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## LASER DETECTOR SAFETY WARNINGS

**⚠ CAUTION**
Do not modify the device. Modifications can cause injuries and malfunctions.

Only authorised and trained personnel are allowed to repair the device. Only use genuine spare parts from Milwaukee. This ensures continuous device safety.

Avoid direct eye exposure. The laser beam can cause severe eye damage and/or blindness.. Caution! The laser emitting product may be behind you. Be careful when facing the product. Make sure that the laser beam does not hit your eyes when you turn around.

The magnet must not be brought near implants or other medical devices (e.g. pacemaker, insulin pump). The magnet creates a magnetic field that could affect the function of the implants or medical devices.

Keep the laser detector away from data media and devices that react sensitive to magnetic force. Data media might suffer irreversible data loss.

Noise emission
The a-rated sound pressure level of the acoustic signal is >80 db (A) at a distance of one meter.

Do not hold the laser detector close to your ear in order to prevent hearing damage! Only use the acoustic signal if the visual perception is insufficient. If possible, use the volume level "Low".

Keep the laser detector away from children.

Do not use the laser detector in explosive atmospheres or near flammable liquids, gases or dust. The device may produce sparks that can ignite vapours or dust.

Please remove the battery if the device is not in use for a prolonged period of time.

Use only genuine Milwaukee accessories. When using non-recommended accessories, you may receive incorrect measuring values.

## SAFETY INSTRUCTIONS BATTERY

This tool is designed to be powered by 2 AA battery properly inserted into the instrument. Do not attempt to use with any other voltage or power supply.

Do not leave batteries within the reach of children.

Properly dispose of used batteries immediately.

Battery acid may leak from damaged batteries under extreme load or extreme temperatures. In case of contact with battery acid wash it off immediately with soap and water. In case of eye contact rinse thoroughly for at least 10 minutes and immediately seek medical attention.

This appliance is not intended for use by persons (including children) with limited physical, sensory or mental capabilities or insufficient experience and/or knowledge unless they are supervised by a person who is responsible for their safety or have been instructed by them in the safe use of the tool.Children should be supervised in order to ensure that they do not play with the tool.

## SPECIFIED CONDITIONS OF USE

The RD300G is a combination of remote control and laser detector. This device detects laser beams from rotating lasers emitting green laser light.

Do not use this product in any other way as stated for normal use.

## TECHNICAL DATA

| | |
|---|---|
| Type | Detector and remote control |
| Battery voltage | 3 V |
| Batteries | 2 x 1,5 V LR6 (AA) |
| Frequency band(s) of Bluetooth | 2400–2483.5 MHz |
| Maximum radio-frequency power transmitted in the frequency band(s): | 7,34 dBm |
| Bluetooth version | V5.0 LE |
| Detection range* | 4,5 – 150 m |
| Remote control range | >100 m |
| Reception angle | 70° |
| Wavelength compatibility | 510 - 530 nm |
| Measuring Accuracy ** | |
| ultrafine | 1,0 mm (± 0,5 mm) @ 30 m |
| fine | 2,0 mm (± 1 mm) @ 30 m |
| medium | 4,0 mm (± 2 mm) @ 30 m |
| course | 6,0 mm (± 3 mm) @ 30 m |
| ultra course | 10,0 mm (± 5 mm) @ 30 m |
| Receiving area | ± 60 mm |
| Center indication (from top) | 89 mm |
| Auto shut off | 15 min |
| Operating time, approx. | 27 h |
| Operating temperature | -20 – 50°C |
| Storage temperature | -25 – 60°C |
| Max.altitude | 2000 m |
| Max.relative humidity | 80% |
| Weight according to EPTA-Procedure | 0,412 kg |
| Dimensions (length x width x height) | 30 mm x 85 mm x 185 mm |
| Protection rating | IP67 |

* The working range may be reduced by unfavourable environmental conditions and depend on the laser quality.

** Dependent on the distance between the laser detector and the laser.

**⚠ WARNING Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
**Save all warnings and instructions for future reference.**

## MAINTENANCE

**Cleaning**

Keep tool housing clean, dry and free of oil or grease. Use only mild soap and a damp cloth to clean the tool since certain cleaning agents and solvents are harmful to plastics and other insulated parts. Some of these include gasoline, turpentine, lacquer thinner, paint thinner, chlorinated cleaning solvents, ammonia and household detergents containing ammonia. Never use flammable or combustible solvents around tools.

**Cleaning the Sensor Window**

Blow off loose particles with clean compressed air. Carefully wipe the surface with a cotton swab moistened with water.

**Repairs**

This tool has limited serviceable parts. Do not open housing or disassemble tool. For repairs, return the tool, to the nearest authorized service center.

Use only Milwaukee accessories and spare parts. Should components need to be replaced which have not been described, please contact one of our Milwaukee service agents (see our list of guarantee/service addresses).

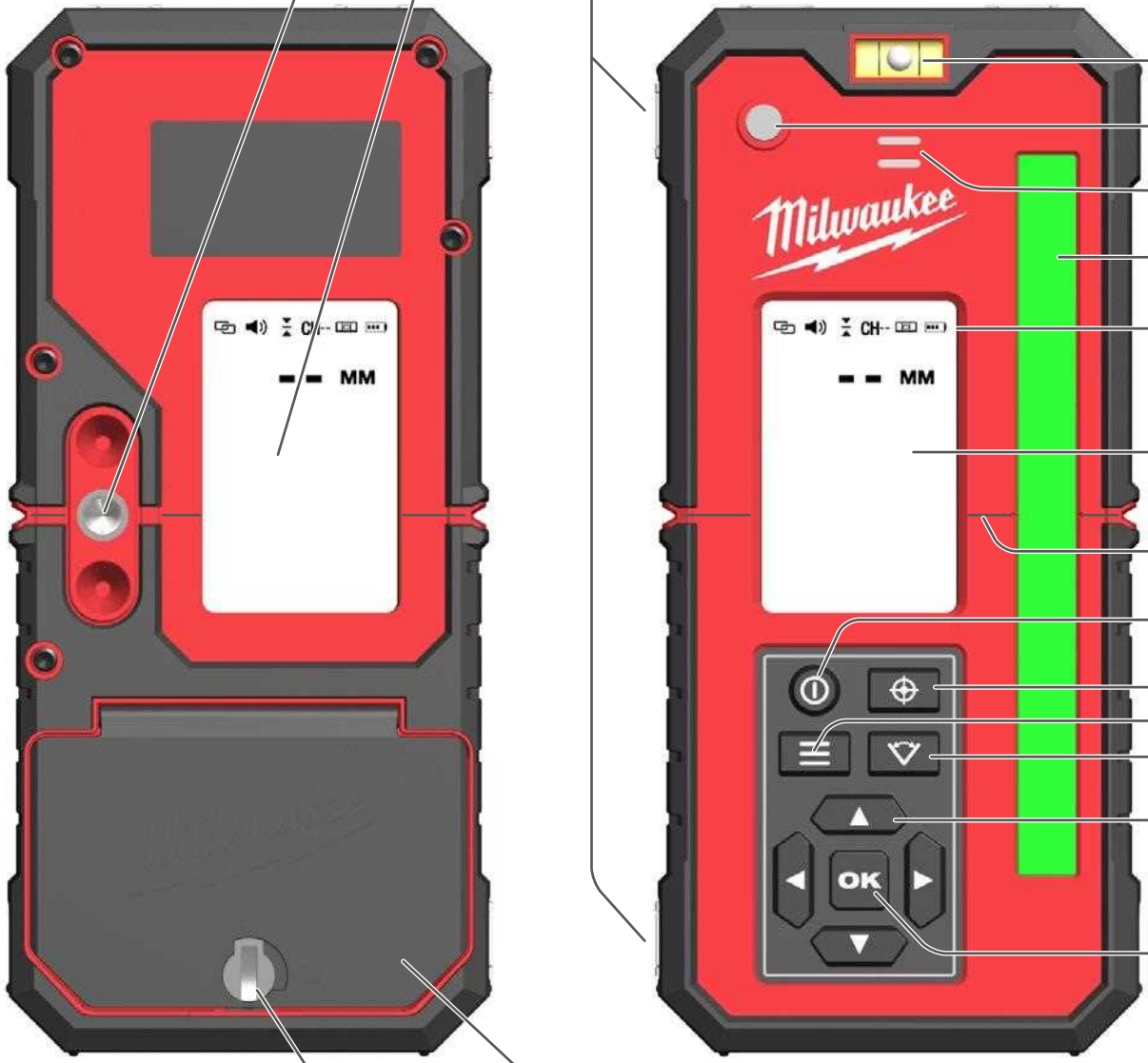
If needed, an exploded view of the tool can be ordered. Please state the machine type printed as well as the six-digit No. on the label and order the drawing at your local service agents or directly at: Techtronic Industries GmbH, Max-Eyth-Straße 10, 71364 Winnenden, Germany.

## EC DECLARATION OF CONFORMITY

Hereby, Techtronic Industries GmbH declares that the radio equipment type RD300G is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: http://services.milwaukeetool.eu

## SYMBOLS

| | |
|---|---|
|  | Please read the instructions carefully before operating the tool. |
|  | CAUTION! WARNING! DANGER! |
|  | Do not dispose of waste batteries, waste electrical and electronic equipment as unsorted municipal waste. Waste batteries and waste electrical and electronic equipment must be collected separately.<br>Waste batteries, waste accumulators and light sources have to be removed from equipment.<br>Check with your local authority or retailer for recycling advice and collection point.<br>According to local regulations retailers may have an obligation to take back waste batteries and Waste electrical and electronic equipment free of charge.<br>Your contribution to re-use and recycling of waste batteries and waste electrical and electronic equipment helps to reduce the demand of raw materials.<br>Waste batteries, in particular containing lithium and waste Electrical and electronic equipment contain valuable, recyclable materials, which can adversely impact the environment and the human health, if not disposed of in an environmentally compatible manner.<br>Delete personal data from waste equipment, if any. |
|  | European Conformity Mark |
|  | UK Conformity Mark |
|  | Ukraine Conformity Mark |
|  | EurAsian Conformity Mark |




**Clamp connection feature:** mount the wall clamp here

**Back LCD screen**

**Magnets:** for direct attachment to ferrous metal surfaces

**Bubble level:** for leveling the detektor in vertical position

**Laser locator indicator LED:** indicates the laserbeam position

**Speaker**

**Sensor:** determines the laser beam position

**Status line:**

Pairing | Tone | Accuracy | CH-- Channel | Level mode | Fuel gauge

**Front LCD screen**

**Center line:** align the laserbeam to this line

**Power button:** press to turn on / press and hold to turn off

**Center find button:** go directly the center find mode

**Main menu button:** go to menu / go back

**Sweep button:** set directly the sweep angle

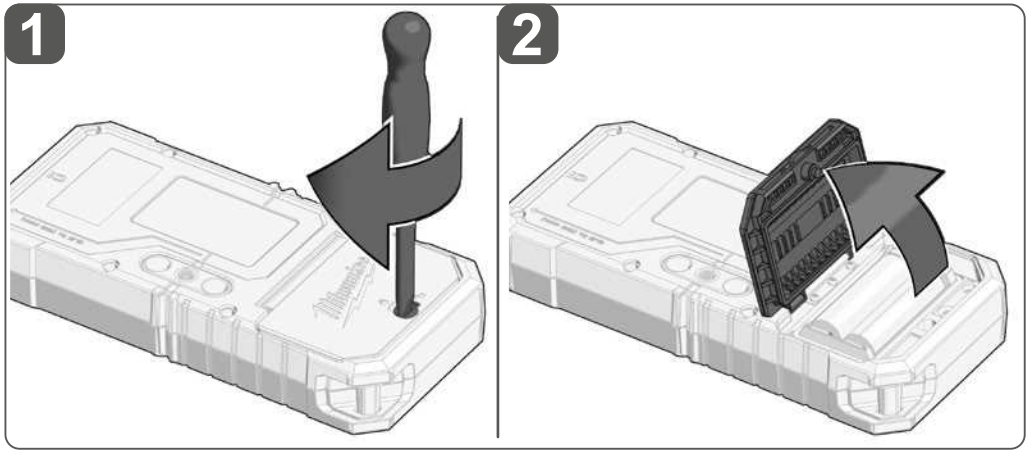
**Arrow buttons:** navigate in the menu

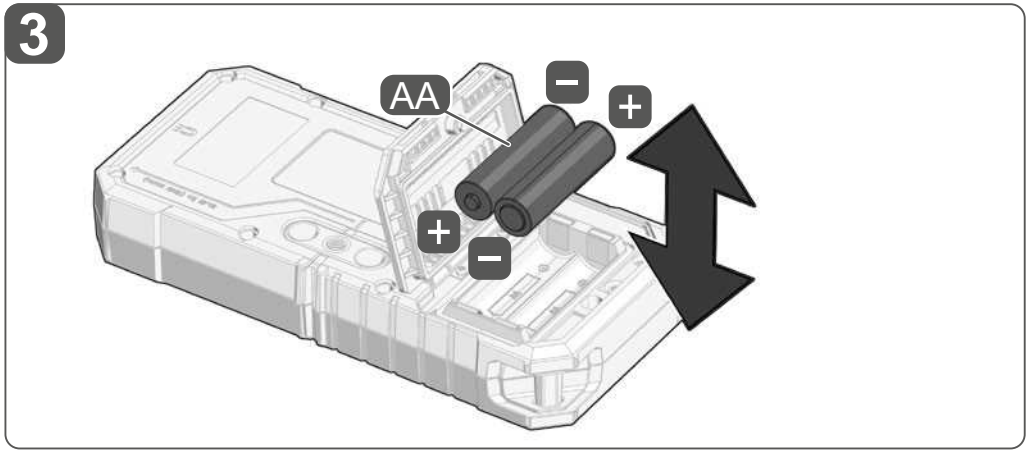
**Enter button:** confirm selected command

