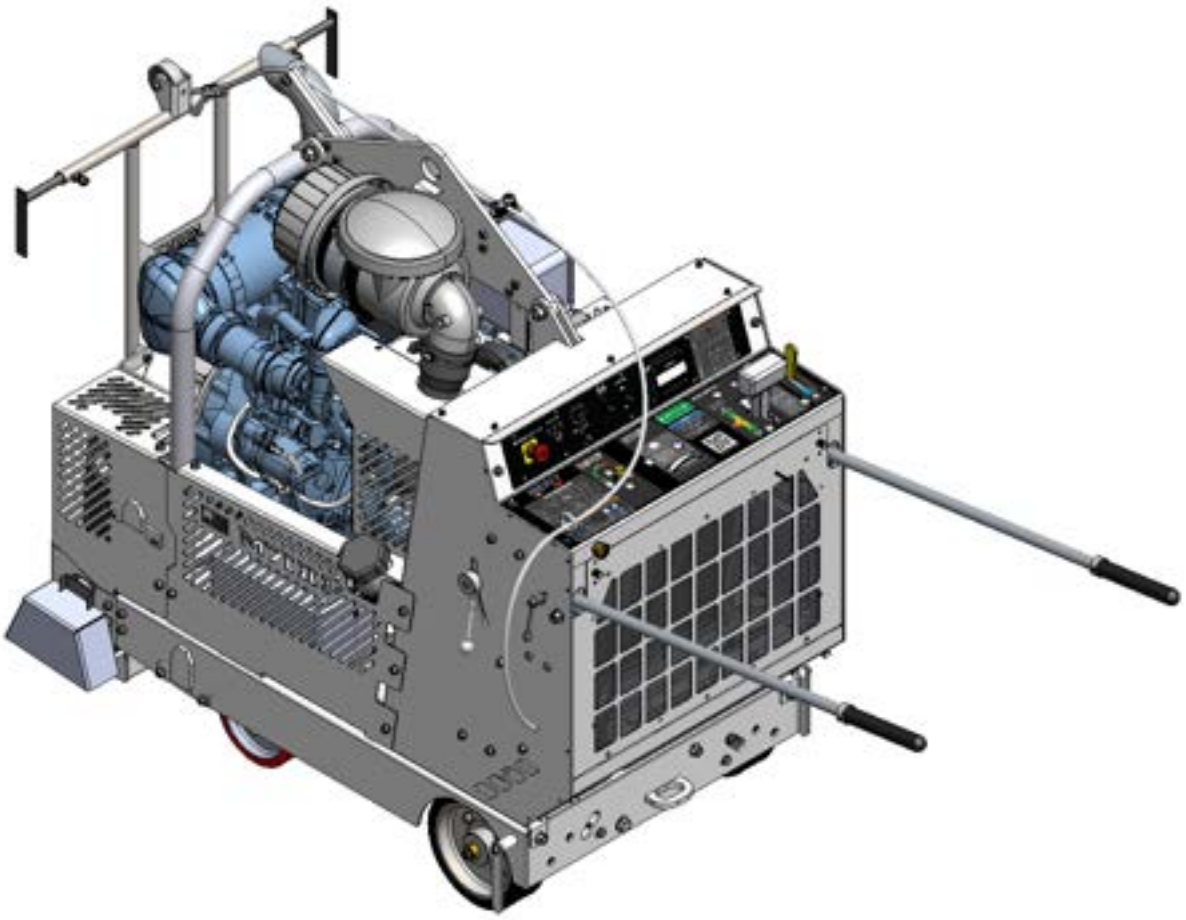
MERIT

AN ICS BRAND



ICS/Merit M700 Flat Saw Operator Manual

ICS/Merit, is committed to your satisfaction and continuously strive to improve our product line to deliver the most reliable and high-performing equipment in the industry.

Before operating or maintaining your ICS/Merit flat saw, take the time to read and understand this manual thoroughly. Failure to follow the safety instructions provided may result in fire, serious injury, or death. Please retain this manual for future reference.

Safety is top priority in the design and manufacture of ICS/Merit products. However, even the most carefully engineered equipment can become hazardous through a single careless act. While safety is built into the design, true hazard control depends on the awareness, judgment, and proper training of those who operate, transport, maintain, and store the equipment. As the saying goes, "The best safety device is an informed, careful operator." Be that kind of operator.

Care must be exercised by anyone working with or near this saw. Operators must be properly trained or supervised by experienced personnel and must understand the risks involved. This manual cannot cover every possible situation, so it is the responsibility of the owner or employer to ensure that all individuals who operate or service this equipment have read and understood its contents.

This includes:

- Product safety
- Product setup for different applications
- Product operation
- Product maintenance

⚠ DANGER Any improper or unintended use of this equipment is not the responsibility of ICS/Merit. Such use immediately voids all warranties and may result in equipment damage, personal injury, or death. Always comply with local laws and regulations.

Refer to the M700 Parts List for additional information and diagrams. For engine-related safety, operation, and maintenance instructions, consult the engine manufacturer's documentation. Refer to the blade manufacturer's guidelines for blade-specific safety and maintenance.

Before operating or servicing the equipment, record the saw's serial number, along with the engine model and engine serial number, for future reference.

Specifications subject to change without notice. For the most up-to-date version of this manual, please visit: https://icsdiamondtools.com/en/document-library

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INTRODUCTION	2
TABLE OF CONTENTS	3
CRATE TEAR DOWN	4 - 5
SPECIFICATIONS	6 - 9
TERMINOLOGY	10
WARNINGS & LABELS	11 - 15
SAFETY INSTRUCTIONS	16 - 30
OPERATION	31 - 39
MAINTENANCE	40 - 53
DAILY MAINTENANCE	54 - 73
REFERENCE / WARRANTY	75

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⚠WARNING Perform uncrating operations only on a flat, level surface. Do not reach under or between the saw and the pallet at any time. Failure to follow these instructions could result in crushing injuries from shifting or falling equipment.

