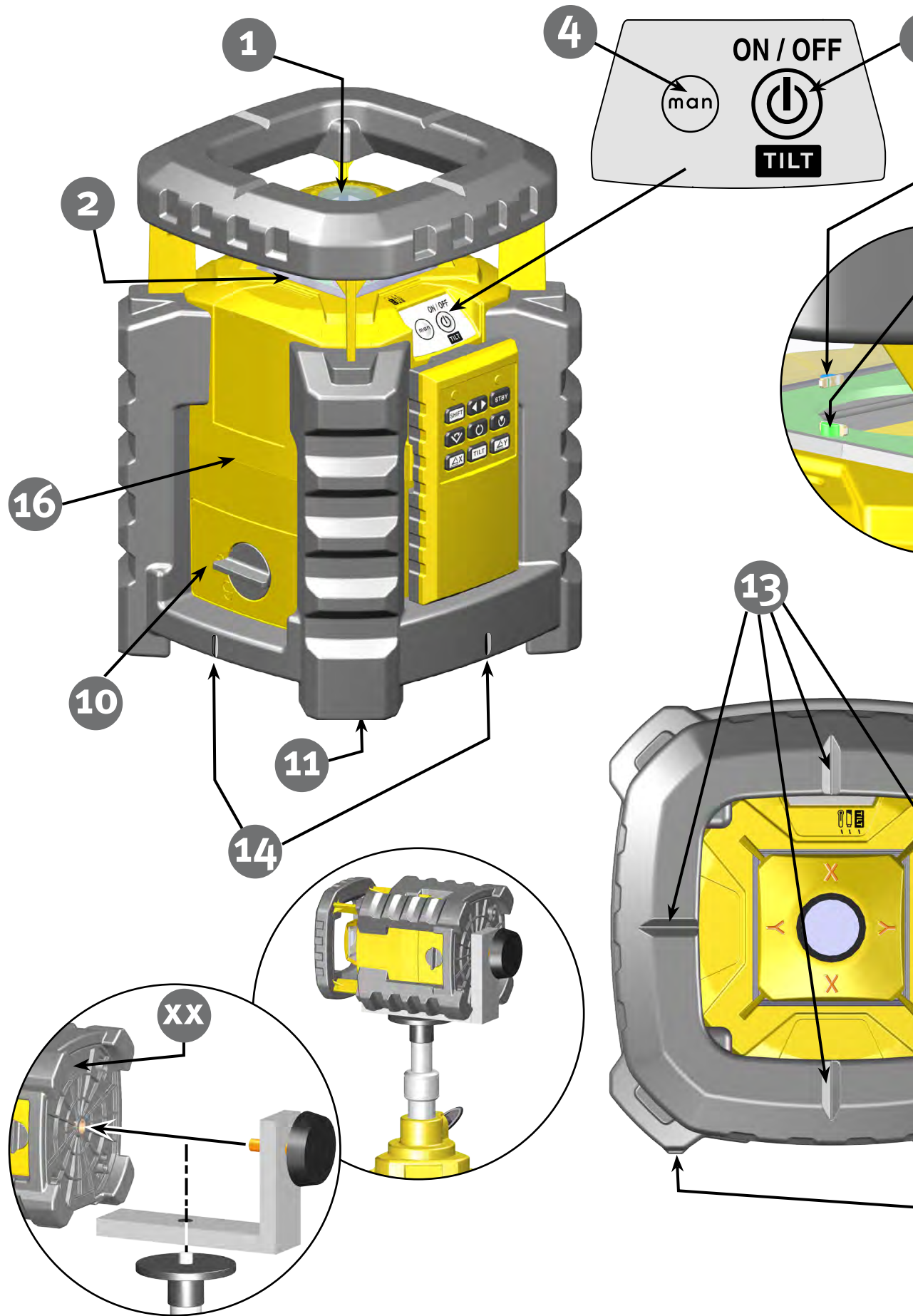
Read the safety instructions and operating instructions through carefully.

Allow only qualified persons to operate the unit.

Ensure that the safety precautions are observed!
To insert batteries -> Battery replacement

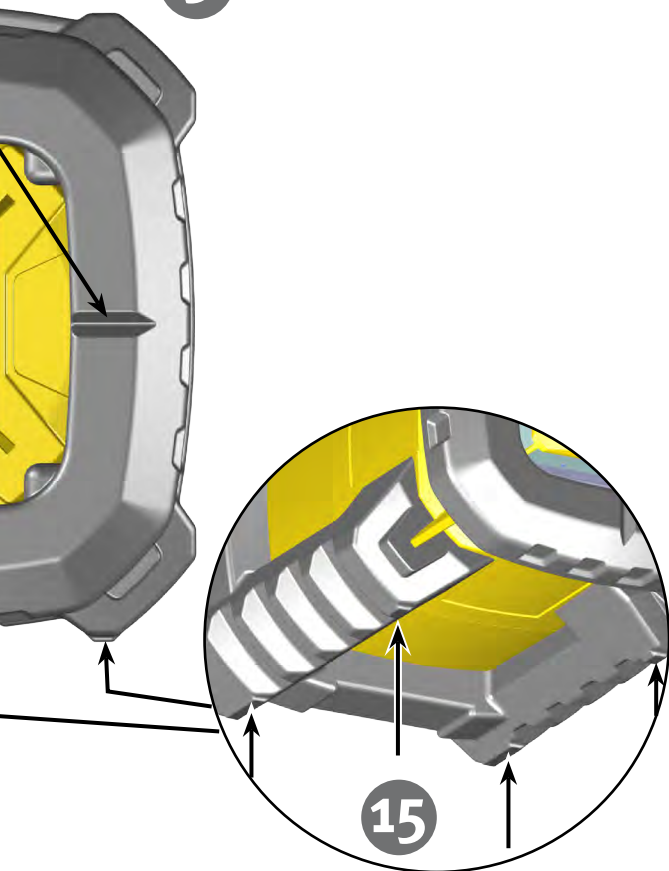
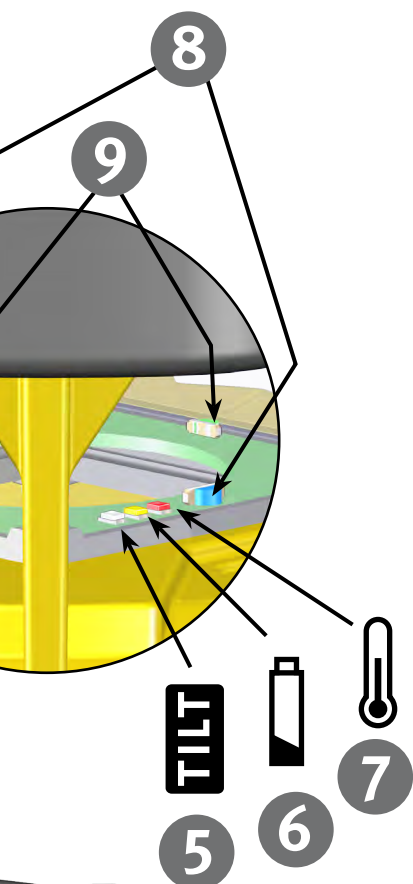


LAR 350

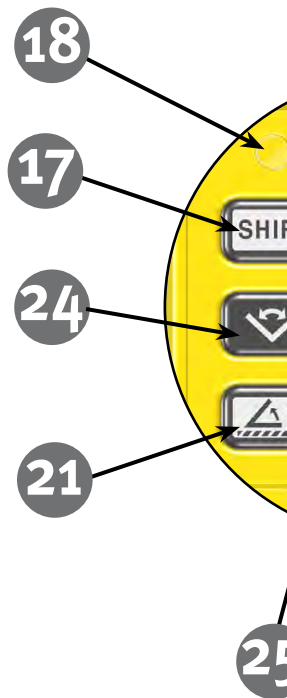
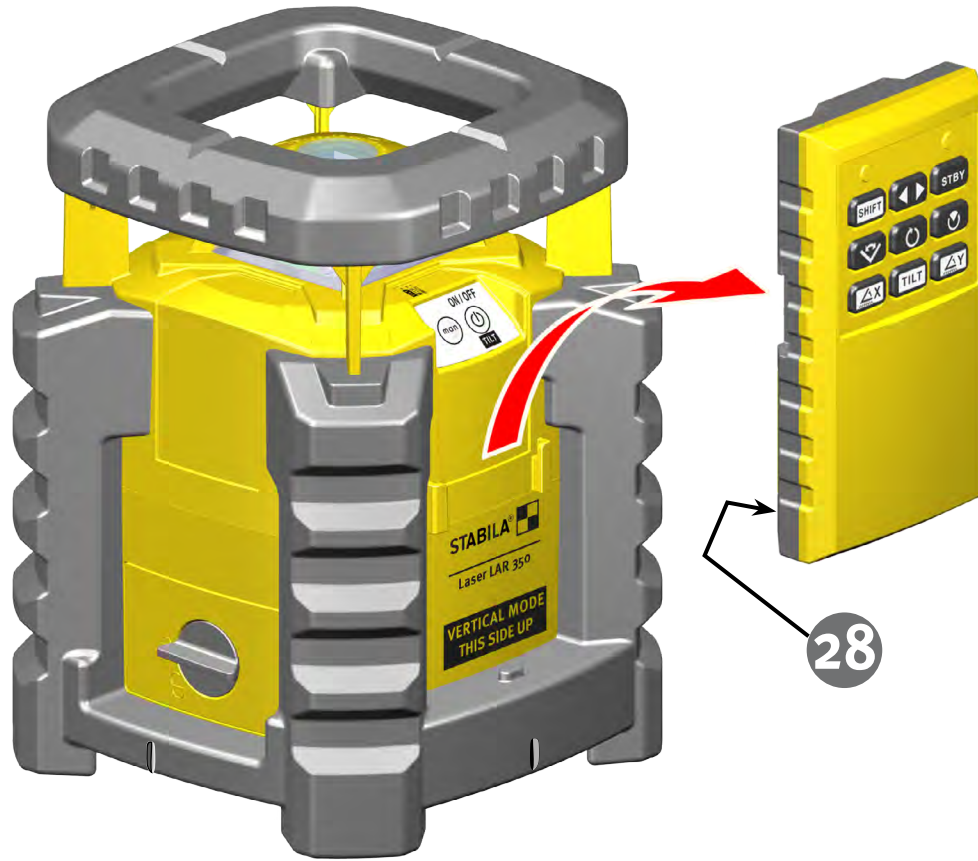


4.1 System Elements

- | | |
|--|---|
| 1. Exit window | Point laser/laser beam |
| 2. Exit window | Rotation beam |
| 3. Button: | ON/OFF/TILT |
| 4. Button: | Manual mode ON/OFF |
| 5. White LED: | Tilt function |
| 6. Yellow LED: | Battery low |
| 7. Red LED: | Overtemperature |
| 8. Blue LED: | Laser x-axis/display TILT + Manual |
| 9. Green LED: | Laser y-axis/display TILT + Manual |
| 10. Battery compartment lid | |
| 11. 5/8" tripod socket | |
| 12. Retaining bracket | |
| 13. Locator markings | |
| 14. Plumb-line laser function marking points | |
| 15. Feet to allow vertical alignment | |
| 16. Housing | - IP 65 protected against water jets and dust |
| xx | Serial number |












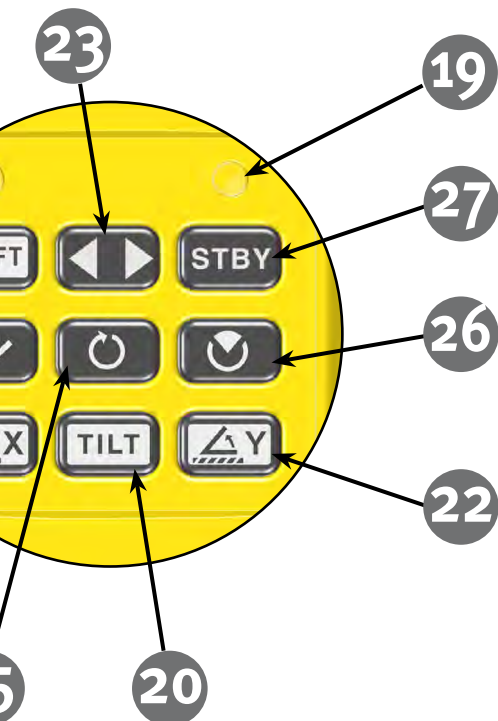
LAR 350



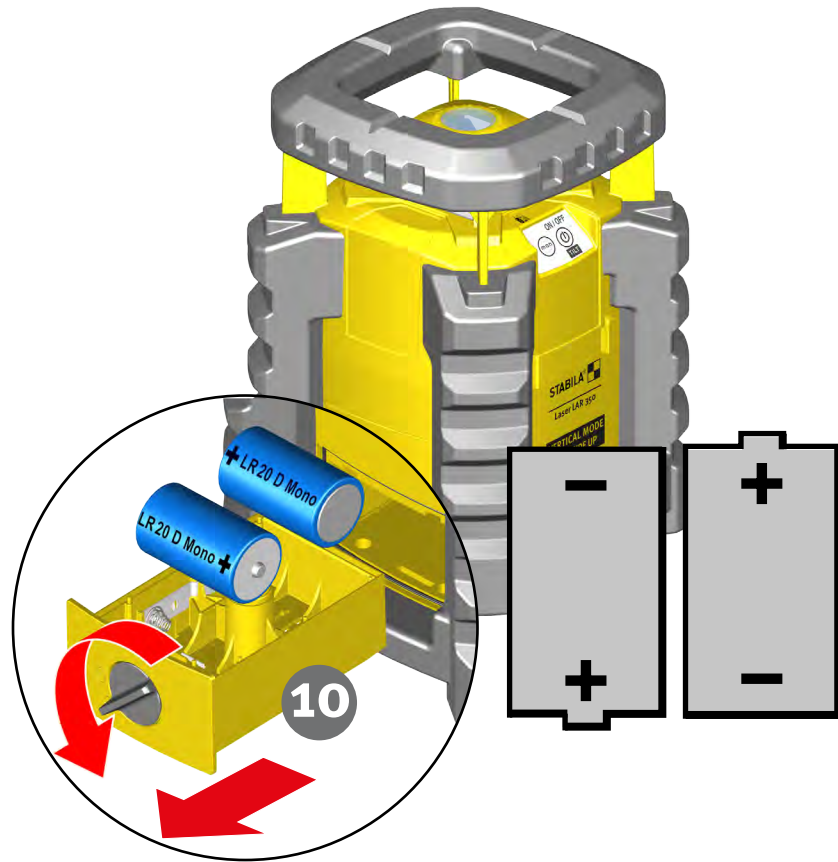
4.2 Remote Control Unit Elements

Remote control unit:

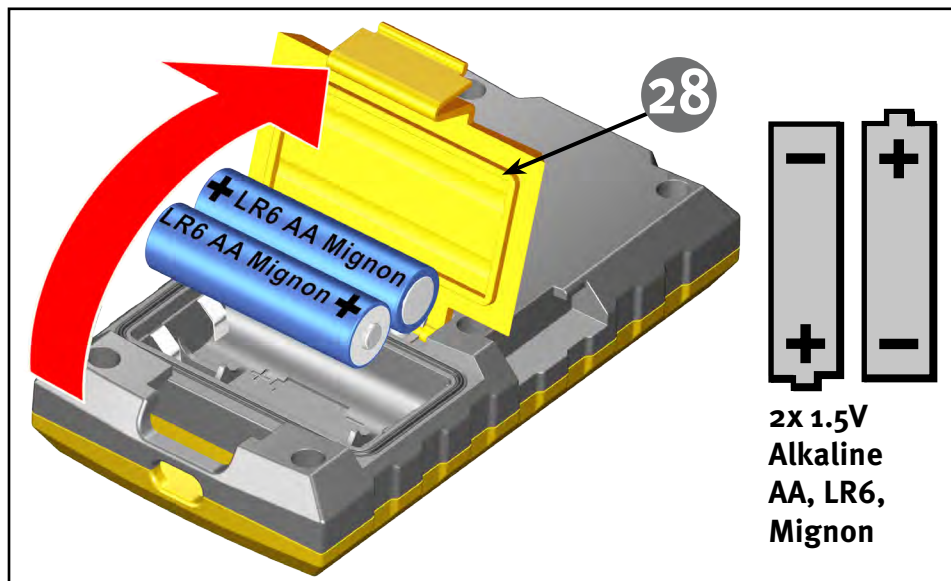
-  17. SHIFT
- 18. LED indicator for SHIFT button
- 19. LED indicator: transmitting
-  20. TILT
-  21. Laser x-axis
-  22. Laser y-axis
-  23. Position
-  24. Scan
-  25. Rotation speed
-  26. Section
-  27. Standby
- 28. Battery compartment lid



LAR 350



2x 1.5V
Alkaline
D, LR20, Mono



2x 1.5V
Alkaline
AA, LR6,
Mignon

5. Battery Insertion/Replacement

Open battery compartment cover (10, 28) in the direction of the arrow and insert new batteries as indicated by the symbol in the battery compartment.

Suitable rechargeable batteries can also be used.

LED indicator:

Yellow LED (6): Battery capacity low

- insert new battery

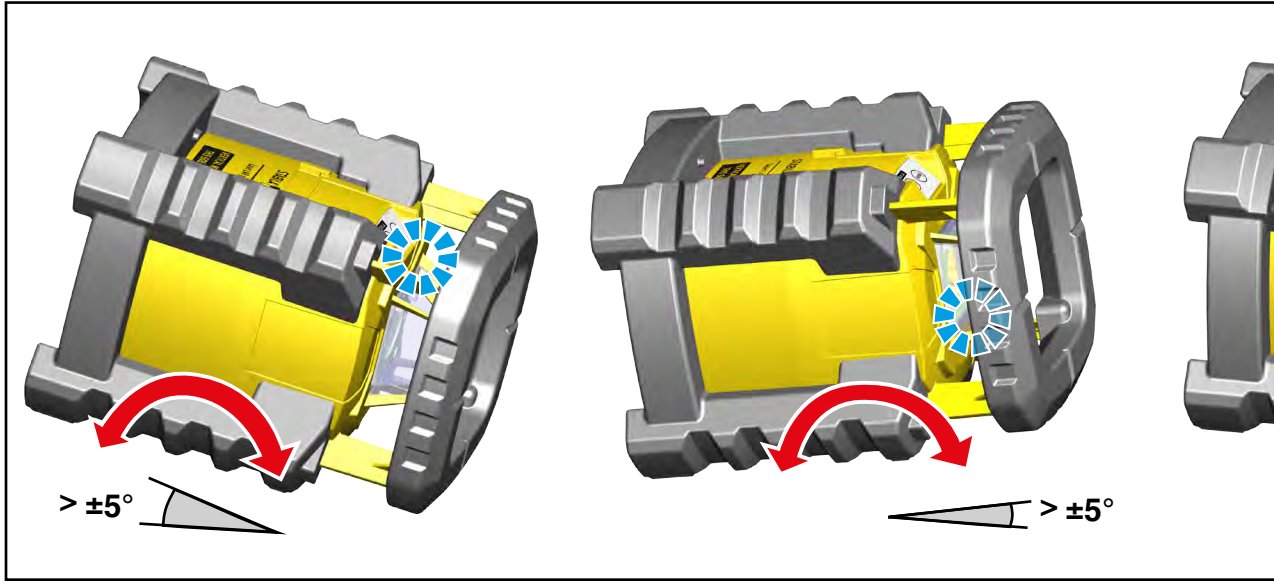
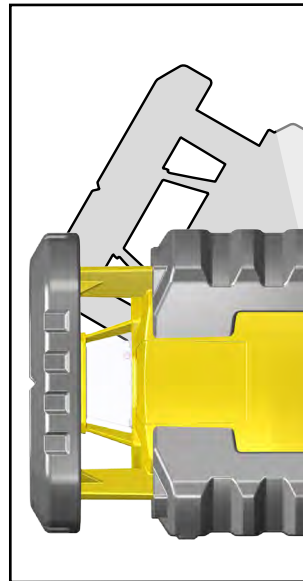
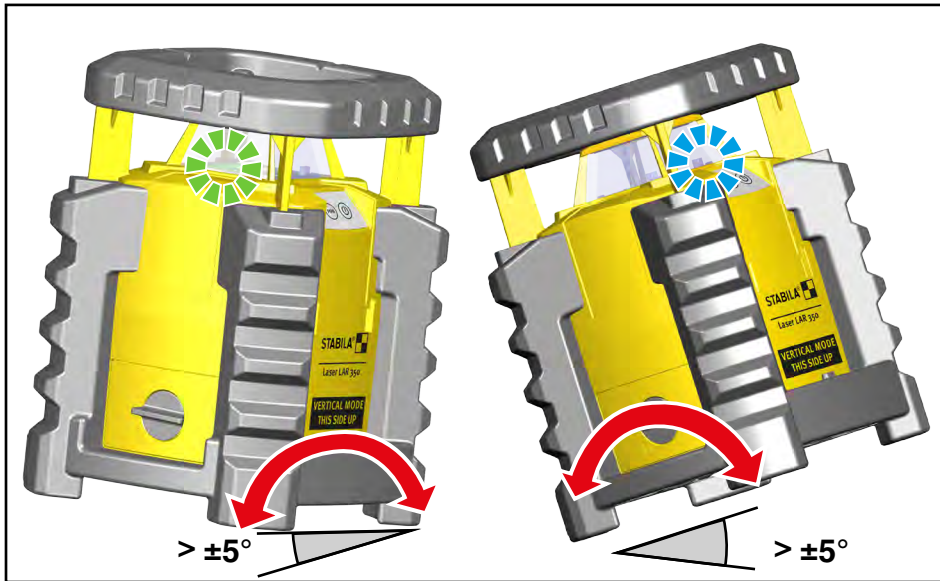
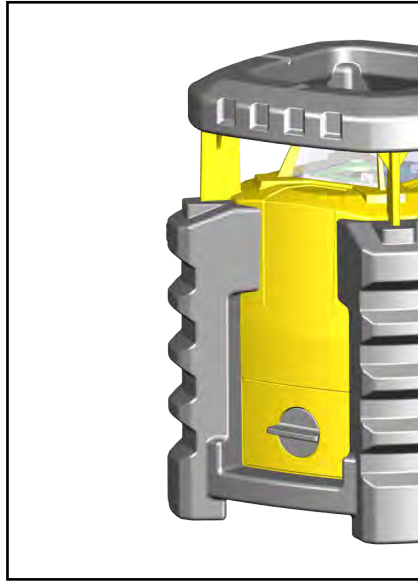
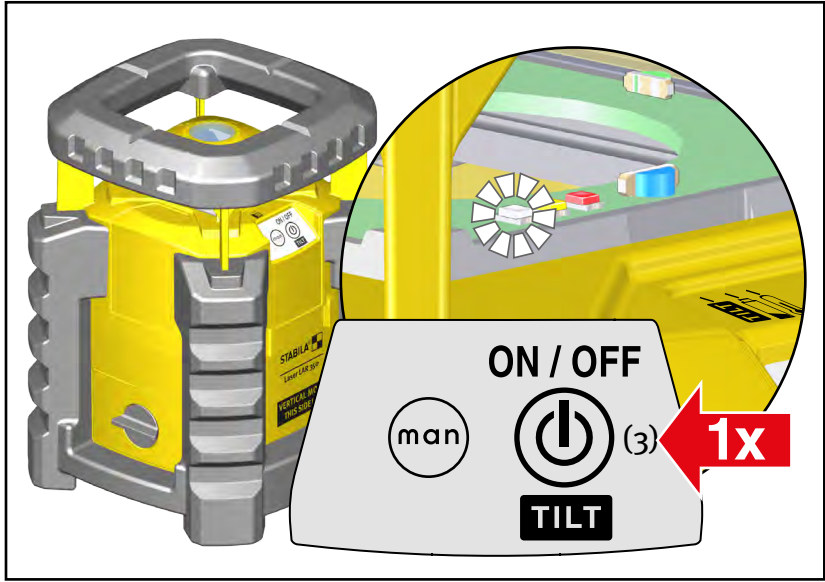


Used batteries should be disposed of at appropriate collection points. Do not dispose of in household waste.

If you do not intend to use the unit for an extended period, remove the batteries.