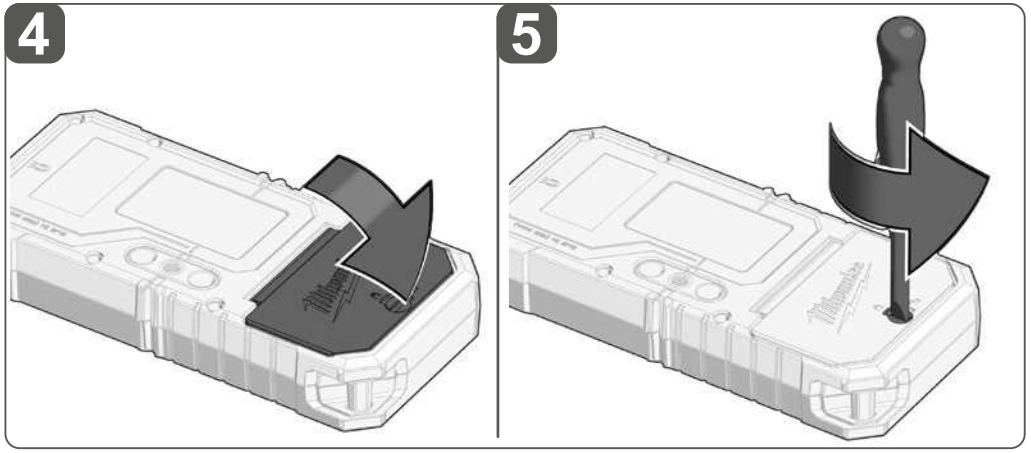
**Battery door:** compartment for 2 AA batteries

**Battery door turn lock**

## BATTERIES

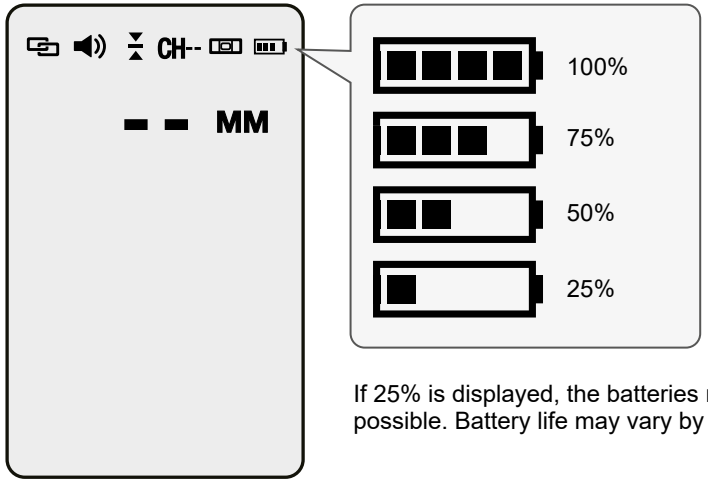


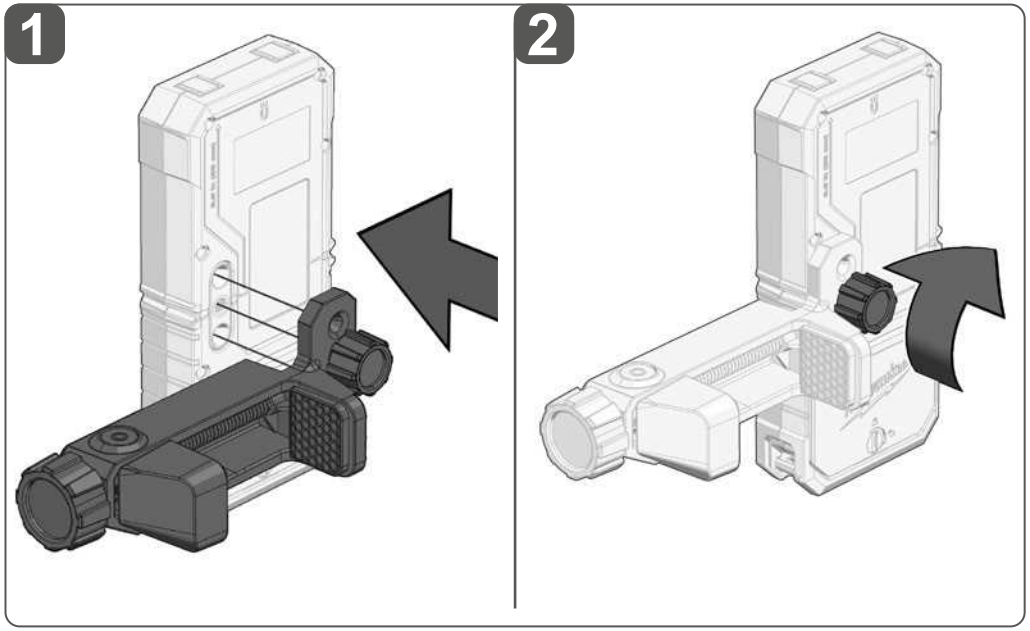

Only use alkaline batteries. Do not use zinc-carbon batteries.
If the detector will not be used for a long time, remove the batteries to protect against corrosion.

After switch on the detector the fuel gauge will display the battery life.

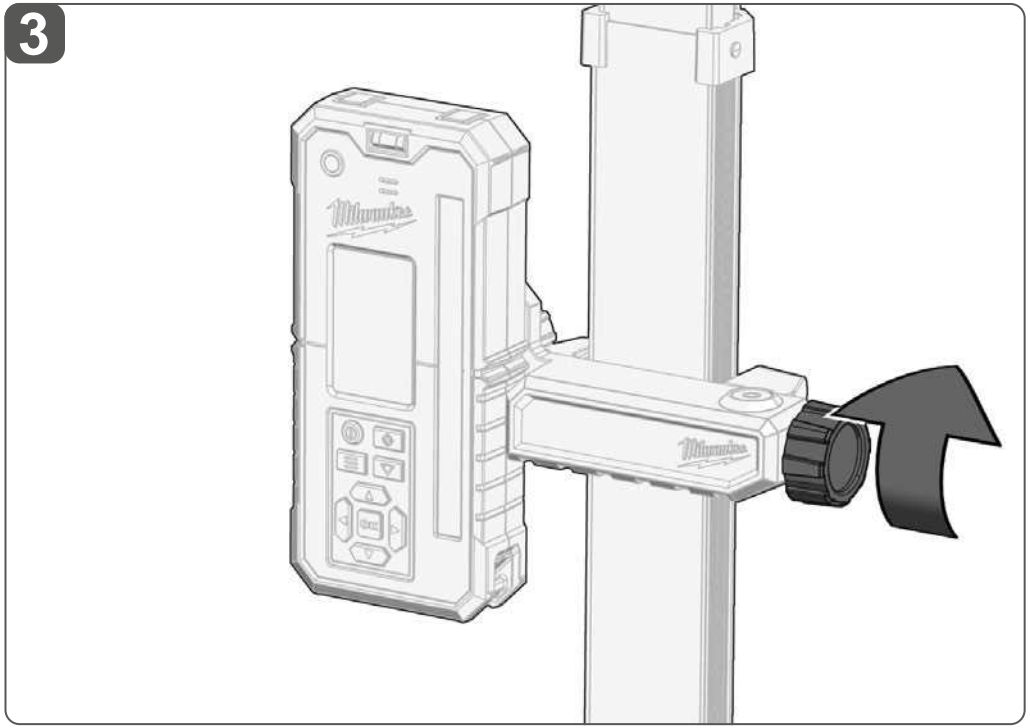


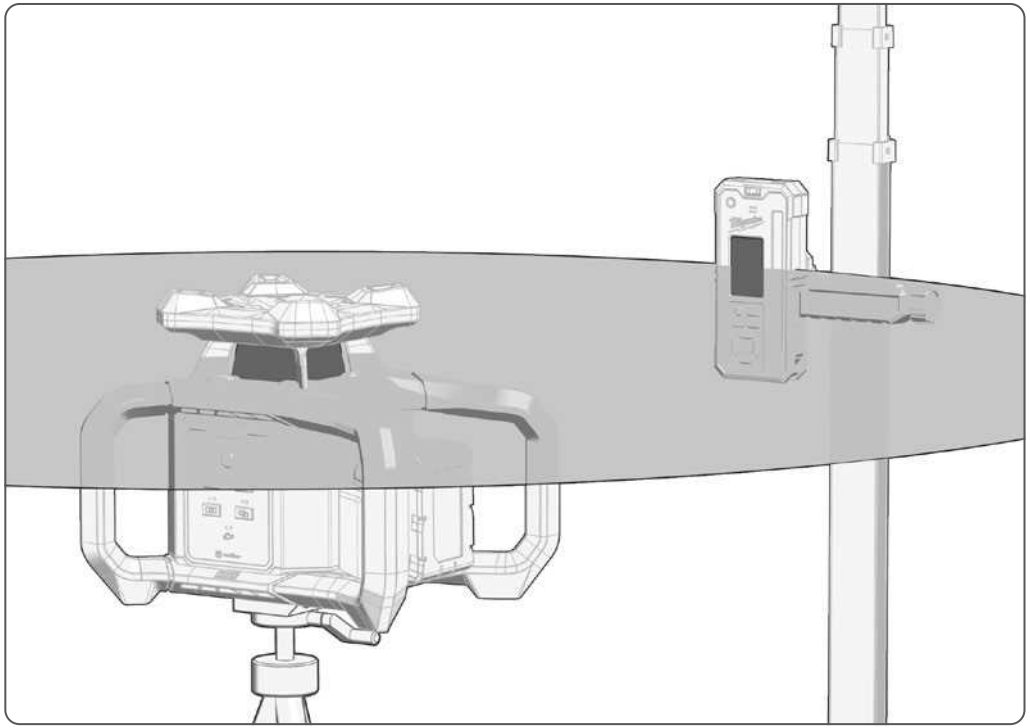

If 25% is displayed, the batteries must be replaced as soon as possible. Battery life may vary by brand/age.