Figure 1

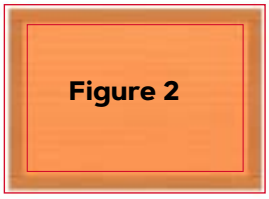

Figure 2

Step 1: Remove the top cover.

First remove all screws inside the red box (Figure 2) then safely remove the top cover (Figure 1)

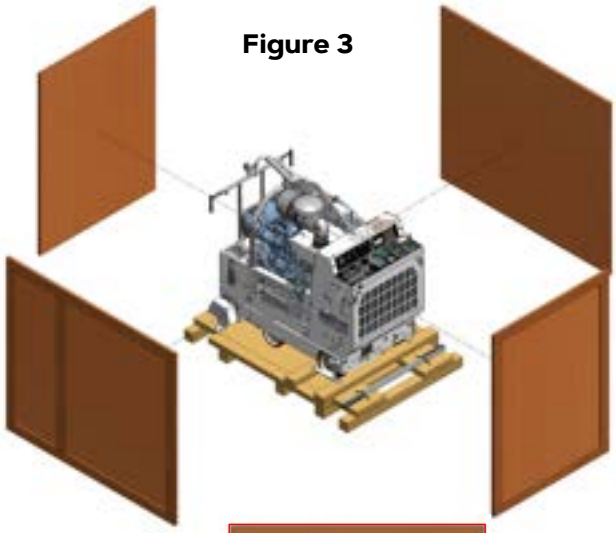

Figure 3

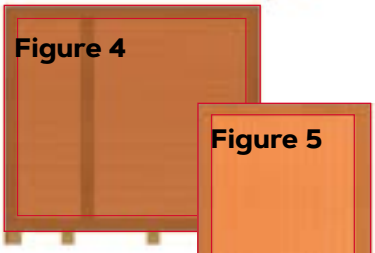

Figure 4

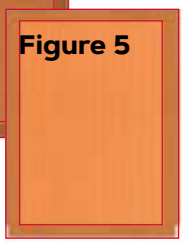

Figure 5

Step 2: Remove the side covers.

First remove all screws inside the red boxes (Figure 4 & 5) then safely remove the side covers (Figure 3).

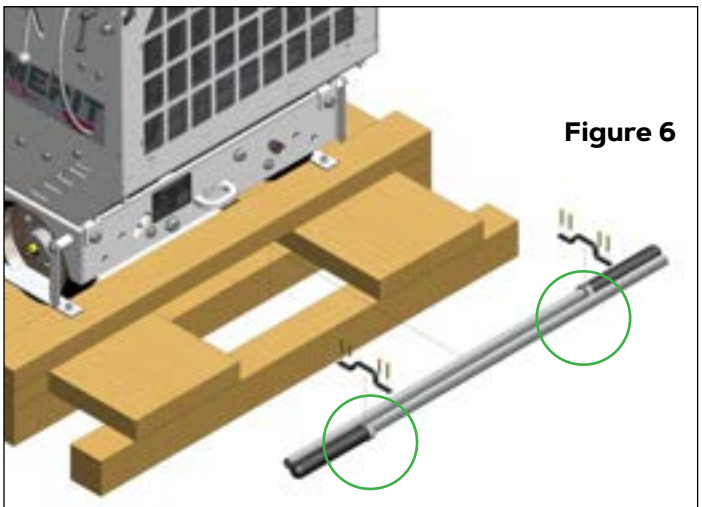

Figure 6

Step 3: Remove any accessories

Remove the handlebars by unscrewing the screws securing the band strap around the bars (Figure 6). Check the pallet for any other accessories and remove.

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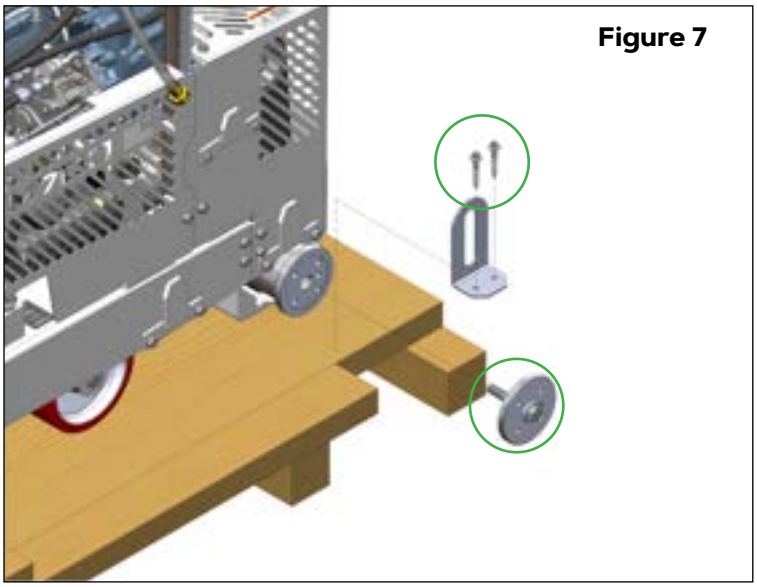


Figure 7

Step 4: Remove the front strapping bracket.

Using a 15/16, remove the left and right blade bolts and outer collars (if necessary), then remove the lag bolts securing the front strapping bracket on both the left and right side (Figure 7). Reattach outer collar and blade bolts securely, ensuring bolt is torqued to 113-125 ft-lbs

WARNING Never operate the saw with a loose, damaged, or improperly torqued blade bolt.

