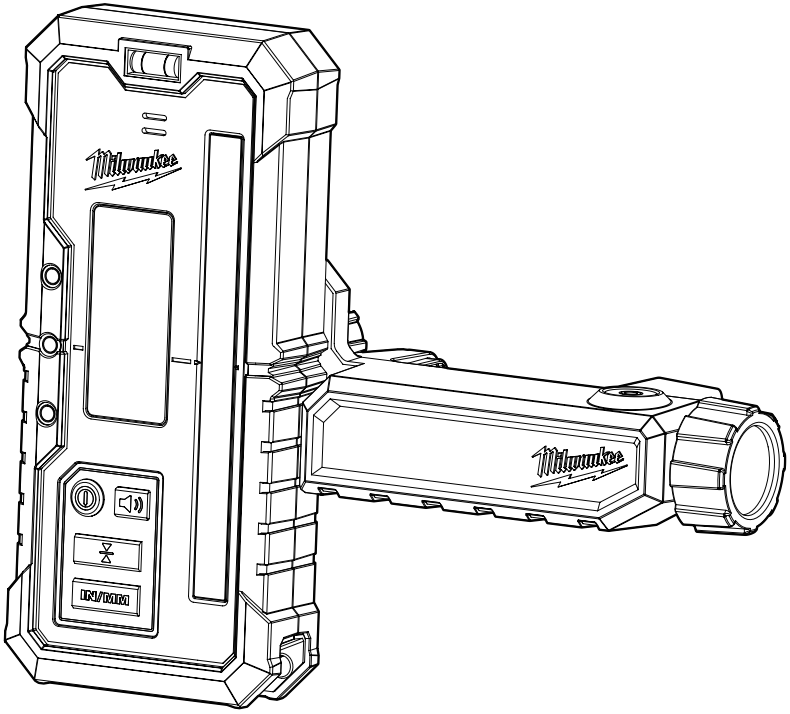
OPERATOR'S MANUAL



Cat. No.
RD600

ROTARY DETECTOR 610M

⚠ WARNING
To reduce the risk of injury, user must read and understand operator's manual.

GENERAL POWER TOOL SAFETY WARNINGS

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

- **Save these instructions** - This operator's manual contains important safety and operating instructions.

WORK AREA SAFETY

- **Ensure adequate safeguards at the work site (e.g. surveying site when measuring on roads, construction sites, etc.).**
- **Avoid dangerous environments.** Avoid extended exposure to rain, snow, damp or wet locations. Do not use in the presence of explosive atmospheres (gaseous fumes, dust or flammable materials).

PERSONAL SAFETY

- **Do not allow persons unfamiliar with the tool, these safety instructions, and the tool's operator's manual to operate the tool.** This tool can be dangerous in the hands of untrained users.
- **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the tool in unexpected situations.

BATTERY TOOL USE AND CARE

- **This tool is designed to be powered by two AA batteries properly inserted into the tool.** Do not attempt to use with any other voltage or power supply.
- **Do not leave batteries within the reach of children.**
- **Do not mix new and used batteries. Do not mix brands (or types within brands) of batteries.**
- **Do not mix rechargeable and non-rechargeable batteries.**
- **Install batteries according to polarity (+/–) diagrams.**
- **Properly dispose of used batteries immediately.**
- **Do not incinerate or dismantle batteries.**
- **Under abusive conditions, liquid may be ejected from the battery, avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.

SPECIFIC SAFETY RULES FOR ROTARY LASER DETECTORS

- **The device conforms to the most stringent requirements of the relevant Electromagnetic Compatibility (EMC) Standards and Regulations.** Yet, the possibility of causing interference in other devices cannot be totally excluded.