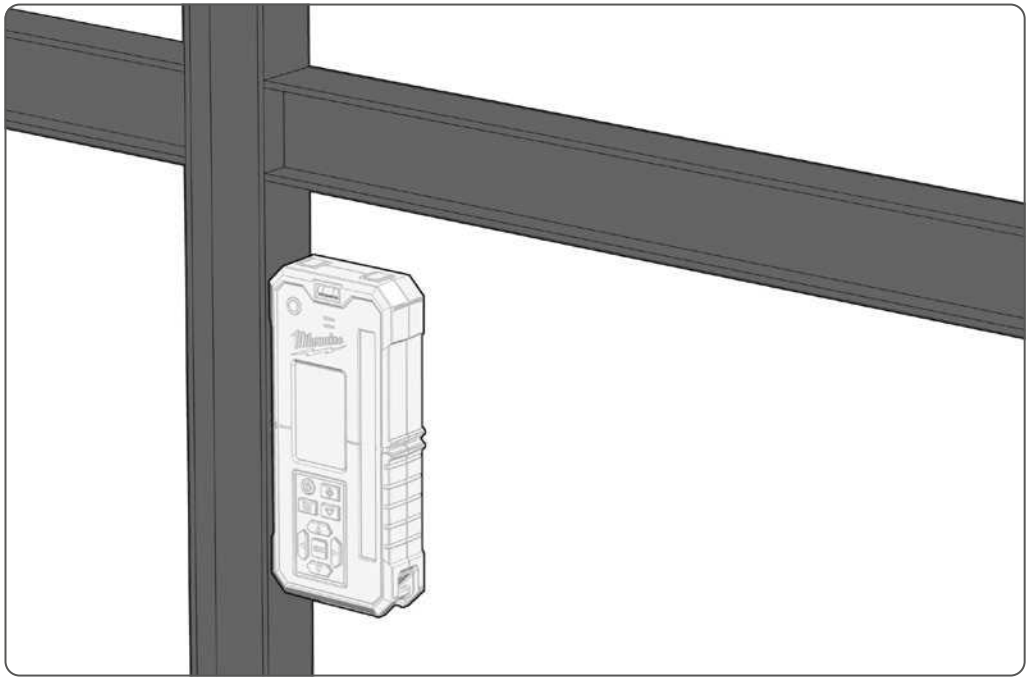
## CLAMP

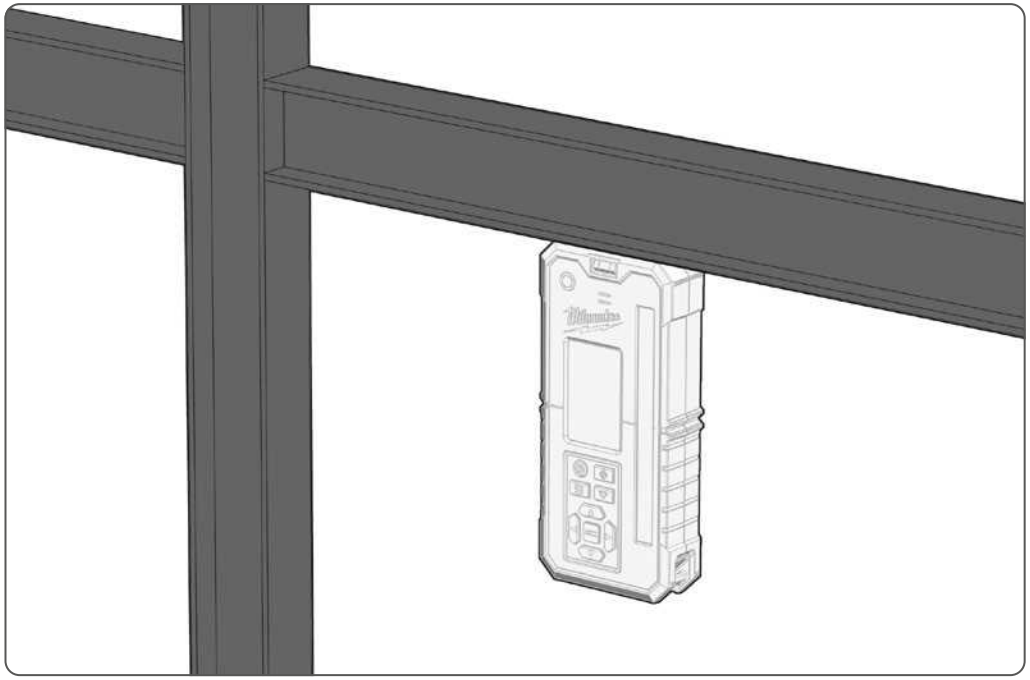


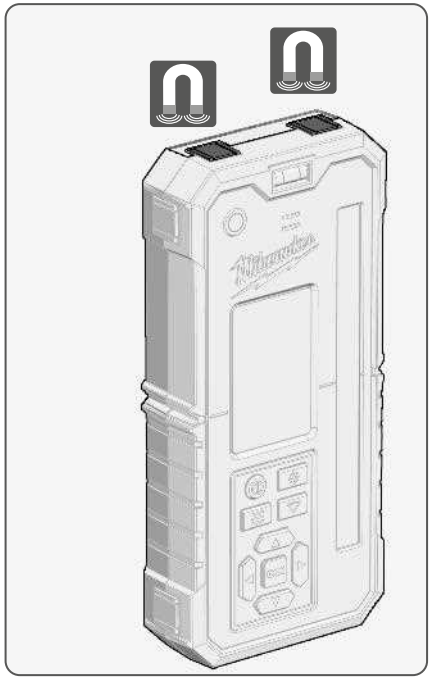

The detector can be attached to the Milwaukee ROD with the clamp.



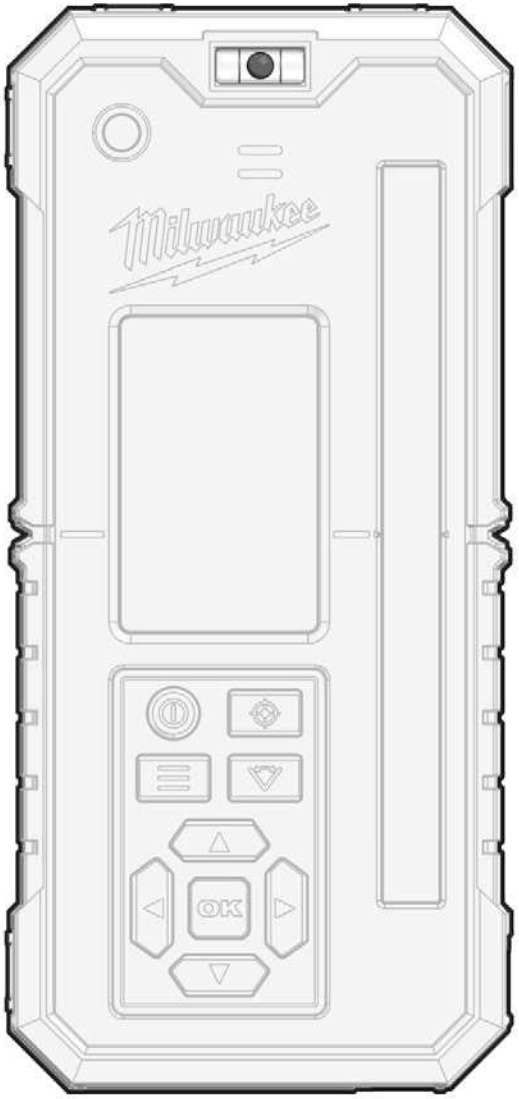









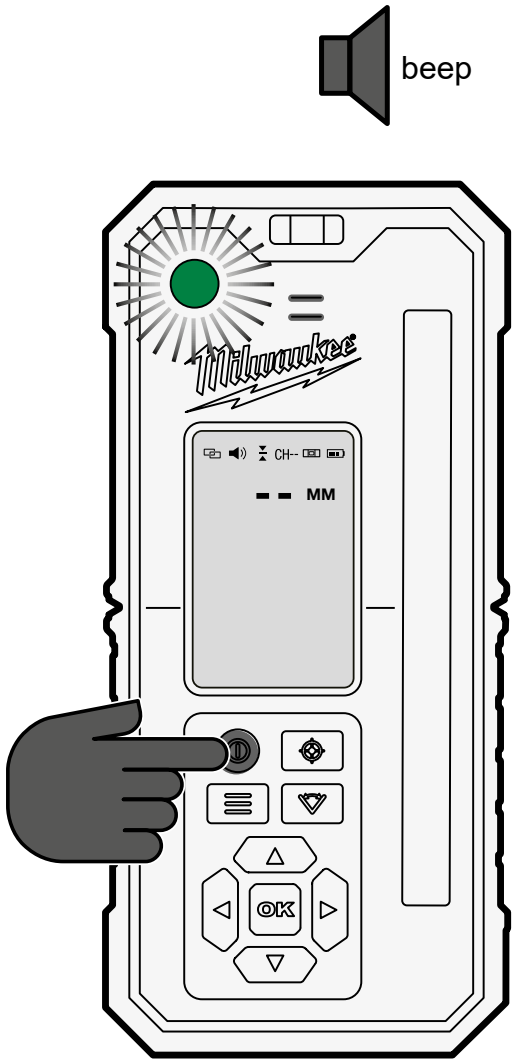
The detector can be attached to magnetic components.



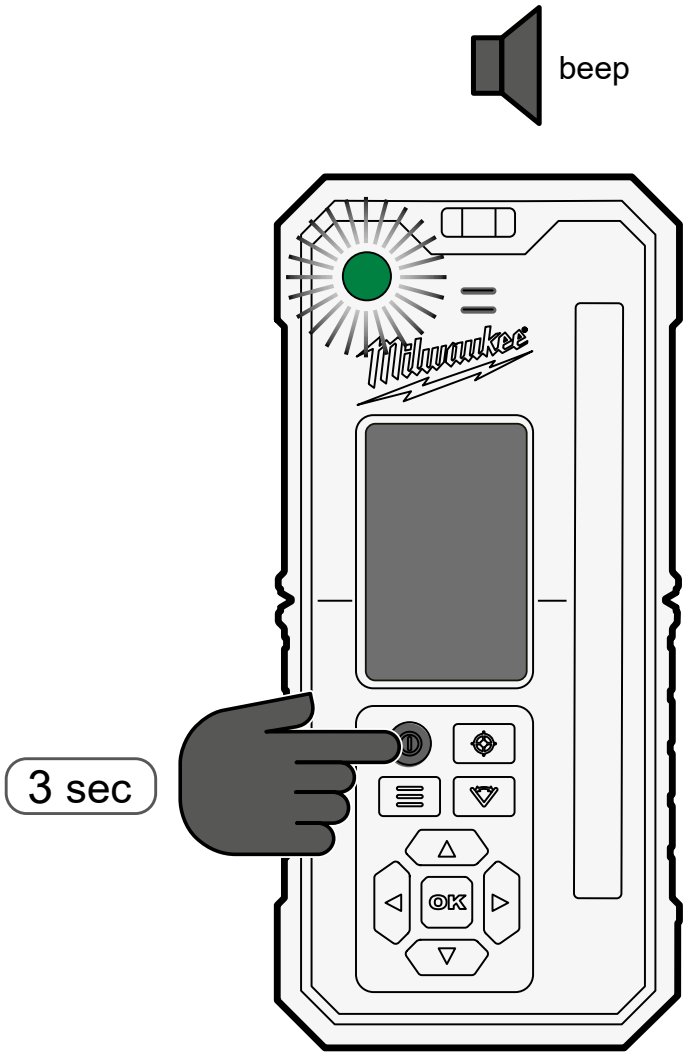


Align the laser detector horizontally according to the level.

## ON




## OFF

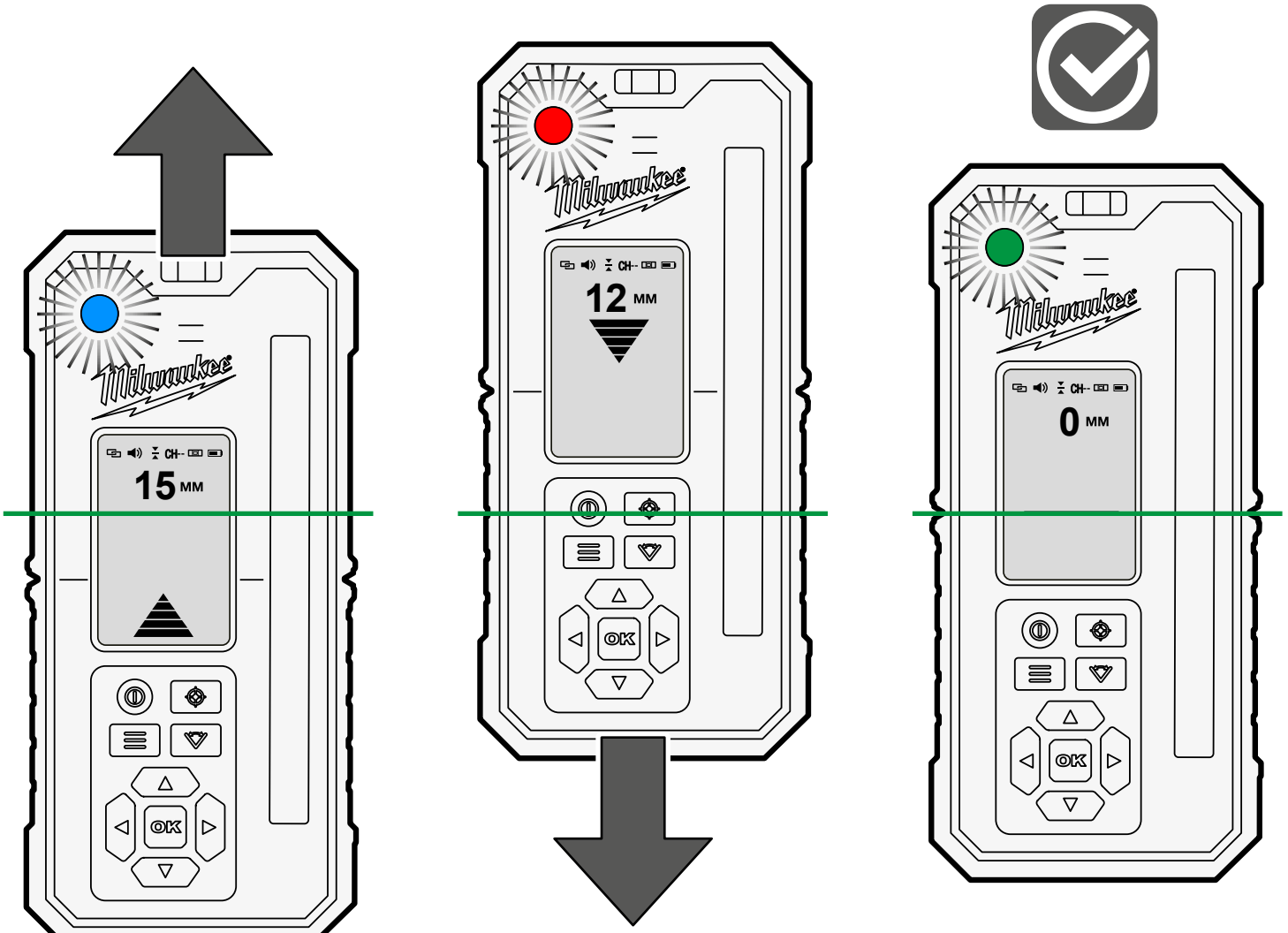



On initial startup select the desired language (see chapter settings).

The backlight will illuminate after any button press or when a laser beam is detecting on the sensor. The backlight will stay on for 15 seconds. The timer will reset every time a button is pressed or when a laser is sensed for the first time (i.e. it wont stay on if a laser stays on the sensor, but if a laser moves off then back on, the timer will reset).

Auto shut-off will occur if there are no button presses and no laser beam detected for 15 minutes.

Note: The laser and detector are independent of one another. A power button press on the detector will power off the detector, but not the laser.