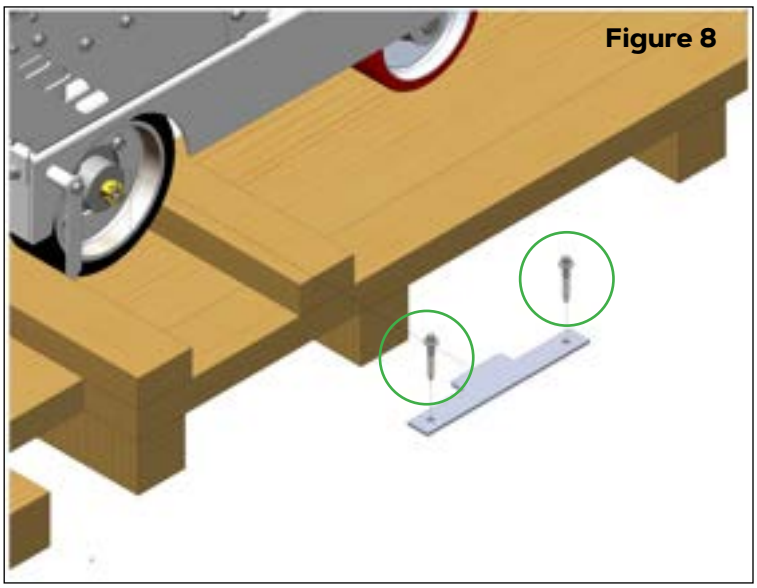
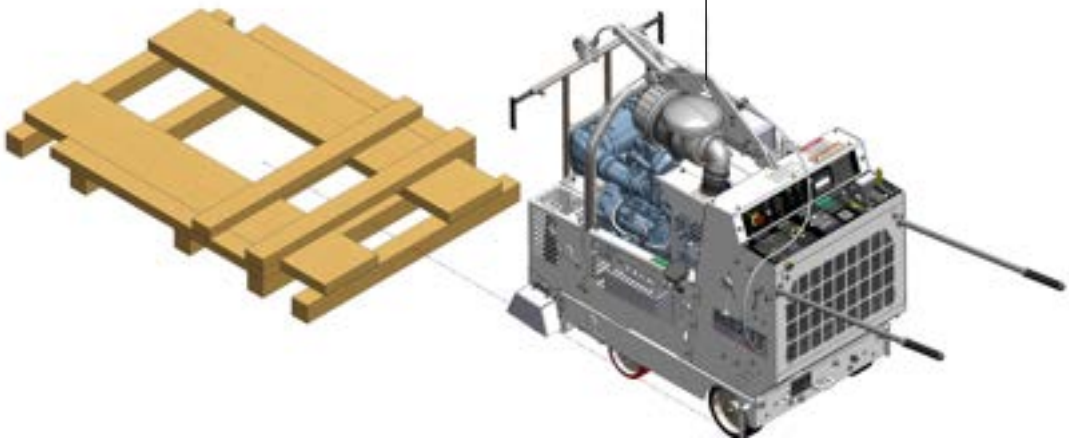


Figure 8

Step 5: Remove the rear strapping bracket.

Remove the lag bolts securing the rear strapping bracket on both the left and right side (Figure 8).

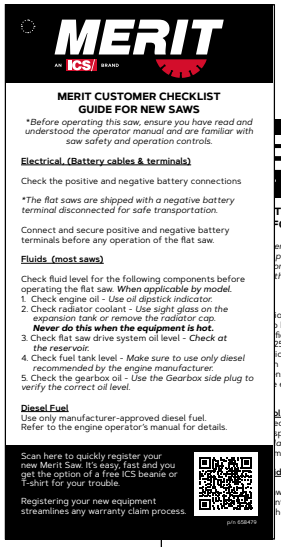
ALWAYS use the lift eye and only certified equipment, chains, or straps rated to handle the weight of the saw.



DANGER Keep all body parts clear of the area directly beneath the saw. Unexpected lowering or falling of the unit will result in death or serious injury

Step 6: Remove the saw from the pallet.

Safely lift the saw straight up until the wheel can clear the pallet, then remove the pallet from underneath the saw ensuring no body parts are directly under the saw. Finally, safely lower the saw onto the ground and follow the hangtag instructions for new saw set up.



MERIT

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MERIT CUSTOMER CHECKLIST GUIDE FOR NEW SAWS

**Before operating this saw, ensure you have read and understood the operator manual and are familiar with saw safety and operation controls.*

Electrical, (Battery cables & terminals)

Check the positive and negative battery connections

**The flat saws are shipped with a negative battery terminal disconnected for safe transportation.*

Connect and secure positive and negative battery terminals before any operation of the flat saw.

Fluids (most saws)

Check fluid level for the following components before operating the flat saw. *When applicable by model.*

1. Check engine oil - *Use oil dipstick indicator.*
2. Check radiator coolant - *Use sight glass on the expansion tank or remove the radiator cap.* ***Never do this when the equipment is hot.***
3. Check flat saw drive system oil level - *Check at the reservoir.*
4. Check fuel tank level - *Make sure to use only diesel recommended by the engine manufacturer.*
5. Check the gearbox oil - *Use the Gearbox side plug to verify the correct oil level.*

Diesel Fuel

Use only manufacturer-approved diesel fuel. Refer to the engine operator's manual for details.

Scan here to quickly register your new Merit Saw. It's easy, fast and you get the option of a free ICS beanie or T-shirt for your trouble.

Registering your new equipment streamlines any warranty claim process.

p/n 658479

Hang Tag

Engine	
Model*	Deutz TD 2.9 L4
Power**	55.4 kW / 74 hp
Air Filter	Dual Stage
Cylinders	4
Emission Type	DOC (Diesel Oxidation Catalyst)
Propulsion	Self-Propelled
Warranty****	1 - 3 Years limited
EPA/CARB	Tier 4 Final

Dimensions	
Net/Gross Weight	2050 lbs
Saw Height	54 in / 137 cm
Saw Width (without outer collar)	32.7 in / 83 cm
Saw Width (with outer collar)	35.2 in / 89.4 cm
Saw Length (tower to chassis)	57.8 in / 147 cm
Wheelbase	23.5 in / 59.7 cm

Blade	
Blade Capacity	18 – 42 in / 46 – 107 cm
Arbor Size	1 in / 2.5 cm
Max Cut Depth	17.5 in / 44.5 cm
Depth Control	Electric Over Hydraulic
Depth Adjustment	Toggle Switch
Blade Mounting	Left and Right Quick Disconnect 5/8-11" x 4" bolts