LAR 350

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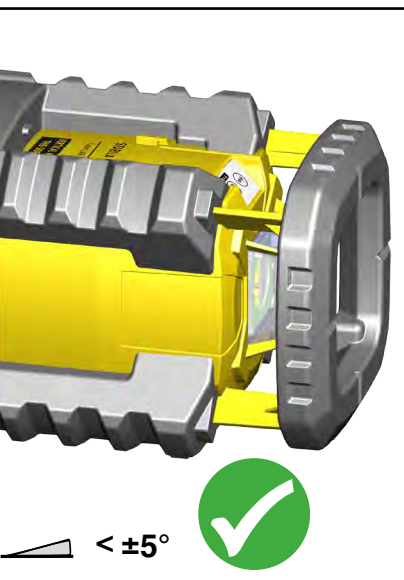
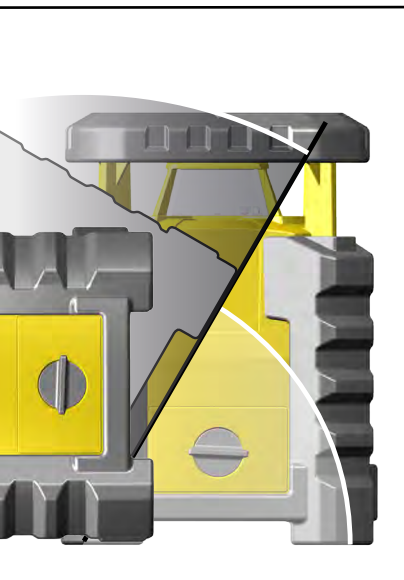
6. Using the Laser Unit



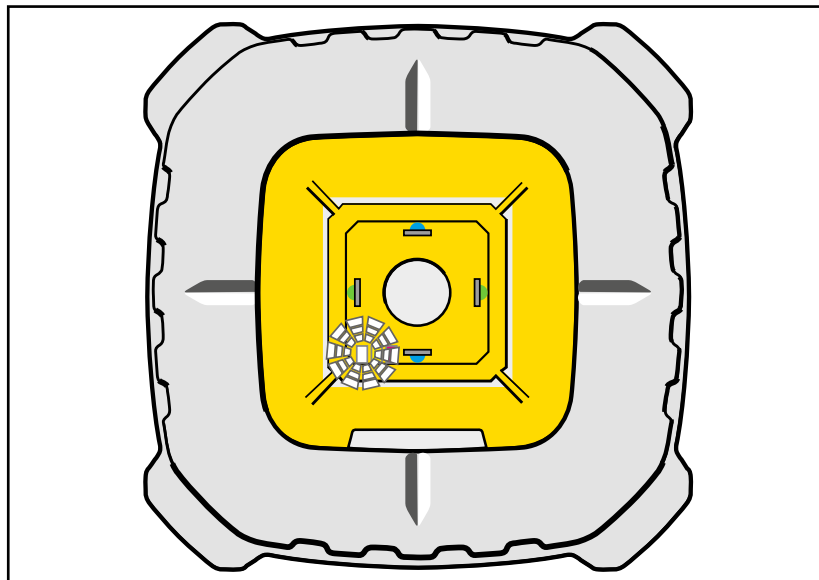
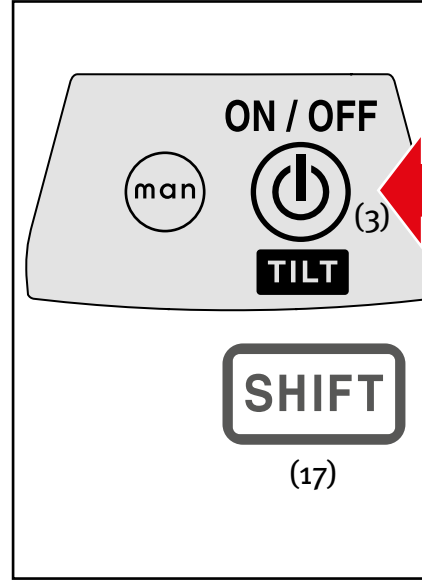
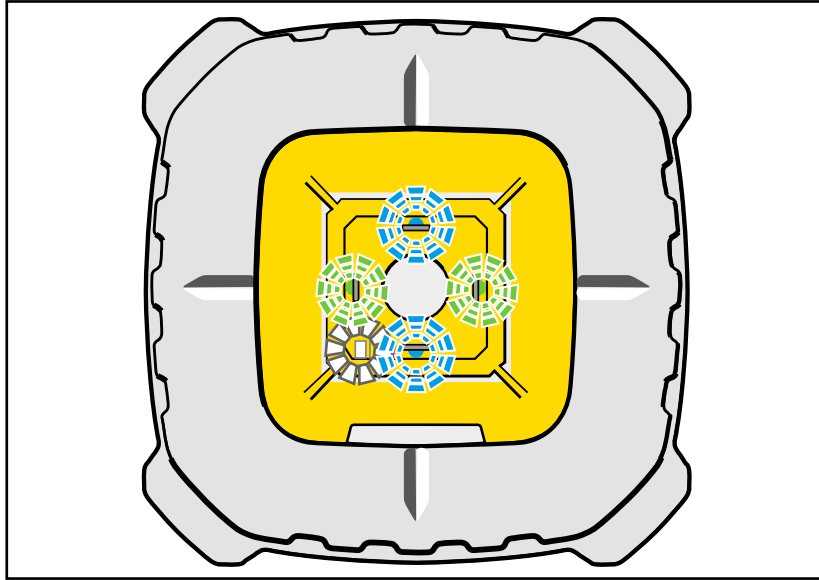
Place the laser unit in the appropriate working position (vertical or horizontal). To start the laser, press button (3). Holding this button for a longer period will switch the laser off again. Activating the self-leveling function causes the unit to level itself automatically. The laser beam does not (yet) flash or rotate. Once levelling is completed, the beam stays on constantly and begins to rotate. Fine adjustments can still be made within the first 30 seconds. These 30 seconds are indicated by a slow flashing of the white LED (5).

If the unit is out of alignment by $\geq 5^\circ$, it is outside the self-leveling range and cannot level itself automatically. In this case the laser continues to flash.

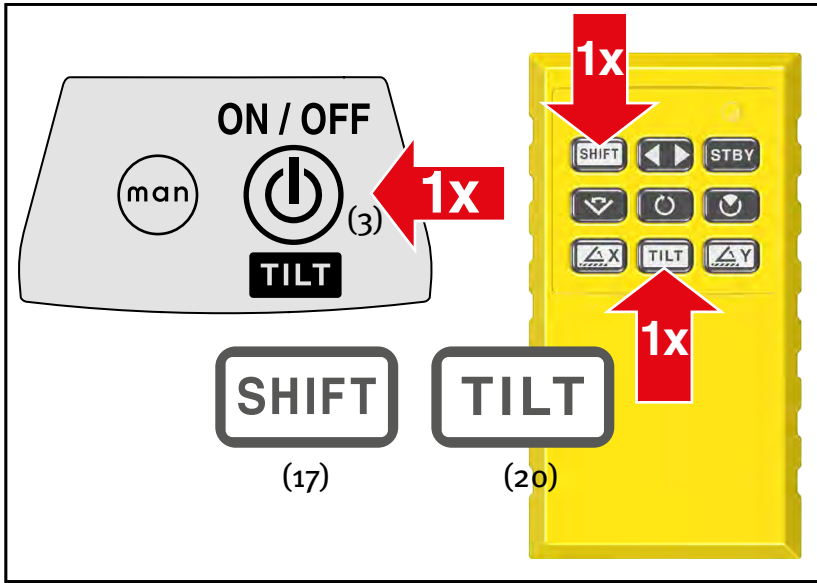
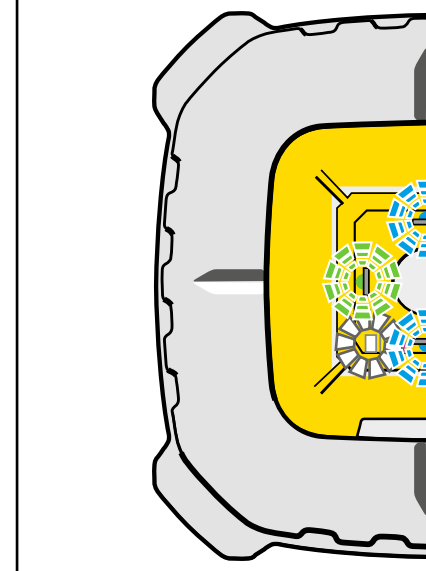
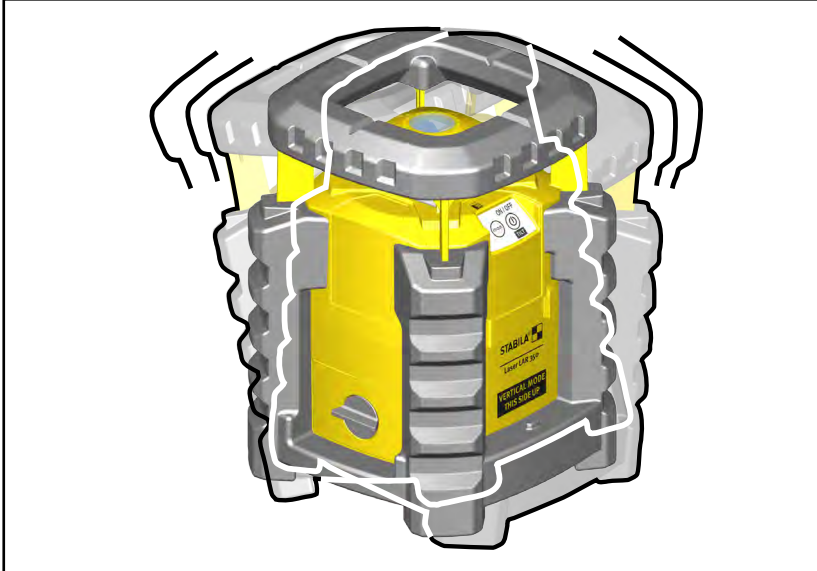
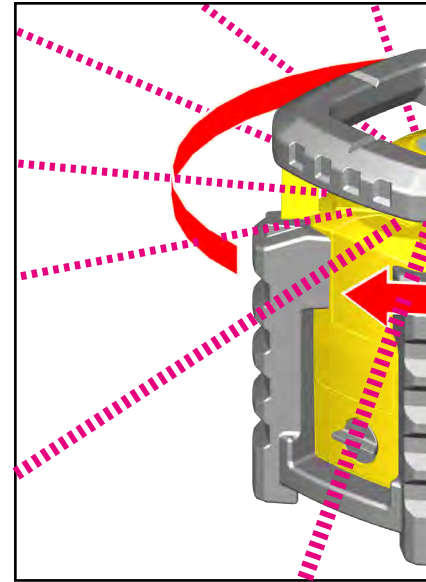
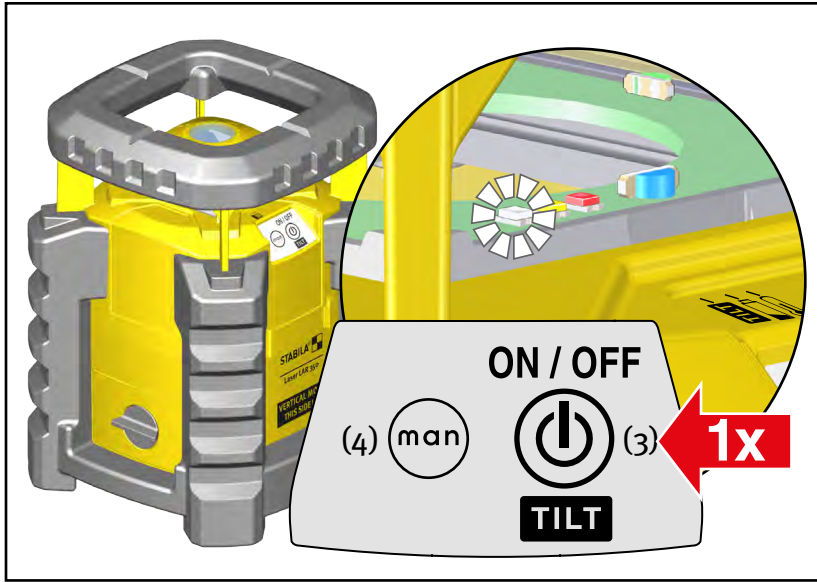
The blue and green LEDs indicate which side of the unit is too high. Adjust the unit by hand until the LEDs go out. In vertical operation the device detects the alignment automatically.

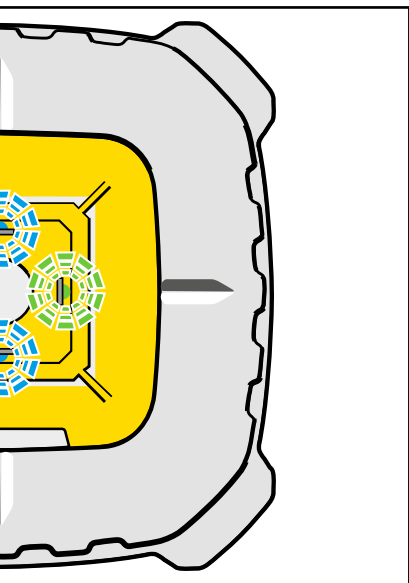
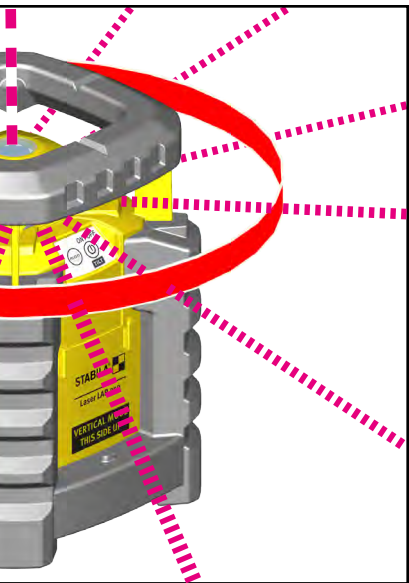


LAR 350



LAR 350





8.1 Automatic Operation with Tilt Function

This mode is always set directly after the unit is switched on (button 3). Other modes can be selected by pressing button (3) or button (4) or using the remote control unit.

In 'Automatic' mode the laser unit levels itself automatically. Place the laser unit in the appropriate working position (vertical or horizontal). To switch on, press button (3) once. Now the LAR 350 is in 'Automatic mode with tilt function'.

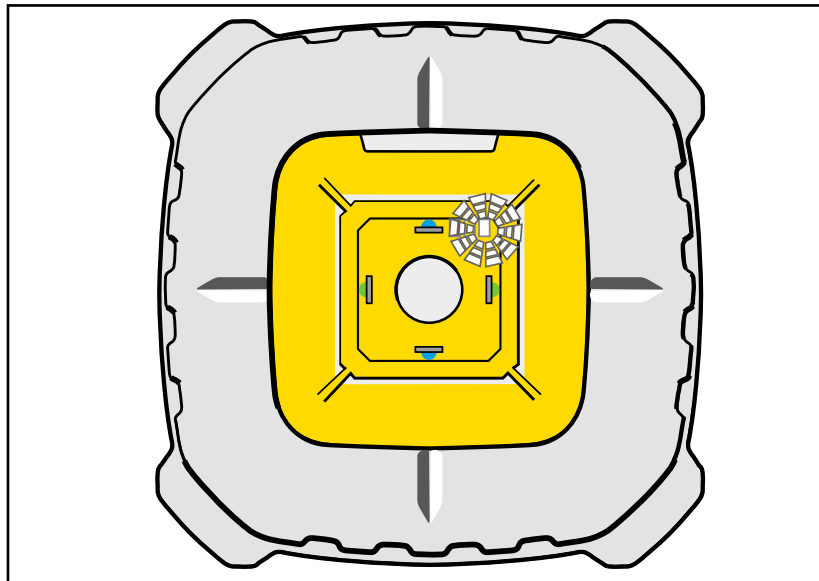
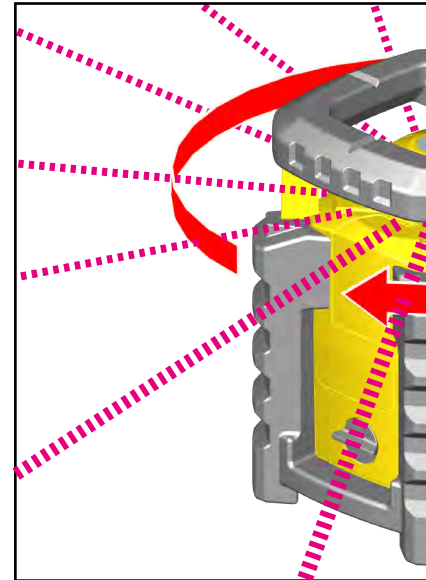
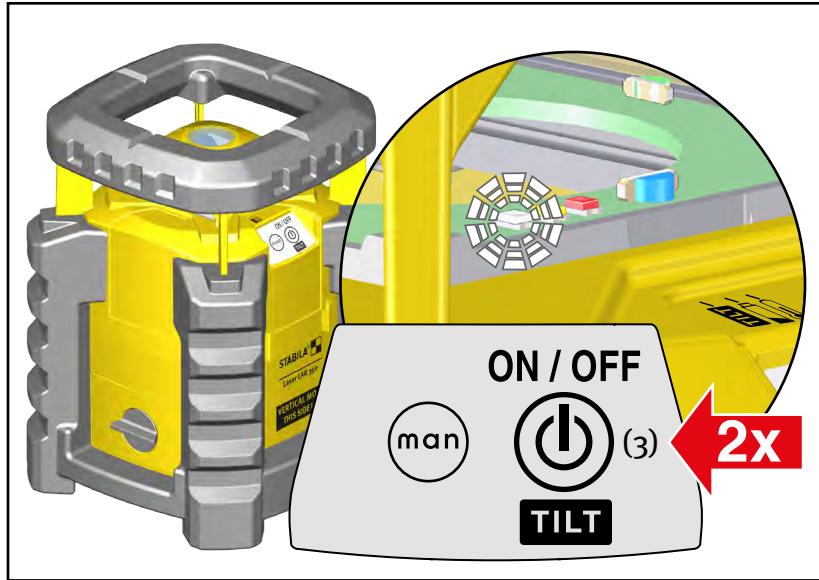
The automatic levelling process begins. Once levelling is completed, the beam stays on constantly and begins to rotate. Fine adjustments can still be made within the first 30 seconds. These 30 seconds are indicated by a slow flashing of the white LED (5).

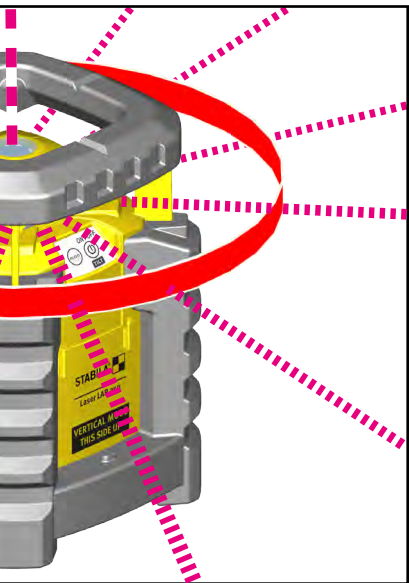
When the tilt function is active, the white LED (5) is lit steadily. If any event occurs that could result in the laser unit being deflected from its exact alignment and setting, the beam ceases to rotate and the blue (8) and green (9) LEDs flash. If this occurs, check the laser unit and set it up once again if necessary.

If the tilt function is triggered, this must be acknowledged by pressing button (3) or, on the remote control unit, by pressing buttons (17) + (20). Only after this can you proceed further.

If you are working in conditions where interference is present (e.g. on vibrating surfaces), it is recommended that you select 'Automatic operation with releveling'.

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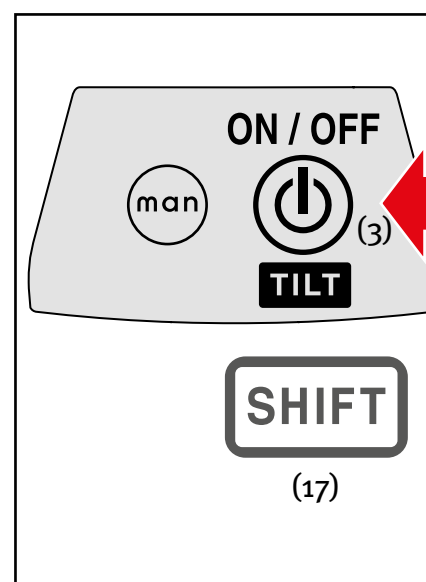
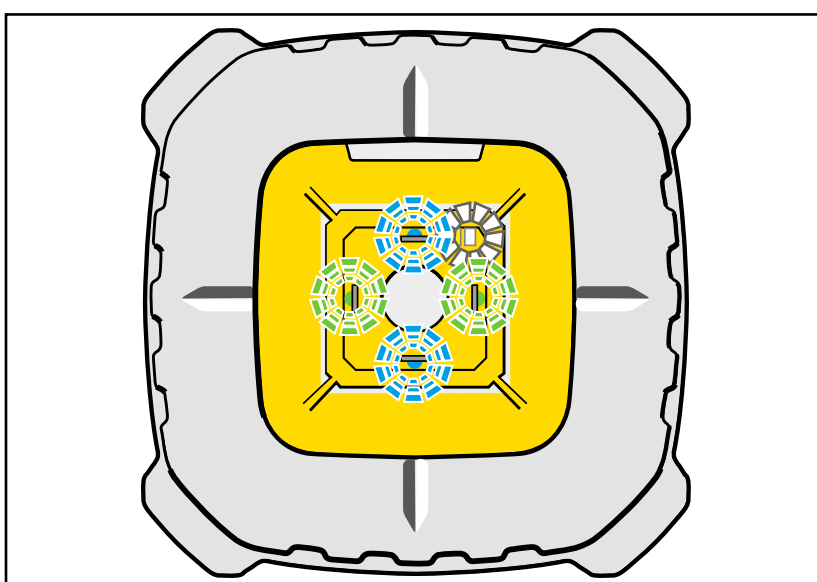
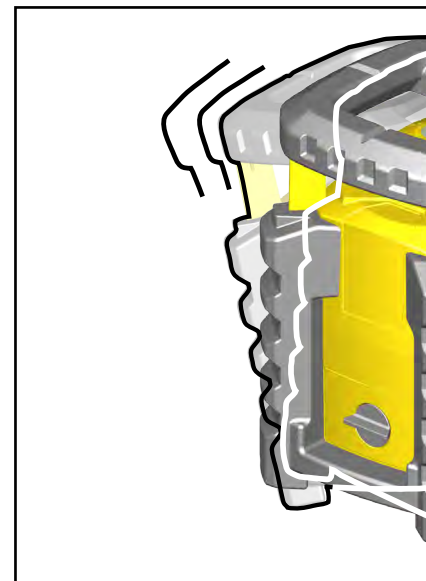
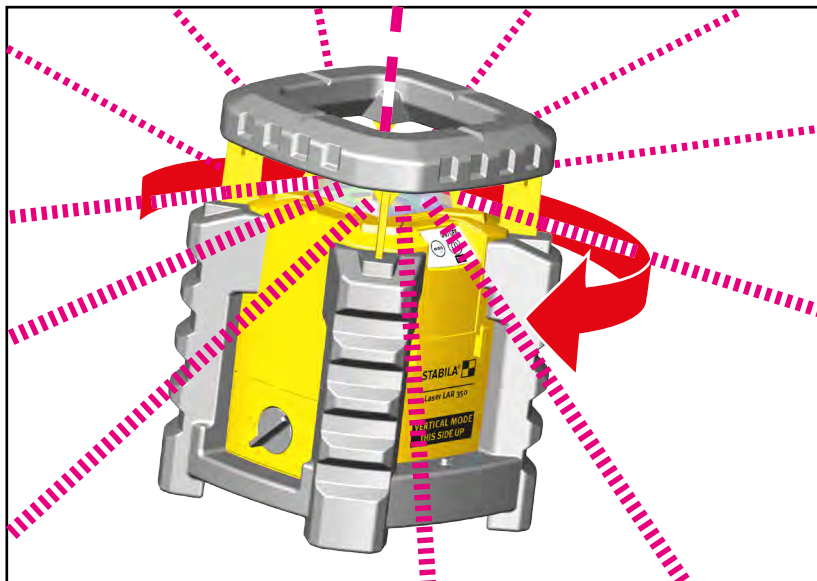
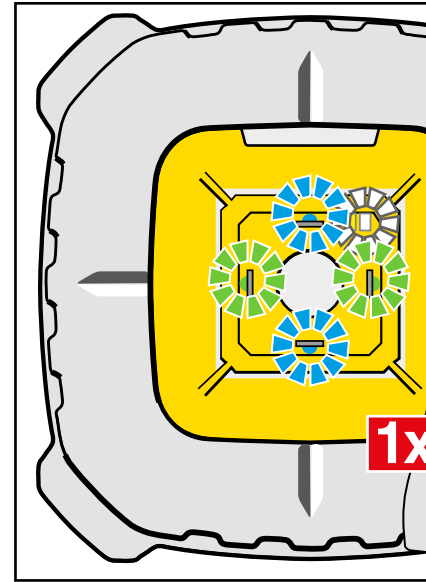
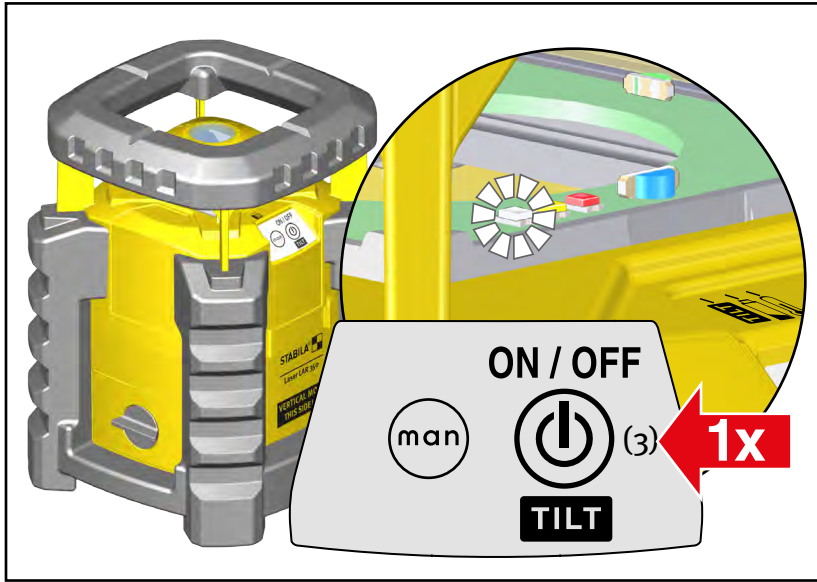
8.2 Automatic Operation with Relevelling

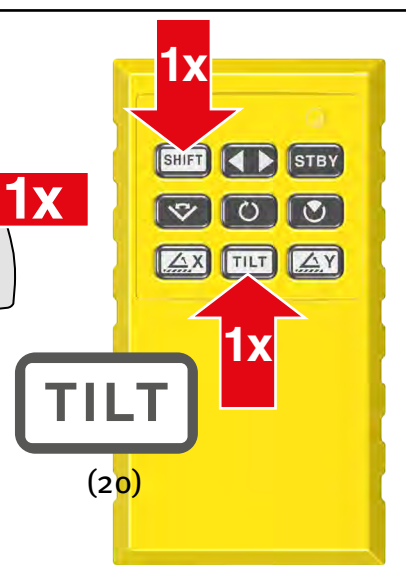
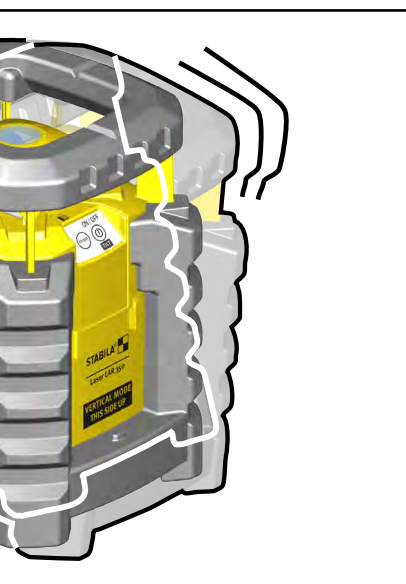
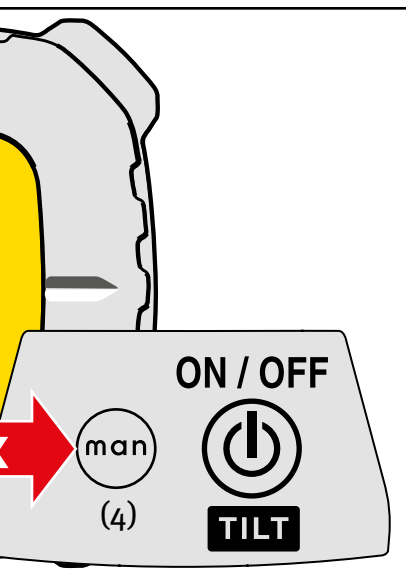
In some situations (e.g. when working on a shaking or vibrating surface), the tilt function can be a hindrance. With automatic releveling, on the other hand, the unit is readjusted each time it is knocked out of alignment.