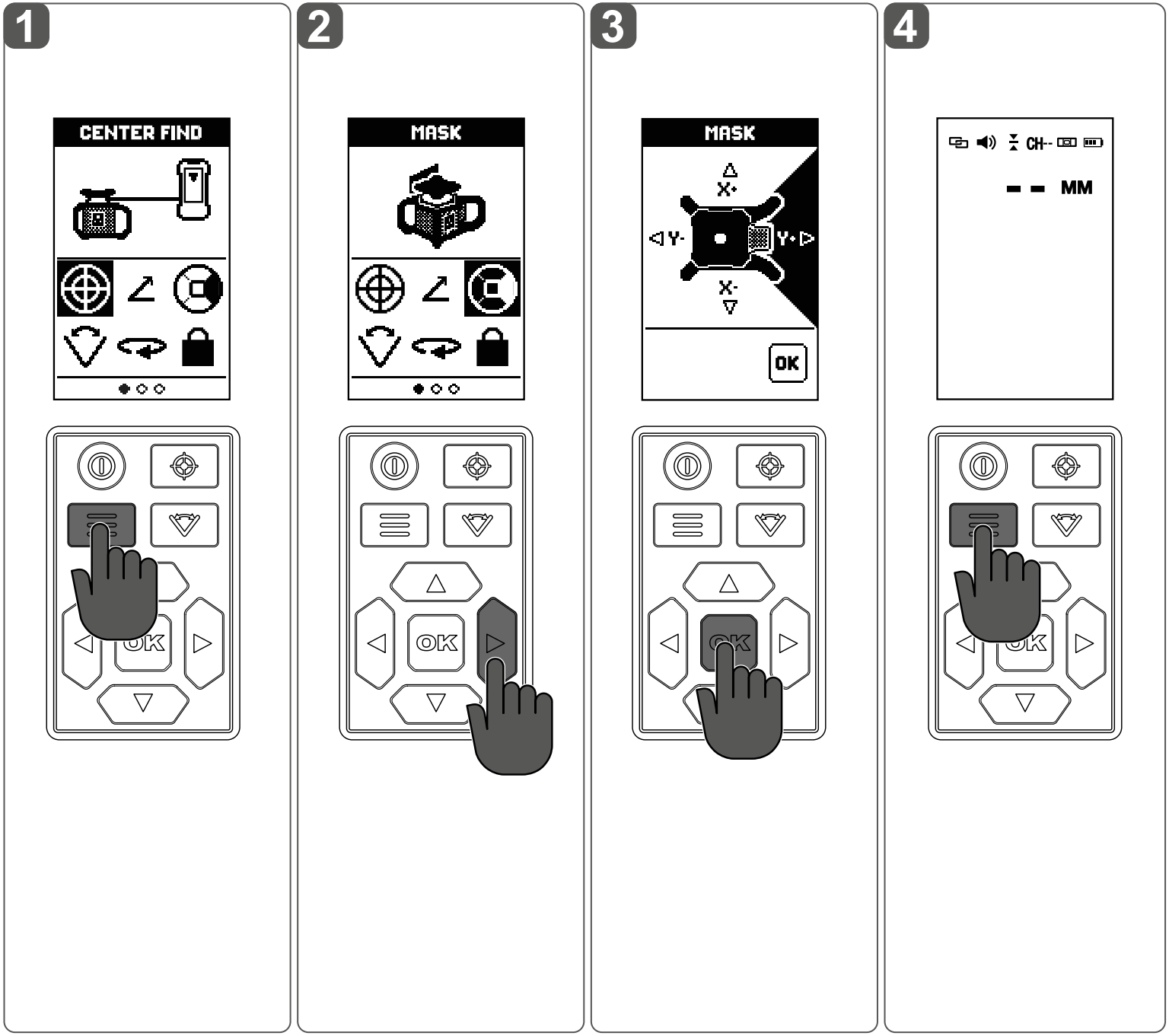

After switching on, the detector is in direct read out mode.

If a laser is sensed, the direct read out, the arrow indicator and laser locator indicator LED will illuminate. If no laser is detected, the arrow indicator and the LED will remain off, and the Direct Read Out will show no value and will display „- - -“.

Note: If the laser leaves the sensor, the up or down arrow segments will begin to cycle indicating the direction that the laser was last detected.

The RD300G is especially design for the Milwaukee laser M18 RLOHVG300, but can also be used as a detector for other laser with green laser beam.

## SWITCHING BETWEEN DIRECT READ OUT MODE AND MENU MODE




The RD 300G is a combination of laser detector and remote control for the M18 RLOHVG300 rotating laser.

After switching on, the RD300G is in direct read out mode and can be used immediately as a laser detector.

All other functions and settings can be selected in the menu.

For this press the menu button and choose with arrow and OK button


Two functions can be selected directly:

Center find

Sweep

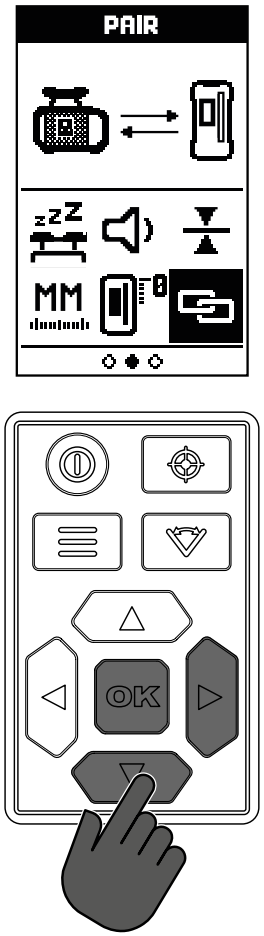
To exit the menu, press the menu button again.

On the left, an example for selecting the mask function and back to the direkt read out mode.

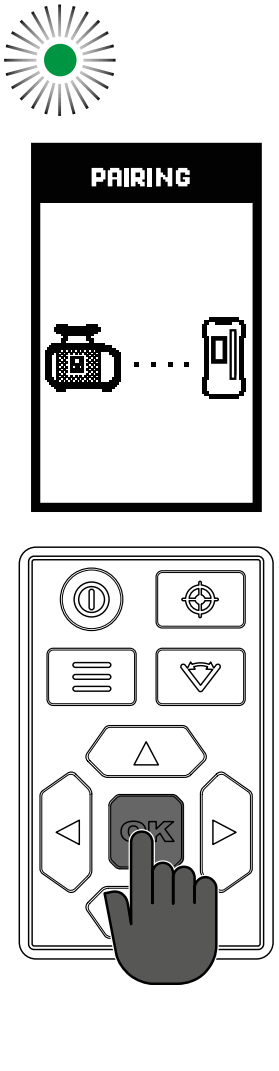
Switching to the menu and navigating in the menu is no longer explicitly described on the following pages.

# BLUETOOTH™ PAIRING THE DETECTOR WITH THE ROTARY LASER

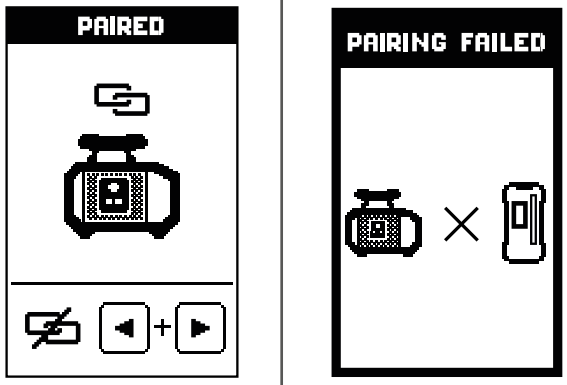
**1**




**2**




**3**




**Hints for a trouble-free pairing:**

- The laser should be placed on a stable surface, so that pressing a button does not cause a bump alarm.
- The laser has completed its leveling process (LED illumitates green).
- The detector must not detect a laser beam or artificial lightning.
- The laser and the detector should be in close proximity.
- Make sure there is no interference from other transmitting devices such as phones, screen, computers, etc.
- Powering off the devices before attempting to pair again.
- After powering on, initiate pairing from the detector first, then quickly start pairing from the laser.

The detector will attempt to re-pair with the last paired laser when first powered on. Kitted detectors will come pre-paired with their laser device.

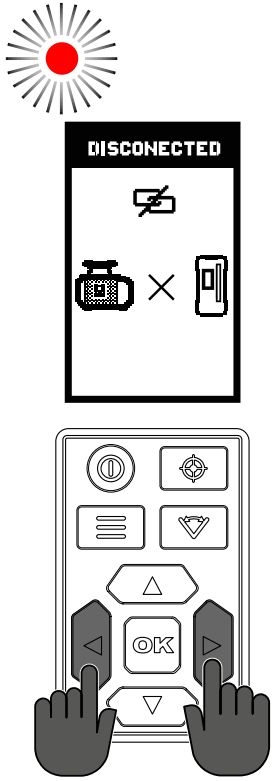
**To manually pair:**

Select PAIR. If not already paired, the detector immediately begins searching for a connectable laser. While the detector searches, ensure the laser is connectable.

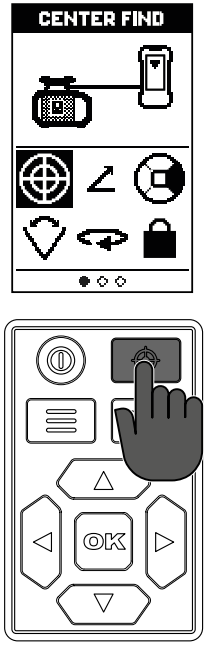
Press and hold the pairing button on the laser until the pairing indicator LED on the laser flashes white.

**To manually unpair:**

Press and hold the left and right arrow keys simultaneously.



1

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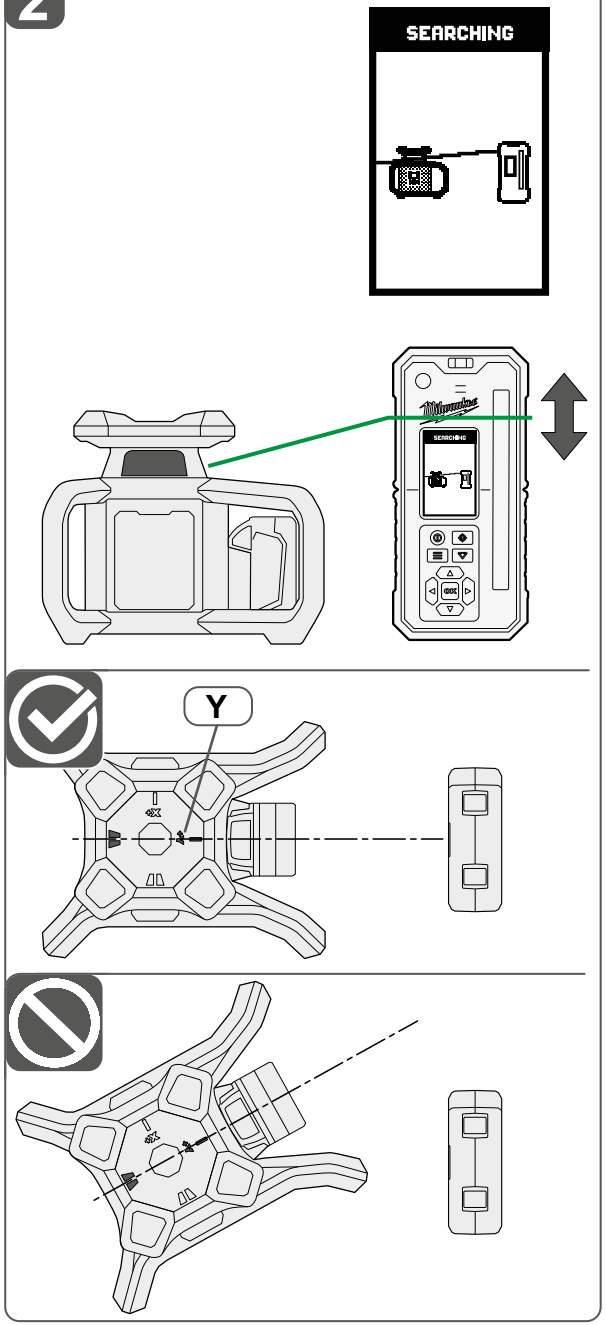


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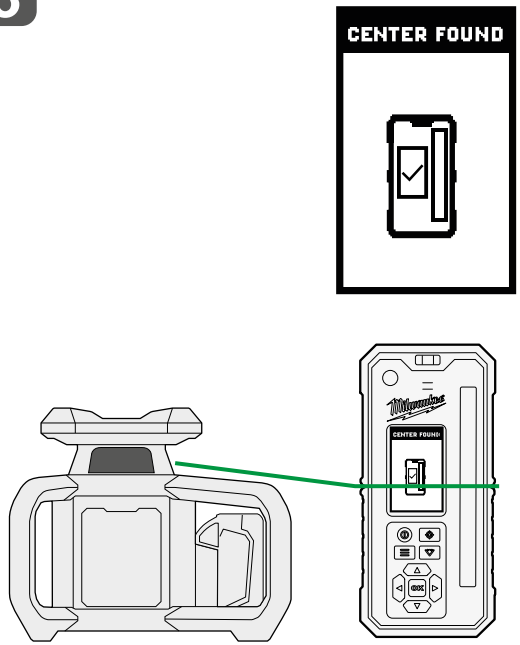
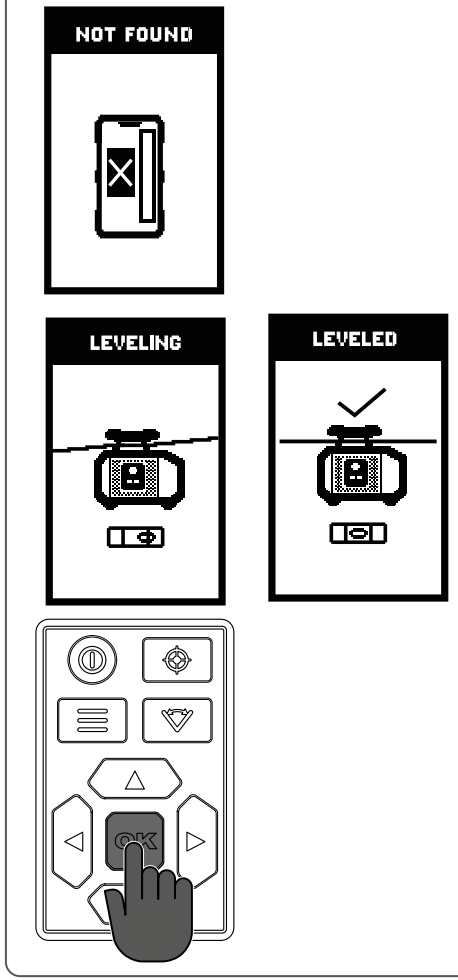
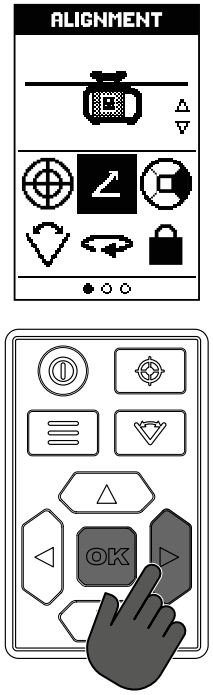



CENTER FIND feature is only compatible with certain RPM‘s and accuracy settings and is not compatible with CHANNEL LINK. Some settings may automatically change when this function is being used. Press the OK button to clear any setting change notification of the detector.