Drive	
Drive Speed	0-240 FPM

Fuel and Lubrication	
Fuel Type	Diesel
Authorized Fuel Inside US	Ultra-Low-Sulphur Diesel
Authorized Fuel Outside US	Consult Engine Manual
Fuel Capacity	9.5 US Gallon / 36 Liter
Engine Oil***	Shell Rotella T4 15W40
Engine Oil Capacity	10.5 quart / 9.9 Liters
Gearbox Oil	SAE80W140
Gearbox Oil Capacity	36 oz / 1 Liter
Hydraulic Drive/Lift Pump Oil	SAE20W-50
Hydraulic Drive/Lift Pump Oil Capacity	3 quart / 2.8 Liter
50/50 Premix Coolant Fluid	Valvoline Zerex G40 or G48 50/50 mix
Coolant Fluid Capacity	15.75 Quarts / 14.90 Liter
Cutting Water Requirements and Source Temp	For extreme weather - ambient temperatures of ≥100° F or 37.7 °C 2 gpm / 8 lpm Do not exceed 100 psi. Water temp of less <90° F /32° C
Grease	NLGI 2, Lithium-based grease

NOTICE Failure to use only Valvoline Zerex G40 or G48 50/50 mix will void engine warranty. Do not mix coolant directly in the tank. For best results and to ensure the correct 50/50 ratio, always prepare the mixture in a separate container before filling the system.

*For more engine technical information, refer to the Deutz engine operator's manual.
**Gross power rating as per 74.3 hp, at specified rpm by engine manufacturer.
***Refer to the Deutz engine operator's manual for engine oil type according to the ambient temperature.
**** Refer to Deutz website for full details: https://www.deutzusa.com/legal/warranty-statements.

NOTICE Use of unauthorized fuel, coolant, or oil will void all warranties.

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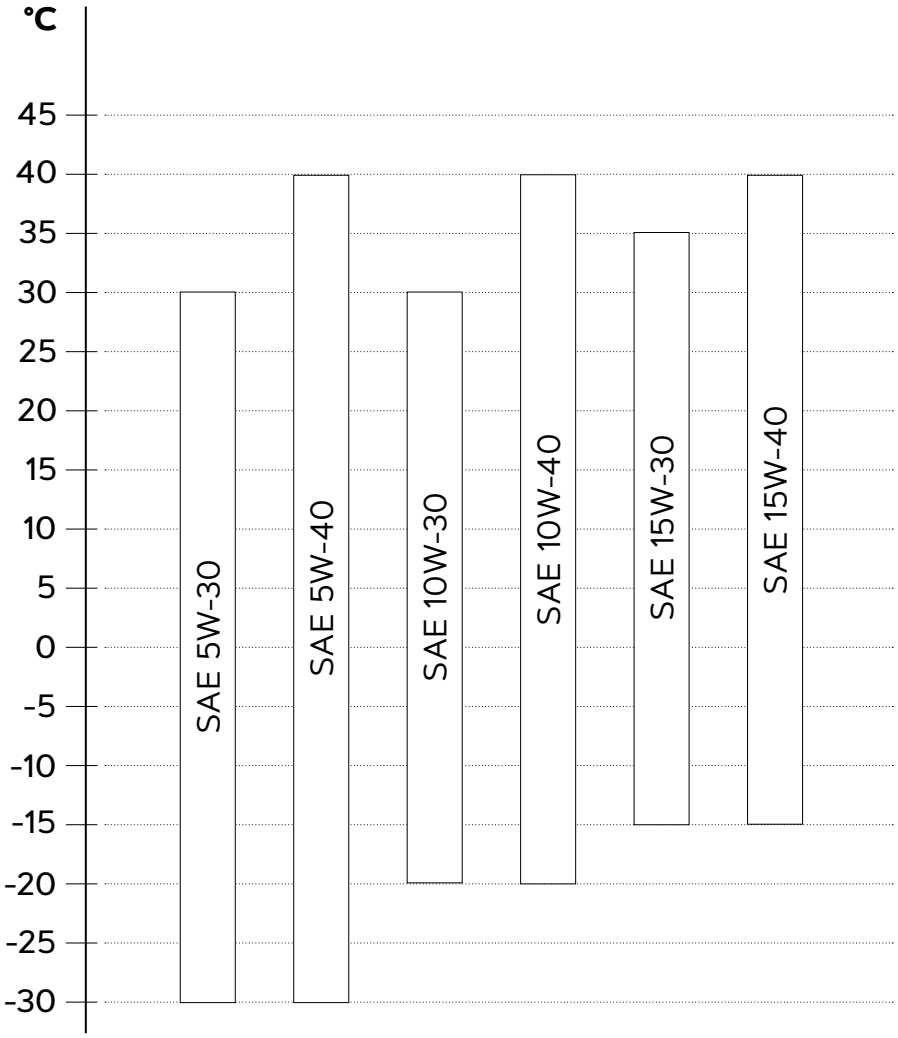
Recommended Oil



For general operation, use **SAE 15W40** or **SAE 10W30** meeting **API Class CJ-4**, **ACEA E6-08**, or **ACEA E9-08** specifications.

Other oil viscosities listed in the chart may be used if the average ambient temperature in your area falls within the specified range.

Always refer to the engine operator manual for detailed guidance on oil selection and maintenance procedures.