Press button (3) x 2 = 1x switch on + 1x deactivate tilt function. The white LED (5) flashes. The laser beam begins to rotate once the unit has levelled itself.

When incidents occur that cause misalignment, the beam ceases to rotate. Now the laser unit relevels itself. Once levelling is completed, the laser beam begins to rotate once more. If the unit is inclined at an angle $\geq 5^\circ$, it is outside the self-levelling range and cannot level itself automatically. Any deviations from the original alignment/setting of the unit are not indicated (-> Tilt function).

LAR 350





9.1 Manual Operation with Tilt Function

In manual mode the laser plane is aligned by hand. Neither self-levelling nor releveling are active. The unit does not level itself. If the tilt function is active, interferences (shocks, vibrations) that could misalign the unit from its exact original setting do not go unnoticed.

Place the laser unit in the appropriate working position (vertical or horizontal). Press button (3) x 1 = switch on in tilt mode. Press button (4) x 1 = activate manual mode. The white LED (5) lights steadily. The blue (8) and green (9) LEDs light steadily.

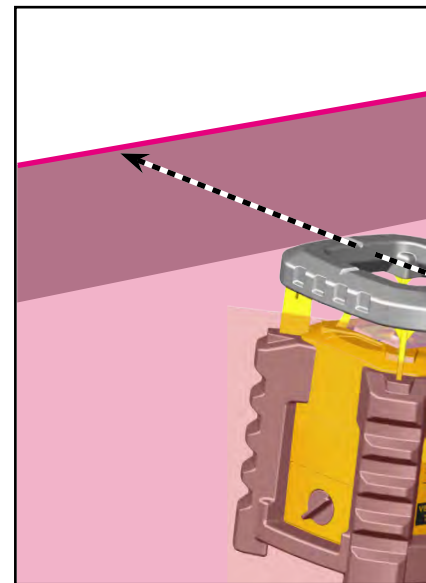
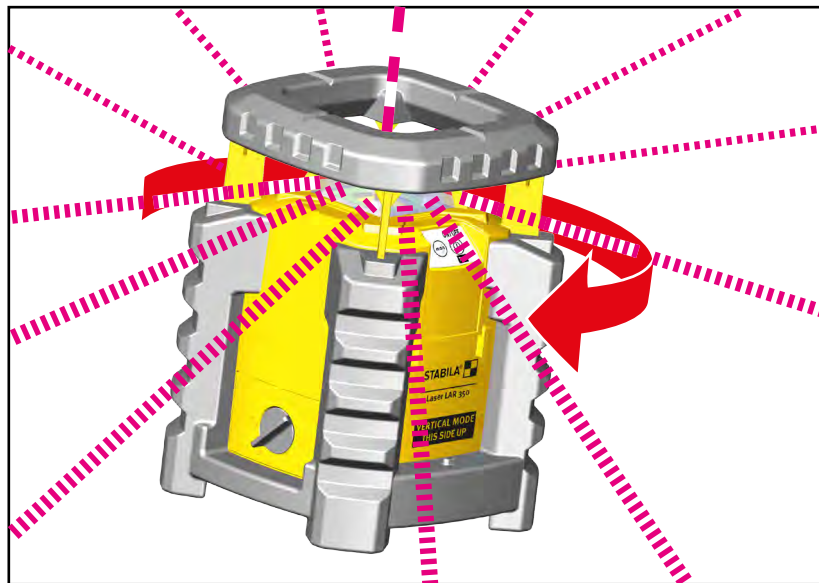
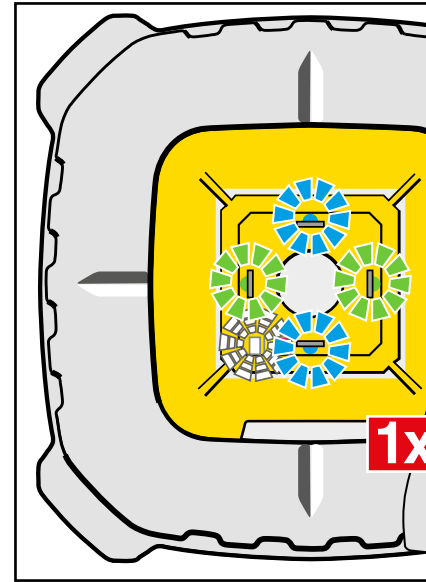
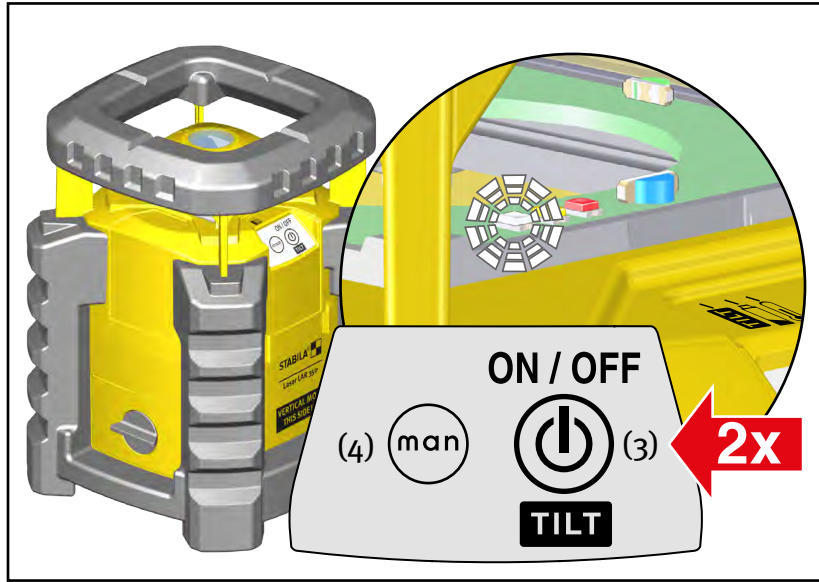
The laser beam rotates. Fine adjustments can still be made within the first 30 seconds. The laser plane can be set up by direction-finding or by taking measurements.

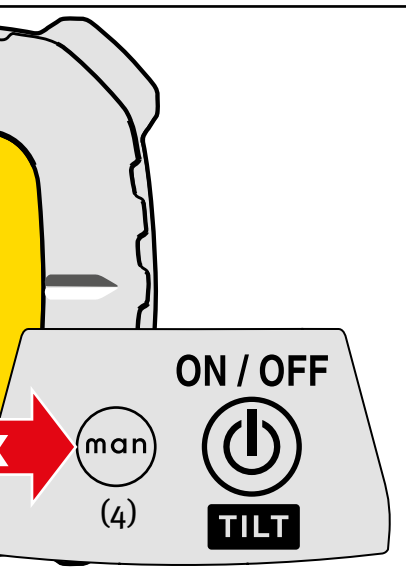
If any event occurs that could result in the laser unit being deflected from its exact alignment and setting, the beam ceases to rotate and the blue (8) and green (9) LEDs flash. If this occurs, check the laser unit and set it up once again if necessary.

The inclinometer (available as an accessory) can be used to aid setting up the inclination.

If the tilt function is triggered, this must be acknowledged by pressing button (3) or, on the remote control unit, by pressing buttons (17) + (20). Only after this can you proceed further.

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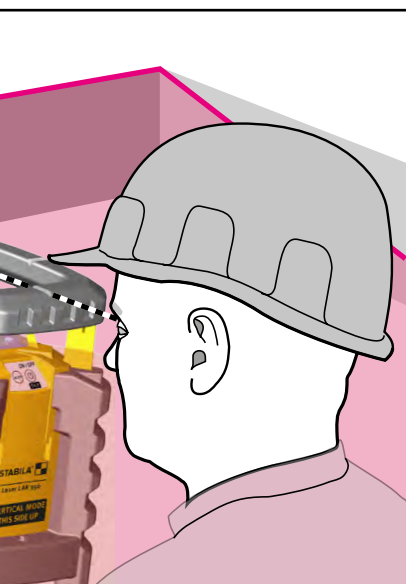




9.2 Manual Operation without Tilt Function

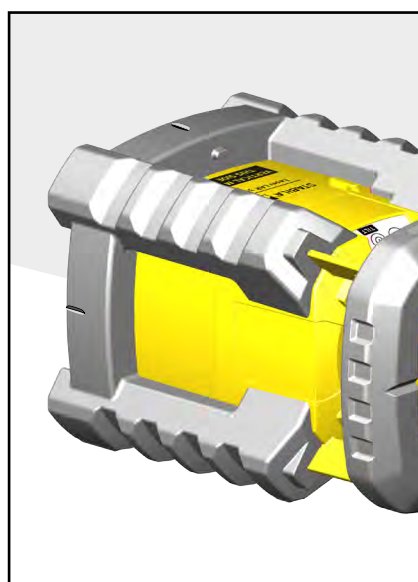
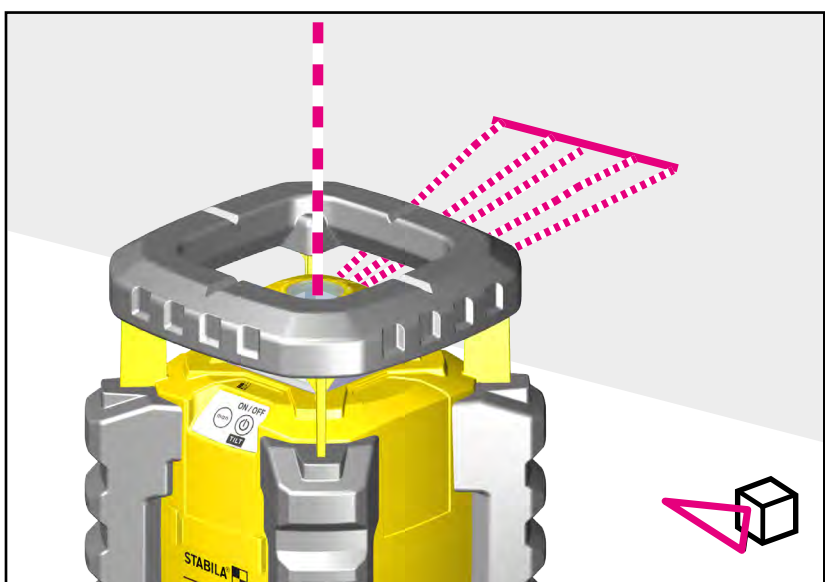
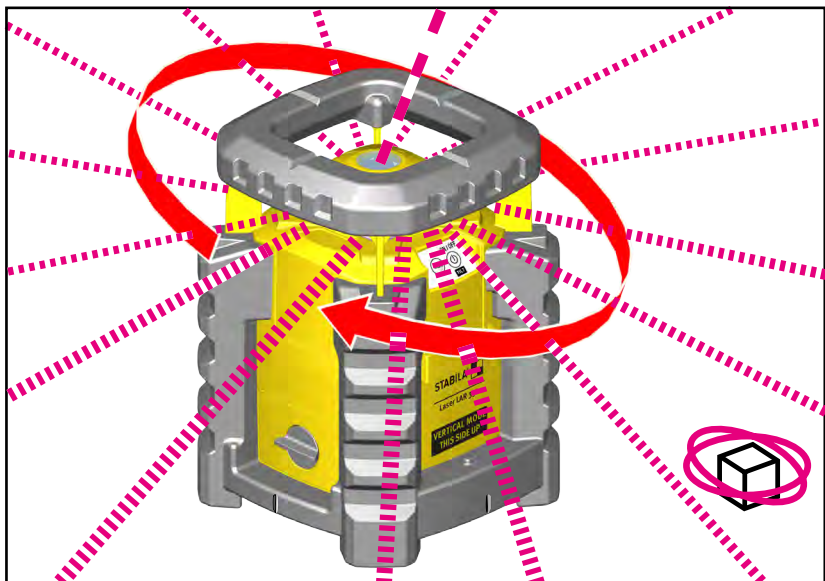
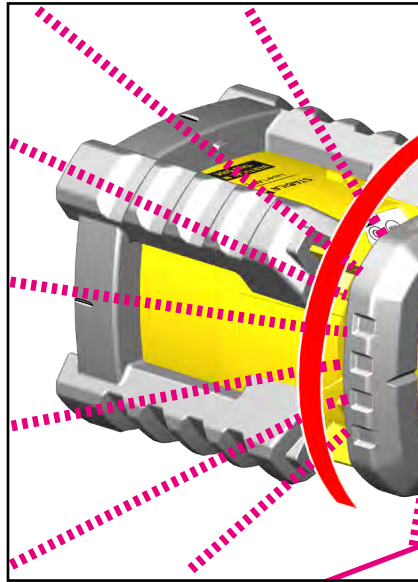
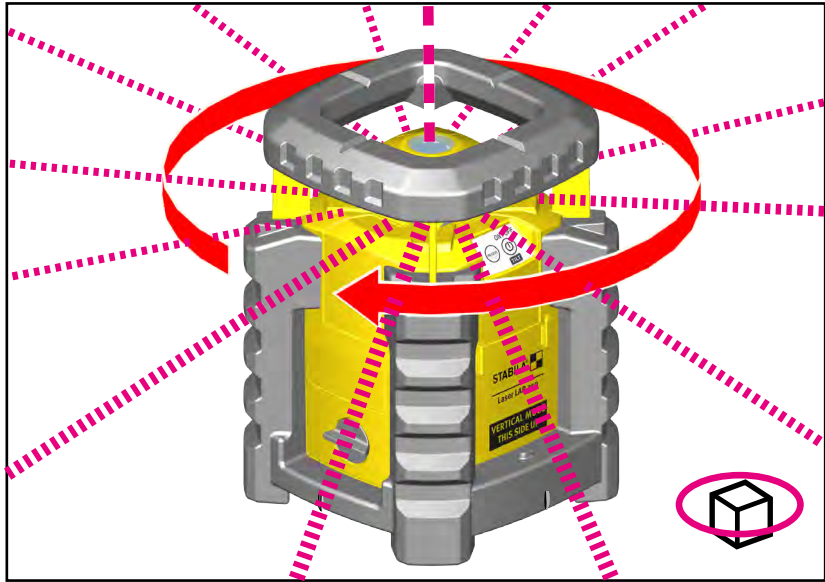
In manual operation without tilt function, neither automatic mode, the tilt function nor relevelevelling are active. In this mode the unit is aligned entirely by hand. The unit does not level itself.

Place the laser unit in the appropriate working position (vertical or horizontal). Press button (3) x 2 = 1x switch on + 1x deactivate tilt function. Press button (4) x 1 = Changeover to/activate manual mode. The white LED (5) flashes. The blue (8) and green (9) LEDs light steadily. The laser beam rotates. The laser plane can be set up by direction-finding or by taking measurements.

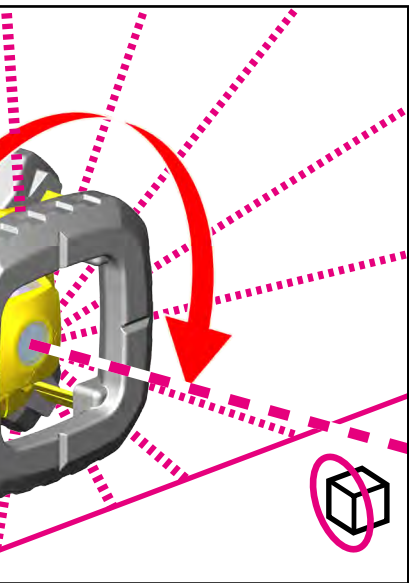


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10. Functions

Rotation function

-- > p. 15

The laser beam rotates through 360° around its axis.

horizontally



vertically

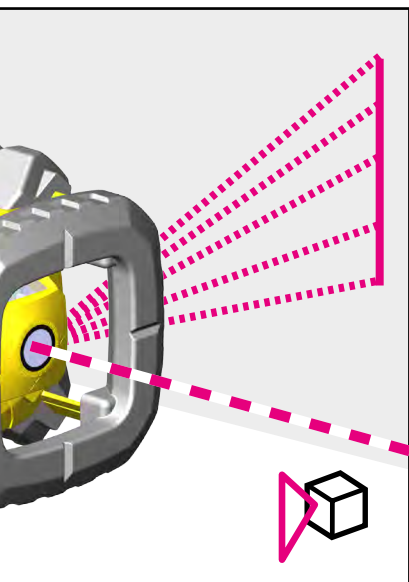
--> p. 18



Inclination function --> p. 17 --> p. 19

Appropriate inclination of the levelling plane

Can only be set by remote control



Line function in scan mode:

--> p. 16 --> p. 20 --> p. 21

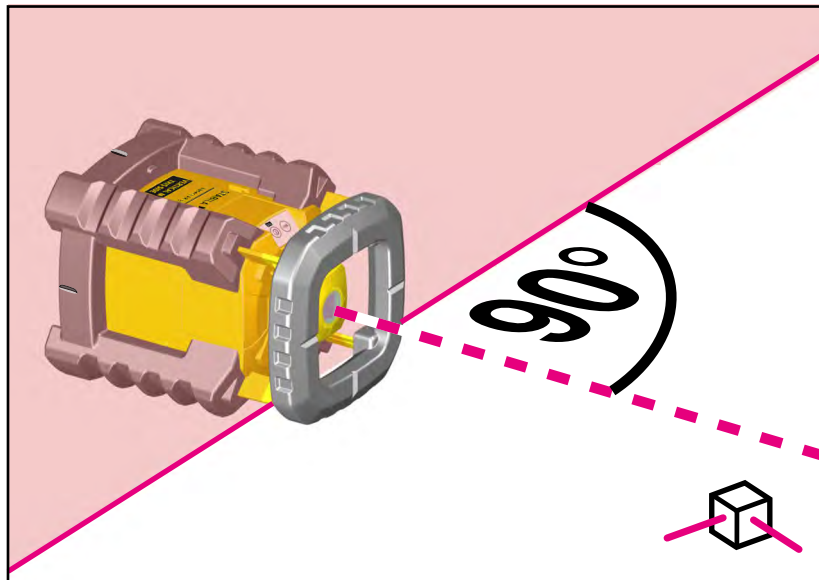
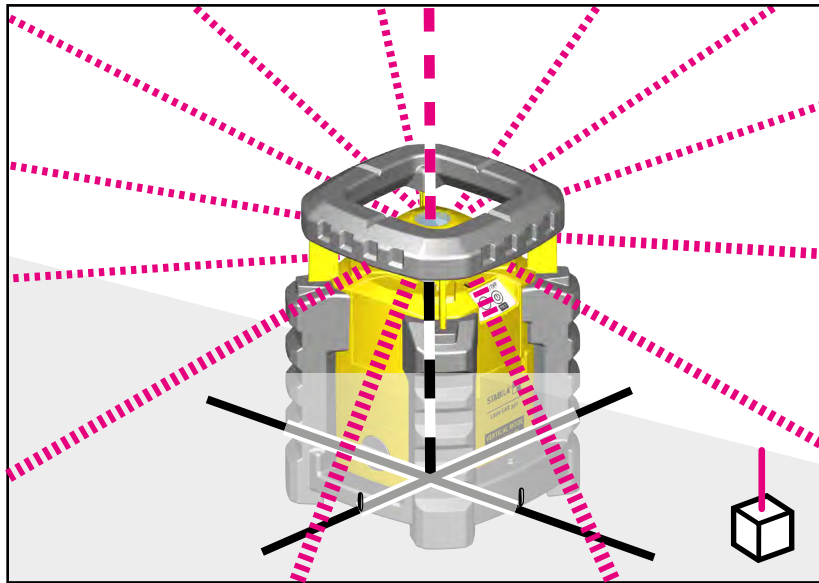
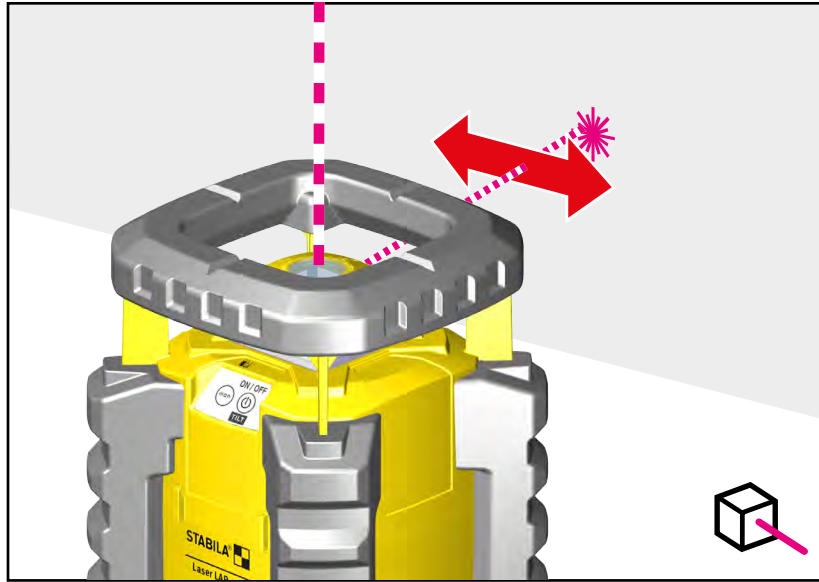


In scan mode the laser projects lines into the floor, wall and ceiling.



Can only be set by remote control

LAR 350



Functions

Point function --> p. 15



The laser beam is visible as a point on the target surface

Can only be set by remote control

Plumb-line function



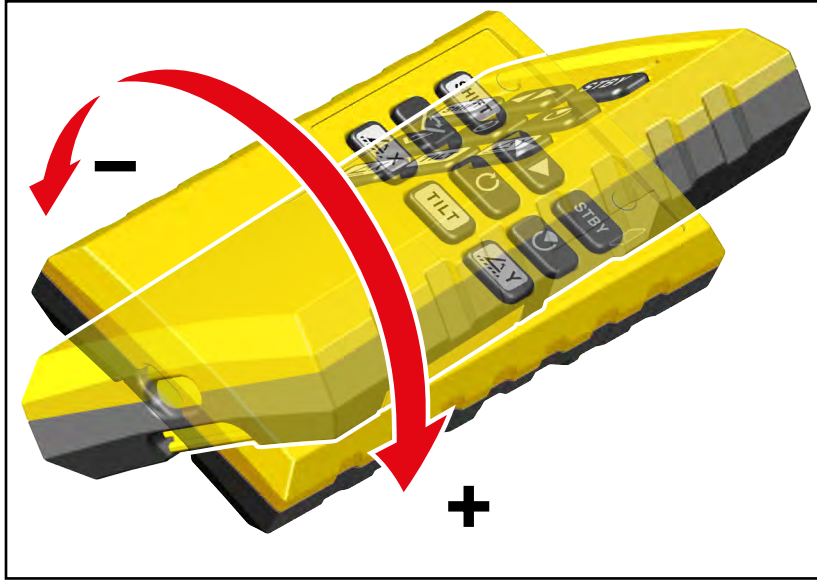
Transfers a determined point from the floor to the ceiling. To transfer a plumb line from a floor marking to the ceiling, the laser unit is aligned exactly with the cross mark with the 4 marking points (14). The point of intersection of the cross mark corresponds to the exiting laser plumb line. In automatic mode a correct result can only be obtained if the floor surface is level.














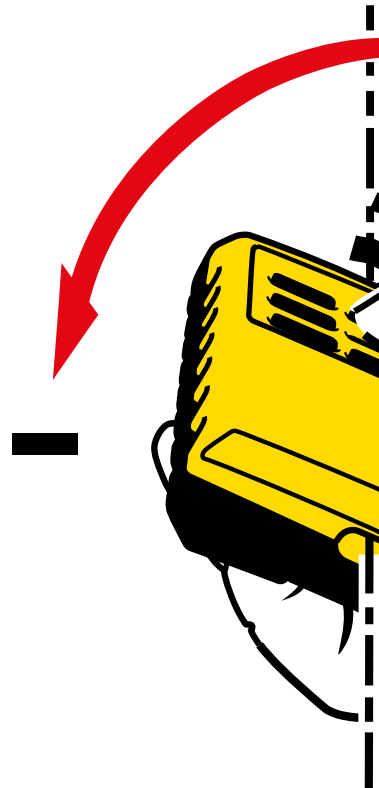
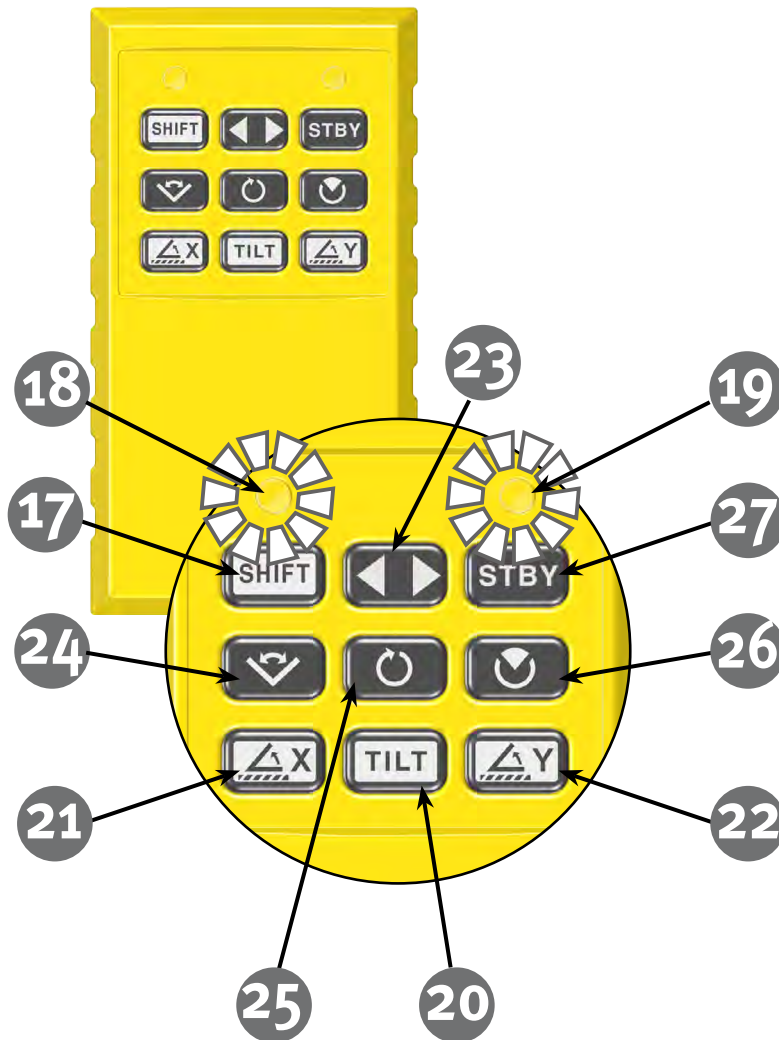
Right angle (90°)

In vertical operation, the point laser and the rotation plane form a 90° angle. This allows right angles to be created.

