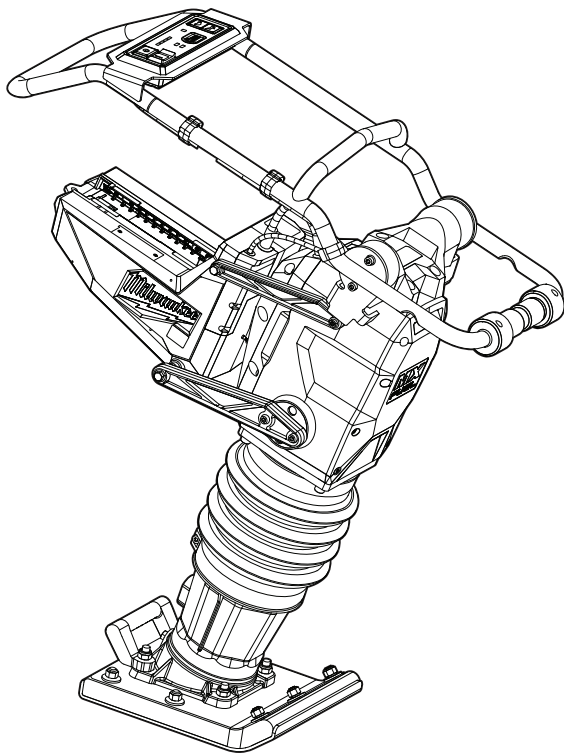




OPERATOR'S MANUAL



Cat. No.
MXF RAM60

MX FUEL™ RAMMER

WARNING

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

GENERAL POWER TOOL SAFETY WARNINGS

⚠WARNING Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. **Save all warnings and instructions for future reference.** The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

WORK AREA SAFETY

- **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres,** such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
- **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

ELECTRICAL SAFETY

- **Power tool plugs must match the outlet.** Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- **Avoid body contact with earthed or grounded surfaces,** such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the cord.** Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- **When operating a power tool outdoors,** use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- **If operating a power tool in a damp location is unavoidable,** use a residual current device (RCD) protected supply. Use of a RCD reduces the risk of electric shock.

PERSONAL SAFETY

- **Stay alert, watch what you are doing and use common sense when operating a power tool.** Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- **Use personal protective equipment.** Always wear eye protection. Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
- **Prevent unintentional starting.** Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

- **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- **Dress properly.** Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
- **If devices are provided for the connection of dust extraction and collection facilities,** ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.
- **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

POWER TOOL USE AND CARE

- **Do not force the power tool.** Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source and/or remove the battery pack,** if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- **Maintain power tools and accessories.** Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- **Use the power tool, accessories and tool bits etc. in accordance with these instructions,** taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.
- **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and 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 behaviour 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 130°C (265°F) 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.

SERVICE

- Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.
- Never service damaged battery packs. Service of battery packs should only be performed by the manufacturer or authorised service providers.

**SPECIFIC SAFETY RULES FOR
RAMMER**

- AWARNING** To reduce the risk of injury, wear protective footwear when operating the tool.
- Always wear hearing protection. Wear appropriate respiratory protection and eye protection.
 - The declared noise emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or poorly maintained, the noise emission may differ.
 - When unattended, lay horizontal.
 - Use caution when operating on slopes. Stay above the machine when on a sloped surface.
 - Pay close attention to side walls during trench applications. Unstable walls may collapse due to vibration from the machine.
 - Follow site rules and regulations.
 - Keeps hands and feet away from moving parts.
 - Do not use accessories which are not specifically designed and specified by the tool manufacturer. Just because the accessory can be attached to your machine, it does not assure safe operation.
 - Do not operate machine with battery locked in place. Only lock for storage.
- AWARNING** To reduce the risk of injury, when working in dusty situations, wear appropriate respiratory protection or use a suitable dust extraction solution.