⚠CAUTION **Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.**

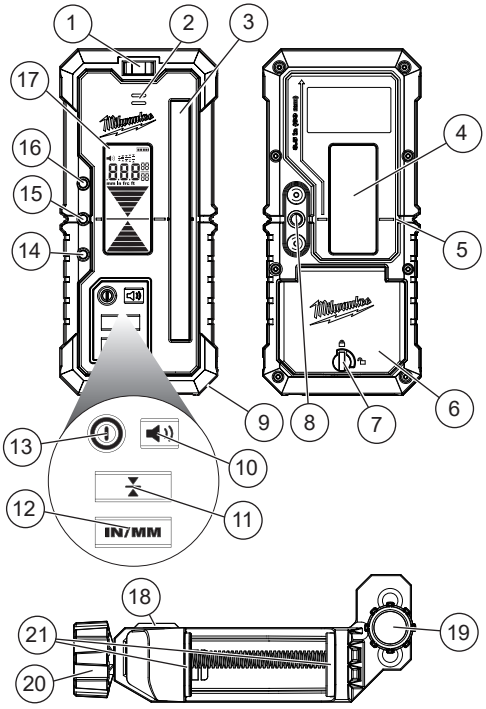
- **Be sure to power off instrument after use.** When instrument will not be used for a long period, place it in storage after removing batteries.
- **Watch out for erroneous results if the tool is defective or if it has been dropped, misused or modified.**
- **Do not dispose of tool or batteries together with household waste material!** Tool and batteries that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.
- **To reduce the risk of injury, when working in dusty situations, wear appropriate respiratory protection or use a suitable dust extraction solution.**
- **Always use common sense and be cautious when using tools.** It is not possible to anticipate every situation that could result in a dangerous outcome. Do not use this tool if you do not understand these operating instructions or you feel the work is beyond your capability; contact *MILWAUKEE*® Tool or a trained professional for additional information or training.
- **Maintain labels and nameplates.** These carry important information. If unreadable or missing, contact a *MILWAUKEE*® service facility for a replacement.

ADDITIONAL BATTERY SAFETY RULES

⚠WARNING To reduce the risk of fire, personal injury, and product damage due to a short circuit, never immerse your tool, battery pack or charger in fluid or allow a fluid to flow inside them. Corrosive or conductive fluids, such as seawater, certain industrial chemicals, and bleach or bleach-containing products, etc., can cause a short circuit.

⚠WARNING Do not charge non-rechargeable batteries.

FUNCTIONAL DESCRIPTION



1. Bubble level
2. Speaker
3. Sensor
4. Back LCD screen
5. Centre line
6. Battery door
7. Battery door turn lock
8. Clamp connection feature
9. Wrist strap attachment
10. Volume adjustment button
11. Accuracy tolerance adjustment button
12. Units adjustment button
13. ON/OFF button
14. High indicator LED
15. Centre indicator LED
16. Low indicator LED
17. Front LCD screen
18. Surface vial
19. Clamp attachment knob
20. Clamping knob
21. Clamp jaws

SYMBOLOGY

Safety alert

Volts

Direct Current

Read Operator's Manual

Regulatory Compliance Mark (RCM). This product meets applicable regulatory requirements.

SPECIFICATIONS

Cat. No.	**RD600**
Recommended Compatible Laser Cat. No.	**M18 RL610**
Volts	3 V DC (2 x AA) LR6/15A
Reception Angle	70°
Detection Range	9 m (30') up to 610 m (2,000') (Diameter)
Receiving Area	± 60 mm
Volume	≥ 95 dBa
Altitude	< 2,000 m
Ingress Protection	IP67
Drop Rating	2 m
Bare Tool Weight	0.36 kg
Centre Indication (From Top)	89 mm (3-1/2")
Auto Shut-off	15 min (No buttons pressed or laser detection)
Run Time	40 hrs
Clamp Weight	0.18 kg
Clamp Width	63.5 mm (2-1/2")
Maximum Relative Humidity (RH)	80% for up to 31°C
Decreasing Linearly Relative Humidity (RH)	50% at 40°C
Recommended Ambient	
Storage Temperature	-25°C to 60°C
Operating Temperature	-20°C to 50°C

NOTE: Distance, laser power, and other environmental factors such as temperature, precipitation, or ambient light conditions may negatively impact product accuracy and range.