LAR 350



-  17. SHIFT
-  18. LED indicator
-  19. LED indicator
-  20. TILT
-  21. Laser x-axis
-  22. Laser y-axis
-  23. Position
-  24. Scan
-  25. Rotation speed
-  26. Section
-  27. Standby



for SHIFT button

: transmitting

ed

11. Operation with Remote Control

The LAR 350 features an innovative remote control unit. It allows a wide range of functions and settings to be intelligently controlled. Settings are made by pressing the relevant button while simultaneously rotating the remote control unit in the hand. Fine adjustments can then be made while holding the unit in this way by touching the buttons lightly. --> Buttons 21,22,23,24,25,26

The speed of adjustment of settings is determined by the angle through which the unit is rotated.

To activate the functions of the highlighted buttons (20,21,22), first press the Shift button (17).

Activation of the Shift button (17) is indicated by the LED (18); this is switched off after about 30 seconds if no further button is pressed.

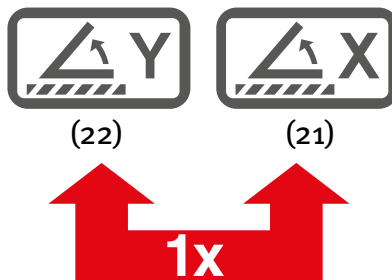
The LED (19) indicates that the unit is transmitting.

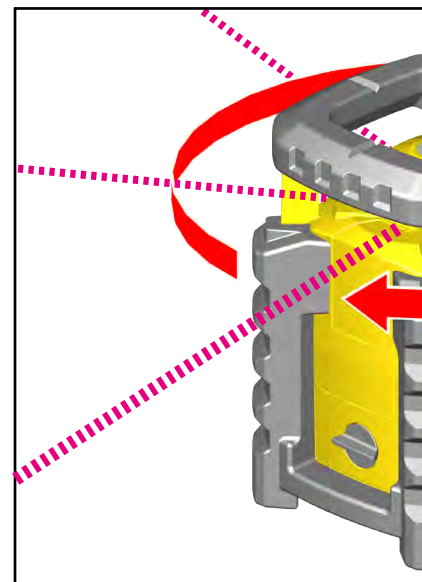
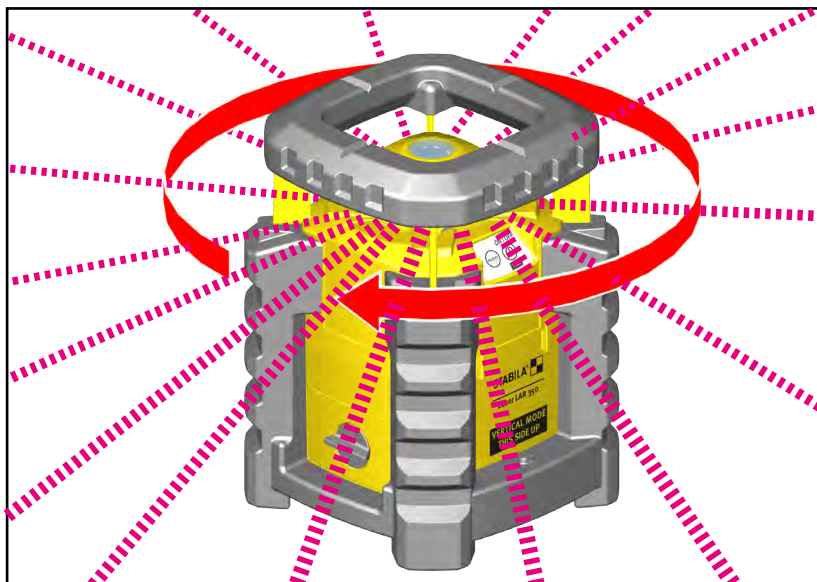
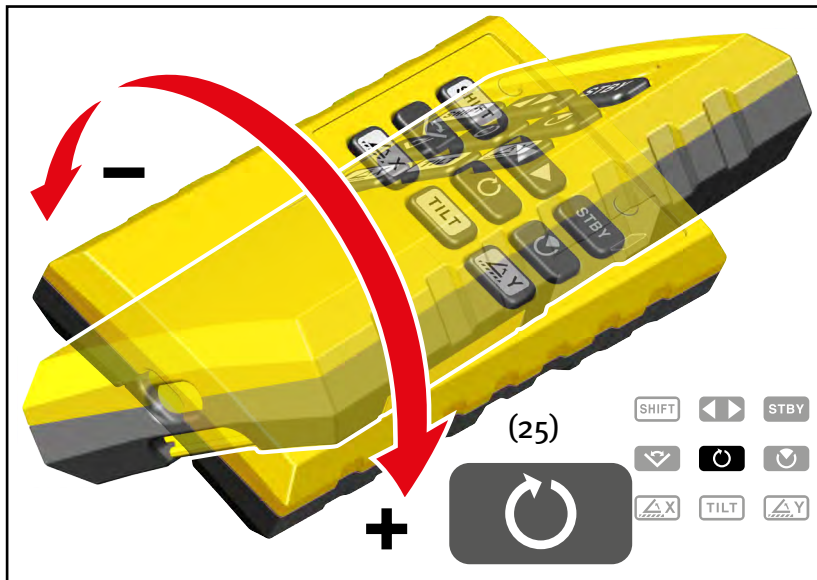
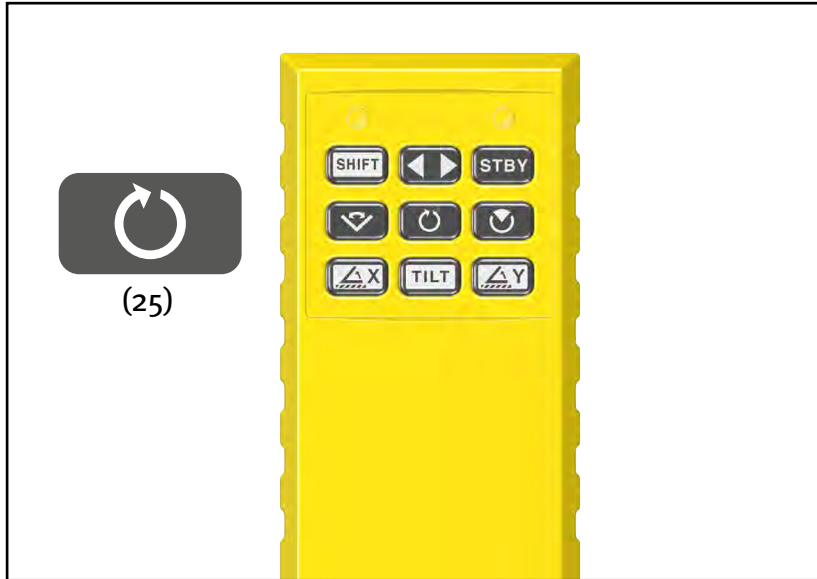


The highest setting sensitivity is obtained by operating the remote control unit while it is horizontal in the longitudinal plane.



The unit can be adjusted to ensure a symmetrical response in the + and - directions. To do this, place it on a level surface and hold down buttons (21) and (22) simultaneously for as long as the LED (19) flashes.

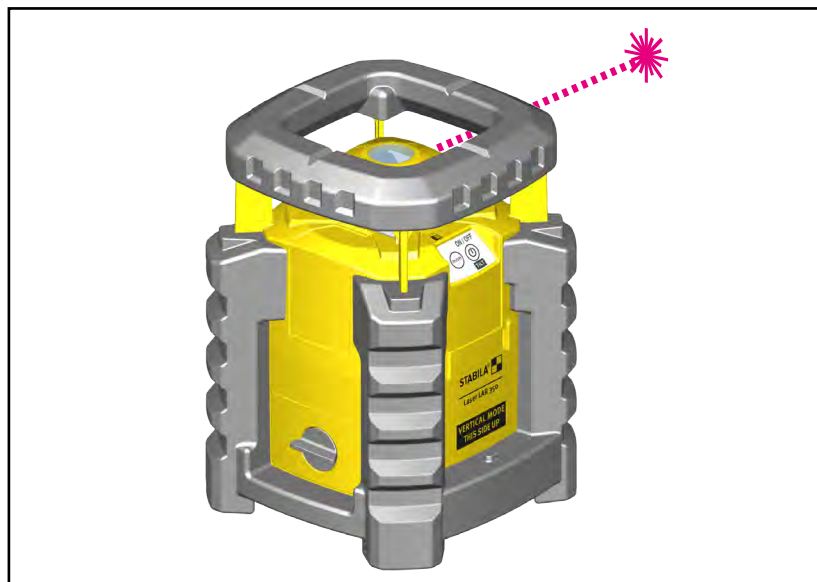
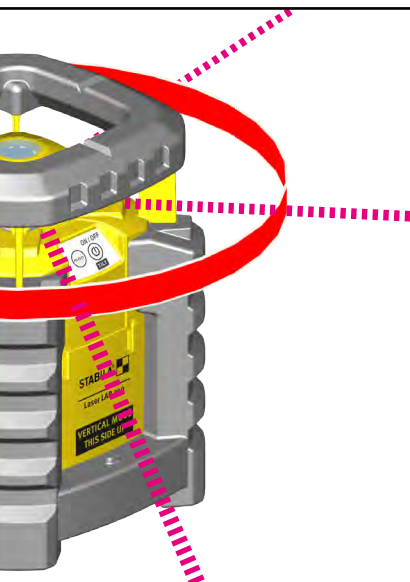




12. Settings and Applications

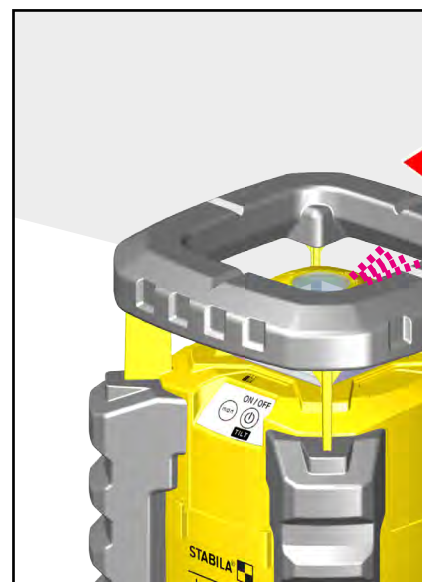
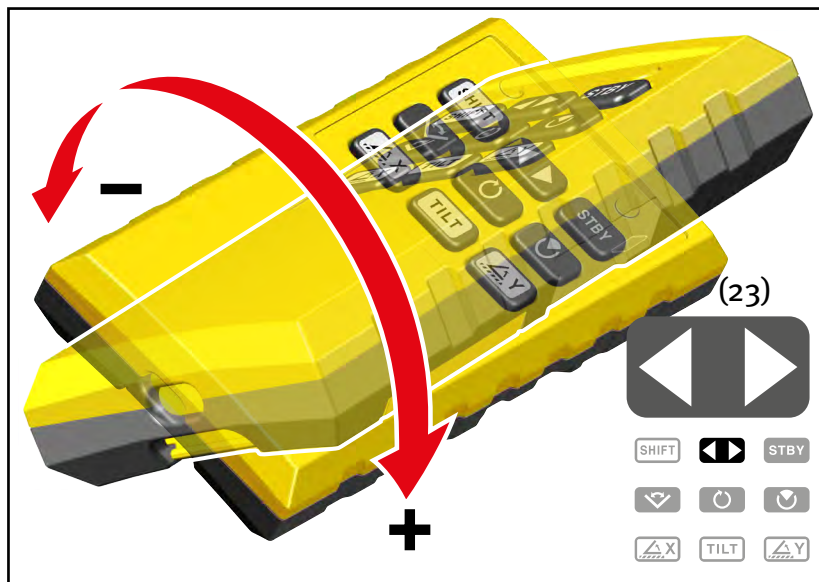
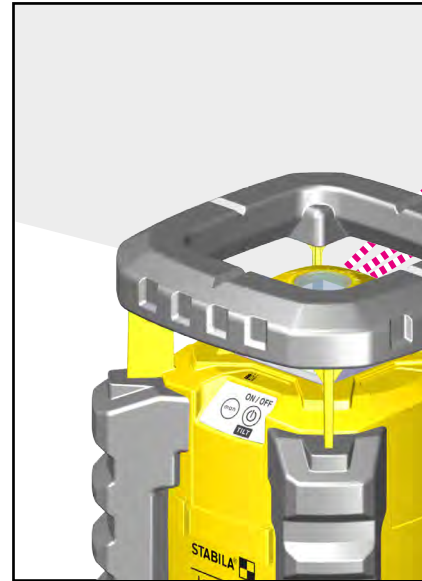
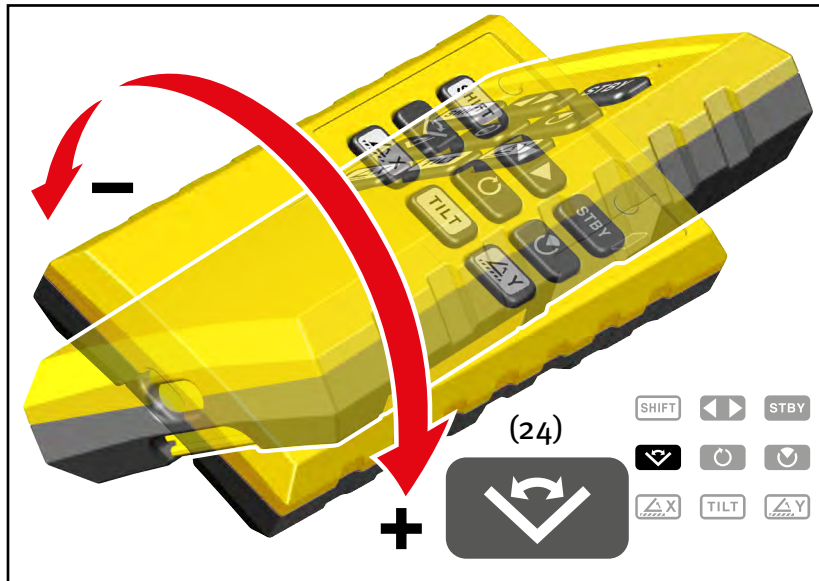
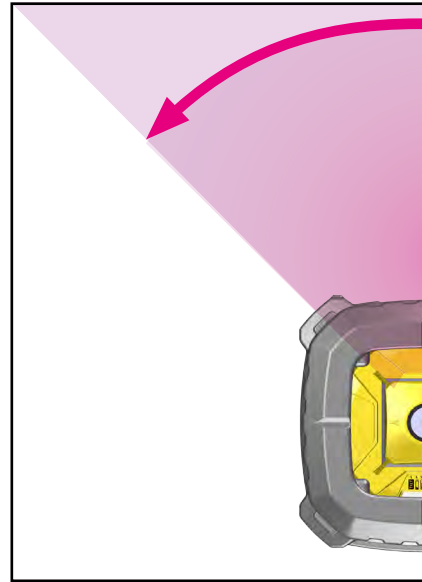
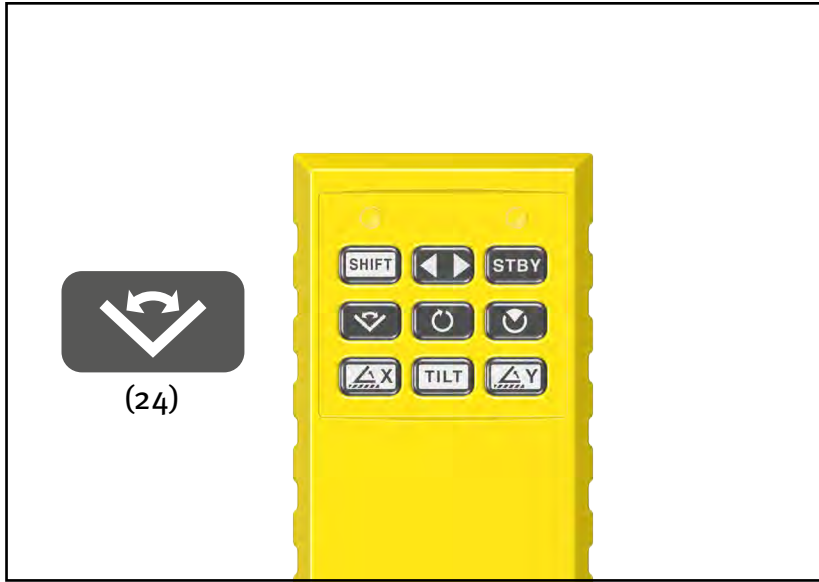
13. Rotation Function/Rotation Speed

The rotation function is set when the unit is switched on and can also be set at any time with button (25). In rotation mode the laser beam rotates. By holding down button (25) and simultaneously rotating the remote control unit the rotation speed can be infinitely adjusted up or down to 0 = point function. This increases visibility.

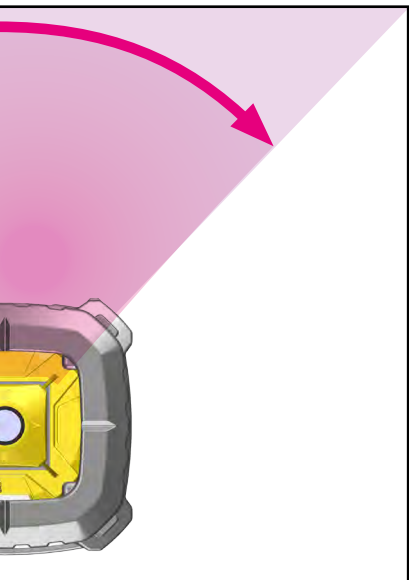


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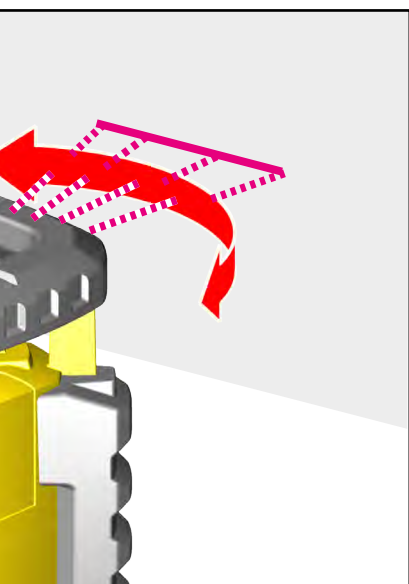
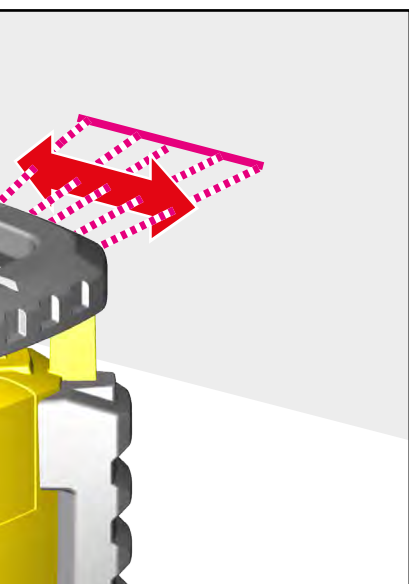
14. Line Function in Scan Mode

In scan mode the beam does not rotate. Instead, it moves to and fro rapidly between two points. The eye perceives this as a laser line.

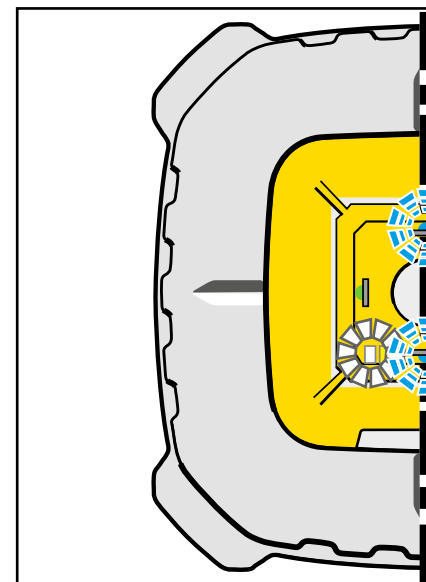
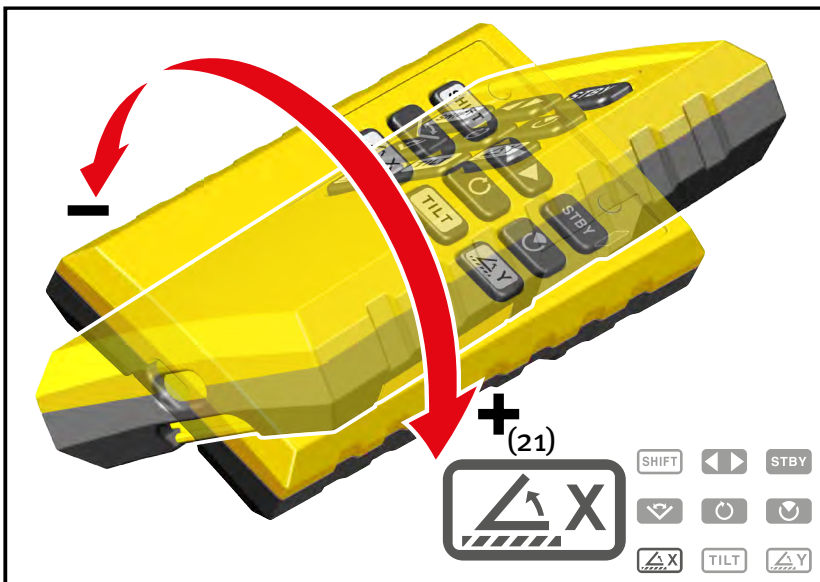
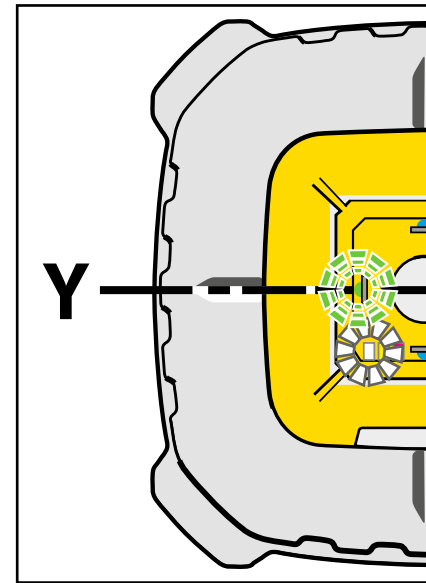
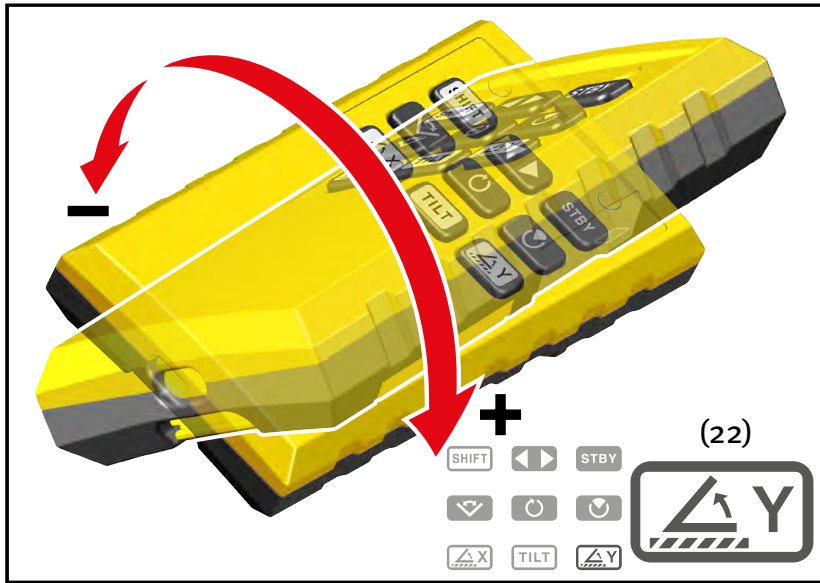
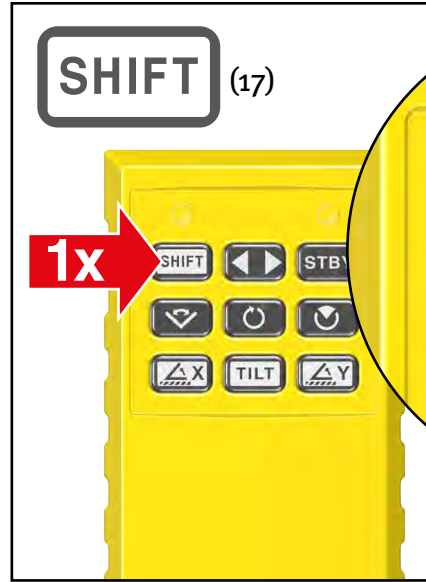
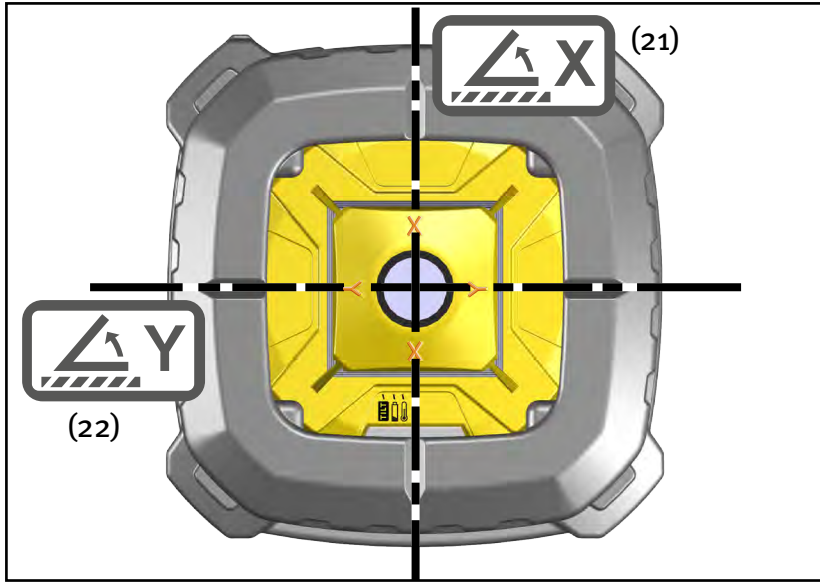
Button (24) switches the scan function on/off. When it is switched on, the scan line is always located opposite button (3) of the laser unit. The thickness of the laser line can be infinitely adjusted (thicker/thinner) by holding down button (24) and rotating the remote control unit.