- Chemical Burn Hazard. Keep coin cell battery away from children.
 - 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.
- AWARNING** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
- lead from lead-based paint
 - crystalline silica from bricks and cement and other masonry products, and
 - arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

**READ AND SAVE ALL INSTRUCTIONS FOR
FUTURE USE**

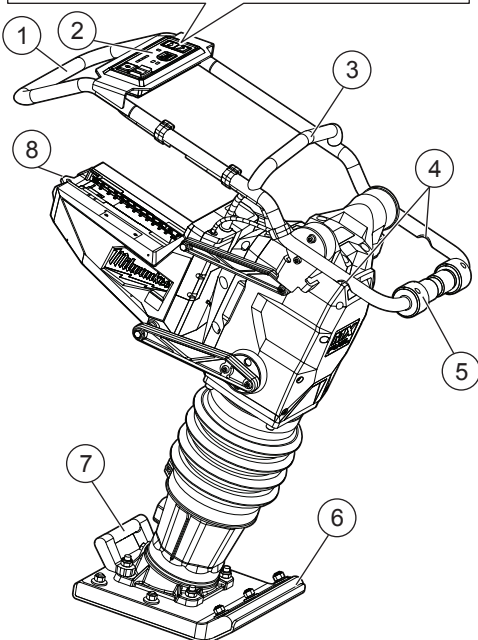
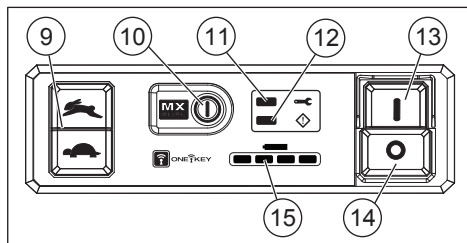
ADDITIONAL BATTERY SAFETY RULES

- AWARNING** 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.
- AWARNING** Do not charge non-rechargeable batteries.

SPECIFICATIONS

Cat. No.....	MXF RAM60
Battery Type	MX FUEL™
Charger Type.....	MX FUEL™
Weight (Tool only).....	72 kg**
Oil Type	80W-90
Oil Capacity.....	800 ml
Impact force.....	16.9 kN
Recommended Ambient Operating Temperature.....	-17°C to 51°C

FUNCTIONAL DESCRIPTION



- | | |
|---------------------|-----------------------------|
| 1. Handle | 9. Speed control buttons |
| 2. User controls | 10. Arm button |
| 3. Lifting point | 11. Oil change interval LED |
| 4. Handle notches | 12. AUTOSTOP™ alert LED |
| 5. Roller | 13. Start |
| 6. Ramming shoe | 14. Stop |
| 7. Transport handle | 15. Fuel gauge |
| 8. Battery lock | |

SYMBOLLOGY



Volts



Direct Current



⚠ WARNING Risk of Electric Shock



Safety Alert Symbol



Read Operator's Manual



Wear hearing protection. Wear appropriate respiratory protection and eye protection.



Wear protective gloves.



Wear non-slip protective footwear.



When unattended, lay horizontal.



Guaranteed Sound Power*



Use lifting point.



Do not lift with forks.



Do not lift with excavator bucket.



Lifting Weight**



ONE-KEY™



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



Do not dispose of electric tools together with household waste material. Electric tools and electronic equipment that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

* See on-product marking for decibel rating.

** Lifting weight includes the weight of the tool and heaviest expected accessories. Always add in the weight of the battery pack if installed during lift.

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.

Inserting/Removing the Battery

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

⚠ WARNING Always remove battery pack before changing or removing accessories.

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

⚠ WARNING Only use accessories specifically recommended for this machine. Others may be hazardous. Always remove battery pack any time the tool is not in use.

Fuel Gauge

When the machine is armed, the fuel gauge displays the battery pack's remaining run time. The fuel gauge mirrors the fuel gauge on the battery pack. When less than 10% of charge is left, 1 light on the fuel gauge will flash. When the battery reaches 0% charge, the fuel gauge will flash 8 times. Charge the battery pack.

10-32%

32-55%

55-77%

77-100%

Less than 10% if first light flashes 4 times

Transportation

Lift the machine using the designated lifting point whenever possible to transport. For short distances, notches in the handle are available to carry the machine by hand with a rod. Use the transport handle and roller when loading into a vehicle.

Hoisting with a device:

⚠ WARNING To reduce the risk of injury from a falling machine, do not lift with forks. Do not lift with an excavator bucket. Only hoist machine with undamaged lifting gear rated for the application.