ASSEMBLY

Attaching the Clamp

The clamp is an optional piece that can be attached to the detector. The clamp can be used with materials up to 63.5 mm (2-1/2") thick.

1. To **attach** the clamp to the detector, align the attachment posts on the clamp with the clamp connection feature on the back of the detector.
2. Align the screw on the back, and turn the knob clockwise to tighten into place.
3. Attach the clamp to the workpiece by turning the clamping knob anticlockwise to open the clamping jaws. To tighten the clamp to the workpiece, turn the clamping knob clockwise. Ensure the clamp is snug before operation.
4. To **remove** the clamp from the workpiece, turn the clamping knob anticlockwise until the clamp jaws release from the workpiece. To remove the clamp from the detector, turn the clamping attachment knob anticlockwise and remove the clamp from the back of the detector.

Changing the 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. Change batteries when the fuel gauge shows low batteries.

To change the batteries:

1. To **open** the battery door, turn the latch clockwise to the unlocked position and then open the door.
2. Remove the old AA batteries, and dispose of them properly.
3. Insert two AA batteries according to the +/- polarity marked in the compartment.
4. To **close** the battery door, close the door and then turn the latch anticlockwise to the locked position.

Fuel Gauge

To determine the amount of charge left in the batteries, turn the tool ON. The display will show the battery charge: Full, 3/4, 1/2 and low battery warning. Battery life may vary by brand/age. Replace the batteries as soon as possible.

OPERATION

⚠WARNING To reduce the risk of injury or temporary effects on vision, do not look directly into the detector when it is on.

⚠CAUTION Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

NOTICE **Perform the Accuracy Field Check procedure immediately upon unboxing each new detector and before exposure to jobsite conditions.** See "Accuracy Field Check" for information. Should any deviation from listed product accuracy be found, please contact an authorised *MILWAUKEE*® service centre. Failure to do so could result in rejection of warranty claim.

Turning the Detector ON/OFF

1. To turn **ON**, press the ON/OFF button until the laser detector beeps. All segments on the LCD will flash for 1 second, then update to show the current settings and status for volume, accuracy, units, and fuel gauge.

   NOTE: The backlight will illuminate after any button press or when a laser beam is detected 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 won't stay on if a laser stays on the sensor, but if the laser beam moves off then back on, the timer will reset).
2. To turn **OFF**, long press the ON/OFF button for more than 1 second. Auto shut-off will occur after 15 minutes if there are no buttons pressed or if no lasers are detected.

   NOTE: The laser and detector are independent of one another. Pressing the ON/OFF button on the detector will power off the detector, and the laser will remain on.

Adjusting the Volume

1. Press the volume button.
2. When the volume button is pressed, the volume will toggle between high (>95 dBA), low (72-90 dBA), and off. The icon on the status bar will update to show the current selection. The detector will play a sample tone to demonstrate the current volume setting.

Setting the Units of Measure

- Press the units adjustment button to cycle through the measurement options of: millimetres, inches (decimal), inches (fractions), and feet. The icon on the status bar will update to show the current selection.

Setting Accuracy

- Press the accuracy tolerance adjustment button to cycle through accuracy adjustment tolerance levels: ultra-fine, fine, medium, coarse, and ultra-coarse. The icon on display will update to show the current selection.

  See the table below for detector deadband accuracy based on unit and accuracy settings.

Detector Accuracy					
mm	in. (Dec.)	in. (Frac.)	ft.	Accuracy Levels (1= Ultra-Fine - 5= Ultra-Coarse)	Levels
0.5	0.02	1/32	0.001		Level 1
1	0.04	1/16	0.003		Level 2
2	0.08	1/8	0.006		Level 3
3	0.12	1/4	0.010		Level 4
5	0.2	1/2	0.016		Level 5

Direct Read-Out and Arrow Indicators

If a laser is sensed, the Direct Read-Out, arrow indicator and Laser Locator Indicator LED will illuminate to guide the user in moving the detector to align the laser with the centre. If no laser is detected, the arrow indicator and Laser Locator Indicator LED will remain off, and the Direct Read-Out will show no value and will display "- - -".