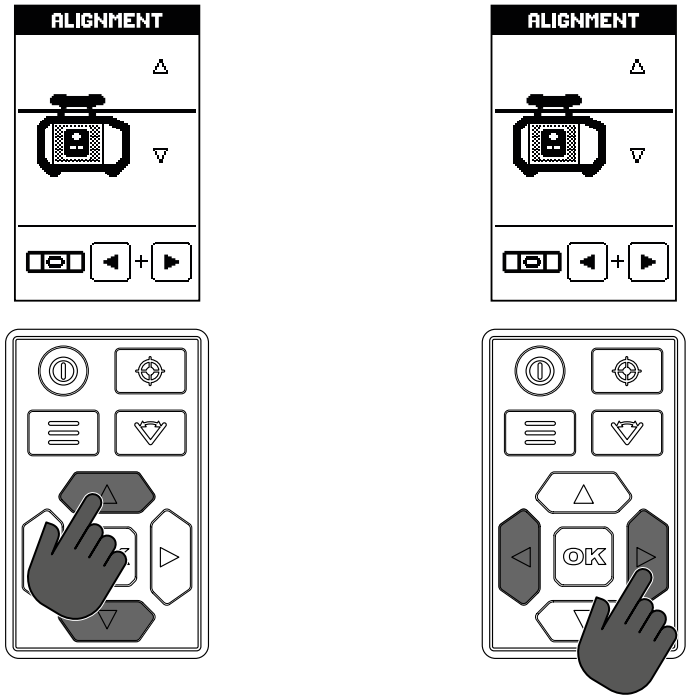
Note: If the center is not found, the detector will display „not found“. Press the OK button, and the detector will go to the main menu, and the laser will start the self-leveling procedure.
Then try steps 1 - 3 again until the center is found.

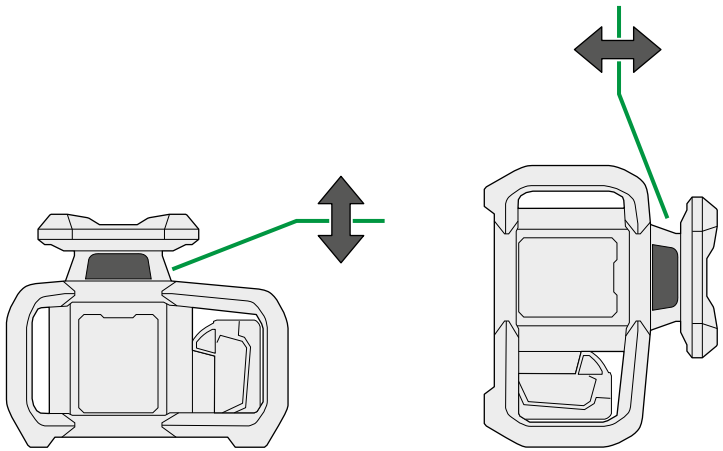


1




2



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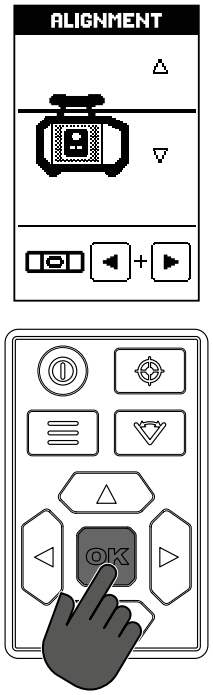
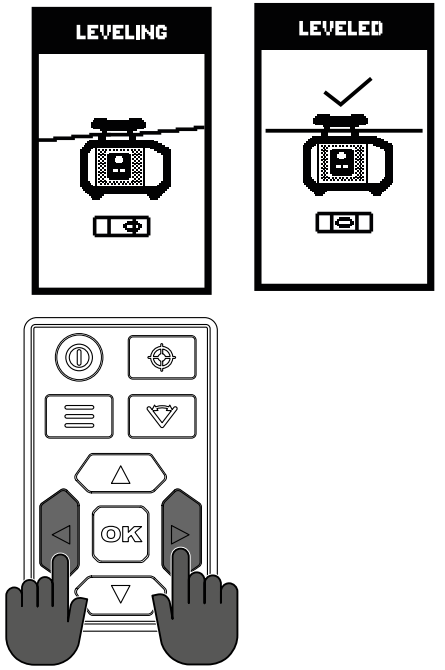



ALIGNMENT mode can be used with the laser in horizontal orientation (to slope), or vertical mode (to align). The laser can only slope in the Y-axis.

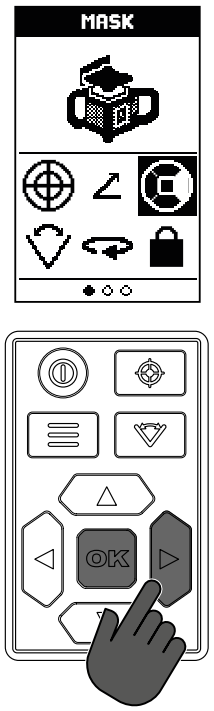
Note: The Laser Locator Indicator LEDs and audible sounds will function during alignment if the user wishes to use them to align the laser with the center of the detector while in ALIGNMENT Mode

**To exit ALIGNMENT and re-level the laser plane:**

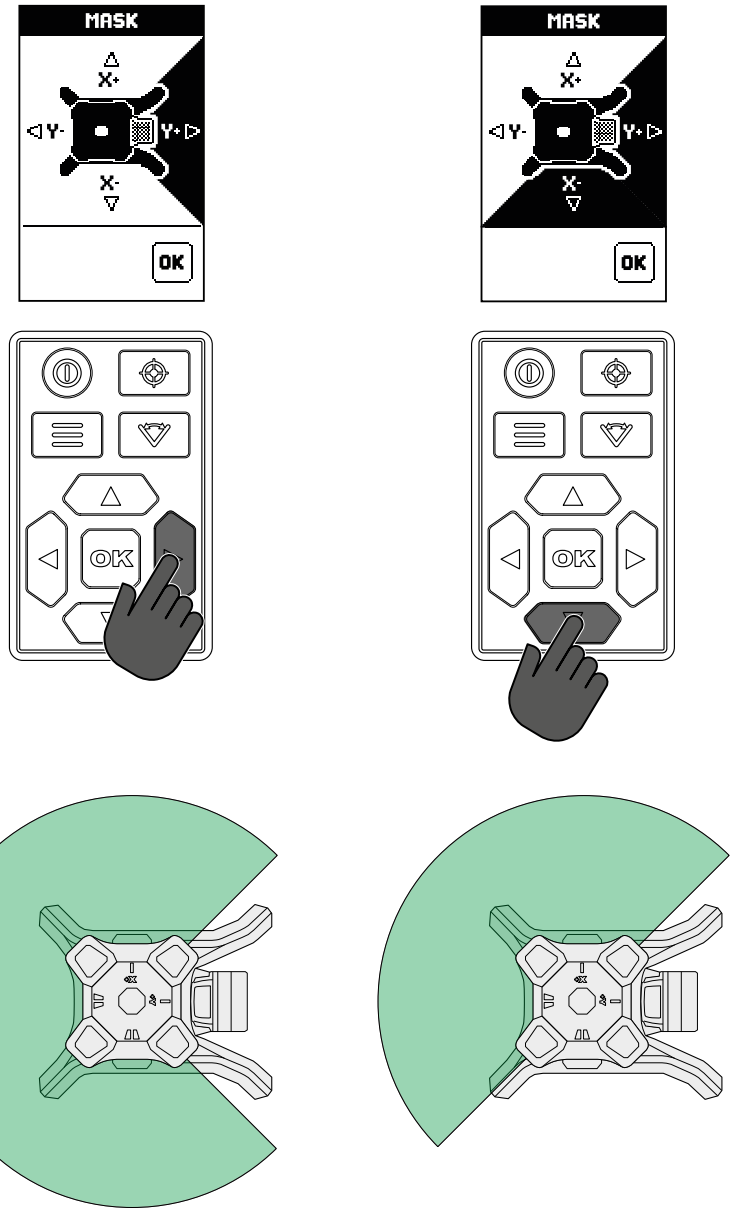
Press and hold the left and right arrow keys simultaneously.



1




2

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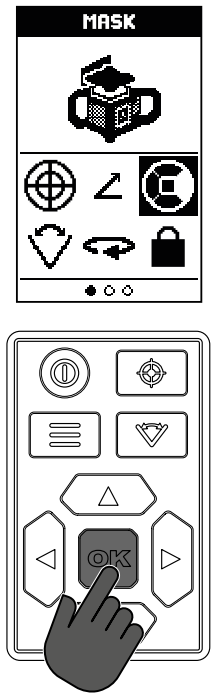
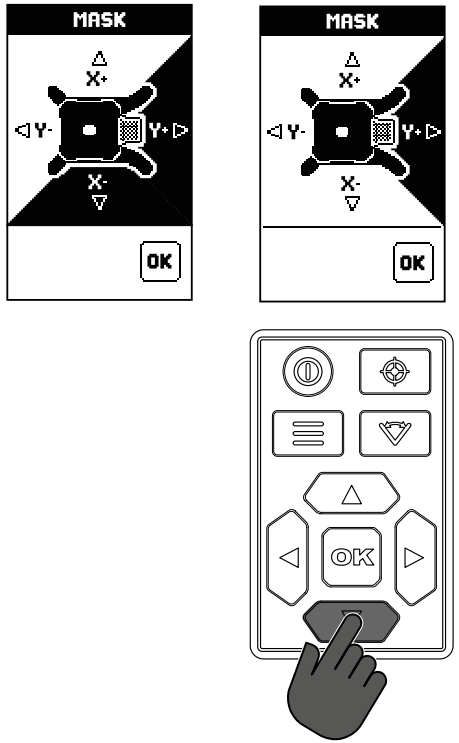



The MASK function can be used to turn off the laser in certain quadrants to prevent interference with other detectors on the jobsite.

Note: Up to 3 adjacent quadrants can be selected at a time. If a fourth or non-adjacent quadrant is masked, the selected quadrant will become masked. All other previously masked sections will become unmasked to resolve the conflict.

**To unselect a mask**

Press the arrow button in the direction needed to unmask.