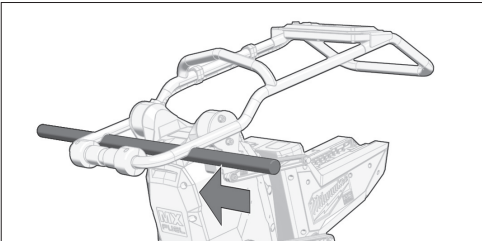
1. **⚠ WARNING** Remove battery to avoid starting the machine.
2. To hoist the machine, use the lifting point as the hoist point (see "Functional Description"). Ensure the hoisting strap will not slip or contact other parts.

Lifting with handle notches:

⚠ WARNING Use multiple people whenever it is necessary to lift or carry the machine. Machine is heavy. Lift with legs, not back. Always clear the area of obstructions before transporting.



1. **⚠ WARNING** Remove battery to avoid starting the machine.
2. Place a rod, minimum 45 mm (1-3/4") diameter under the handle notches.

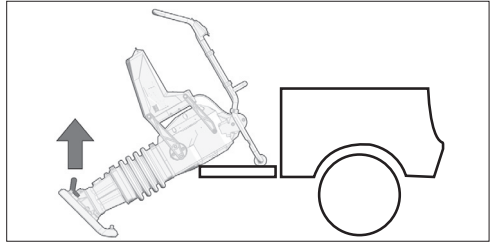


3. Using two people, one on each side of the machine, lift the machine using two hands; one on the rod and the other on the handle.
4. Only lift high enough to transport.
5. Set down machine before releasing grip on the rod and handle.

Lifting into a vehicle:

⚠ WARNING To reduce the risk of injury, secure the machine before transporting to prevent tipping, rolling, slipping and falling.

1. **⚠ WARNING** Remove battery to avoid starting the machine.
2. Position the machine against the vehicle.
3. Use the transport handle and roller to load into a vehicle.



ONE-KEY™

To learn more about the ONE-KEY™ functionality for this tool, go to www.milwaukeeetool.com.au/innovation/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, always wear proper eye protection marked to comply with AS/NZS 1337.1. When working in dusty situations, wear appropriate respiratory protection or use a suitable extraction solution.

Wear protective footwear when operating the rammer.

Wear ear protectors. Exposure to noise can cause hearing loss.

Always keep the tool, battery bay, and battery clean according to the Maintenance section. Clean daily and before storing.

Arming the Machine

The MX FUEL™ machines must be armed prior to use. Even with the battery pack inserted, the trigger and machine functions will not operate until the machine is armed.

To arm the machine:

1. Insert the battery pack.
2. Press the arm button. The MX FUEL™ icon will light. The machine will become armed in 2 seconds.
3. After 15 minutes of inactivity, the machine will enter sleep mode. The MX FUEL™ icon will go off and the trigger and LEDs are un-operational.
4. Press and hold the arm button for 1 second to reactivate the machine.
5. Press and hold the arm button for 1 second to unarm (turn off) the machine. The MX FUEL™ icon will go off.

Operation

⚠WARNING Crush hazard. To reduce the risk of serious injury:

Always be sure of your footing. A slip and fall can cause serious personal injury.

Use caution when operating on slopes. Stay above the machine when on a sloped surface.

Slippery or unstable surfaces may cause a loss of balance or control of the machine.

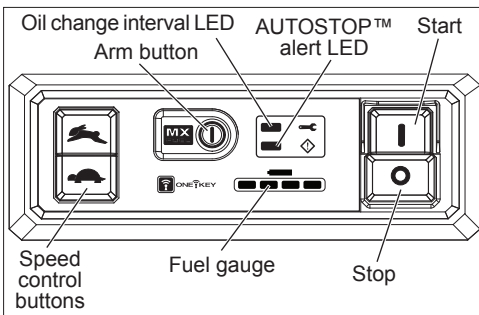
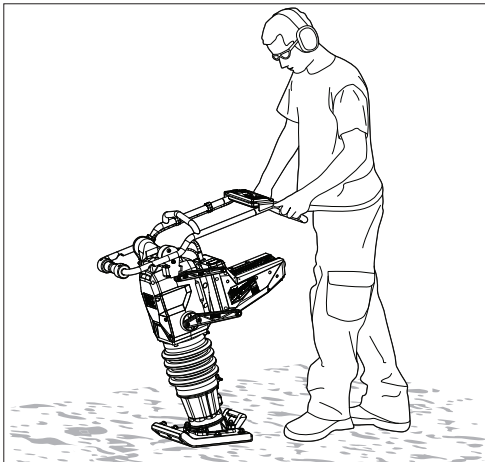
Maintain a firm grip on the machine whenever it is turned on. A loose grip can result in the loss of control of the machine.