To rotate the scan line to the desired position, hold down button (23) and rotate the remote control unit.

--> 'Positioning the Laser Beam'



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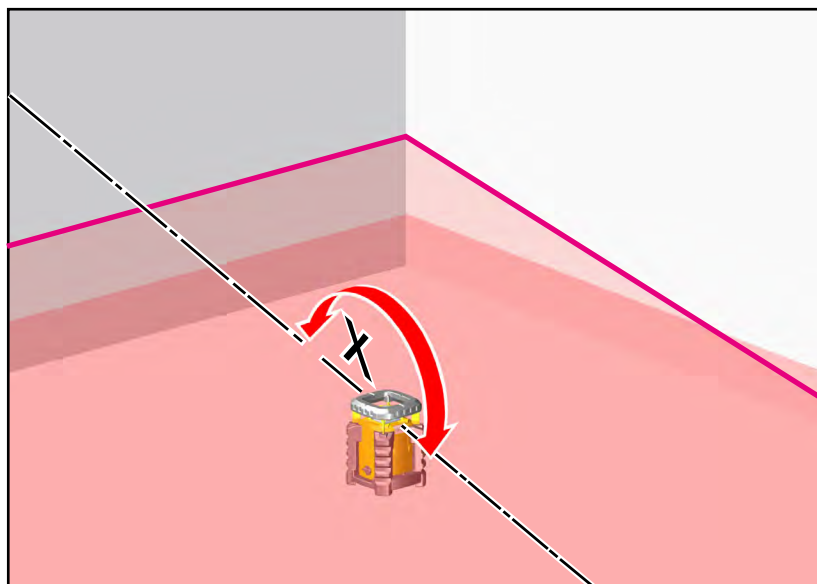
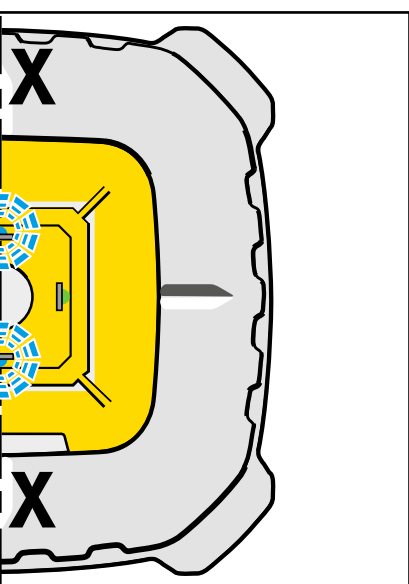
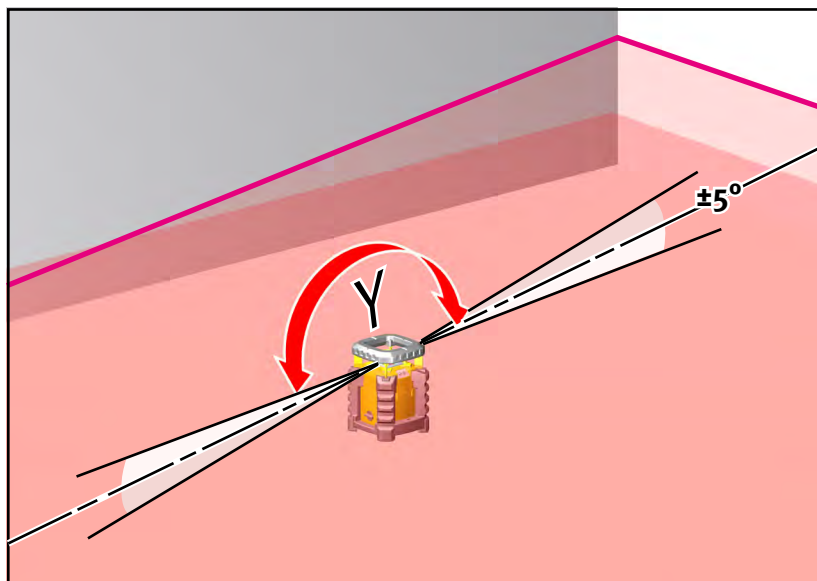
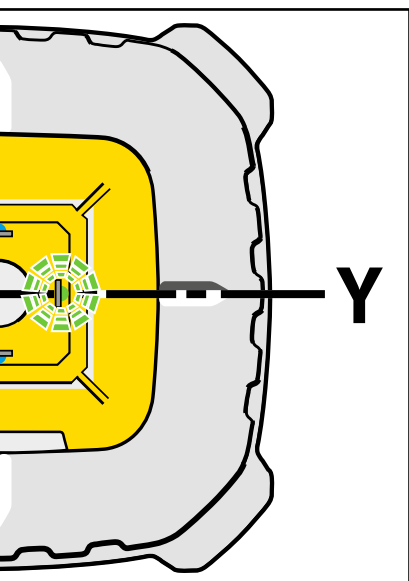


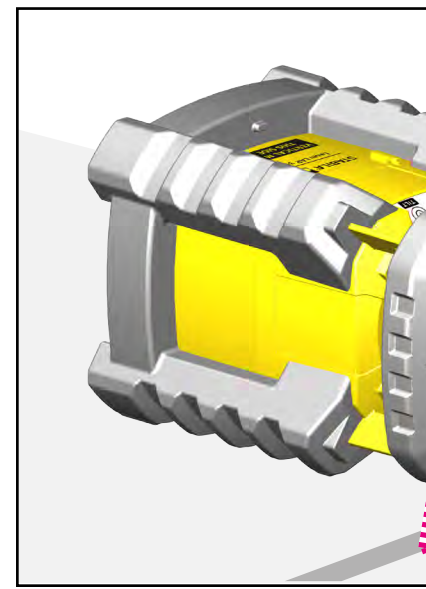
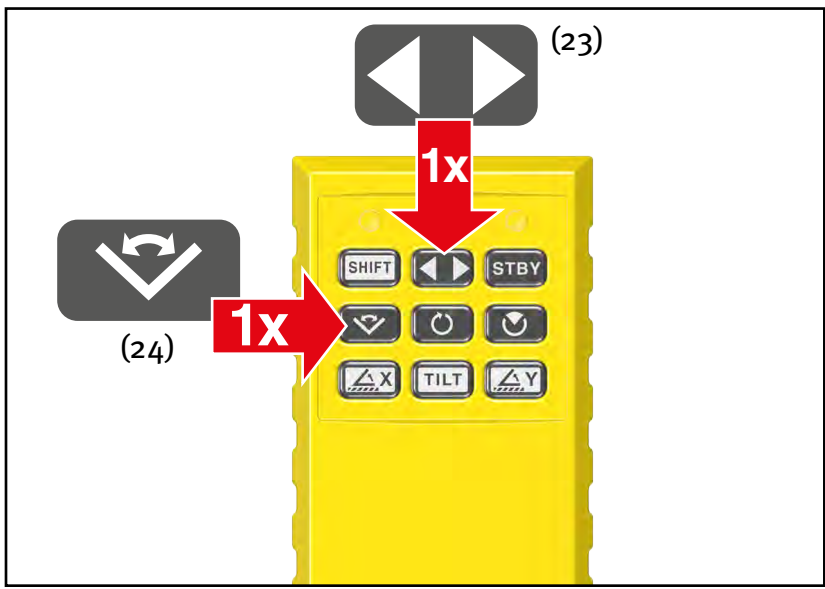
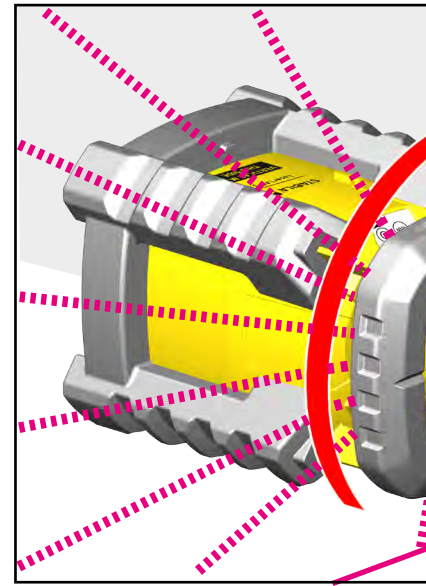
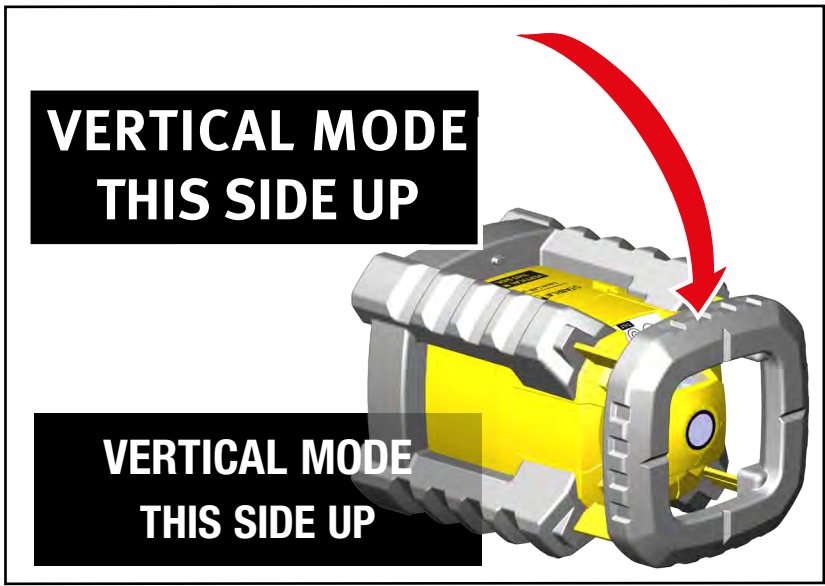
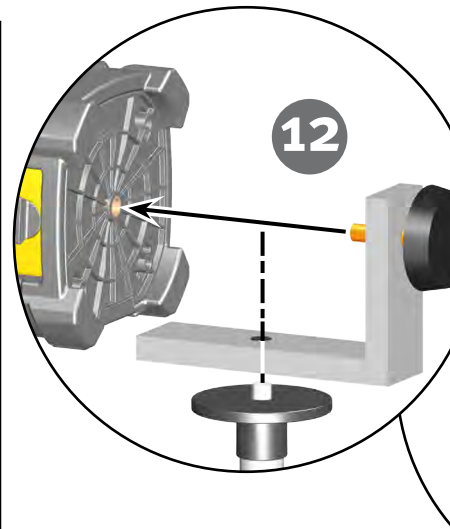
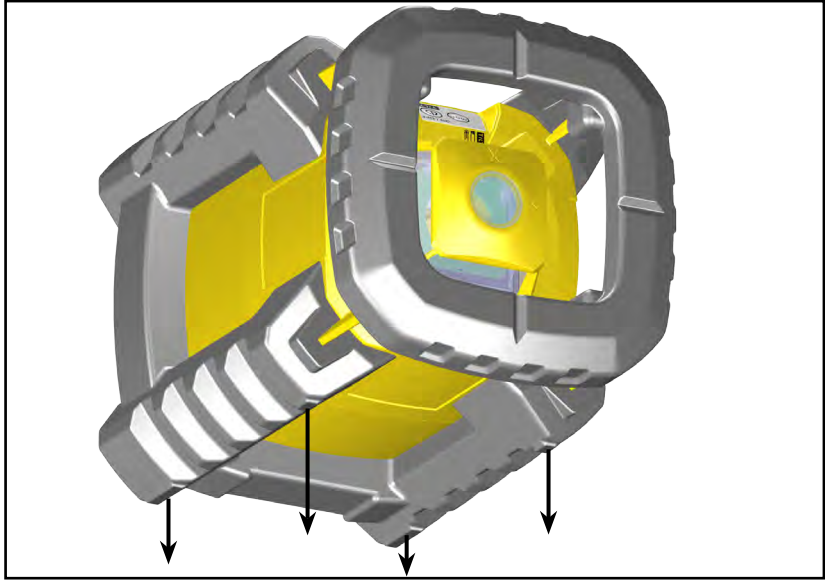
15. Inclining the Laser Axes

Briefly pressing button (21) = laser x-axis or (22) = laser y-axis causes the rapidly flashing LEDs (blue or green) to indicate the corresponding laser axis. The laser axes can be adjusted independently through an inclination range of up to $\pm 5^\circ$.

By using an inclinometer (available as an accessory), this angle can be increased to about 50° .

Press the Shift button (17) to enable the inclination function for the laser axes. The axis inclinations are varied by holding down button (21) or (22) while rotating the remote control unit. The corresponding LEDs flash during adjustment.

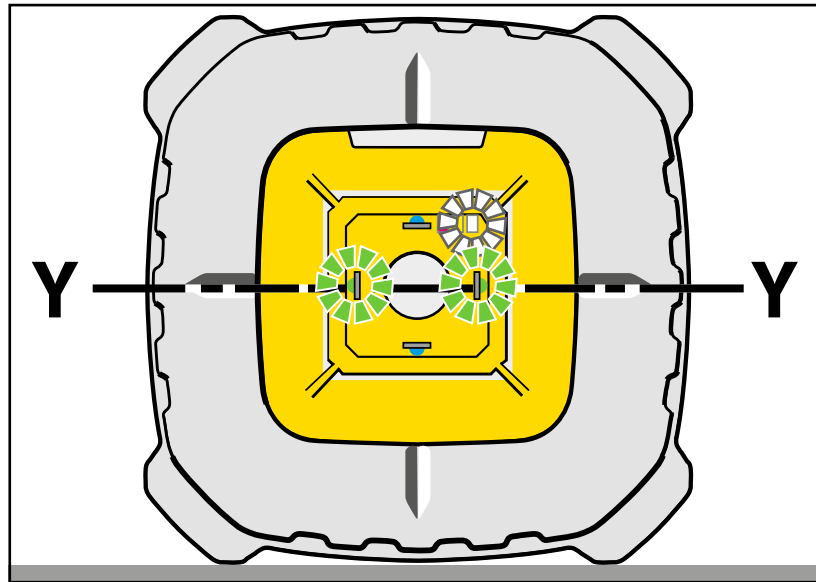
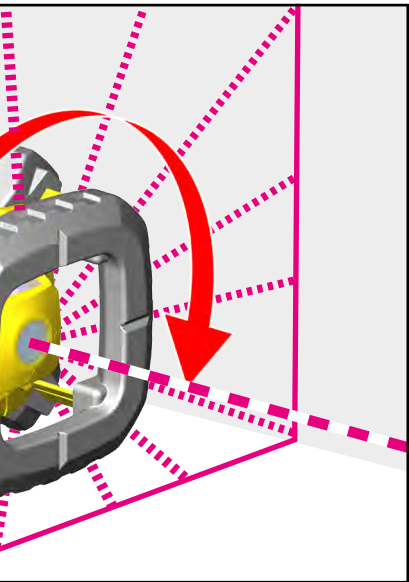
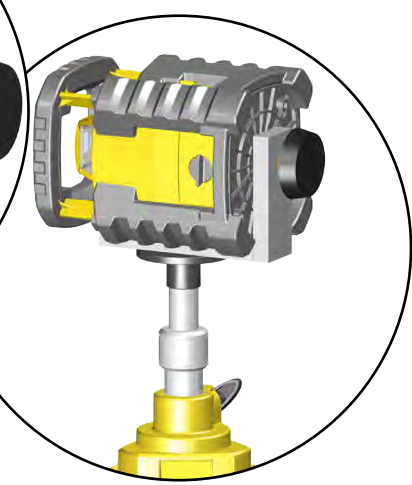




16.1 Vertical Function

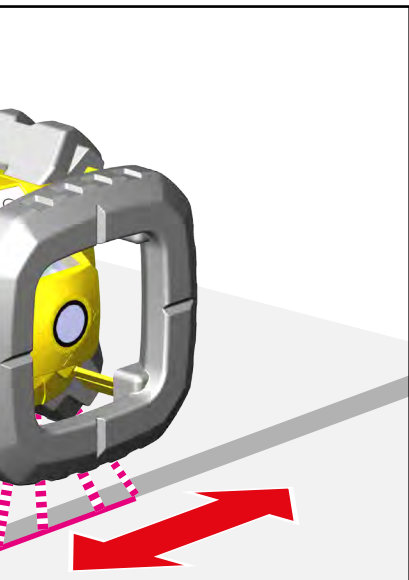
To enable the LAR 350 to perform vertical levelling and marking tasks, it is placed on its side on the feet integrated into the body. Position the unit so that the wording 'VERTICAL MODE THIS SIDE UP' appears on the top. The operator display is then also at the top. The retaining bracket (12) can be used to mount the LAR 350 on a tripod. The unit switches into vertical mode automatically. All modes and functions are available.

Note that in this position only the laser x-axis is automatically levelled. The LEDs of the laser y-axis are lit.

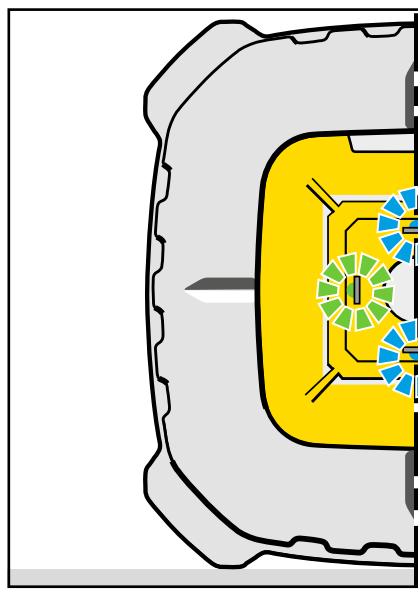
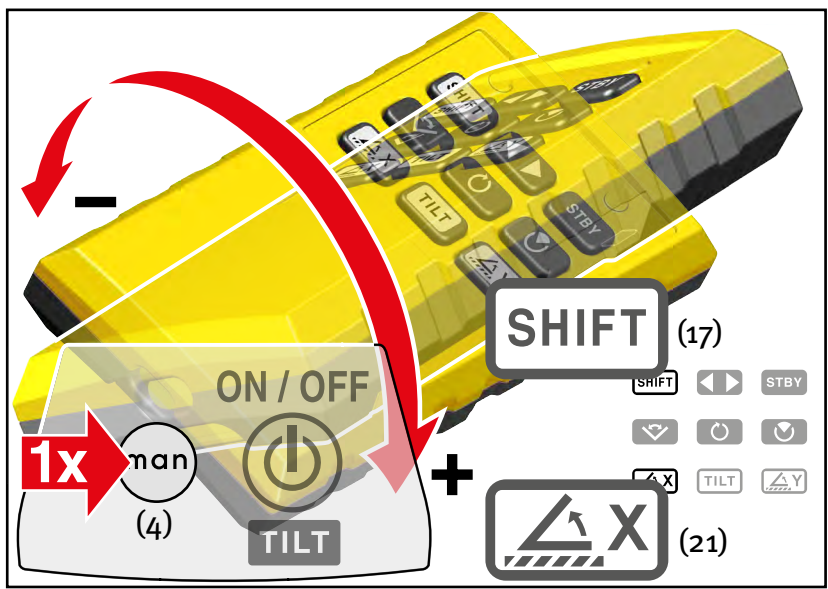
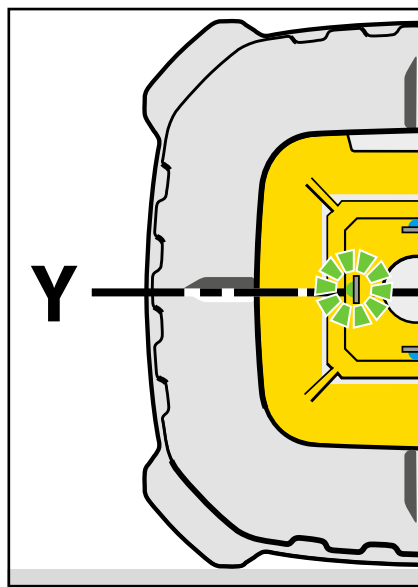
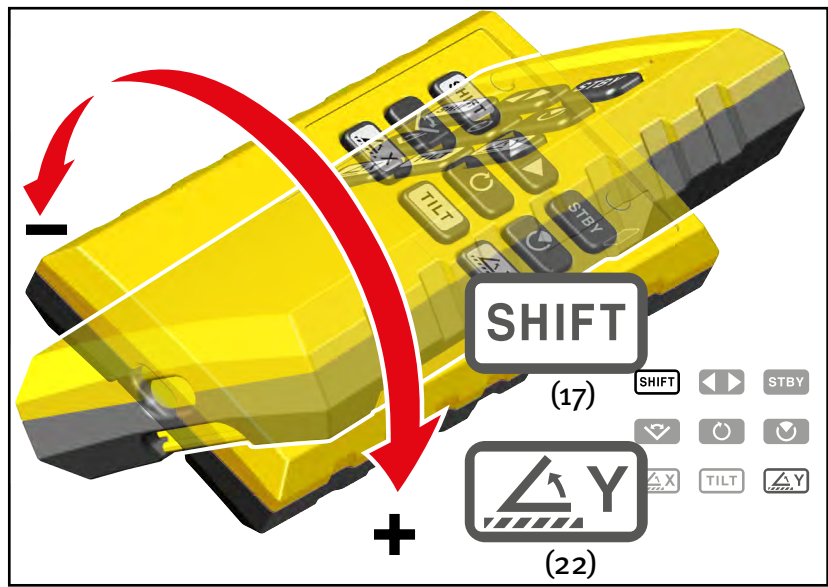
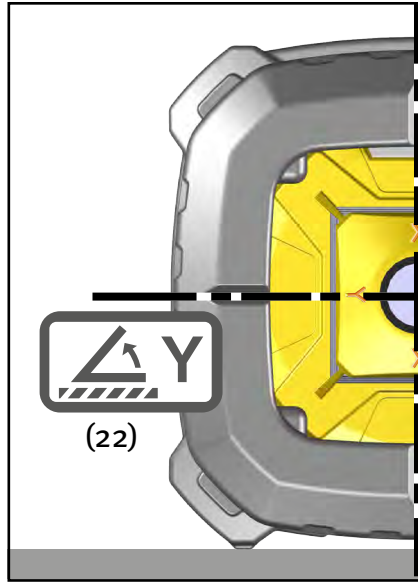
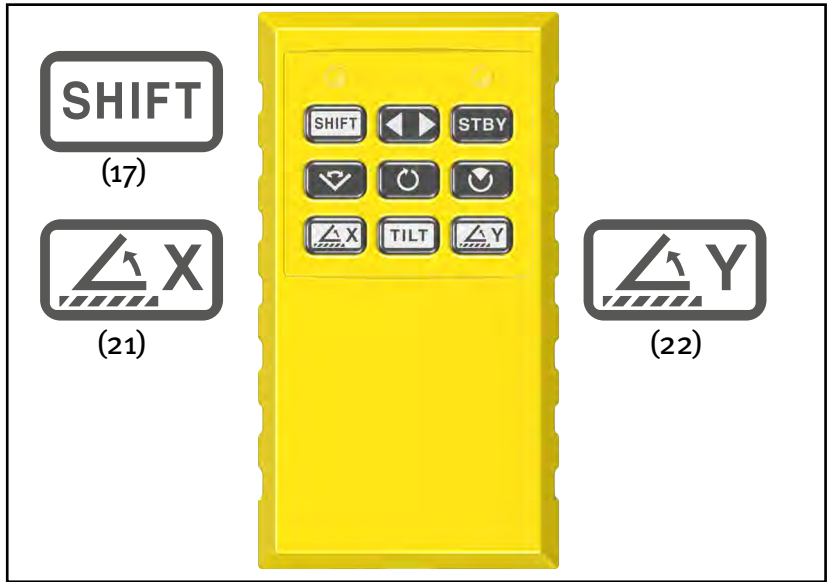


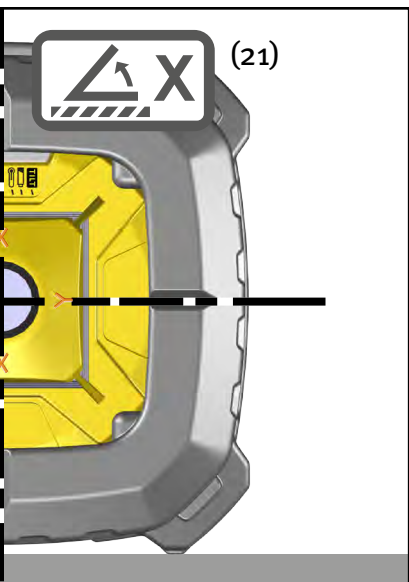
16.2 Positioning Aid in Vertical Mode

Button (24) switches the scan function on/off. Only when the unit is switched from rotation mode to scan mode is the scan line always on the floor immediately after switching on. Now the laser can be simply aligned on the floor. To rotate the scan line to the desired position, hold down button (23).
--> 'Scan mode'