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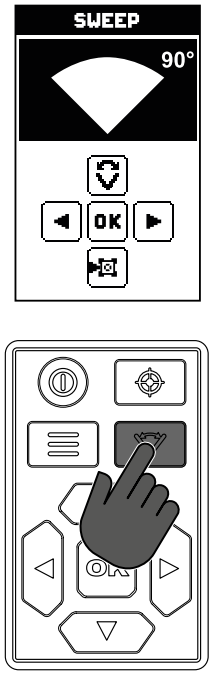


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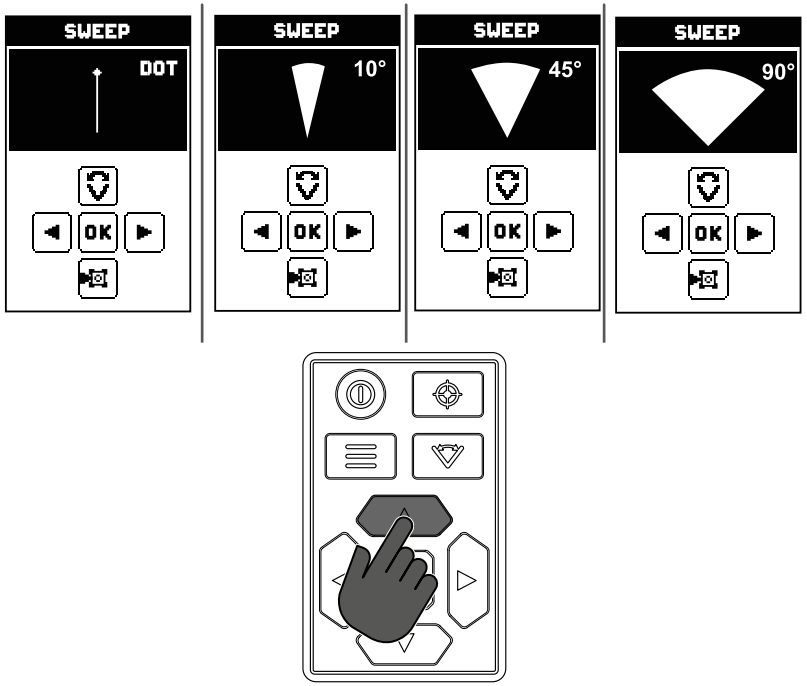




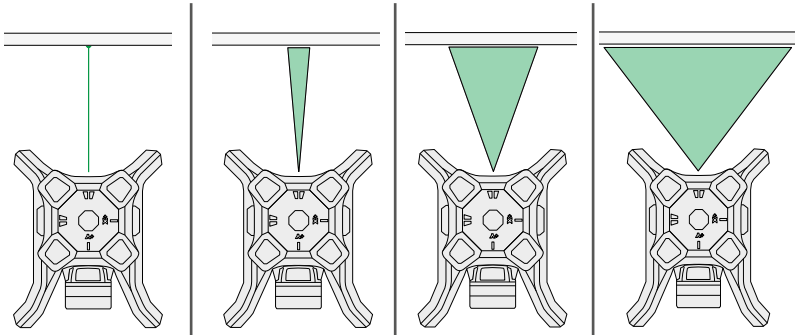

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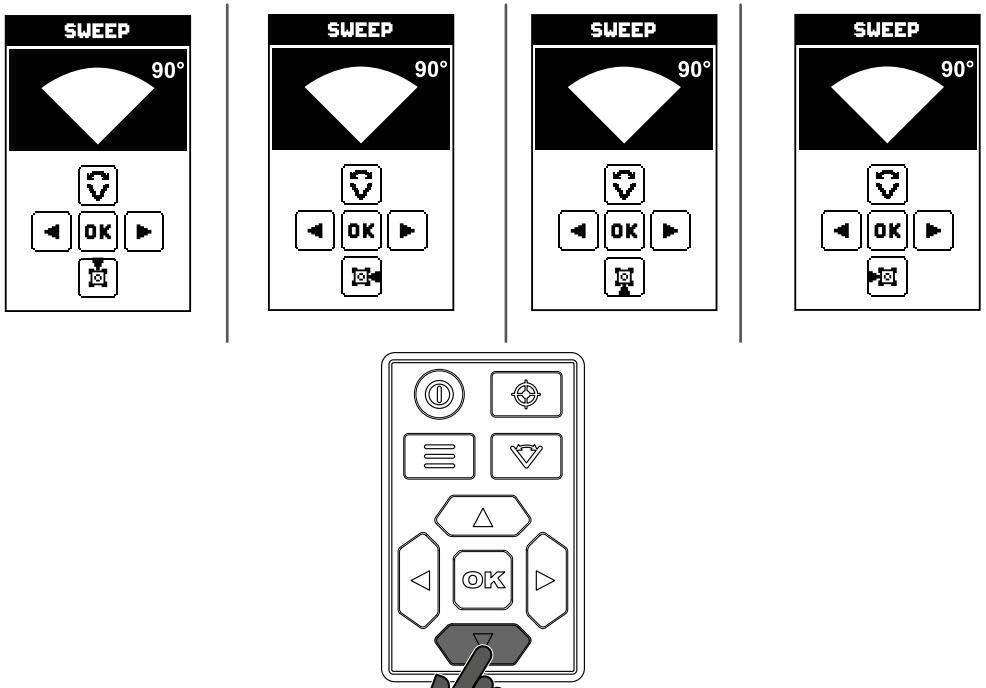
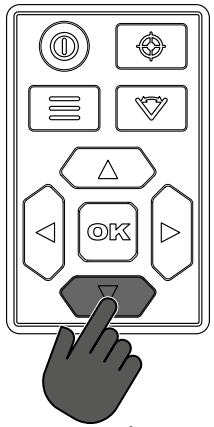
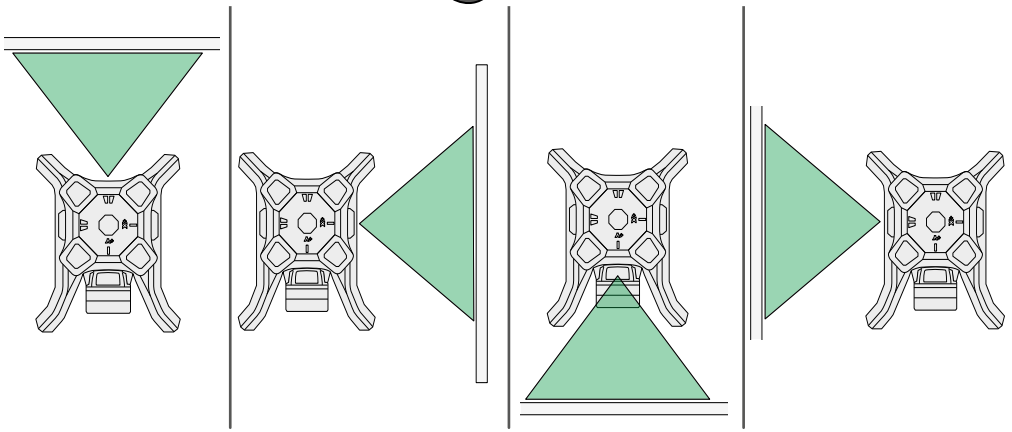
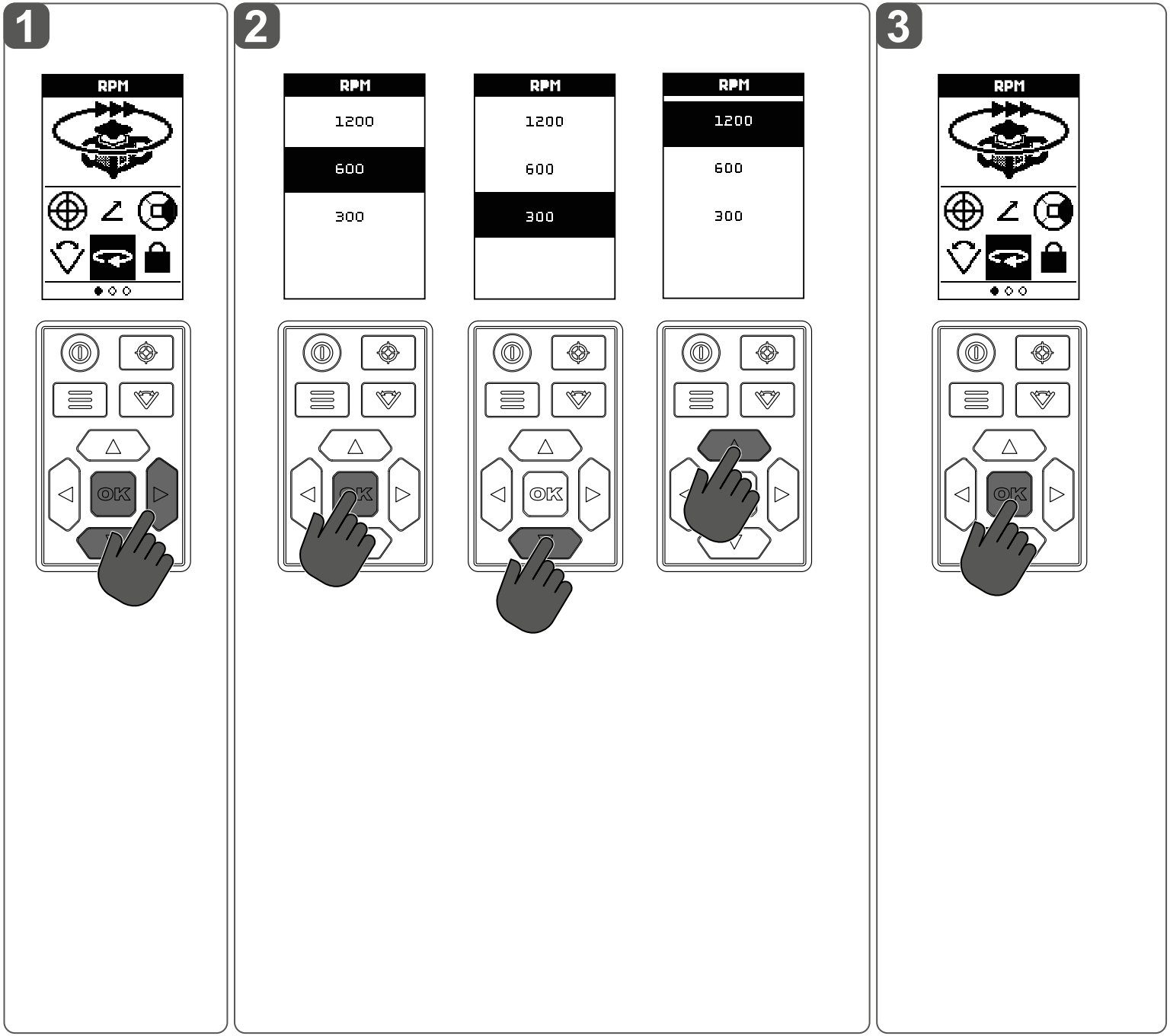