- •High Indicator LED (blue) - Move the detector location up until on centre.
- •Centre Indicator LED (green) - The line being detected from the laser is on centre.
- •Low Indicator LED (red) - Move the detector location down until on centre.

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.

Troubleshooting

- 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 unit'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 unit.
- If the detector freezes, press and hold the ON/OFF button for 15 seconds or remove the batteries to reset. If problem persists, please contact an authorised *MILWAUKEE*® service centre for support.

ACCURACY FIELD CHECK

NOTICE **Perform the Accuracy Field Check procedure immediately upon unboxing each new laser and before exposure to jobsite conditions.** Should any deviation from listed product accuracy be found, please contact an authorised *MILWAUKEE*® service centre. Failure to do so could result in rejection of warranty claim.

Influences on Accuracy

Sunlight or other extreme lighting conditions can adversely impact accuracy. For best results, use indoors or avoid direct sunlight. Abusive treatment of the laser level detector, such as excessive impacts from drops, can lead to deviations in product accuracy.

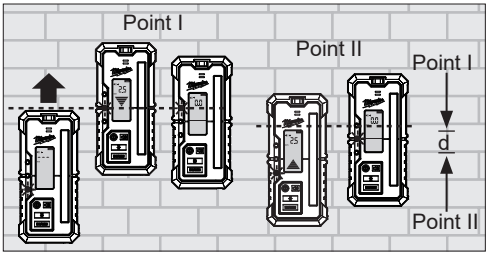
Therefore, it is recommended to conduct the Field Check procedure after any impact or before completing any critical jobs.

For best results, use with *MILWAUKEE*® Lasers.

Detector Accuracy Check Procedure

1. Set up compatible laser about 9 m from a flat wall.
2. Ensure the laser source is self-leveled and perpendicular to the wall.
3. Place the detector flat on a wall directly in front of the laser source and slightly below the projected laser line.
4. Keeping the bottom of the detector parallel with the ground, raise the detector past the centre mark until the down arrow appears on the LCD screen.
5. Lower the detector until the centre line appears.
6. Mark a line on the wall (Point I).
7. Continue to lower the detector until the up arrow appears.
8. Raise the detector until the centre line appears.
9. Mark a line on the wall (Point II).
10. Measure the distance between Point "I" and Point "II" – divide by 2. After completion, compare this to the Detector Accuracy table in the "Setting Accuracy" section.

NOTE: If the measured accuracy is out-of-spec according to this table, contact an authorised *MILWAUKEE*® service centre.



MAINTENANCE

WARNING **To reduce the risk of injury, always unplug the charger and remove the battery pack from the charger or tool before performing any maintenance. Never disassemble the battery pack, charger, or tool, except as provided in these instructions. Contact a *MILWAUKEE*® service centre for ALL repairs.**

Maintain Laser Detector

Maintain tools. If damaged, have the tool repaired at an authorised *MILWAUKEE*® service centre before use. Accidents may be caused by poorly maintained tools.

Cleaning

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

Cleaning the Aperture Windows

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

Calibration and Repairs

For calibration and repairs, return the tool to an authorised service centre.

WARRANTY - AUSTRALIA and NEW ZEALAND

Please refer to Australian and New Zealand warranty supplied with tool. This warranty applies only to product sold by authorised dealers in Australia and New Zealand.

SERVICE - AUSTRALIA and NEW ZEALAND

MILWAUKEE® prides itself in producing a premium quality product that is Nothing But Heavy Duty™. Your satisfaction with our products is very important to us! If you encounter any problems with the operation of this tool, please contact your authorised *MILWAUKEE*® dealer.

For a list of *MILWAUKEE*® dealers, guarantee or service agents please contact *MILWAUKEE*® Customer Service or visit our website.
(Australia Toll Free Telephone Number 1300 645 928)
(New Zealand Toll Free Telephone Number 0800 645 928)
or visit milwaukeetool.com.au/milwaukeetool.co.nz.

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