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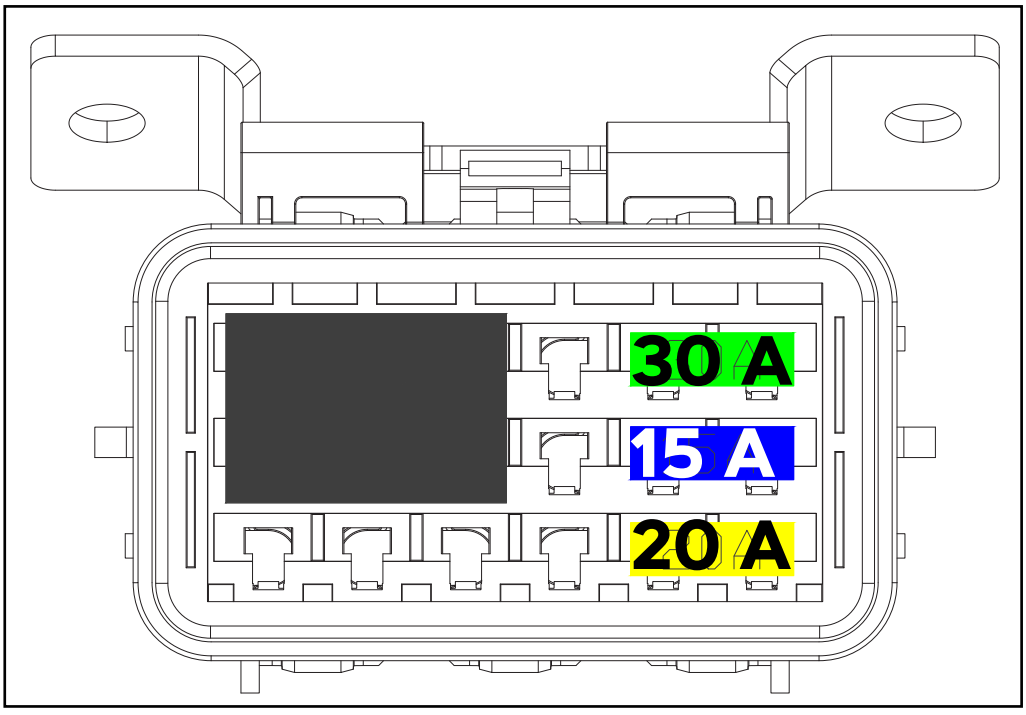
WARNING Only use fuses listed below. Fuses are designed to protect electrical circuits from overloading and prevent fires. Using the wrong type or rating of fuse can lead to electrical malfunctions, overheating, and potentially fire hazards.

Fuses and Battery

OEM Harness Fuses				
Location	**Fuse Size**	**Protected Component**	**Fuse Type**	**Fuse Color**
Fuse Box	30A	Engine ECU	ATM	Green
Fuse Box	15A	Display, Raise & Lower, Night light, Ignition, Depth Stop	ATM	Blue
Fuse Box	20A	Fuel Pump	ATM	Yellow
Fuse Box	Relay	Fuel Pump	301-1A-C-R1-U03-12VDC	Black
In-Line	100A	Glow Plug	Maxi	not shown

DANGER Always wear safety glasses and gloves when handling the battery. Charge the battery in a well-ventilated area to prevent exposure to harmful fumes.

Battery	
Group	94R
CCA/CA	790



Fuse Box Layout

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Key Information to Save

Information for Ordering Parts or Calling Technical Services		
Model	**Equipment Serial Number**	**Engine Serial Number**

Quick Reference for Frequently Replaced Parts

Deutz part numbers listed. Visit your local Deutz dealer to purchase.

Oil Filter: 01174416
Primary Air Filter: Wix Primary 46562 | Baldwin Primary RS3544
Secondary Air Filter: Wix Seconary 46569 | Baldwin Secondary RS3545
Deutz Pre Fuel Filter: 04130241
Deutz Main Fuel Filter: 00319257

All ICS/Merit Part Numbers

Hydraulic Drive System Filter: 23239 (WIX Brand PN 57253)
Forward and Reverse Cable: 658590
Raise and Lower Switch: 657590
Rear Wheels: 639195
Front Wheels: 655391
Collar Set:
- 5" - 651853
- 6" - 658799
- 7" - 658800

Throttle Switch: 22224
Blade Bolt:
- Right Hand Thread - 490390
- Left Hand Thread - 490391

Main Belts:
- 26in Set Up - 4-3VX450 (x4)
- 30in Set Up - 4-3VX450 (x4)
- 36in Set Up - 4-3VX465 (x4)
- 42in Set Up - 4-3VX475 (x4)

Nightlight Kit: 647921
Air Filter: 651911
Safety Sticker Sheet - 657858
Upper Decal: 652018
Lower Decal: 652019

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Terms Used Throughout This Guide

Blade Bolt: Secures the blade flange to the saw. Quick disconnect version.

Blade Depth Control: Allows to set a predetermined depth before cutting.

Blade Flange/Collar: Secures the blade to the saw.

Blade Guard: Covers blade to protect hands and feet of operator and bystanders.

Display Controller: Saw display, displays the engine parameters.

DTC: Diagnostic Trouble Code (engine error code)

Emergency Stop Button: Location is in the operator dash interface. Used to stop the engine in case of an emergency.

Free Wheel Valve: When open, the saw can be pushed and pulled freely while not running. When closed and placed on a flat surface, the saw remains stationary. Always chock the wheels before leaving the saw unattended.

Handlebars: Used to maneuver the flat saw.

Hydrostatic Pump: Drives the rear saw wheels, shares a reservoir with the lift pump.

Ignition Switch: Turns accessories on, and also starts the engine.

Levers: Used to hold the handle bar in the desired position.

Lift Pump: Lifts the blade out of the cut. Shares a reservoir with the Hydrostatic Pump.

MIL: Malfunction Indicator Lamp ("check engine light")

Nightlight Switch: Turns on the LED light for night cutting. Nightlight sold separately.

Output Shaft: Where the blade mounts to the saw.

Pointer Frame: Used as a guide for a straight cut.

Pulley: Ranges from one groove and up. Used to transfer motion by use of belts. Pulleys are commonly referred to as sheaves.

Raise and Lower Switch: Raises and lowers the saw to allow blade to cut.

Rear Access Panel: Allows for access to the rear components and underneath of the operator interface.

Reduction Gearbox: Takes high RPM from a motor and converts it to lower speed with increased torque.

Speed Control: Controls the speed and forward & reverse motion of the flat saw.

Splined Flex Plate: Used to transfer the engine rotation to the reduction gearbox.

Throttle Switch: Increases or decreases engine RPM.

Water Valve: Controls water and flow to the blade.

NOTICE Before using the equipment, familiarize yourself with the control panel and the location and operation of all buttons, levers, dials, etc.

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Warning Symbols

The following symbols are found throughout this manual and/or on the saw. They are designed to make you aware of potential hazards or unsafe practices:

SAFETY ALERT
Indicates that the following text explains a danger, warning, or caution.

READ INSTRUCTIONS
This manual contains important safety and operating information. Read it carefully and follow all instructions.