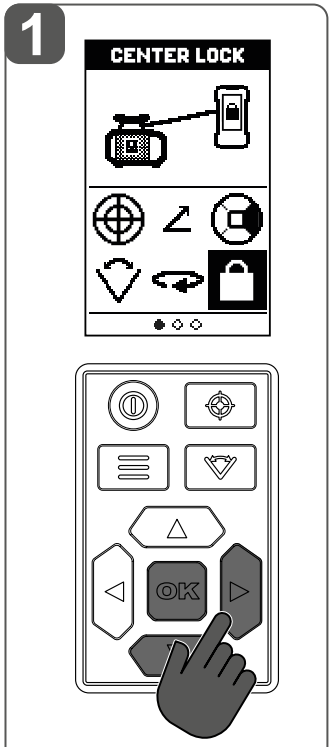



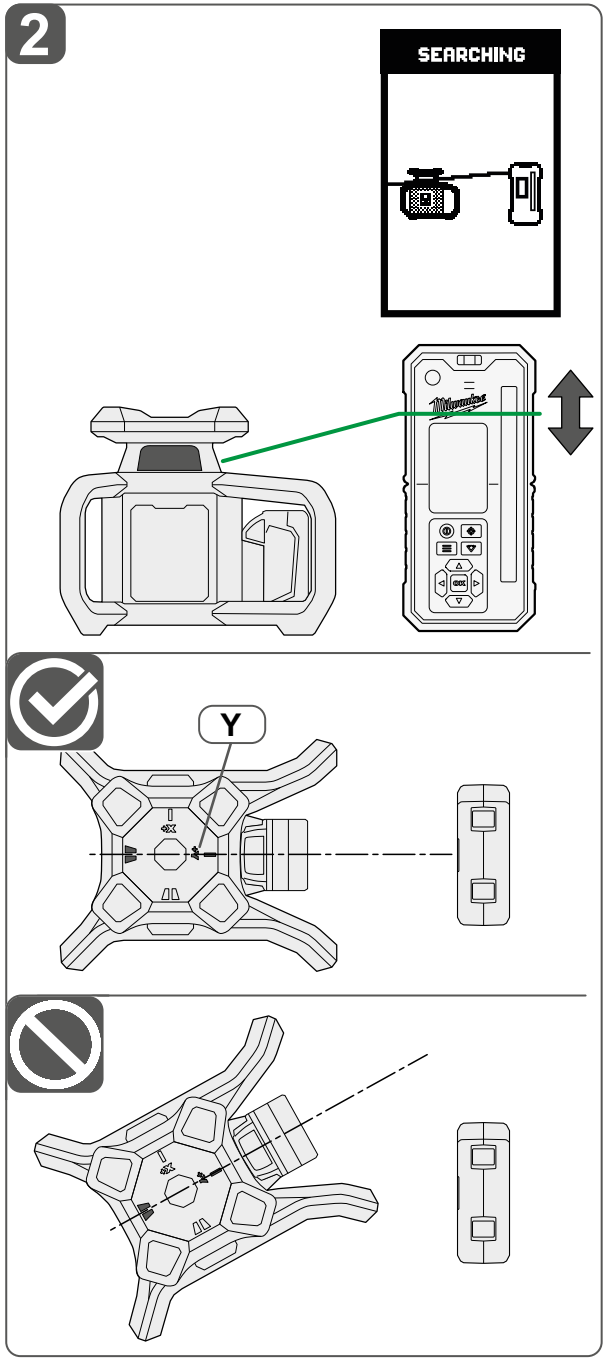


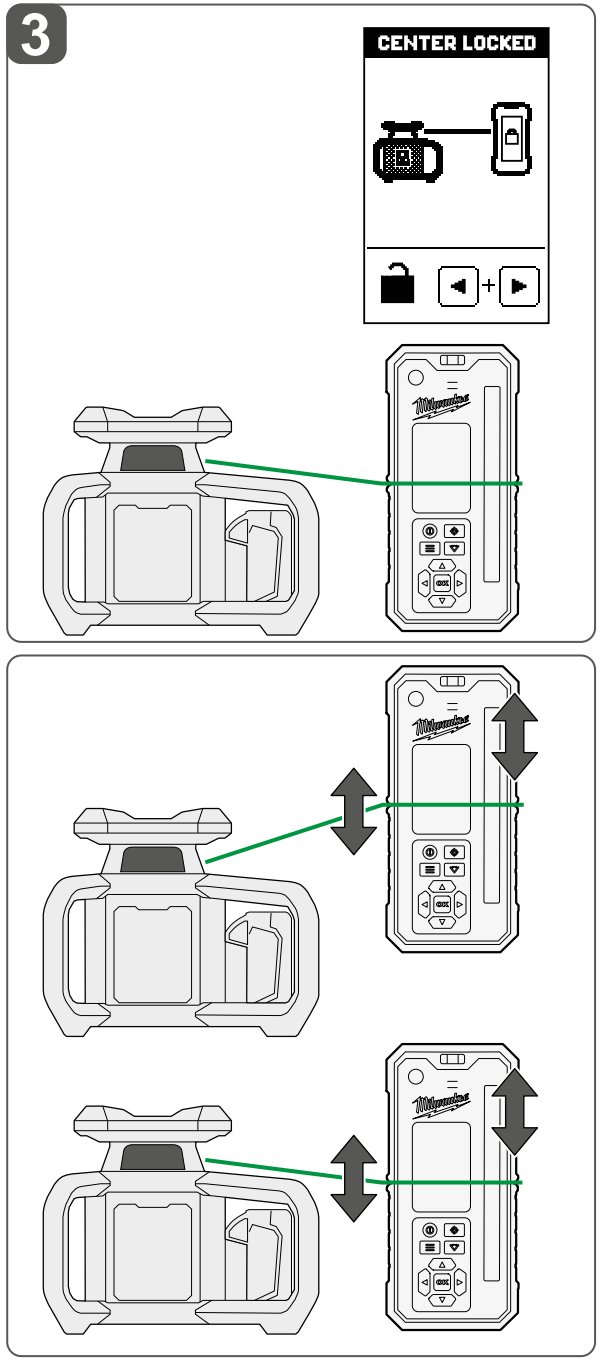



In ROTATIONAL MODE, the optimum speed of the laser rotation can be selected.

Slower RPM's are more visible, while faster RPM's will yield a more continuous looking line that is better for detection reaction time.



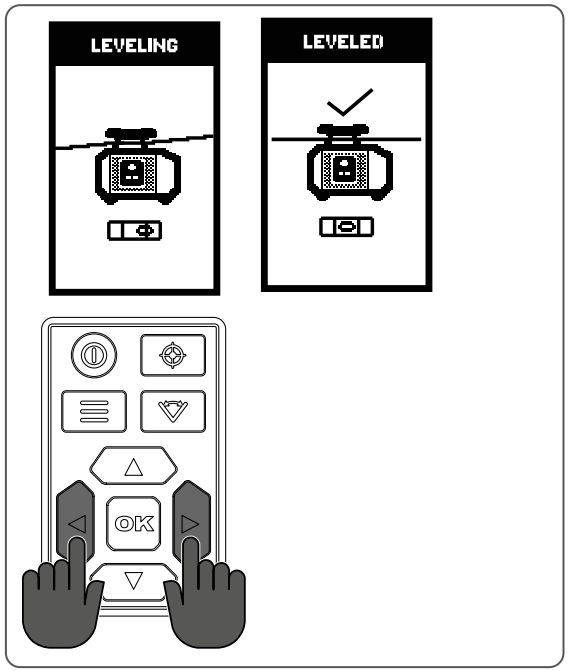

CENTER LOCK is only compatible with certain RPM's and accuracy settings and is not compatible with Channel Link. Some settings may automatically change when this function is being used. Press the OK button to clear any setting change notification of the detector.

Once the center is locked, the laser will continue to adjust it's slope to remain on the center of the detector. If the detector is ever blocked or moved such that the laser beam is no longer on the sensor, this operation will fail and a „not found" warning will be displayed.

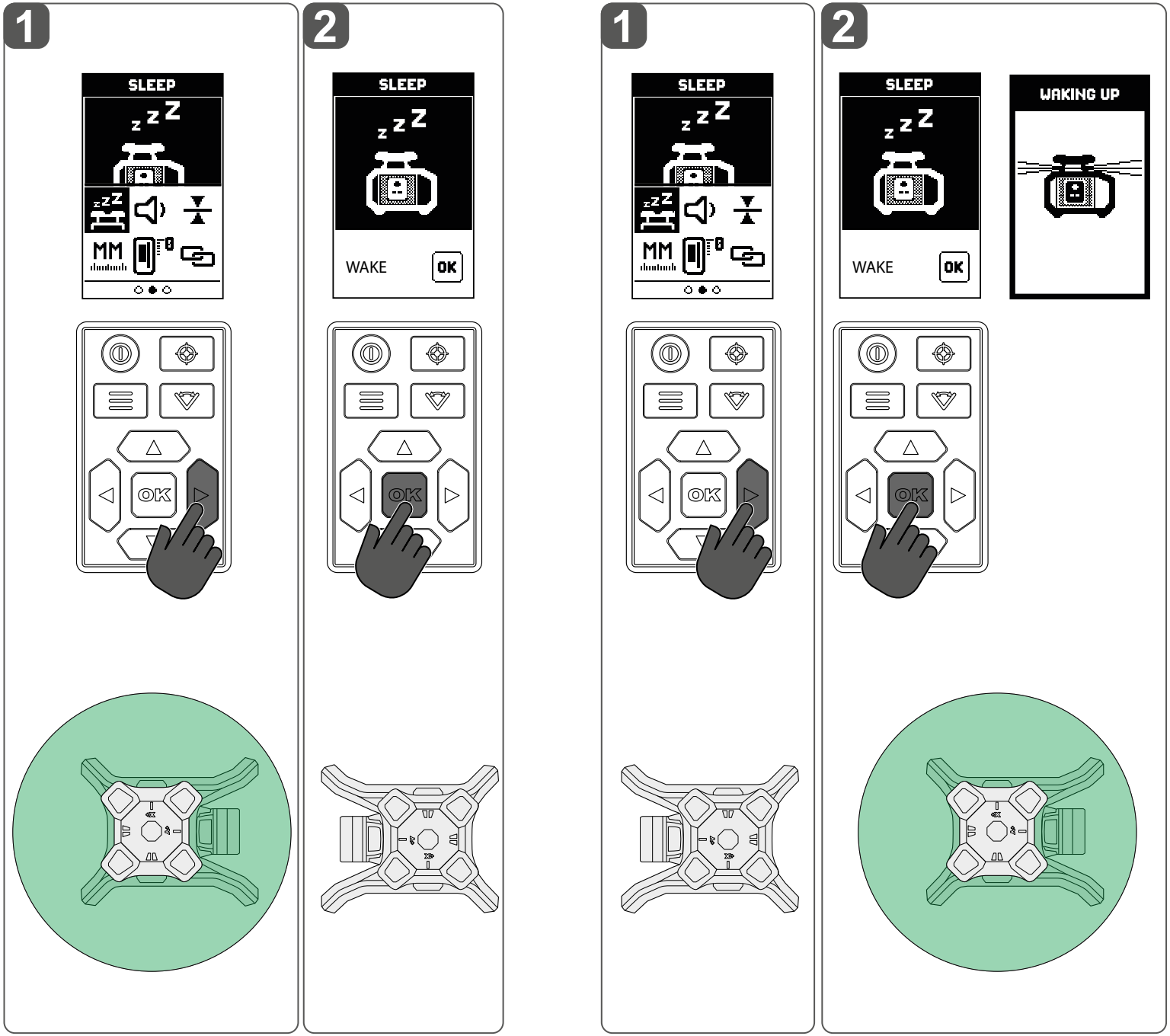
Note: If CENTER LOCK is not found, the detector will display „not found". Press the OK button, and the remote/ detector will go to the main menu, and the laser will start the self-leveling sequence. Select the CENTER LOCK icon from the menu, and try steps 1 - 3 again until Center Lock is found.

**To unlock the center lock**

Press and hold the left and right arrow keys simultaneously.



## SLEEP MODE

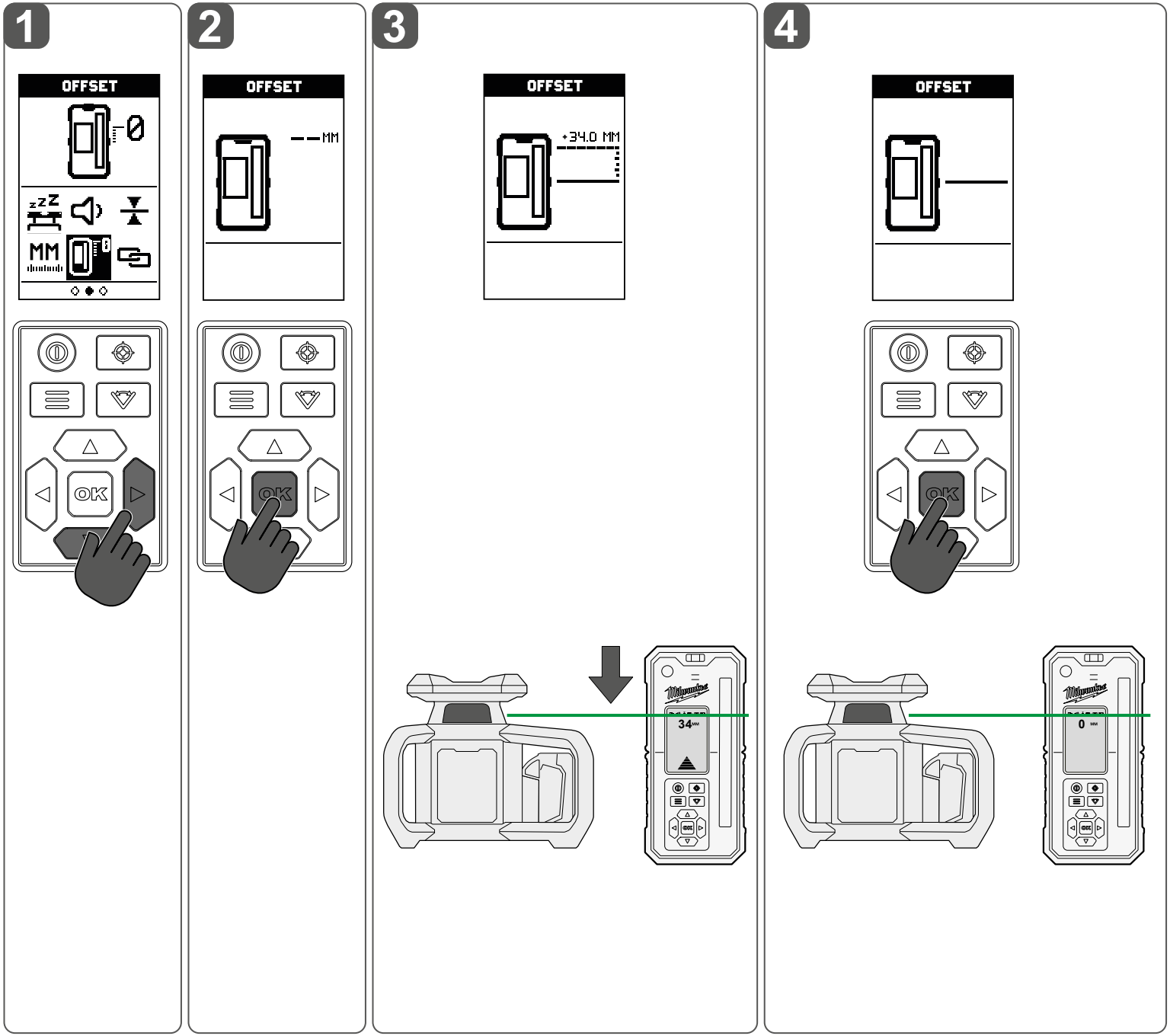



SLEEP MODE can be used to conserve the rotary laser battery without disturbing laser setup.

Note: The laser head will stop rotating and the laser diode will turn off. The laser will retain its current position and settings and will resume when SLEEP MODE is exited. If the laser is asleep for more than 4 hours, the laser will automatically shut off.

**Wake off:**

If the detector is powered off, it will re-pair to the laser when powered on, and the sleep menu will re-open with the option to „wake“ with the press of the OK button.

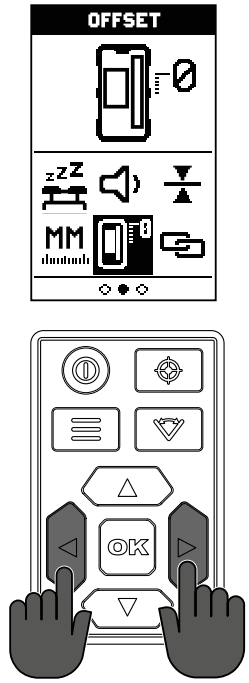



The detector will display the offset distance based on the current sensing location of the beam on the sensor.

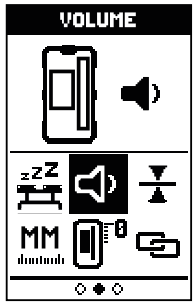
Note: Offset is not compatible with Center Lock or Center Find. Initiating these functions will reset offset to 0.

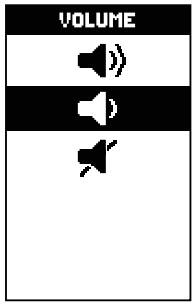
**To reset the offset menu:**

Press and hold the left and right arrow keys simultaneously.