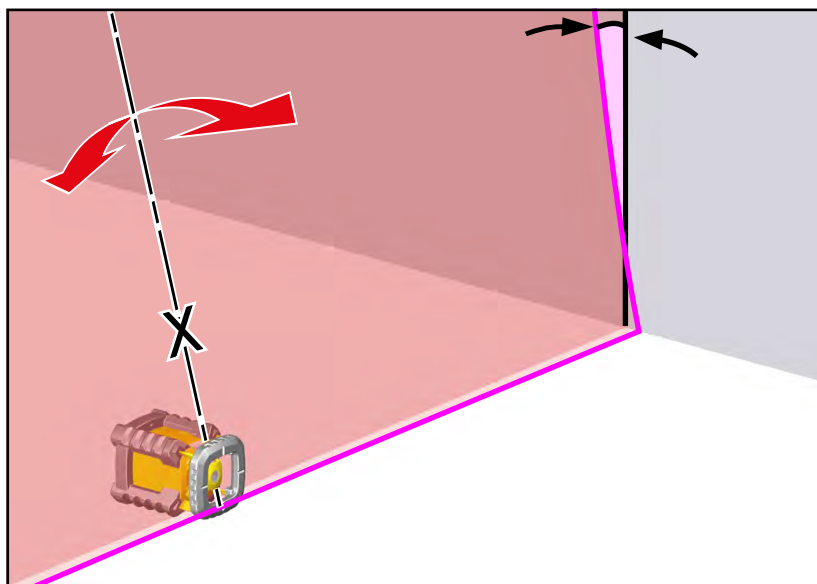
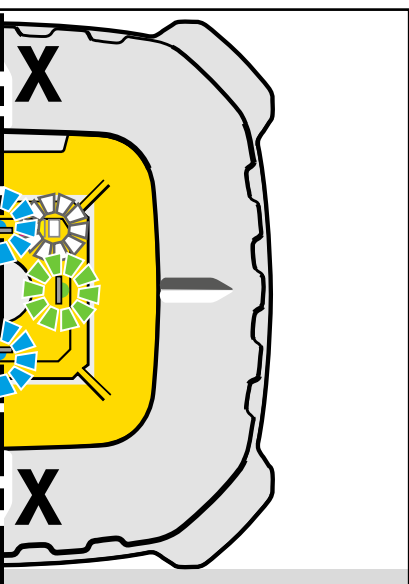
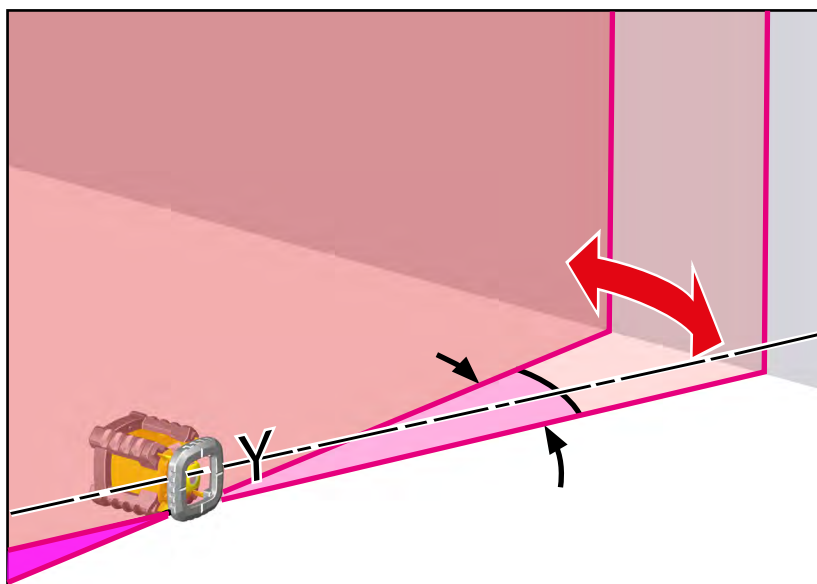
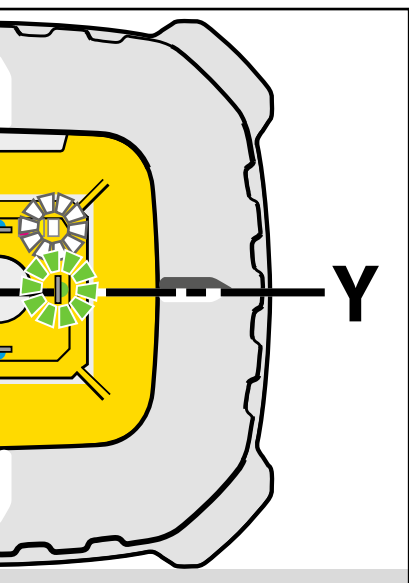
LAR 350



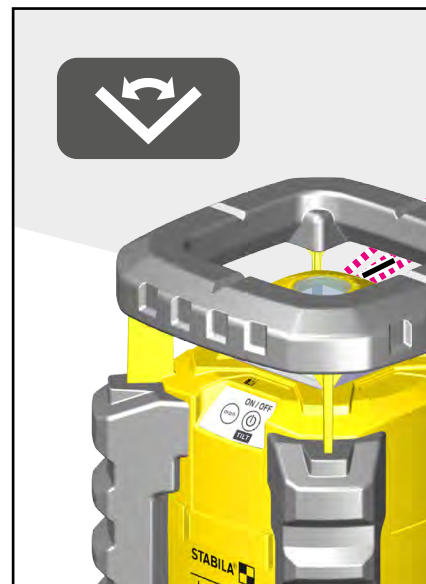
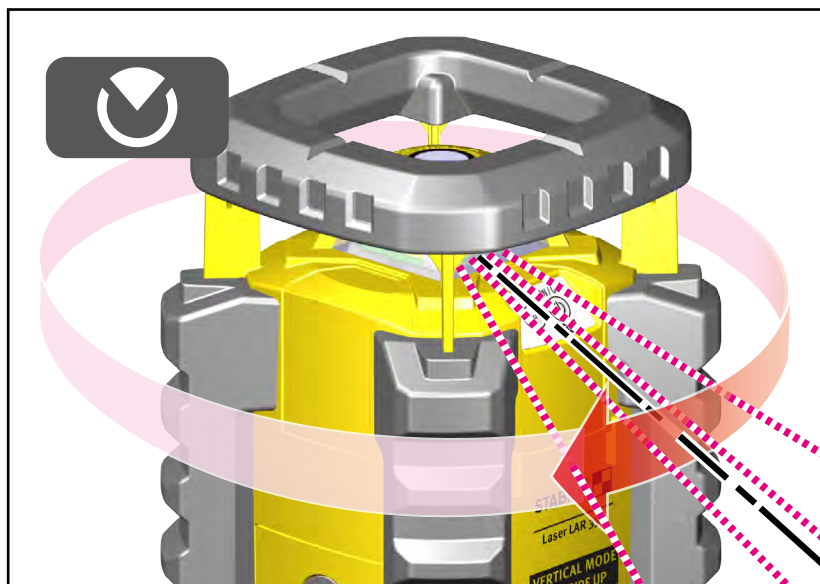
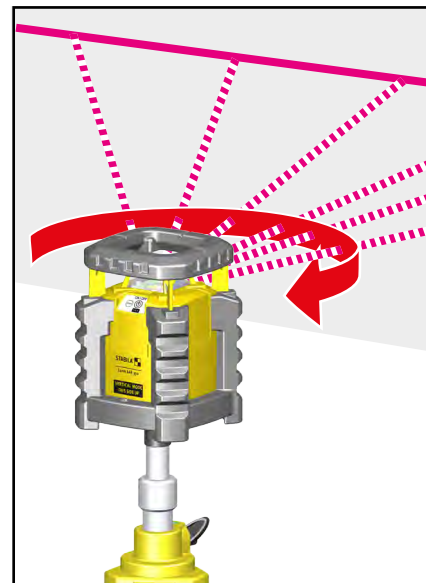
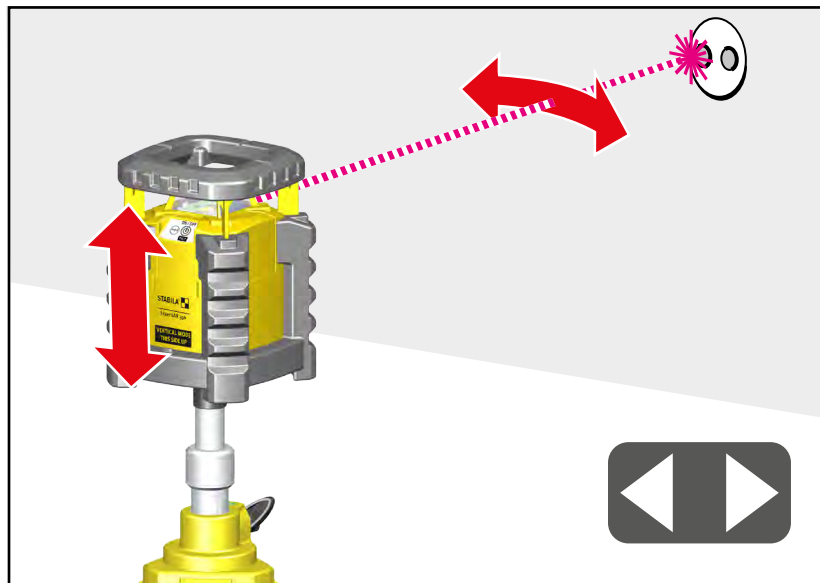
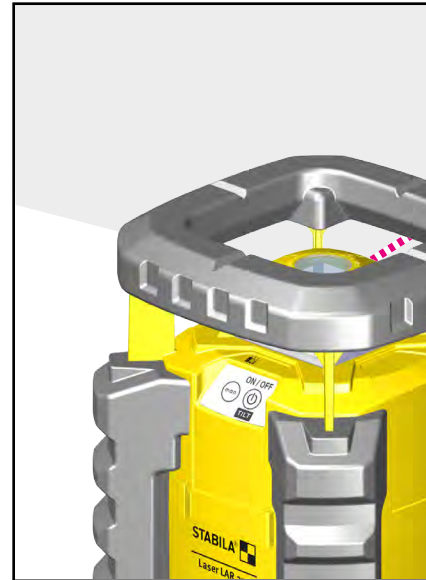
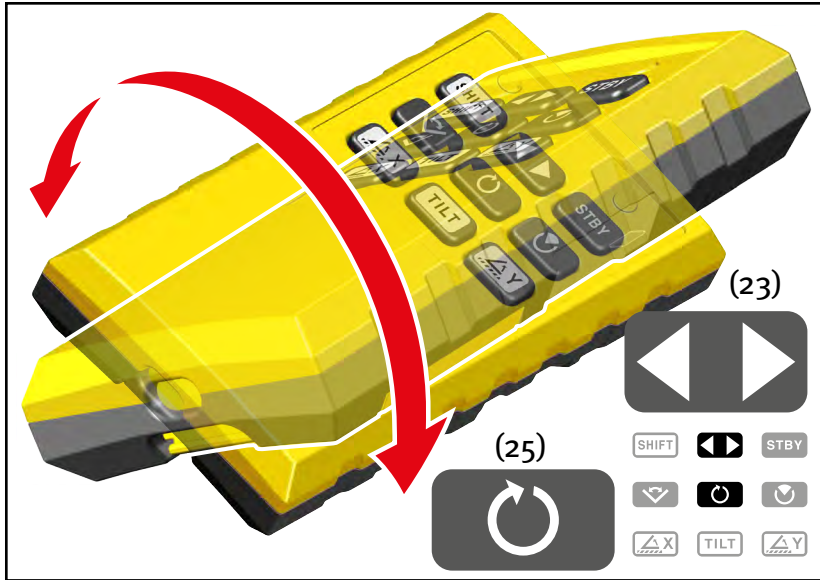


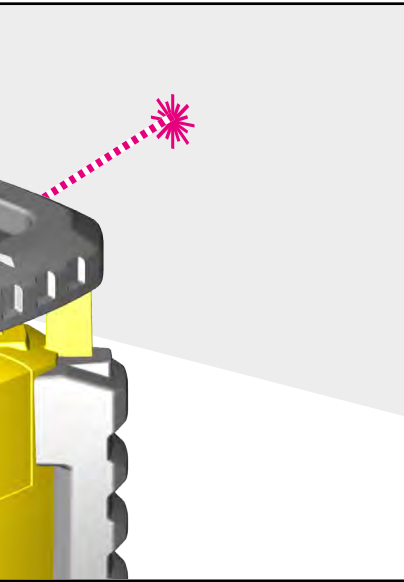
16.3 Rotating and Inclining the Laser Axes

Button (17) switches the laser axis rotation and inclination function on and off. Use buttons (21) and (22) to set the two laser axes. The corresponding LEDs flash during adjustment. If only the laser y-axis is adjusted (button 22), the vertical alignment of the x-axis is retained. The green LEDs indicate that levelling of the y-axis is inactive (-> p. 18). The laser plane can be aligned. Adjustment of the x-axis must be enabled by pressing button (4) on the laser unit. Once the x-axis is adjusted (buttons 4+21), no further levelling can take place. The laser is now operating in manual mode. The blue and green LEDs are now steadily lit.



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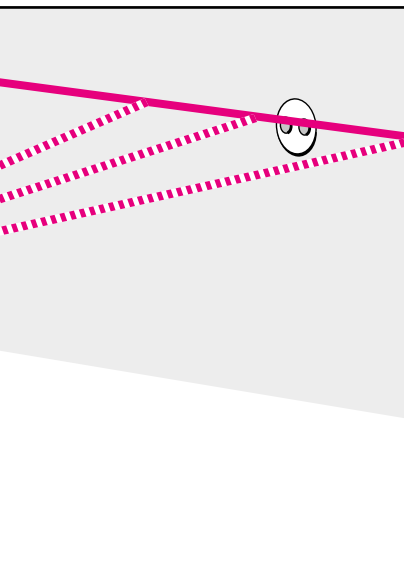


17. Positioning the Laser Beam

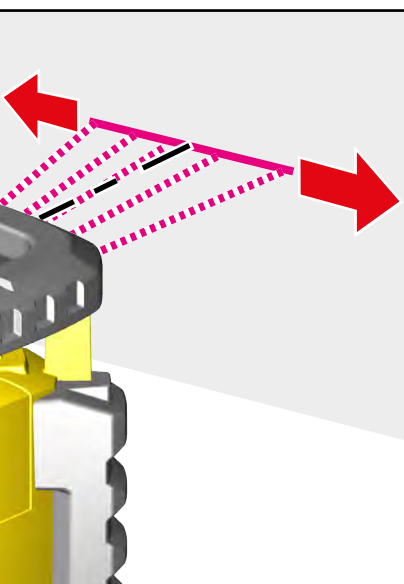
In certain applications it can be helpful to align the laser beam using only a single laser point.

To do this, reduce the rotation speed to zero = point laser (button 25). --> Rotation Speed

To rotate the laser point to the desired position, hold down button (23).

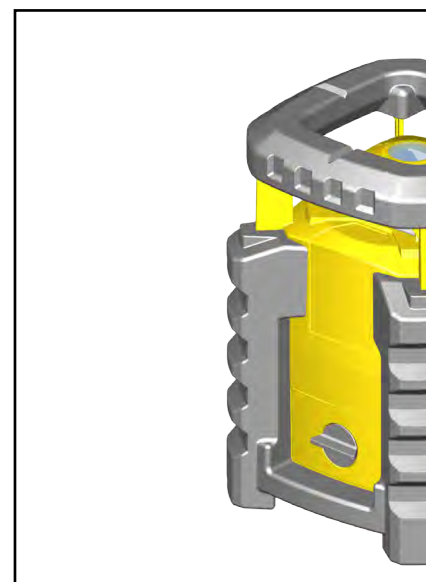
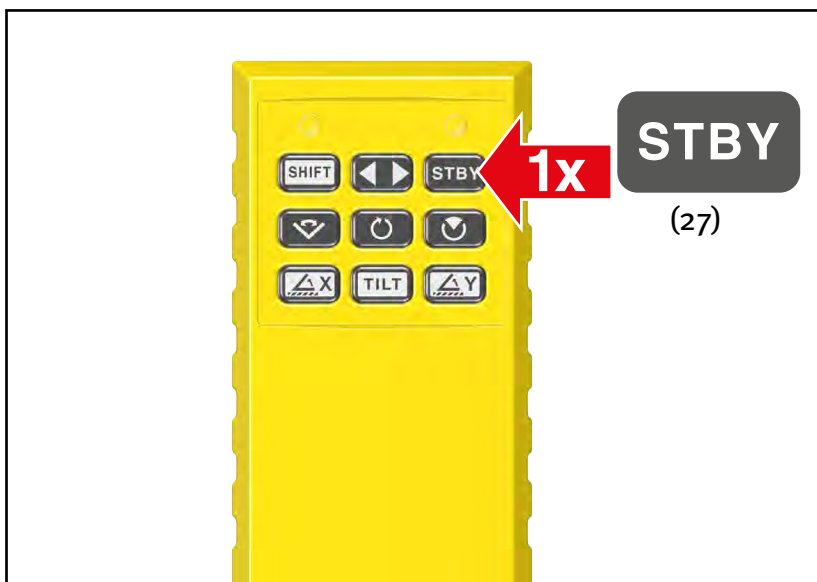
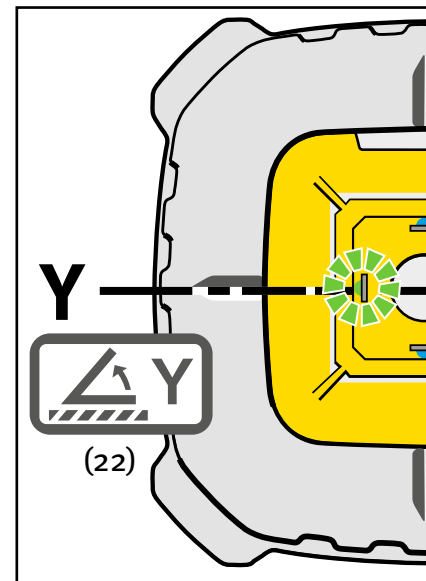
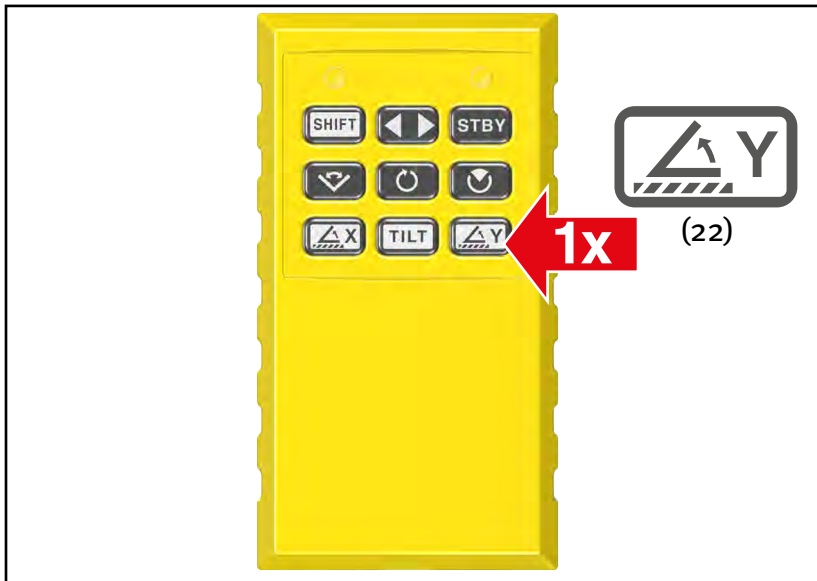
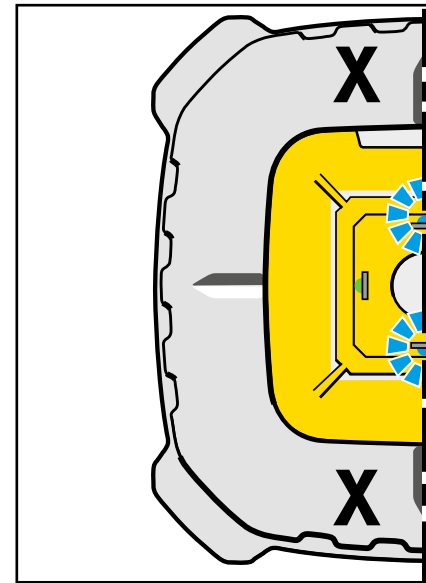
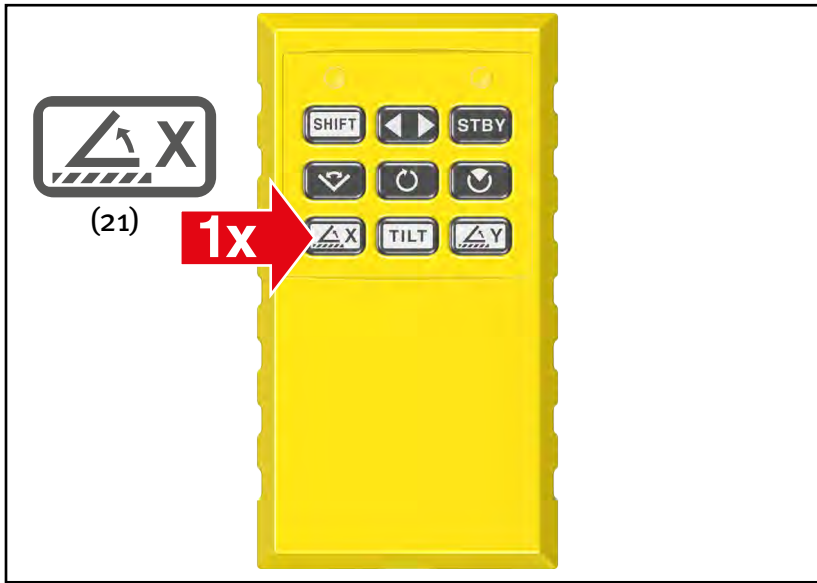


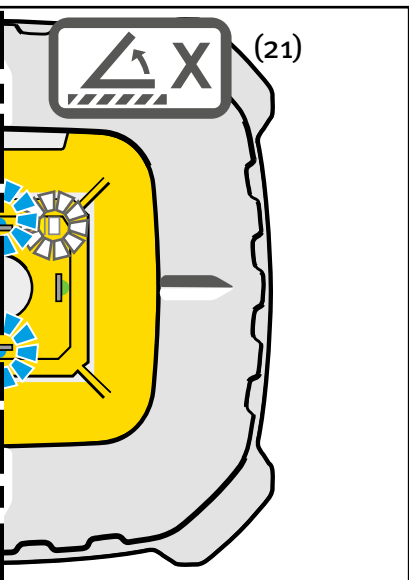
Laser planes can also be set up in advance by this method.



Once the unit is then switched to scan or section mode, the laser beam is directed symmetrically over the set position of the point laser. The direction of the laser sector or laser line in scan mode can thus be specified in advance.

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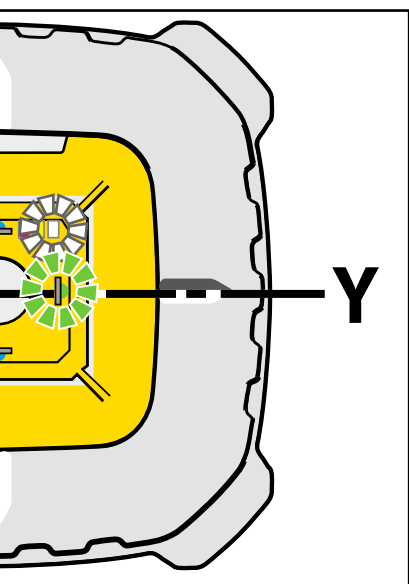


18. Displaying the Alignment of the Laser Axes

The blue and green LEDs indicate the respective axes if button (21) = laser x-axis or (22) = laser y-axis is briefly pressed.

--> 'Inclining the Laser Axes'

--> 'Rotating and Inclining the Laser Axes'

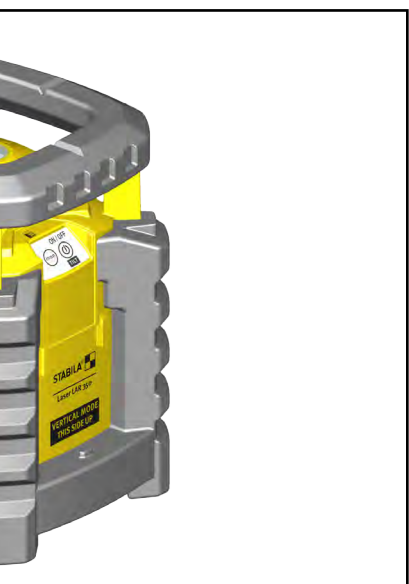


19. Standby Mode

In the standby setting the laser unit saves energy.

