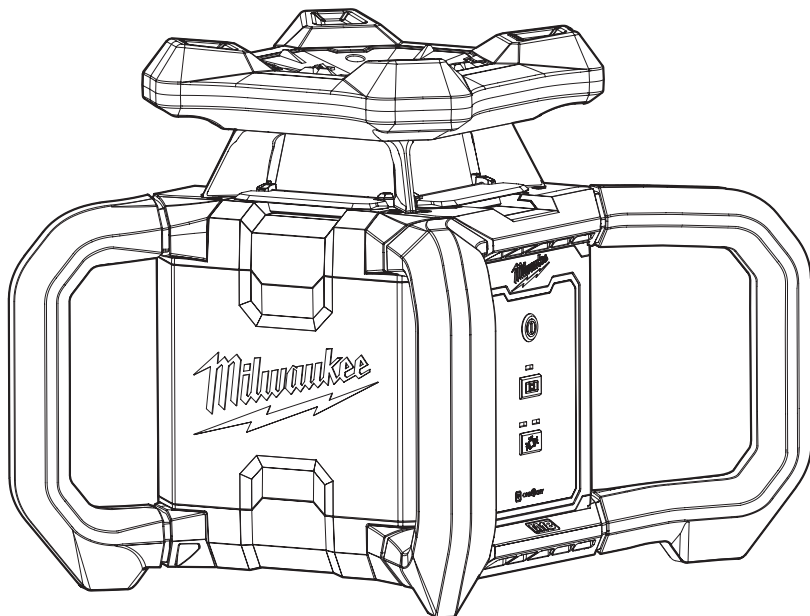




OPERATOR'S MANUAL  
MANUEL de L'UTILISATEUR  
MANUAL del OPERADOR



Cat. No. / No de cat.  
**3701-20**

**M18™ RED EXTERIOR ROTARY LASER LEVEL**  
**LASER ROTATIF EXTÉRIEUR ROUGE DE M18™**  
**LÁSER ROTATIVO EXTERIOR ROJO DE M18™**



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

**AVERTISSEMENT** Afin de réduire le risque de blessures, l'utilisateur doit lire et bien comprendre le manuel.

**ADVERTENCIA** Para reducir el riesgo de lesiones, el usuario debe leer y entender el 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.

## LASER SAFETY

**⚠WARNING** The device produces visible laser beams, which are emitted from the tool.

• **This device complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.**

• **Laser light** - Do not stare into beam or view directly with optical instruments. Do not point laser light at others. Laser light can cause eye damage.

## 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

• **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.

• **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.

• **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.

• **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.

• **Do not use a battery pack or tool that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.

• **Do not expose a battery pack or tool to fire or excessive temperature.** Exposure to fire or temperature above 265°F (130°C) may cause explosion.

• **Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions.** Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

• **Store your battery and tool in a cool, dry place.** Do not store battery where temperatures may exceed 120°F (50°C) such as in direct sunlight, a vehicle or metal building during the summer.

## SPECIFIC SAFETY RULES FOR ROTARY LASER LEVELS

• **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.

• **Chemical Burn Hazard.** Keep coin cell battery away from children.

• **If using with a lanyard, do not exceed maximum capacity marked on the lanyard label.** Always determine the weight of the product, with all accessories, when selecting the appropriate lanyard system. Exceeding maximum capacity may result in serious injury. See specifications for tool and battery weight.

• **For best results, use only with energy absorbing lanyards.** Ropes, straps or chains may break and cause failure. Do not use with lanyards at full tension.

• **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 MILWAUKEE for a free replacement.