WEAR HEAD PROTECTION
Wear a protective helmet and eye, hearing, and respiratory protection when operating the saw.

WEAR LONG PANTS
Wear long pants when operating the saw.

WEAR HAND PROTECTION
Wear protective gloves when operating the saw.

WEAR FOOT PROTECTION
Wear appropriate closed-toe boots when operating the saw.

SLIPPERY SURFACE
Unsure footing can lead to accidents.

VENTILLATION REQUIRED
Only operate saw in a well-ventilated area.

FIRE DANGER
Risk of fire if warnings not followed.

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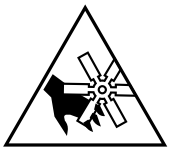
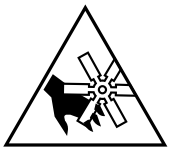
⚠ WARNING



HIGH SPEED FAN
KEEP HANDS CLEAR
WHILE MACHINERY
IN OPERATION

⚠ WARNING

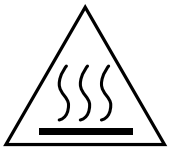


HIGH SPEED FAN
KEEP HANDS CLEAR
WHILE MACHINERY
IN OPERATION

⚠ WARNING

EXPOSED PULLEYS
AND BELTS. DO NOT
OPERATE MACHINE
WITHOUT BOLTED
GUARDS IN PLACE.

⚠ WARNING



BURN HAZARD

DO NOT REMOVE
RADIATOR CAP WHILE
SYSTEM IS HOT.

USE VALVOLINE ZEREX G48
COOLANT

⚠ WARNING

MUFFLER IS HOT!
MAY CAUSE BURNS
AND / OR IGNITION
OF MATERIAL.
AVOID CONTACT!

⚠ WARNING

EXPOSED PULLEYS
AND BELTS. DO NOT
OPERATE MACHINE
WITHOUT BOLTED
GUARDS IN PLACE.

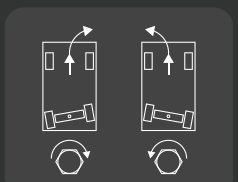
⚠ **WARNING:** Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.

TRACKING ADJUSTMENT

1. **Loosen the two Outer Bolts.**
2. **Adjust larger bolt.**
   Refer to guide on right for direction.
3. **Tighten Outer Bolts to secure.**



FREE WHEEL VALVE

ROTATE CLOCKWISE FOR DRIVE

ROTATE COUNTER-CLOCKWISE FOR NEUTRAL

DIESEL FUEL ONLY

USE ULTRA LOW SULFUR DIESEL

⚠ DANGER

DO NOT ATTEMPT TO OFFLOAD ANY PIECE OF EQUIPMENT ON UNEVEN GROUND OR SLOPE. DO NOT LEAVE EQUIPMENT UNATTENDED ON UNEVEN GROUND. INJURY OR DEATH MAY OCCUR. THIS EQUIPMENT SHOULD NOT BE OPERATED BY ANYONE UNDER THE AGE OF 18.

DO NOT JUMP-START A DEAD BATTERY ON THE UNIT. THE PROCESS OF JUMP-STARTING A DISCHARGED BATTERY CAN, UNDER CERTAIN CONDITIONS, RESULT IN BATTERY EXPLOSION FROM IGNITION OF HYDROGEN GAS RESULTING IN INJURY OR DEATH.

NOTICE

DO NOT OVER GREASE BEARINGS

NOTICE

DO NOT OVER TIGHTEN BELTS

⚠ CAUTION

THE ENGINE MUST BE LEVEL WHEN THE ENGINE OIL IS CHECKED. SEVERE ENGINE DAMAGE WILL OCCUR IF THE ENGINE IS UNDERFILLED OR OVERFILLED WITH OIL.

PN 657858 RevAA

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Explanation of Safety Alerts

Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Indicates a potential situation exists which, if not avoided, may result in damage to your flat saw or property.

Additional Warnings

Proposition 65

WARNING: This product produces gasoline or diesel engine exhaust, which is known to the state of California to cause cancer, birth defects or other reproductive harm. For more information go to: https://www.p65warnings.ca.gov

Spark Arrester Law – State of California:

"(a) Notwithstanding Section 4442 of the Public Resources Code, and except for vehicles with mufflers as provided in Article 2 (commencing with Section 27150) of Chapter 5 of Division 12, no person shall use, operate, or allow to be used or operated, any off-highway motor vehicle, as defined in Section 38006, on any forest-covered land, brush-covered land, or grass-covered land unless the vehicle is equipped with a spark arrester maintained in effective working order.

(b) A spark arrester affixed to the exhaust system of a vehicle subject to this section shall not be placed or mounted in such a manner as to allow flames or heat from the exhaust system to ignite any flammable material.

(c) A spark arrester is a device constructed of nonflammable materials specifically for the purpose of removing and retaining carbon and other flammable particles over 0.0232 of an inch in size from the exhaust flow of an internal combustion engine or which is qualified and rated by the United States Forest Service.

(d) Subdivision (a) shall not be applicable to vehicles being operated off the highway in an organized racing or competitive event upon a closed course, which is conducted under the auspices of a recognized sanctioning body and by permit issued by the fire protection authority having jurisdiction."

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Respiratory Hazards

Cutting, especially dry cutting, produces dust and fumes known to cause illness, death, cancer, respiratory disease, birth defects, and/or other reproductive harm. Dust often contains silica, a basic component of sand, quartz, brick clay, granite, and numerous other minerals and rocks.

Exposure to excessive amounts of dust can cause:

- Respiratory disease, including chronic bronchitis, silicosis, and pulmonary fibrosis. These diseases can be fatal.
- Skin irritation and rash.
- Cancer, according to the National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC).

Take precautionary steps:

- Avoid inhalation of and skin contact with dust, mist, and fumes.
- Wear and ensure that all bystanders wear appropriate respiratory protection, such as dust masks designed to filter out microscopic particles. (See OSHA 29 CFR Part 1926.1153.)

For additional information, contact your employer, the Occupational Safety and Health Administration (OSHA), or The National Institute for Occupational Safety and Health (NIOSH).