## Volume of beep



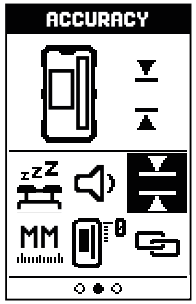



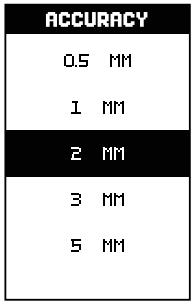

three settings are available
- high (>95 dBA),
- low (72 - 90 dBA),
- off.

When toggling, a sample tone will play to demonstrate the currently selected setting.

The icon on the status bar will update to show the current selection.

## Accuracy




The icon on the display will update to show current selection.

Remote/Detector Accuracy

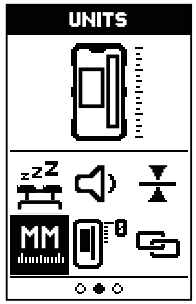
| mm | in | ft | level |
|---|---|---|---|
| 0.5 | 1/32 | 0.001 | 1 |
| 1 | 1/16 | 0.003 | 2 |
| 2 | 1/8 | 0.006 | 3 |
| 3 | 1/4 | 0.010 | 4 |
| 5 | 1/2 | 0.016 | 5 |

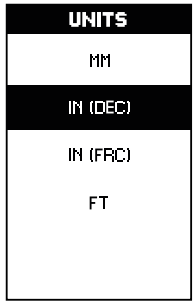
## Languages



On initial startup select the desired language.

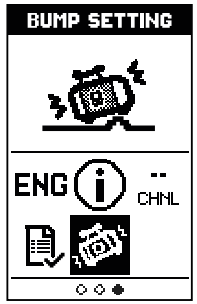
## Units of measure

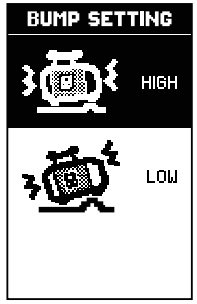



The measurement setting will reflect in the main menu and will update in the DIRECT READ OUT.

## Bump sensitivity

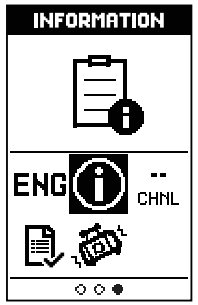


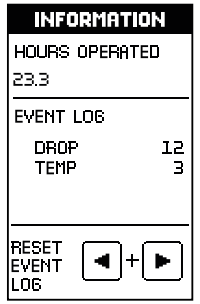




The laser is defaulted to high sensitivity bump setting from the factory.

Select the desired setting. The laser will re-initialize the bump alarm in it's new setting.

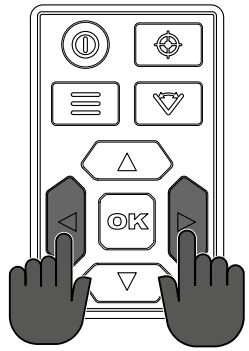
## Information Screen



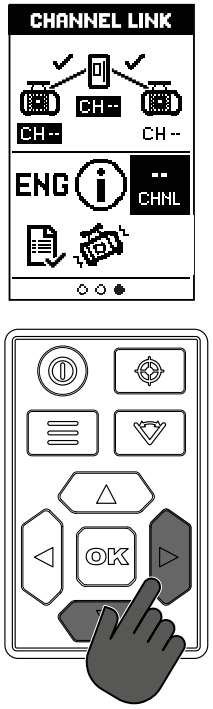




Information about:
- tracking operating hours
- drop events detected
- temperature events

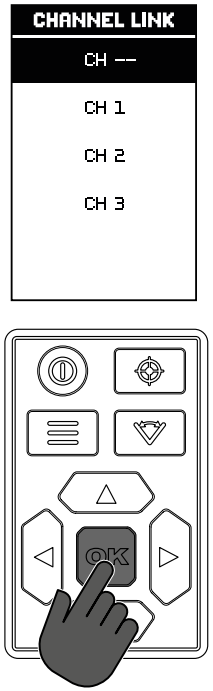
**To reset Event log:**
Press and hold the left and right arrow keys simultaneously.



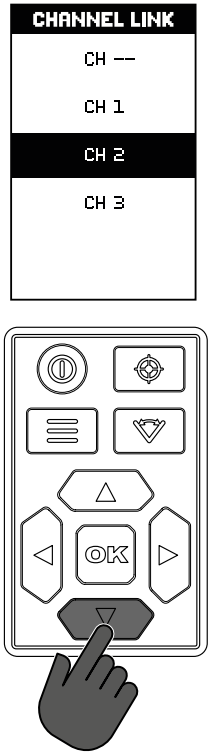
1



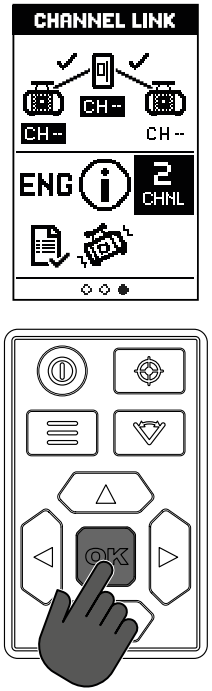

2




3




4

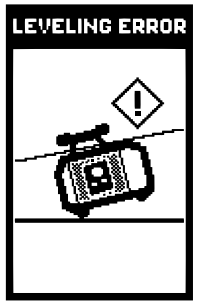



CHANNEL LINK can be used to eliminate interruptions from other lasers on a busy jobsite, by distinguishing and detecting the preferred laser. The detector cannot distinguish between two lasers at the same time. Be sure that only one laser is striking the detector sensor at a time.

Note: A detector in „CH--“ will detect lasers in any channel. While the detector is in CH 1,2,3 it will only detect lasers in matching channels. Select a unique channel to distinguish the laser from others on the jobsite or select „CH--“ to detect any green rotary MILWAUKEE rotary laser on the same jobsite.

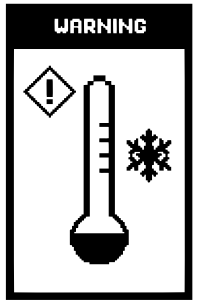
Note: CHANNEL LINK is only compatible with certain RPM‘s and functions. Some settings may automatically change when this function is used. Press the OK button to clear any setting change notification of the detector.

**Leveling Error**



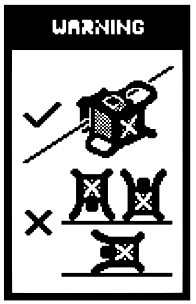

The laser was unable to find a leveling solution due to time out or out of leveling range. Adjust laser to be on a level surface. If that doesn‘t work, press the leveling mode button on the laser. If that doesn‘t work, try power cycling the laser.

**Temperature Alarm**



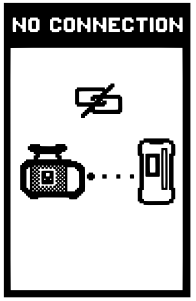

Indicates that the laser is too hot or cold. To resume work, the laser must be returned to a suitable operating temperature. Note the internal temperature may be sev- eral degrees warmer than ambient temperature.

**Wrong Vertical Orientation Alarm**




This will appear if the laser is placed in a non-compatible vertical orienta- tion. Adjust laser as directed on the LCD screen. The Keypad should be facing up and parallel to the ground.

**No Connection**




The selected feat- ures are not available because the device is not paired to a laser. Follow pairing steps then retry the feature.

**Other Errors**

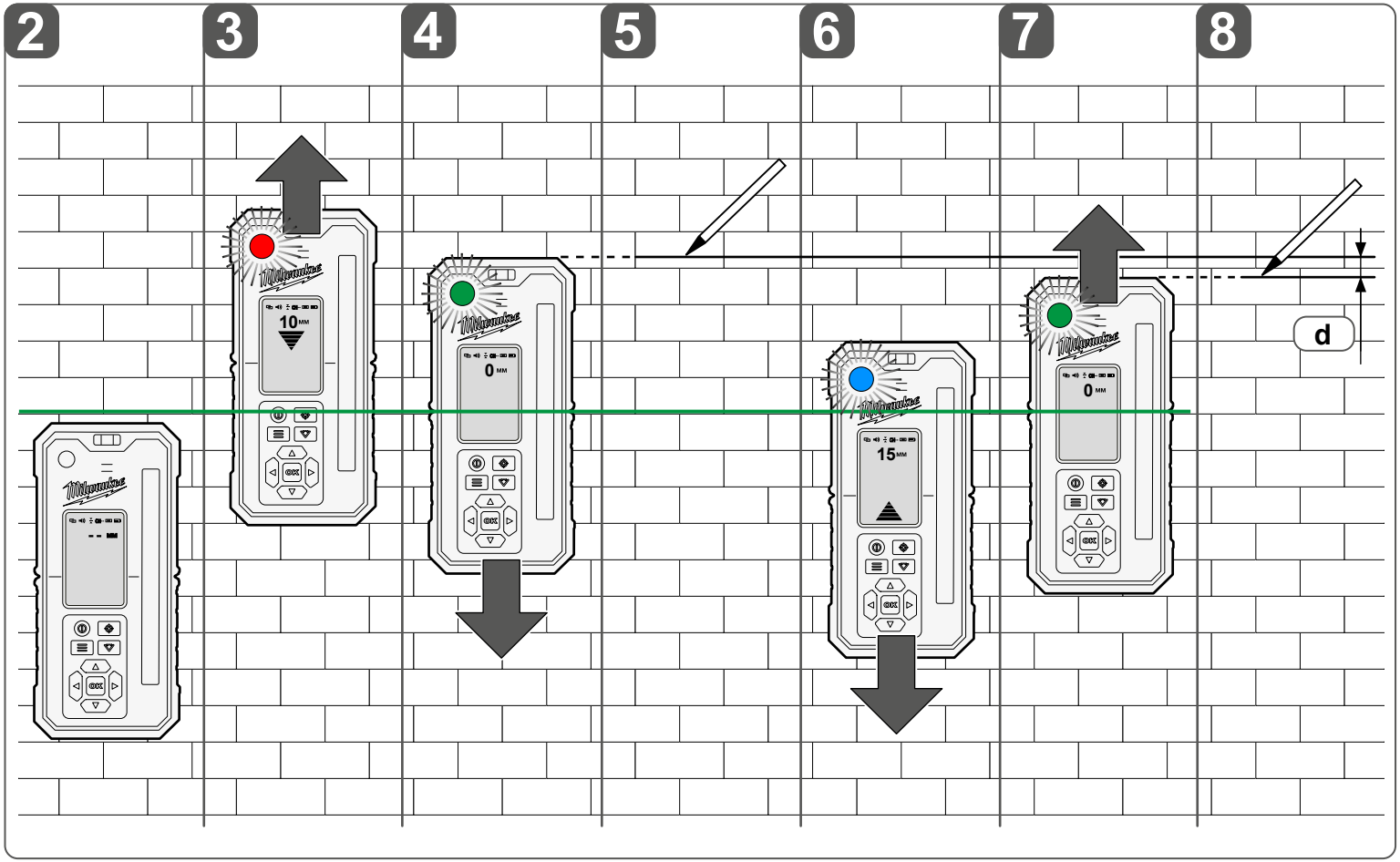
Ensure batteries are inserted correctly according to the +/- polarity marked in the compartment.

Replace batteries that may be at the end of life.

Ensure the tool‘s internal temperature is within specified operating ranges. If stored in excessive heat or cold, allow at least 2 hours to acclimate to ambient temperature before turning on the tool.

If the detector freezes, press and hold the power button for 15 seconds or remove the batteries to reset.

If problem persists, please contact an authorized MILWAUKEE service center for support.


Perform the accuracy check procedure immediately upon unboxing of each new detector and before exposure to jobsite conditions.

Should any deviation from listed product accuracy be found, please contact a MILWAUKEE service facility. Failure to do so could result in rejection of warranty claim.

**Influences on Accuracy**

Ambient temperature changes can impact laser accuracy. For accurate and repeatable results, the described procedures should be done with the laser off the ground and placed in the center of the working area.

Mount the laser on the tripod and check the leveling of the tripod.

Abusive treatment of the laser, such as excessive impacts from drop, can also lead to changes in product accuracy. Therefore, it is recommended to perform the accuracy check procedure after any drops or before completing any critical jobs.

For best results, use with MILWAUKEE Lasers.

**NOTE:** Extreme temperatures will affect laser accuracy.

**Detector Accuracy Check Procedure**

1. Set up compatible laser 9 m from flat wall.
2. Place detector flat on wall directly in front of the laser source and slightly below the projected laser line.
3. Keeping the detector bottom parallel with the ground, raise detector until down arrow appears.
4. Lower the detector until center line appears.
5. Mark a line on the wall.
6. Continue to lower detector until the up arrow appears.
7. Raise detector until center line appears.
8. Mark a line on the wall.

Compare the distance d/2 to the following table:

| | | |
|---|---|---|
| ultrafine | 1,0 mm (± 0,5 mm) | @ 30 m |
| fine | 2,0 mm (± 1 mm) | @ 30 m |
| medium | 4,0 mm (± 2 mm) | @ 30 m |
| course | 6,0 mm (± 3 mm) | @ 30 m |
| ultra course | 10,0 mm (± 5 mm) | @ 30 m |

Note: If the measured accuracy is out-of-spec according to this table, contact an authorized MILWAUKEE service center.