# **FCC** Federal Communications Commission

## **WARNING**

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

## **SPECIFICATIONS**

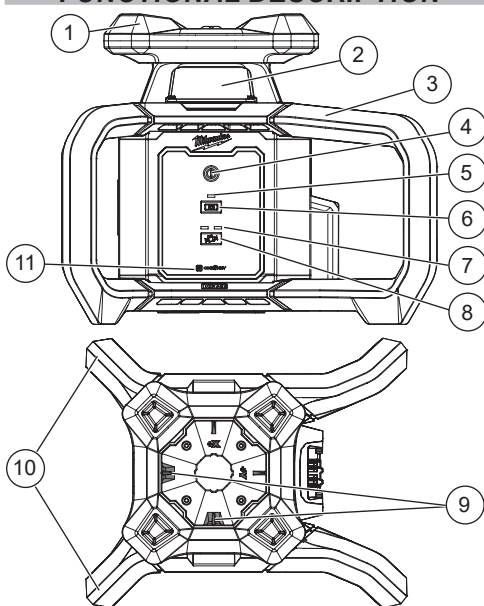
Cat. No.	3701-20
Volts	18 DC
Battery Type	M18™
Charger Type	M18™
Module/FCC ID	BGM11S/QOQ11
Coin Cell Battery Type	CR2032
Laser	Class 2
Max Power	P <sub>AVG</sub> ≤3.3 mW
Pulse Frequency	10 Hz
Pulse Duration	T <sub>p</sub> ≤1.5 ms
Wavelength	620 - 690 nm
Beam Divergence	<1.5 mrad
Rotational Speed	600 RPM
Leveling Range	Total 10° in X or Y Axis
Working Range (With Receiver)	2000' (Diameter)
Horizontal Plane Accuracy	±3/32" at 100'
Altitude	<6560'
Pollution Degree	2°
Typical Leveling Time	<12 (Seconds)
Mounting Insert	5/8"-11
Ingress Protection (Tool Only)	IP66
Drop Rating	1.5 m
Tip Rating	2 m
Bare Tool Weight	7 lbs
Weight	11.4 lbs
(With heaviest compatible battery pack)	
Maximum Relative Humidity (RH)	80%
for up to 88°F	
Decreasing Linearly Relative Humidity (RH)	50% at 104°F
Recommended Ambient	
Storage Temperature	-4°F to 140°F
Operating Temperature	0°F to 122°F

## **Recommended Compatible**

**Receiver Cat. No.** 3711

**NOTE:** Accuracies and leveling times are measured on a level surface at ambient temperatures. Use of the tool in extreme conditions may negatively impact these specs.

## **FUNCTIONAL DESCRIPTION**



**Milwaukee® RED EXTERIOR ROTARY LASER LEVEL**  
Milwaukee Tool, Brookfield, WI 53005 USA

**WARNING** To reduce the risk of injury, user must read operator's manual. Use only Use M18™ batteries.

**AVERTISSEMENT** Afin de réduire le risque de blessures, l'utilisateur doit lire le manuel. Utilisez des piles M18™.

**ADVERTENCIA** Para reducir el riesgo de lesiones, el usuario debe leer el manual. Utilice baterías M18™.

**LAZER 2**

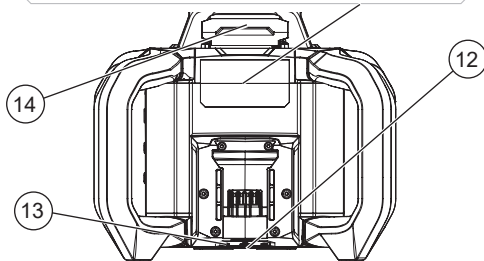
IEC 60825-1:2014-05 up to 1.5ms MAX OUTPUT P<sub>max</sub> ≤ 3.3mW @ 620nm - 690nm. COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR COMPLIANCE WITH IEC 60825-1 Ed. 3, AS DESCRIBED IN LASER NOTICE NO. 56, DATED MAY 6, 2019. THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MUST NOT CAUSE HARMFUL INTERFERENCE, AND

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.

Contains FCC ID: 00011      Contains IC: 5123A-11

CAT. NO. 3701-20      18V™      SER. \_\_\_\_\_



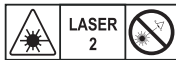
1. Protective foam top bumper
2. Laser aperture window
3. Protective foam handles
4. ON/OFF button
5. Leveling mode indicator LED
6. Leveling mode button
7. Bump alarm indicator LEDs
8. Bump alarm button
9. X/Y iron sights
10. Short lanyard attachment handles
11. ONE-KEY™ indicator LED
12. 5/8"-11 mounting insert
13. ONE-KEY™ Coin cell compartment
14. Masking flaps (4)

## SYMBOLLOGY



Volts

Direct Current



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



Read Operator's Manual



Power Button



Leveling Button



Bump Alarm LED



Coin Cell Polarity Indicator

## ASSEMBLY

**WARNING** Recharge only with the charger specified for the battery. For specific charging instructions, read the operator's manual supplied with your charger and battery.