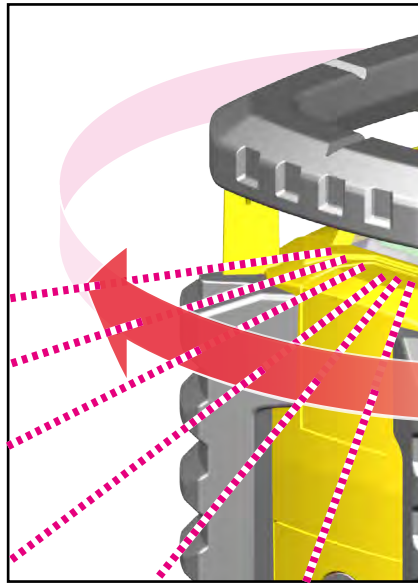
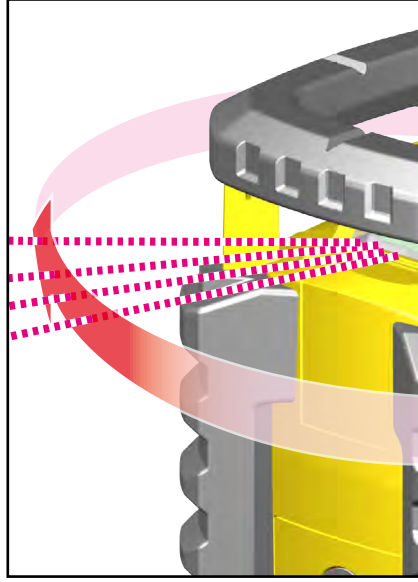
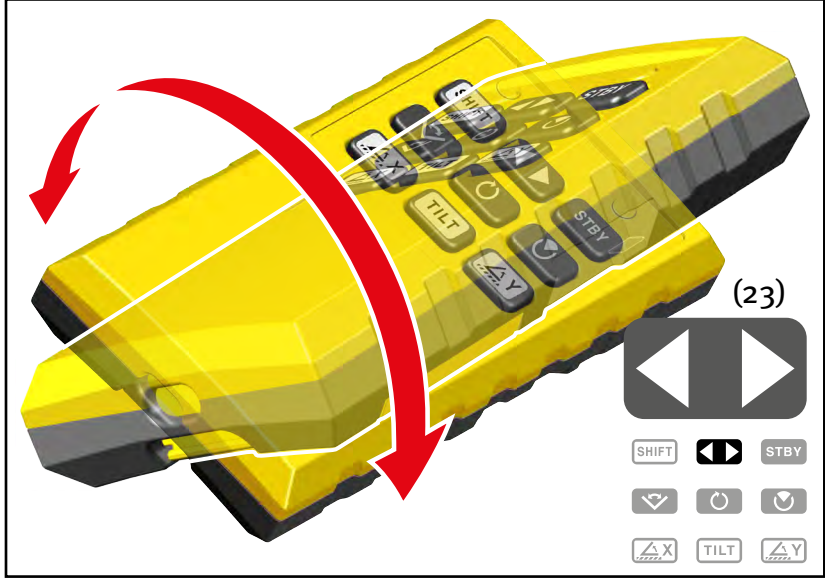
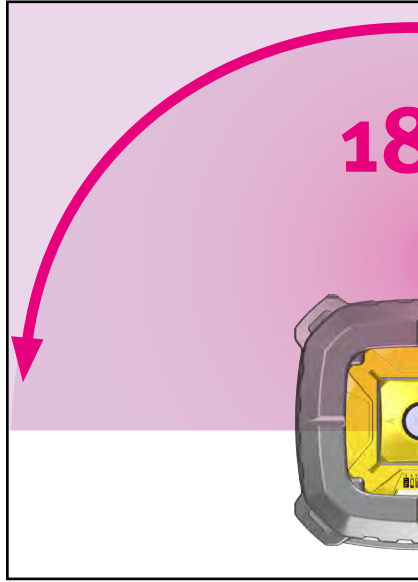
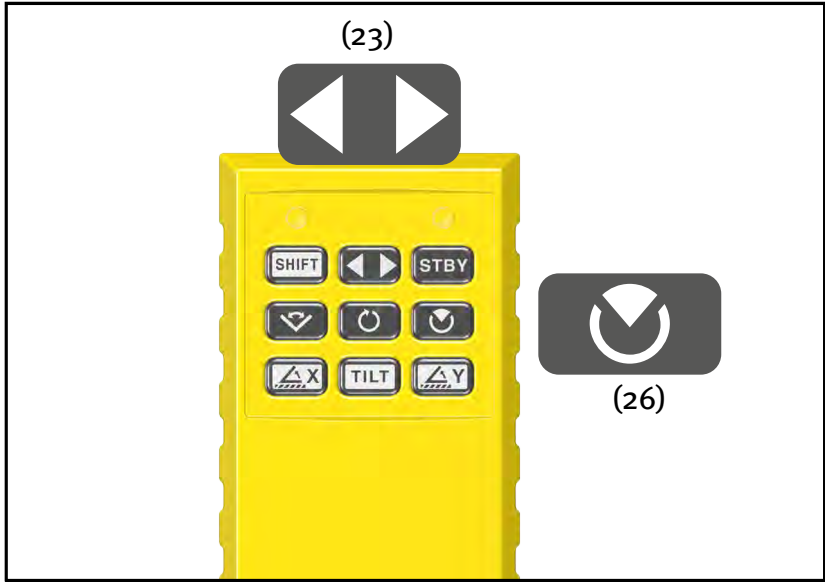
Press button (27) to activate standby mode. The laser beam does not rotate and becomes inactive. All settings, including the tilt function or releveling and the LED displays, are retained.

Exit standby mode by pressing button (27) or buttons (20...26) of the remote control unit.

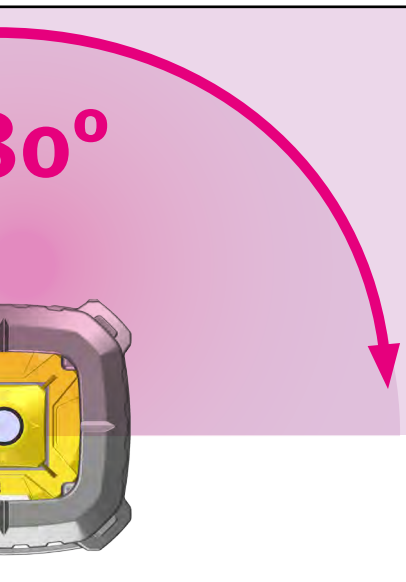


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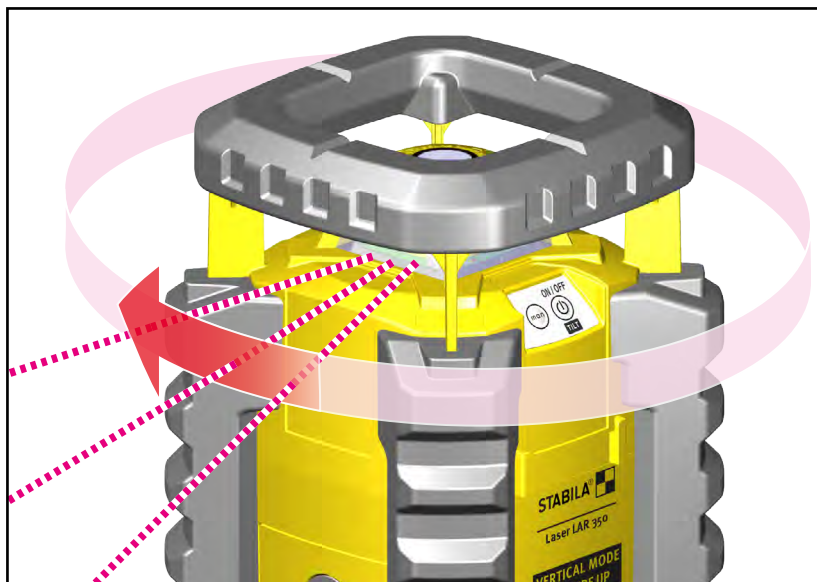
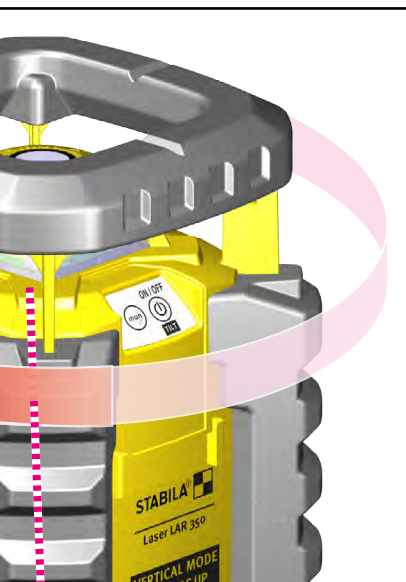
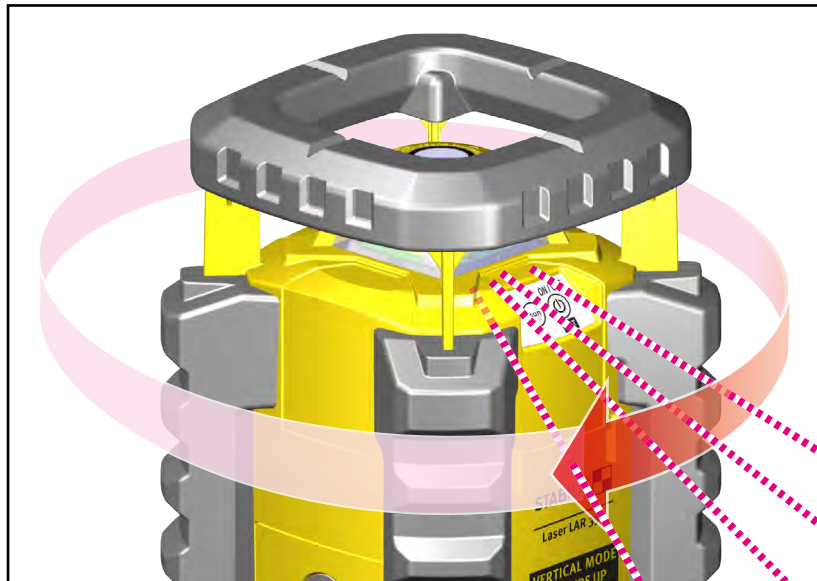
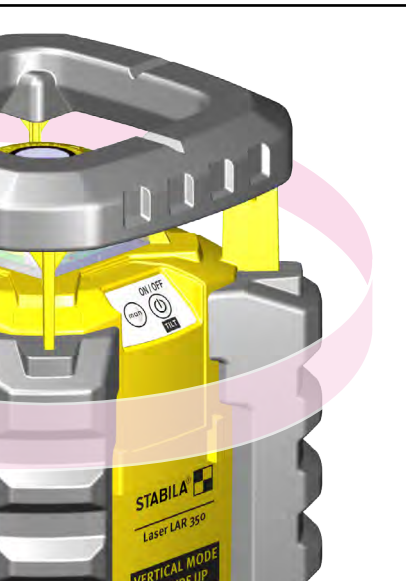
20. Section Mode

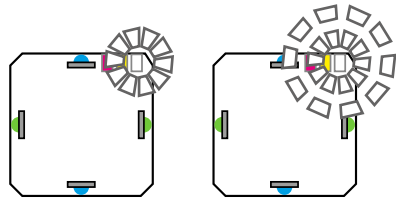
Here the rotating laser beam is limited to a particular sector. This prevents malfunctions occurring outside the actual working area through interference with other devices. Within the specified sector, all function modes of the rotation laser are available.

Button (26) switches the section mode on/off. When it is switched on, the laser sector is always located opposite button (3) of the laser unit and has an angle of 180°.

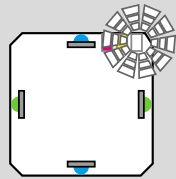
To rotate the laser sector to the desired position, hold down button (23). See also 'Positioning the Laser Beam'.

The angle of the laser sector can be varied using button (26). In this mode the laser beam rotates at maximum speed; this speed cannot be changed.

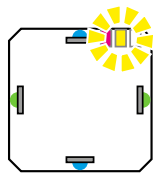




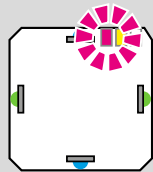
Operation with tilt function --> 'Tilt Function'
 30 seconds fine adjustment --> Using the Laser Unit,
 Tilt Function



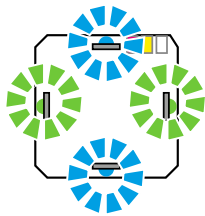
Operation without tilt function
 --> 'Automatic Operation with Relevelling'
 --> 'Manual Operation'



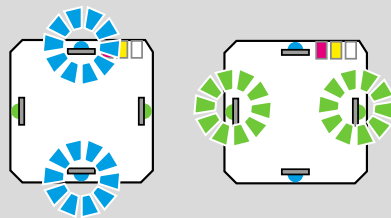
Battery capacity low
 --> 'Battery Insertion/Replacement'



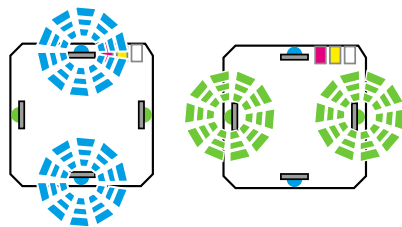
The temperature inside the unit is above 50°C.
 To prevent overheating, the laser diode has been switched off.



Operating in manual mode
 --> 'Manual Operation'
 --> 'Manual Operation with Tilt Function'
 --> 'Rotating and Inclining the Laser Axes'

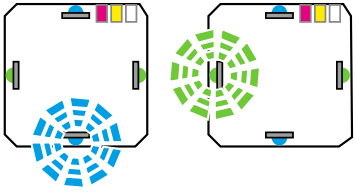


Laser axes in manual mode without levelling,
 --> 'Displaying the Alignment of the Laser Axes'
 --> 'Inclining the Laser Axes'
 --> 'Inclining and Rotating the Laser Axes'

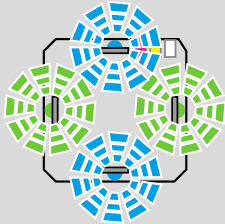


Laser axis is currently being changed

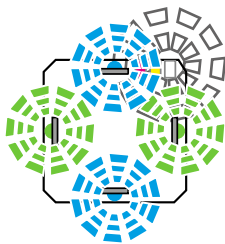
21. LED Indicators



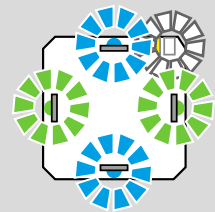
Unit is outside self-levelling range
--> 'Using the Laser Unit'



Tilt function initiated
--> 'Automatic Operation with Tilt Function'
--> 'Manual Operation with Tilt Function'



Horizontal adjustment currently in progress



Vertical adjustment currently in progress

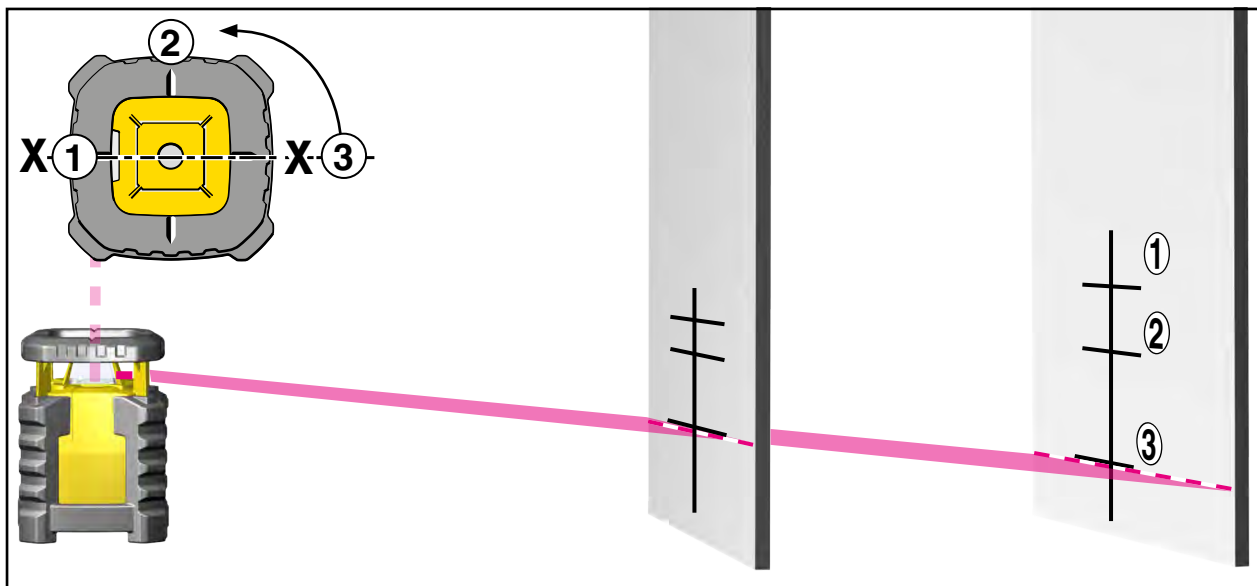
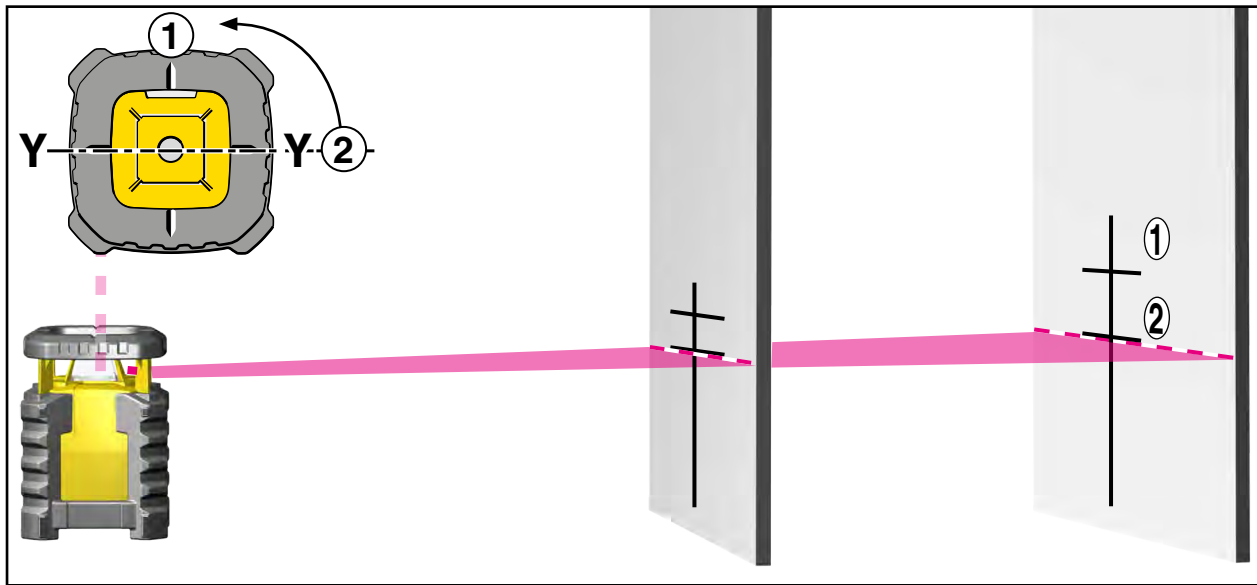
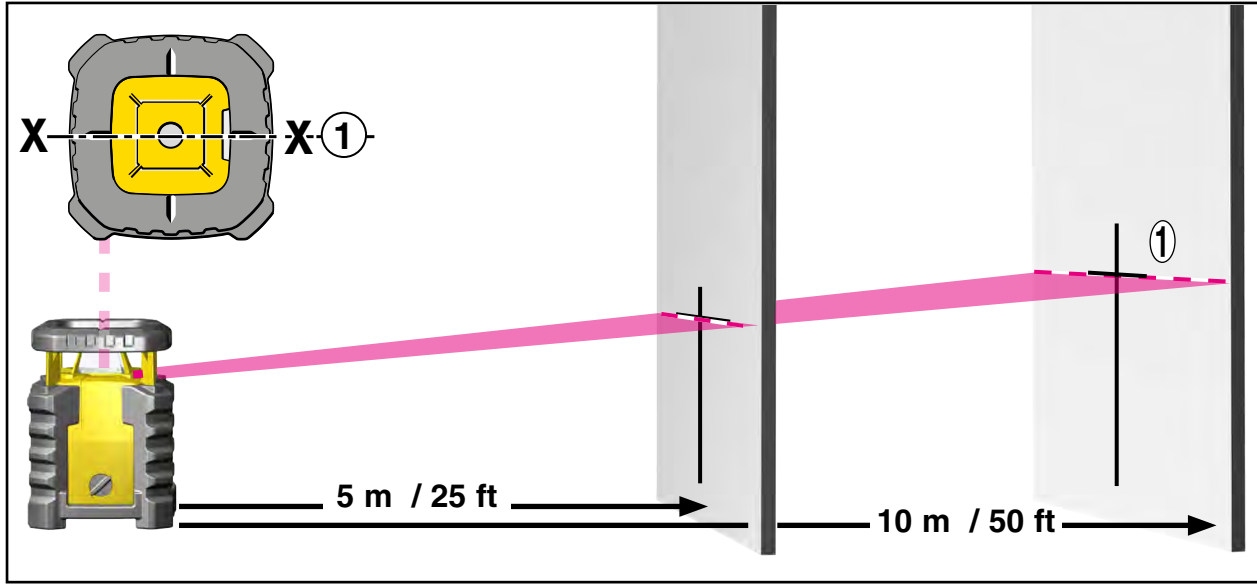


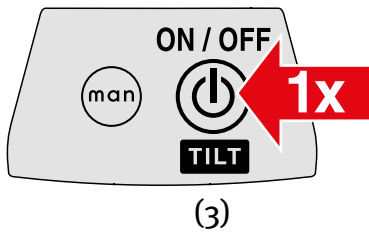
LED on steadily



LED flashing

LAR 350





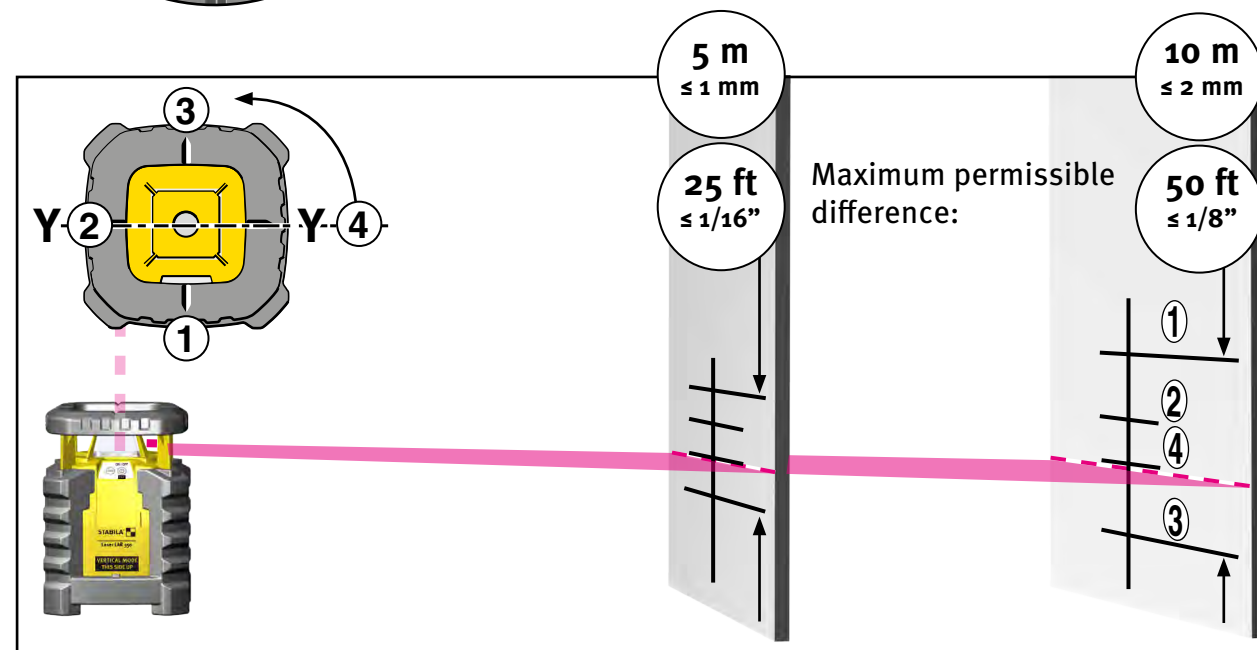
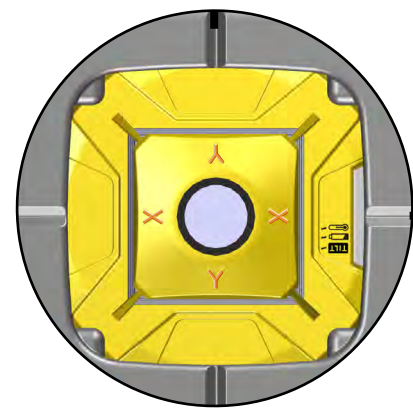
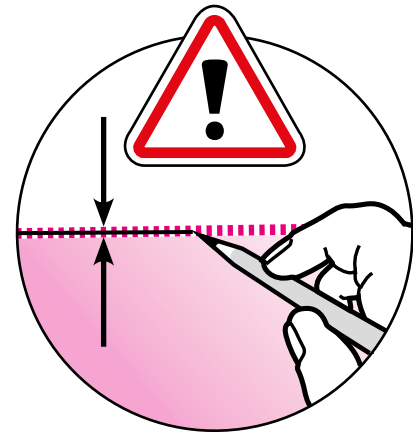
22.2 Horizontal Check