In Canada, Health Canada: https://www.canada.ca/en/health-canada.html.

Personal Protective Equipment

Always wear approved and properly fitted personal protective equipment (PPE) when using this product. PPE cannot fully prevent injury. It only decreases the degree of the injury if an accident does occur. Check and verify that personal protective equipment is in good working condition.

The following list may not be all-inclusive. Consult your company's safety director to ensure you are adhering to all local, regional, and company requirements.

- Use an approved protective helmet.
- Use approved respiratory protection.
- Use approved hearing protection.
- Use approved eye protection.
- Use protective gloves.
- Use safety-toe boots and anti-slip soles.
- Use approved clothing.

Fire Extinguisher

Always keep a fire extinguisher nearby when using this equipment.

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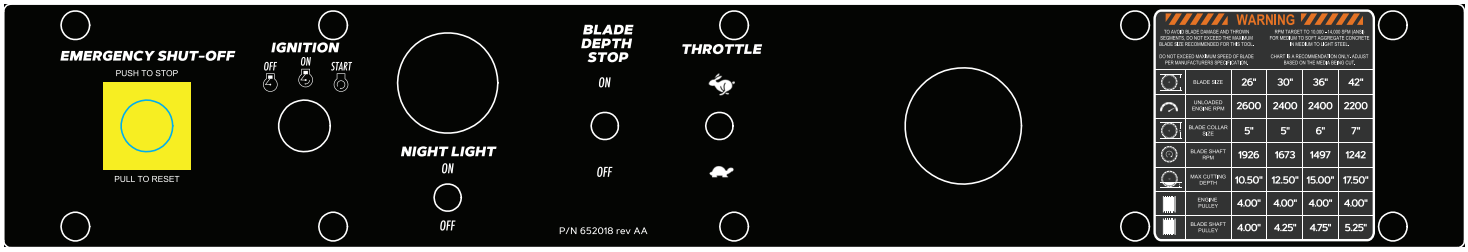
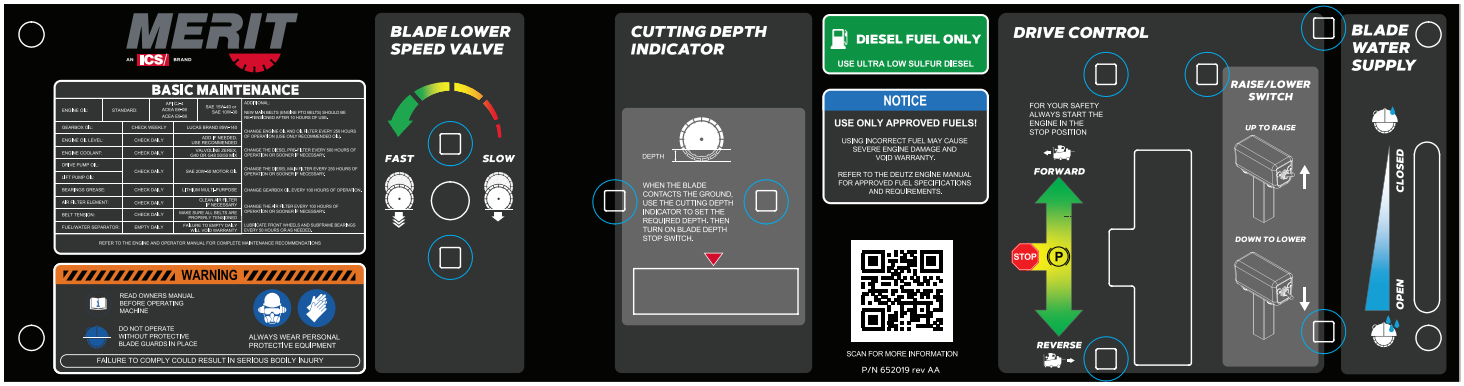
Product Identification Label Sheet

Upper Decal - 652018



Lower Decal - 652019



NOTICE Failure to use engine manufacturer's recommended oil will void all warranties.

To receive decals and instructions in French or Spanish, please call: 800.321.1240.
Pour recevoir les autocollants et les instructions en français ou en espagnol, veuillez appeler 800.321.1240.
Para recibir calcomanías e instrucciones en francés o español, llame a: 800.321.1240.

Label Placement

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General Precautions

⚠WARNING This product is a dangerous tool. It may cause severe injury and/or death to the operator or bystanders if you are not careful or if it is used incorrectly. Prior to operating or servicing the equipment, take the time to read and understand all of the material in this manual.

ICS/Merit requires all who work with this saw to read this manual and take the necessary precautions to ensure their safety and the safety of others in the work area. The manufacturer does not assume responsibility for any accident due to improper usage or modifications of the equipment.

Delivery Checks

Immediately upon delivery of the new equipment and before putting it into service:

- Read the manual completely.
- Read the supplied engine manual.
- Check the general condition of the flat saw.
- Check engine oil level. Check fuel levels.
- Recommended lubricants are detailed in the Lubrication section.
- Ensure recipt of: 1 blade wrench (on the saw), operator manual, engine operator manual, Blade Guard, 2 ignition keys, Rain Cap.
- Saw ships with handlebars removed, and the hardware needs to be assembled before initial startup.
- Ensure all belts are installed and tensioned. Belts may settle/stretch and have reduced tension after leaving the manufacturing facility. **NEVER** use a saw with missing belts.

Personal Safety

NOTICE Always wear proper PPE. Including, but not limited to: eye protection and/or a face shield, helmet, hearing protection, long-sleeved shirt, long pants, safety-toe shoes with non-slip soles, and gloves. In some situations, a respirator may also be required.