### Removing/Inserting the Battery

To remove the battery, push in the release buttons and pull the battery pack away from the tool.

**WARNING** Always remove the battery pack any time the tool is not in use.

To insert the battery, slide the pack into the body of the tool. Make sure it latches securely into place.

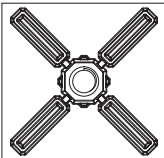
**WARNING** Only use accessories specifically recommended for this tool. Others may be hazardous.

To reduce the risk of injury or damage, securely mount/attach the laser before starting an operation. Injury/damage may occur if the laser falls.

### Mounting the Rotary Laser

The rotary laser can be mounted to a tripod or Rotary Laser Wall Mount:

- If working overhead, ensure the laser is secure before operating and attached to a MILWAUKEE 35 lb rated lanyard.
- Ensure the laser and accessories are on a stable surface.
- Use the 5/8"-11 threaded insert to mount the laser on a tripod or Rotary Laser Wall Mount.

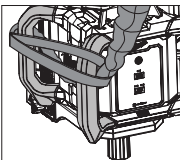


### Lanyard Attachments

Use MILWAUKEE Lanyards to help reduce the risks associated with dropped tools. Complies with ANSI/ISEA 121:2018.

1. Follow instructions provided with tool lanyard.

2. When using the lanyard, user must attach both short handles together properly, as shown above, before operation.



**WARNING!** To reduce the risk of serious injury or death, use only lanyards rated for the weight of the tool.

## ONE-KEY™

To learn more about the ONE-KEY™ functionality for this tool, go to [milwaukeekeetool.com/One-Key](http://milwaukeekeetool.com/One-Key). To download the ONE-KEY™ app, visit the App Store® or Google Play™ from your smart device.

### ONE-KEY™ Indicator

Solid Blue	Wireless mode is active and ready to be configured via the ONE-KEY™ app.
Blinking Blue	Tool is actively communicating with the ONE-KEY™ app.
Blinking Red	Tool is in security lockout and can be unlocked by the owner via the ONE-KEY™ app.

## OPERATION

**WARNING** To reduce the risk of injury or temporary effects on vision, do not look directly into the laser 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 of each new laser and before exposure to jobsite conditions. See "Accuracy Field Check" for information. Should any deviation from listed product accuracy be found, please contact an authorized MILWAUKEE service center. Failure to do so could result in rejection of warranty claim.

### Turning the Rotary Laser ON/OFF

- To turn the laser **ON**, press the power button. When powered on, the laser will begin the leveling sequence. Once level and ready to use, the Leveling Mode Indicator LED will become solid green.
- To turn the laser **OFF**, press the power button. The laser diode will turn off, the head will stop rotating, and all LEDs will turn off.

### Rotational Mode

When the laser initially turns on, the laser will automatically start to self-level. The laser head will rotate at 600 RPM, and the laser beam will become visible.

### Auto-Leveling Mode

When the laser initially turns on, the laser will automatically start to self-level. The Leveling Mode Indicator LED will begin flashing green.

- During the leveling process, the Bump Alarm will not be active. When the laser is leveled, the Leveling Mode Indicator LED will be solid green, and the laser head will start to rotate. The laser will be ready for use.

- If the leveling process fails by the one-minute timer or is out of the leveling range, the Leveling Mode Indicator LED flashes red, the laser diode turns off and stops rotating, and an audible tone will sound.

**NOTE:** If the laser fails to level, ensure the laser is on a stable and flat surface. This error occurs when the working surface causes the laser to be outside the leveling range. After, try pressing the Leveling button or power cycling the laser to trigger a relevel. If the problem persists, please contact an authorized MILWAUKEE service center for support.