Pay close attention to trench side walls, trenches, changing ground conditions, structures and uneven ground. Unstable walls may collapse due to vibration from the machine. Use caution when operating near pits, ditches, or plateaus. Ensure the ground has the adequate load-bearing capacity to support the weight of the machine and operator.

If you lose control of the machine, do not try to stop the machine.

Check for damaged parts or loose hardware before operating the machine. Do not operate the rammer with damaged or loose parts.

The rammer is intended to be used for tamping in earth, gravel, and mixed soils. DO NOT use the machine for driving pilings, tamping rock beds, or on other materials that are harder than the machine is intended for.



1. To turn on the machine, arm the machine.
NOTE: The stop button LED will also light when the machine is armed.
2. Set the speed.
NOTE: Defaulted to high.
3. To start the tamping action, press the start button.
4. The rammer will begin to move and advance while tamping.
5. Guide the machine.
6. To **stop** the tamping action, press the stop button.
7. To turn **off** the machine, unarm the machine.
8. **⚠WARNING** Remove battery to avoid starting the machine.
9. After each use, clean the machine by tipping it over to remove dirt, stones, and mud from the shoe. Use an air hose or pressure washer, if needed. See "Maintenance" for further cleaning instructions.

Oil Change Interval LED

After 50 hours (initially) and later after 200 hours of tamping action, the oil change interval LED will light to alert the user to change the oil, see "Changing the Oil".

To **reset** the oil change interval LED:

1. While the machine is armed and the oil change interval LED is lit, press the arm button 3 times rapidly. The oil change interval LED will begin blinking for 5 seconds.
2. While the oil change interval LED is blinking (within 5 seconds), press and hold the arm button until the oil change interval LED turns off.

AUTOSTOP™

If the tool is severely tipped or dropped, the tool will cease tamping action and the stop button LED will change from solid to blinking.

To **reset** AUTOSTOP™:

1. Place the machine in an upright position.
NOTE: Once upright the stop button LED may remain blinking or return to solid.
2. Press the stop button.
3. To **start** the tamping action, press the start button.

AUTOSTOP™ Alert LED

The AUTOSTOP™ Alert LED will light when AUTOSTOP™ functionality is lost. For repairs, return the machine to the nearest authorised service centre.

Cold Starting

If this machine is stored for a long period of time or at cold temperatures (less than 0°C), it may initially operate with a shorter stroke until warmed up. When moving from cold storage to a warm environment allow the machine to warm up for at least 15 minutes before beginning work. The colder the machine is, the longer it will take to warm up. Once warmed up, the machine will resume normal operation.

MAINTENANCE

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

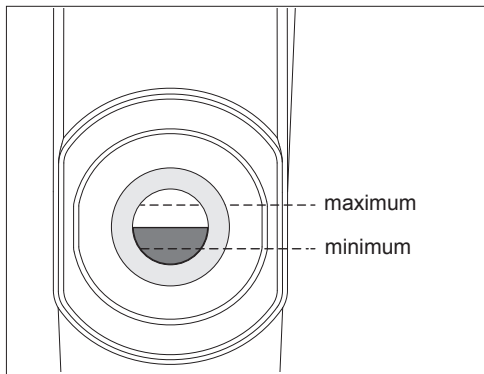
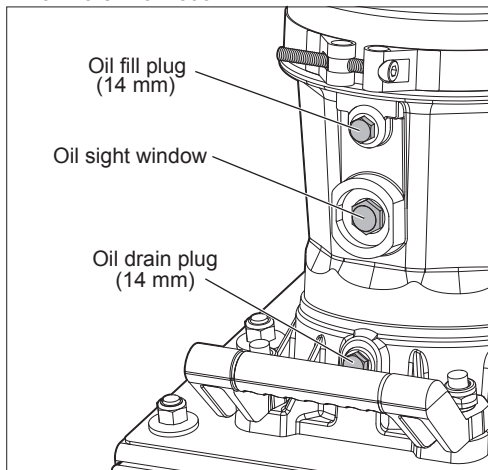
Maintaining Tool

Keep this machine, battery pack and charger in good repair by adopting a regular maintenance program. Inspect the machine for issues such as undue noise, misalignment or binding of moving parts, breakage of parts, or any other condition that may affect the machine operation. Return the machine, battery pack, and charger to a **MILWAUKEE®** service facility for repair.