Checking the horizontal laser line level

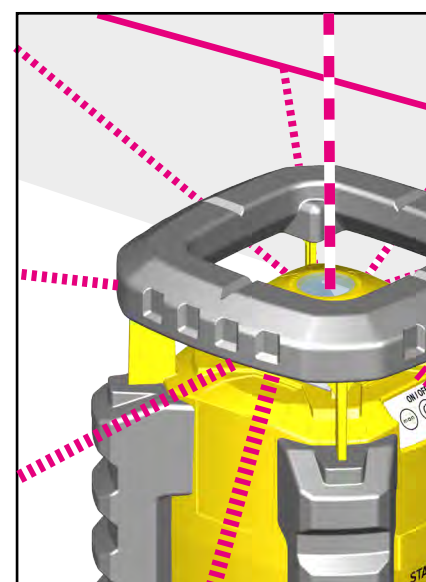
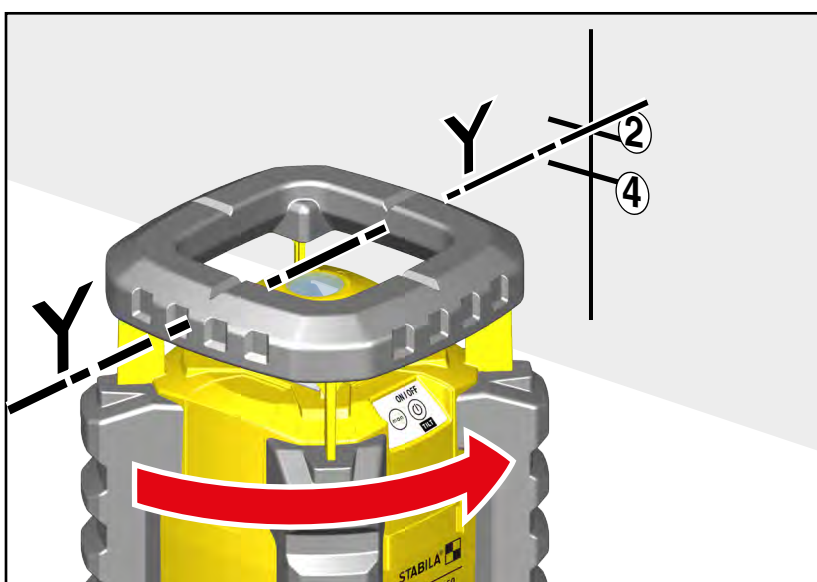
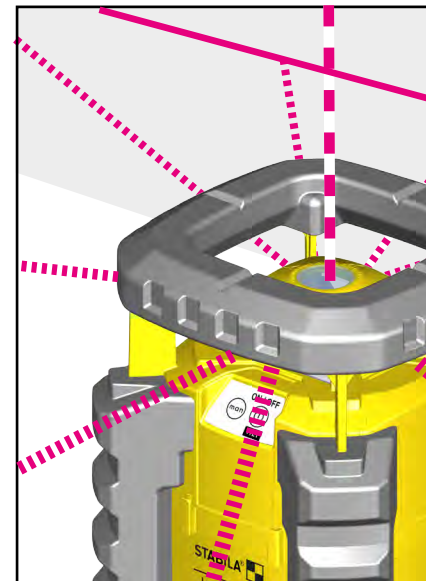
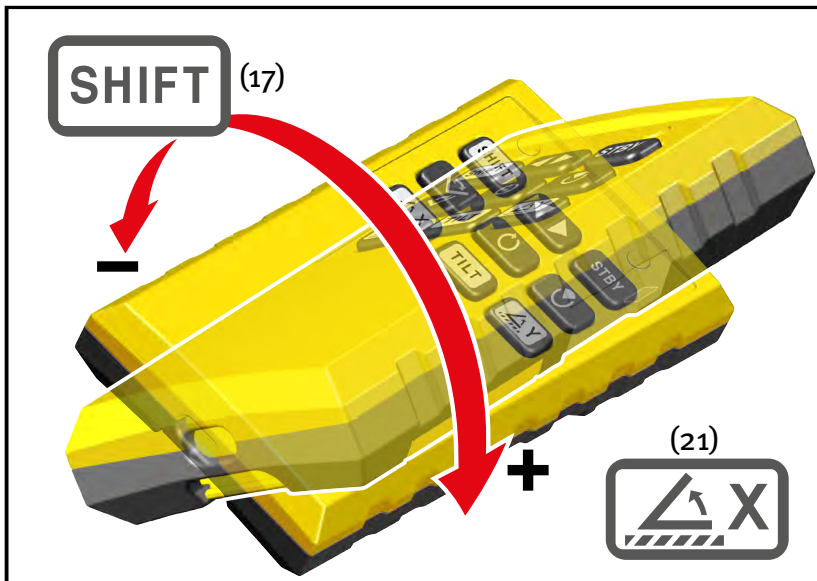
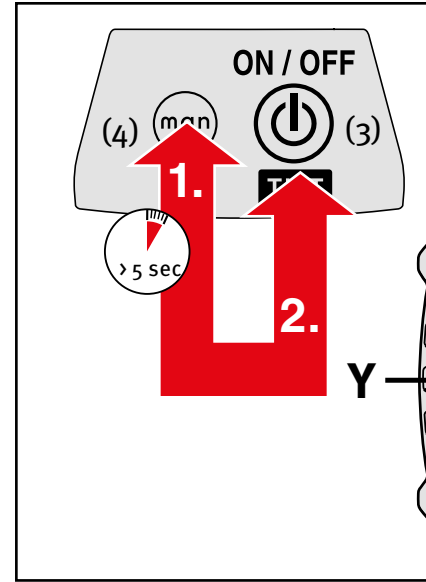
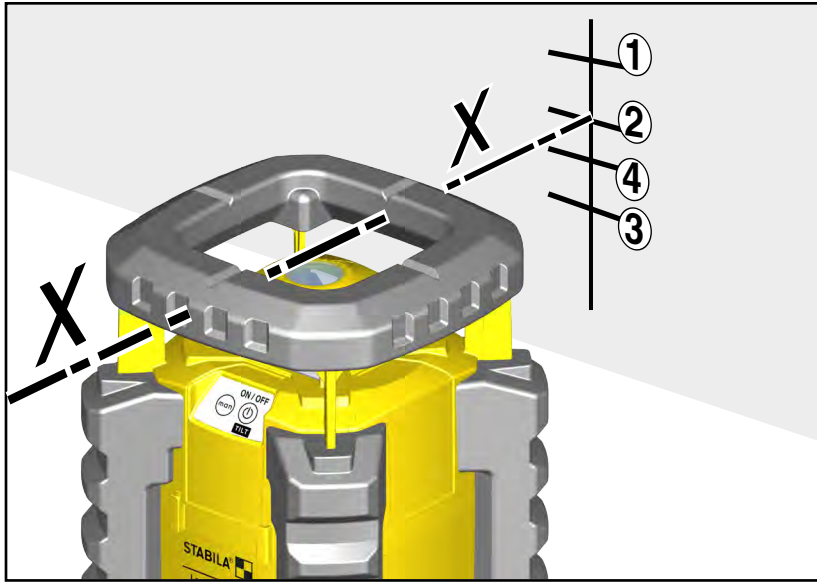
Be sure to adhere as closely as possible to the orientation of the unit as shown.

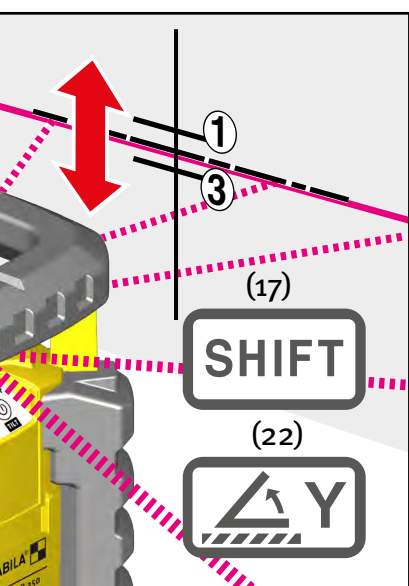
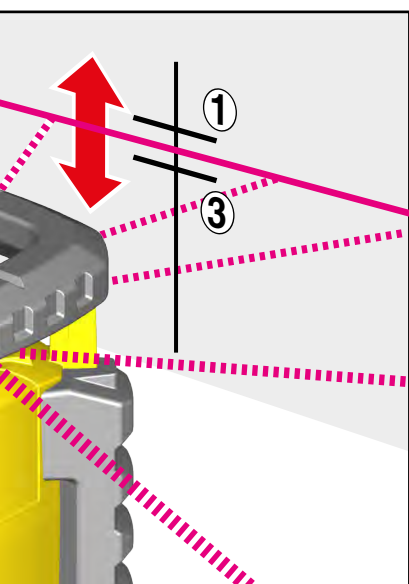
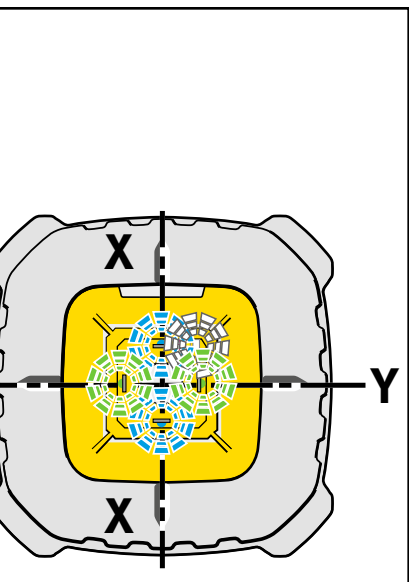
1. Place the LAR 350 on a horizontal surface or on a tripod at a distance of 5 or 10 m from a wall, with the operator panel towards the wall.
2. Switch the laser unit on (button 3) and wait until it has automatically levelled itself.
3. Mark the centre of the visible laser line on the wall - measurement 1 (point 1). A receiver can also be used.
4. Rotate the entire laser unit through 90° without altering the height of the laser (i.e. do not change the tripod height). Allow the unit to level itself again.
5. Mark the centre of the laser line on the wall (point 2).
6. Repeat steps 4 and 5 twice to obtain points 3 and 4.

If the differences between the four control points are less than 1 mm for a distance of 5 m (1/16" at 25 ft) or less than 2 mm for a distance of 10 m (1/8" at 50 ft), the unit is within its permitted tolerance of $\pm 0.1 \text{ mm/m}$ ($\pm 18''$ over 100ft). Here points 1 and 3 correspond to the device's x-axis and points 2 and 4 to its y-axis.



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22.3 Adjustment - Horizontal

If the tolerance level was exceeded in the horizontal check, the laser can be readjusted as follows. In each case the critical element is the distance that results from the measurement points taken from opposing positions, i.e. points 1+3 or 2+4.

Example: The distance between points 1 + 3 is greater than the tolerance of ± 0.1 mm/m. Accordingly, the laser must be readjusted in this axis.

When performing readjustments, ensure that the batteries are fully charged.

Position the laser with this axis (the x-axis) towards the wall. Switch the laser off. To enter calibration mode, first hold down button (4) (> 5 seconds). Now, still holding button 4, press the on/off button (3). Next, release button (4) and then release button (3). The blue (8) and green (9) LEDs flash rapidly. The laser levels itself and begins to rotate. The white LED (5) TILT flashes rapidly.

Use the receiver to check the height. The laser is correctly adjusted when the laser point is situated exactly halfway between the points 2 and 4. Activate Shift (button 17).

Now hold down button (21) and simultaneously rotate the remote control unit to move the laser line up or down until it is in exactly the central position. Each time button (21) is pressed, the height is altered by 1 unit.

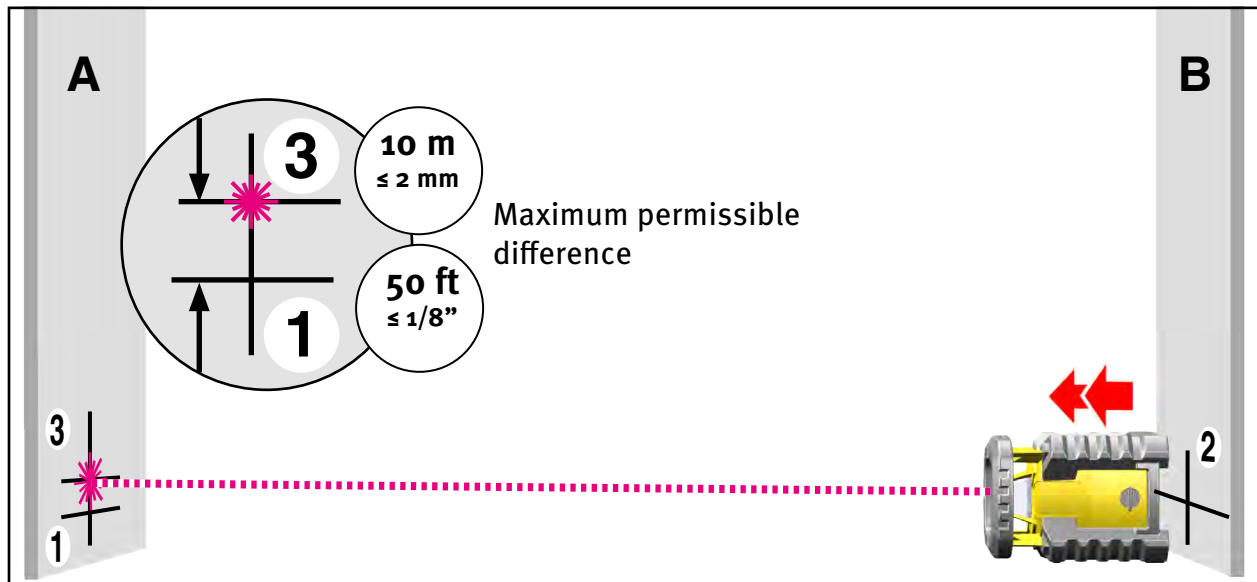
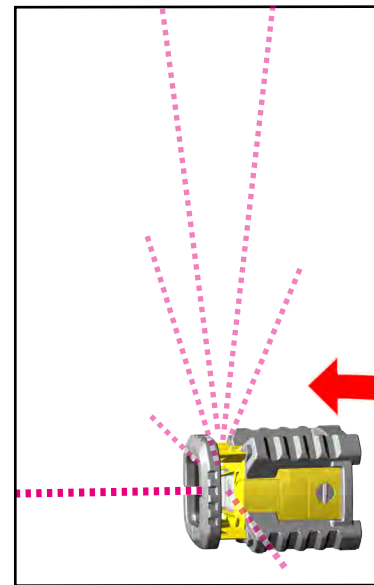
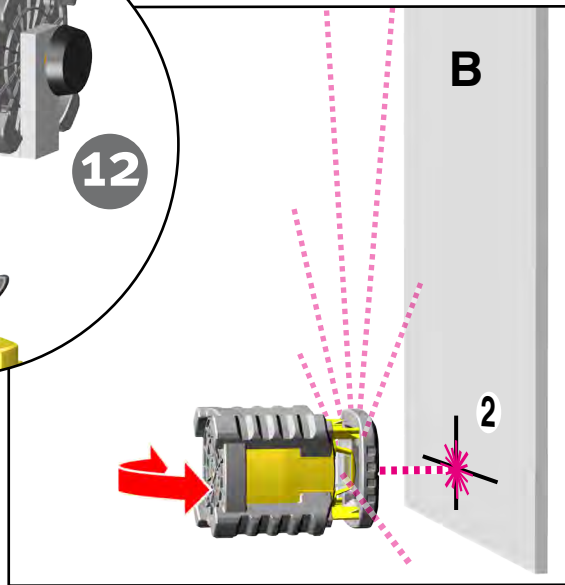
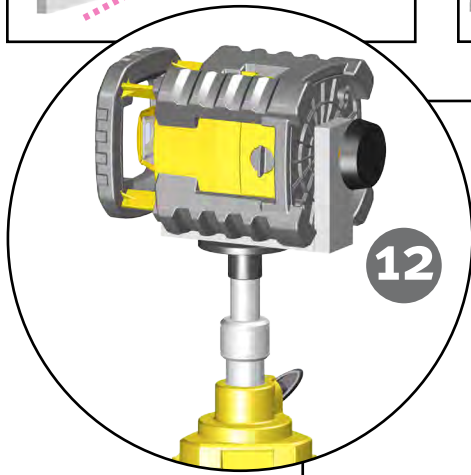
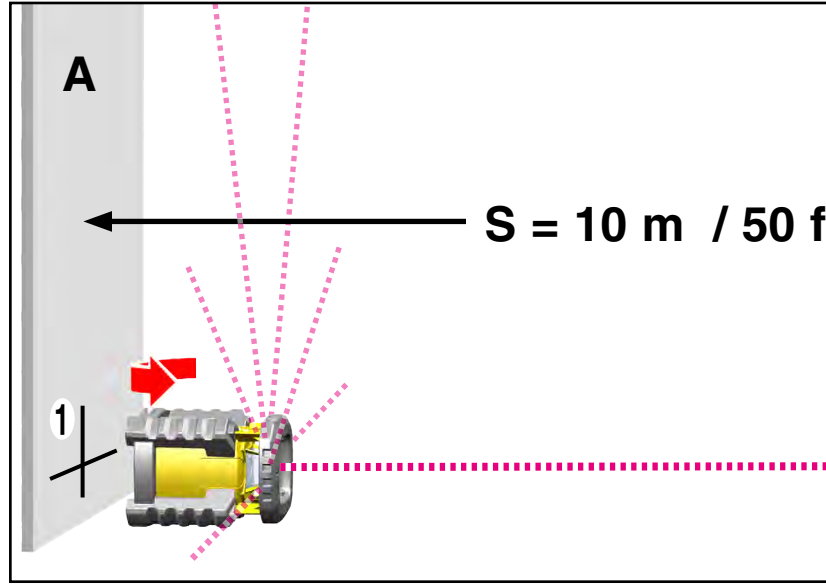
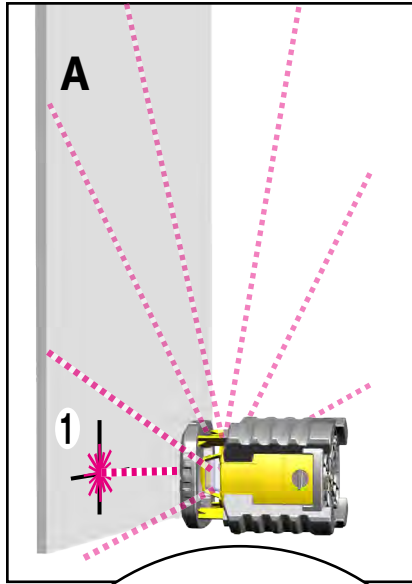
Now rotate the laser through 90° so that the y-axis points to the wall. If the centre of the laser line does not match the centre point drawn from the x-axis calibration, the y-axis should now also be calibrated.

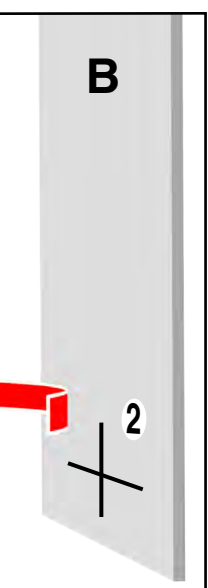
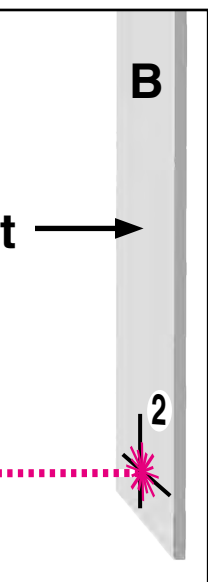
Adjust the height of the laser line again using buttons (17) and (22) of the remote control unit until the line is again exactly at the height of the central mark of the x-axis.

Storing the calibration

The laser has now been recalibrated. Pressing button (4) causes the settings to be stored. To exit calibration without storing the settings, press button (3) on the laser unit to exit calibration mode without saving. The old settings are retained unchanged.

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22.4 Vertical Check

Checking the vertical plumb-line laser

To perform the vertical check, two parallel wall surfaces are required with a separation S of at least 10 metres.

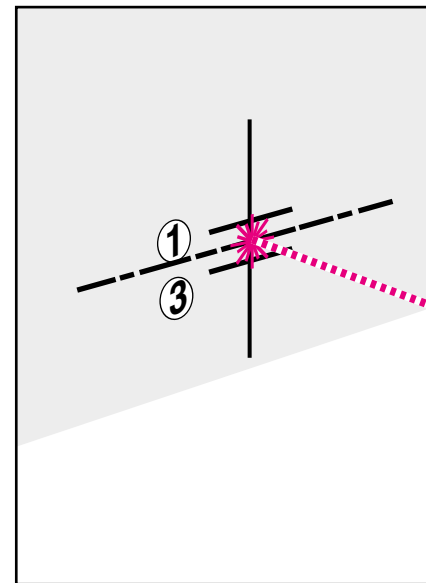
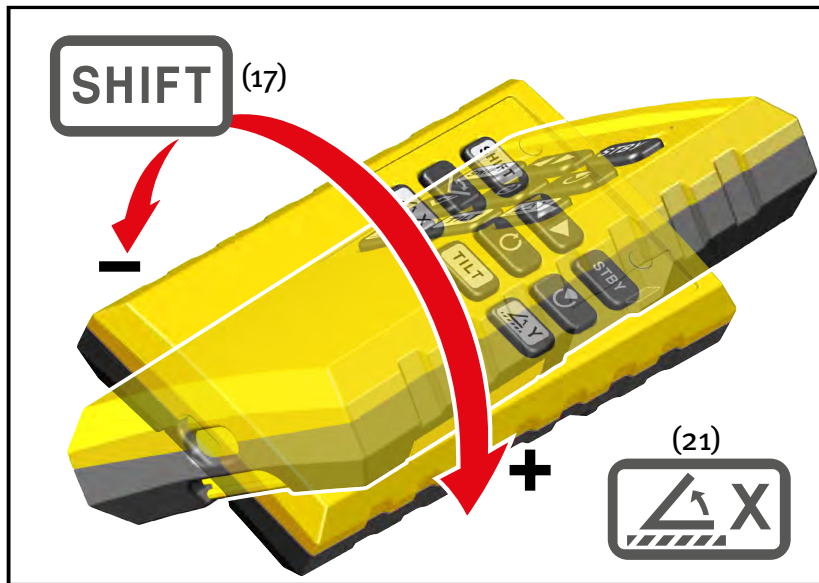
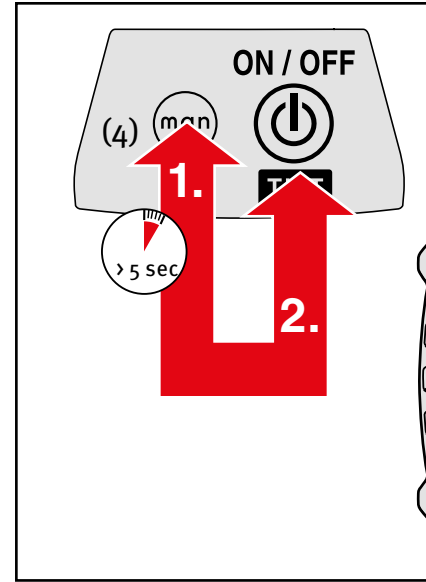
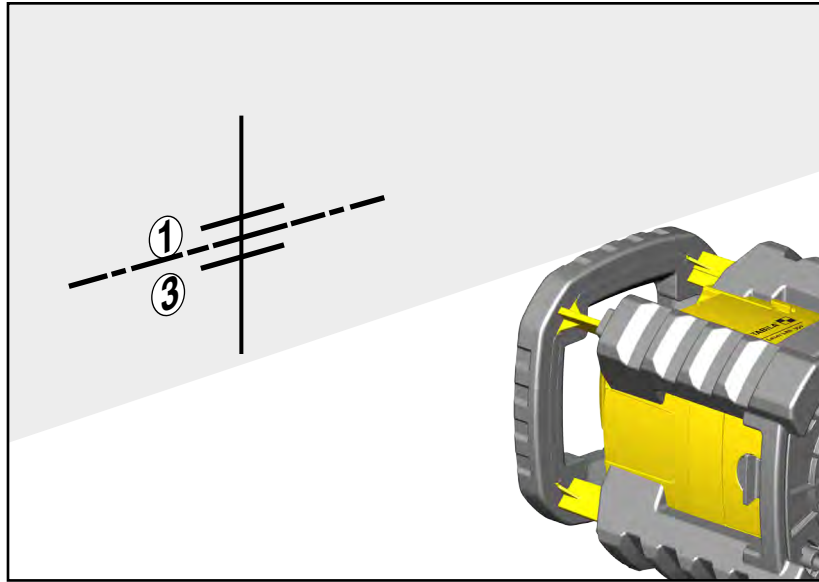
1. Position the rotation laser directly in front of one of the walls, A, on its side-mounted feet as for vertical levelling. The retaining bracket (12) can be used to mount the LAR 350 on a tripod.
2. Switch the laser unit on (button 3).
3. Once automatic levelling is complete, mark the position of the laser point on wall A. Point 1.
4. Rotate the LAR 350 through 180° and align with wall B using the plumb-line laser. Do not adjust the height.
5. Once automatic levelling is complete, mark the position of the plumb-line laser point on wall B. Point 2.
6. Now reposition the laser unit so that it is directly in front of wall B. Align the LAR 350 with wall B using the plumb-line laser.
7. Once automatic levelling is complete, rotate the plumb-line laser point and move it vertically until it exactly covers point 2.
8. Rotate the LAR 350 through 180° and align with wall A using the plumb-line laser. Do not adjust the height.
9. Rotate the plumb-line laser point until it covers the marking line of point 1 exactly.
10. Once automatic levelling is complete, mark the position of the plumb-line laser point on wall A. Point 3.
11. Measure the vertical distance between points 1 and 3.

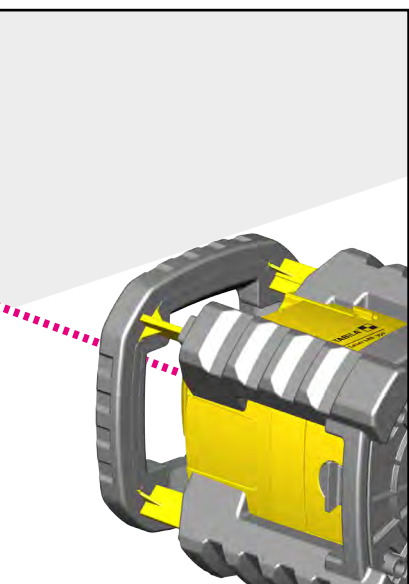
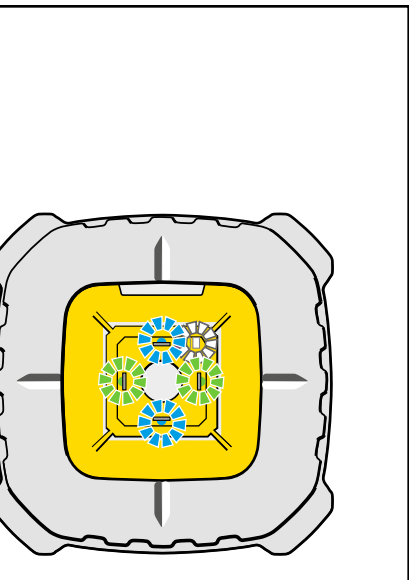


Where the distance between walls A and B is 10 m/ 50 ft, the distance between points 1 and 3 should not be greater than 2 mm / 1/8" .

$$0.1 \frac{\text{mm}}{\text{m}} \geq \frac{\overline{P_1 P_3}}{2S}$$

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22.5 Adjustment - Vertical

If the tolerance level was exceeded in the vertical check, the laser can be readjusted as follows.

When performing readjustments, ensure that the batteries are fully charged.

Position the laser with the plumb axis towards the wall. Switch the laser off. To enter calibration mode, first hold down button (4) (> 5 seconds). Now, still holding button 4, press the on/off button (3). Next, release button (4); the laser beam rotates, the blue (8) and green (9) LEDs flash rapidly.

Use the receiver to check the height. The laser is correctly adjusted when the laser point is situated exactly halfway between the points 1 and 3. Activate Shift (button 17). Now hold down button (21) and simultaneously rotate the remote control unit to move the laser point up or down until it is in exactly the central position.

Storing the calibration

The laser has now been recalibrated. Pressing button (4) causes the settings to be stored. To exit calibration without storing the settings, press button (3) on the laser unit to exit calibration mode without saving. The old settings are retained unchanged.

LAR 350

23. Technical Data

Laser type:	red diode laser, wavelength 635 nm
Power output:	< 1 mW, laser class 2 as per IEC 60825-1:2014
This product compl. with the appl. requ. of 21CFR, parts 1040.10 and 1040.11.	
Self-levelling range:	approx. $\pm 5^\circ$
Levelling accuracy*:	± 0.1 mm/m / $\pm 1/8$ " over 50 ft
Batteries:	2 x 1.5 V alkaline, size mono, D, LR20
Battery life:	approx. 80 hours (alkaline)
Operating temperature range:	-10 °C to +60 °C / 14°F to +140°F
Storage temperature range:	-20 °C to +70 °C / -4°F to +158°F

Subject to technical modifications.

* when operated within the specified temperature range