## Bump Alarm

Due to the laser's high leveling accuracy, the laser is very sensitive to knocks, vibrations, and changes in position. The Bump Alarm will be triggered if the laser is moved from its initial location. Once auto-leveling is finished and the Leveling Mode Indicator LED becomes solid green, the Bump Alarm Indicator LEDs will begin to flash white indicating the Bump Alarm is initializing. During this time, disturbances will not trigger an alarm but will restart the initialization timer. If the laser has not moved for 30 seconds, the Bump Alarm Indicator LEDs will become solid white. This indicates that the Bump Alarm is active. Any bumps above the sensitivity limits will trigger the alarm. The laser diode will turn off, the head will stop rotating, the Bump Alarm Indicator LEDs will alternate flashing white, the Leveling Mode Indicator LED will flash red, and an audible tone will sound.

### Clearing the Bump Alarm:

• In the event of a Bump Alarm, press either the Leveling button or the Bump Alarm button. The alarm will clear, and the laser will begin leveling sequence and re-initiate the Bump Alarm. The laser can be power cycled to clear the Bump Alarm if needed.

**NOTE:** Check the position of the laser plane to determine if it has moved. Additional setup may be needed to re-align the laser with previous benchmarks.

### Changing the Bump Alarm Sensitivity:

The Bump Alarm sensitivity default is set to high from the factory, both Bump Alarm Indicator LEDs will be illuminated. Set up the laser on a flat and stable surface to avoid interruptions in operation. If the Bump Alarm becomes overly sensitive to the environmental conditions, the setting can be changed by pressing the Bump Alarm button. Only the left Bump Alarm Indicator LED will illuminate, indicating the lower sensitivity selected. The Bump Alarm will re-initiate when the sensitivity is changed. Once complete, the LED will turn solid white to show that the Bump Alarm is armed. To switch back, press the Bump Alarm button again.

## Complete Manual Mode

Ensure the laser completes self-leveling successfully before entering this mode. Complete Manual Mode is only available to engage when the laser is level, and the leveling LED is solid green.

1. To turn **ON** Complete Manual Mode, press the Leveling button.
2. The Leveling Mode Indicator LED will turn solid red, and the laser will no longer attempt to self level.

**NOTE:** The Bump Alarm Indicator LEDs will turn off. The Bump Alarm is not available in Complete Manual Mode.

3. To turn **OFF** Complete Manual Mode, press the Leveling button again, and the laser will begin self-leveling sequence and the Leveling Mode Indicator LED will go back to solid green if leveled properly.

## Manual Masking

To avoid interference with other users on the jobsite, manual masking flaps can be used to block 4 individual quadrants of the rotating laser plane.

- To **MASK**, use finger to flip up the mask in the desired quadrant to block the laser beam exiting the window.
- To **UNMASK**, simply use finger to flip the mask back down.

## Troubleshooting

- Ensure the battery is installed correctly. The fuel gauge should indicate the remaining charge when correctly installed.
- Ensure the battery is charged.
- **Leveling Error** - The Leveling Mode Indicator LED will flash red, and the alarm will sound. Ensure that the laser is on a level surface and that the tool is in the proper Horizontal orientation. Try pressing the Leveling button to initiate auto-leveling. Try power cycling the tool to clear the setting. If this fails, return the laser to an authorized MILWAUKEE service center.
- **Bump Alarm too Sensitive** - Ensure the laser is on a level and stable surface. Try changing to a less sensitive setting using the Bump Alarm button on the laser keypad. Clear the Bump Alarm by using one of the options from the "Clearing the Bump Alarm" section. If this fails, return the laser to an authorized MILWAUKEE service center.
- **ONE-KEY™ Lock Out** - The laser will turn on briefly but shut down after ~15 seconds. The ONE-KEY™ Indicator LED will be flashing red. This is an indicator that the laser is locked out. Use the ONE-KEY™ app to connect and unlock the tool.

**NOTE:** If all the recommended troubleshooting fails, power cycle the laser with the Power button. Try removing/re-inserting the battery to restart the tool. If the problem persists, return the laser to an authorized MILWAUKEE service center.