If the machine does not start or operate at full power with a fully charged battery pack, clean the contacts on the battery pack. If the machine still does not work properly, return the machine, charger and battery pack, to a **MILWAUKEE®** service facility for repairs.

Changing the Oil

1. **⚠WARNING** Remove battery to avoid starting the machine.
2. Place the machine on a level surface.
3. Tip machine back so it is resting on the handle.
4. Place a suitable oil container under the drain plug on the foot housing.
5. To drain, remove the oil drain plug. Let oil drain into a suitable oil container. Dispose of the waste oil in compliance with all applicable regulations. Contact your local waste management authority for more information.

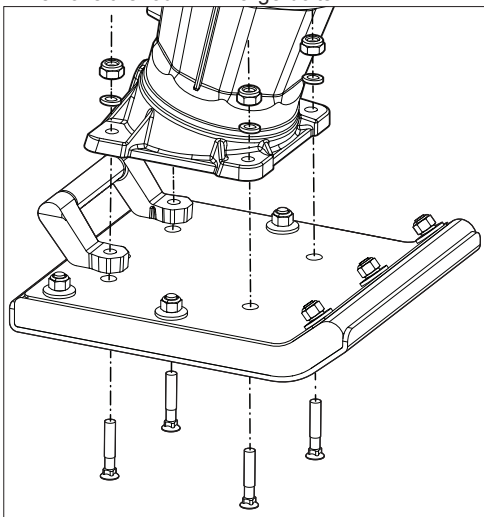


6. Tip the machine forward so it rests on the roller.
7. Replace the oil drain plug.
8. Remove the oil fill plug.
9. Refill with 800 ml of 80W-90 SE, SF or higher grade motor oil through the oil fill port.
10. Replace oil fill plug and using a calibrated device torque to 30 Nm.
11. Stand the machine up and check level in sight glass.

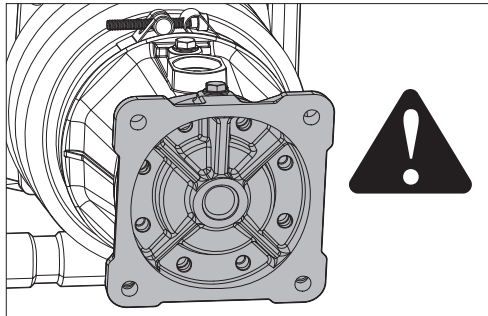
Removing/Installing the Shoe

Check shoe for cracking, bending, loose or broken fasteners or other signs of wear. Tighten or replace damaged hardware, or replace shoe assembly when damage or poor performance occurs.

1. **⚠WARNING** Remove battery to avoid starting the machine.
2. To remove the shoe, use a 19 mm wrench to remove the four M12 large bolts.



⚠DANGER Parts under compression; do not disassemble further. Serious injury may occur.



3. Remove the shoe.
4. Install a new shoe.
5. Hand tighten the bolts. Using a calibrated device torque the four M12 large bolts to 75 Nm.

Internal Coin Cell Battery

⚠️ 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.



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 machine.
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 electric shock, fire, and/or serious personal injury due to short circuit, never stick a tool, brush, or object into the battery terminals. Do not allow fluids to flow into battery pack.

Never immerse your machine in liquid or allow a liquid to flow inside it.

Dust Contamination

Inspect the battery bay and battery before and after each use for dust contamination. Dust contamination could cause the machine to not start, not operate at full power, or shut down unexpectedly. To clean, use a damp, soapy cloth to wipe the battery bay, machine terminals, and outside of the battery terminals. Do not allow liquid to flow inside battery. If the machine still does not work properly, return the machine, charger, and battery pack to the nearest authorised service centre.

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.

Repairs

For repairs, return the tool, battery pack and charger to the nearest authorised service centre.

ACCESSORIES

⚠️ WARNING Use only recommended accessories. Others may be

hazardous.

For a complete listing of accessories, go online to milwaukeeeetool.com.au / milwaukeeeetool.co.nz or contact an authorised distributor.

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 milwaukeeetool.com.au/milwaukeeetool.co.nz.

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