## ACCURACY FIELD CHECK

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

## Influences on Accuracy

Ambient temperature can impact laser accuracies. For accurate and repeatable results, the following procedure should be conducted with the laser elevated off the ground and placed in the center of the working area. Abusive treatment of the laser, such as excessive impacts from drops, can also lead to deviations in product accuracy. Therefore, it's recommended to conduct the field check procedure after any impacts or before completing any critical jobs.

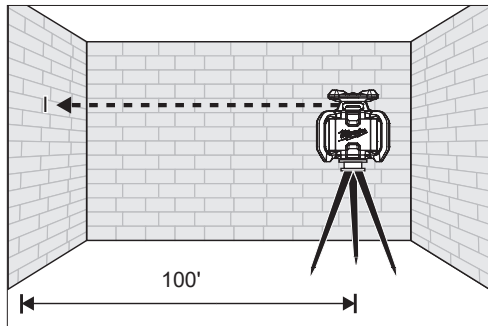
**NOTE:** Accuracies and leveling times are measured at ambient temperatures (68°F). Use of the tool at extreme temperatures (even within the operating temperature range) may negatively impact these specifications.



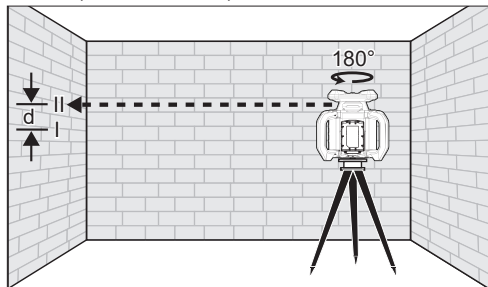
## Leveling Accuracy for Horizontal Orientation

A tripod for this operation is suggested. Use a distance of 100' between the center of the laser and the wall. Ensure the area is clear of objects and the laser is level as possible before doing this operation. This procedure must be performed twice to check the plane accuracy for both X and Y axes.

1. Mount the laser on a tripod.
2. Turn the laser **ON** by pressing the power button, and wait for the self-leveling sequence to finish. The Leveling Mode Indicator LED will be solid green when achieved.
3. Mark the center of the beam on the wall (point I). If the laser is not visible, use a compatible receiver to find the plane and mark the center point.



4. Rotate the laser 180° without changing height, and wait for self-leveling sequence. Mark the center of the beam on the wall (point II). Ensure (point II) is as vertical as possible above or below (point I).
5. Measure the vertical distance, (d) between points (I) and (II). This is the actual height deviation of the laser in the axis checked over 200'. The maximum deviation allowed should be 3/16" at 200' (or 3/32" at 100').



6. Repeat the steps above for the other axis.

**NOTE:** If any of the above accuracies are out of spec, return to an authorized MILWAUKEE service center for recalibration.

## 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 facility for all other repairs.

### Maintain Laser Level

Maintain tools. If damaged, have the tool repaired before use at a nearest authorized MILWAUKEE service center. Accidents may be caused by poorly maintained tools.

### ONE-KEY™

**WARNING** Chemical Burn Hazard. This device contains a lithium button/coin cell battery. A new or used battery can cause severe internal burns and lead to death in as little as 2 hours if swallowed or enters the body. Always secure the battery cover. If it does not close securely, stop using the device, remove the batteries, and keep it away from children. If you think batteries may have been swallowed or entered the body, seek immediate medical attention.



### Internal Coin Cell Battery

An internal coin cell battery is used to facilitate full ONE-KEY™ functionality.

To replace the coin cell battery:

1. **WARNING!** Remove tool's battery to avoid starting the tool.
2. Loosen the screw(s) and open the coin cell battery door.
3. Remove the old coin cell battery, keep it away from children, and dispose of it properly.
4. Insert the new coin cell battery (3V CR2032), with the positive side facing up.
5. Close the battery door and tighten the screw(s) securely.

**WARNING** To reduce the risk of personal injury and damage, never immerse your tool in liquid or allow a liquid to flow inside them.

### Cleaning

Clean dust and debris from any vents. Keep tool 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 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 Aperture Windows

Always wear eye protection. 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 or Repair, return the tool, battery pack, and charger to nearest authorized MILWAUKEE service center.