- Ensure decals are intact and legible; if damaged or missing, contact customer service for replacement: 800.321.1240.
- Save all warnings and instructions.
- Never modify or bypass safety systems.
- Comply with applicable laws and regulations.
- The operator and employer of the operator must know and prevent the risks during operation of this equipment.
- **NEVER** operate the saw with faulty safety equipment.
- **ALWAYS** use proper and adequate lighting.
- **DO NOT** operate the equipment in enclosed spaces, due to exhaust.
- **DO NOT** operate or service the equipment unless with having received the proper training.
- **DO NOT** let untrained personnel operate or service the equipment.
- **DO NOT** let anyone under the age of 18 operate or service the equipment.
- **DO NOT** operate or service the equipment without wearing the proper PPE and make sure everyone else in or around the work area is also wearing the proper PPE.
- **DO NOT** operate or service the equipment with loose clothing, hair, jewelry, or accessories that may get caught in the machinery.
- **DO NOT** operate or service the equipment under the influence of drugs or alcohol.
- **DO NOT** operate or service the equipment if feeling unwell due to fatigue, illness, or taking medicine.
- **DO NOT** operate the equipment during inclement weather. This includes heavy rain, strong winds, and intense heat or cold. Freezing conditions, lightning, and sudden downpours can create hazardous job site conditions.

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Personal Safety (Cont'd)

- **ALWAYS** be careful and use common sense; the operator is responsible for any accidents that occur to their person or property.
- **ALWAYS** have a phone and first aid kit nearby for emergencies.
- This product produces an electromagnetic field during operation. In some circumstances, this field can interfere with active or passive medical implants. To decrease the risk of serious injury and/or death, we recommend that individuals with medical implants first speak to their physician and the medical implant manufacturer before operating or servicing this equipment.
- **ALWAYS** use approved hearing protection when operating this equipment; high noise levels and long-term exposure to noise can cause noise-induced hearing loss.
- Overexposure to vibration can lead to circulatory and/or nerve damage to the extremities, especially in cold temperatures (Reynaud's Disease).

⚠WARNING If you experience tingling, numbness, pain, or changes in skin color, particularly in your fingers, hands, or wrists, stop using the equipment immediately. If the problem persists, seek medical attention.

Operational Safety

- **DO NOT** operate the equipment if it is defective for any reason.
- **DO NOT** leave the equipment unattended while the engine is running.
- **DO NOT** operate the equipment unless the blade guard and all other safety devices are installed and in operational condition.
- **DO NOT** operate the equipment using attachments not associated with or recommended for the equipment.
- **DO NOT** modify this product. Any alterations can compromise safety, void the warranty, and result in equipment failure or serious injury.
- **DO NOT** operate the equipment remotely; the operator must remain in contact with the equipment at all times.
- **DO NOT** expose yourself or anyone else to the direct line of the blade while operating the equipment.
- **DO NOT** operate the equipment on steep slopes or exceed an incline or decline of 15°.
- **DO NOT** allow the equipment to roll down an incline while in the neutral position.
- Make sure you know how to stop the engine quickly in case of emergency.
- **NEVER** assume the equipment will remain still when parking/stopping on a slope. Chock the wheels to help prevent unnecessary movement.
- **ALWAYS** raise the saw to a proper height for access when working underneath. Use chocks to block the wheels and fit blocks or jacks under the frame edges at the front and back for additional support.
- When using a jack to raise the saw, ensure the equipment is on level ground, then place the jack against a solid part of the frame to properly support the saw while lifting.
- **ALWAYS** operate the equipment with two hands, keeping the body positioned in between the handlebars while the saw is running.
- **DO NOT** leave the saw unattended while the Free Wheel Valve is in the open position. Always chock the wheels before leaving the saw unattended, even when the Free Wheel Valve is closed.

⚠WARNING This product is not equipped with a parking brake. Never leave the product unattended while it is positioned on a slope. If the product must be parked on a slope, it must be properly chocked to prevent any movement. Use extreme caution when operating on slopes. The product is heavy and may cause serious injury or death if it rolls or tips over.

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Safeguarding the Work Area

⚠WARNING Maintain a safe distance from nearby structures and equipment during operation. Failure to do so may result in unintended contact, leading to injury or equipment damage. Ensure all personnel in the vicinity are aware of the operator's intended movements.

- **ALWAYS** be aware of your surroundings.
- Clear the work area, keeping it clean and well-illuminated. Flying debris and noise pose a serious risk to others.
- Prior to operating, turn off all electricity, gas, and water around the work area.
- The work area should not contain any buried or embedded utility lines (electrical, gas, water, etc.) that could be damaged and/or cause personal injury while operating. To avoid utility lines, it is recommended to always have a ground-penetrating radar inspection done prior to operation.
- Make sure electrical lines are powered off and isolated: In the USA, call 811 before operation; in Canada, local numbers vary.
- To avoid electrocution, check for live electrical wires that may be hidden within or behind walls and/or lying around the workspace.
- Ensure that ancillary electrical equipment (fans, pumps, vacuums, etc.) are properly grounded and certified for use in the intended environment.
- **DO NOT** operate the equipment until all unnecessary materials have been removed from the work area.
- Make sure cut materials cannot fall and injure the operator or bystanders.
- **DO NOT** operate the equipment with anyone else in the work area or within the direct line of the blade.
- **DO NOT** leave the equipment unattended until the engine is off and the blade has stopped.
- Remove or control slurry to prevent slippery conditions while cutting.
- **DO NOT** exceed an incline or decline slope of greater than 15° while cutting.
- **DO NOT** cut perpendicular to a slope or grade greater than 15°. Doing so may cause the saw to tip, resulting in serious injury or equipment damage.
- Dispose of hazardous waste (such as used motor oil) as per city, state, and federal regulations.

Ventilation and Carbon Monoxide

- **DO NOT** operate or service equipment indoors and/or inside buildings that do not have sufficient ventilation.
- Exhaust fumes produced by the engine contain carbon monoxide, which is invisible, odorless, and may result in serious injury and/or death.
- Long-term exposure to exhaust fumes may have serious health consequences including respiratory diseases, cardiovascular problems, and increased cancer risk.

⚠WARNING Headaches, dizziness, nausea, and fatigue are signs of carbon monoxide poisoning. At high concentrations, carbon monoxide can cause sudden unconsciousness without warning, which may lead to severe injury or death.

Fire Prevention

- **DO NOT** operate or service the equipment near flammable or explosive materials, gases, or environments as fires, flashovers, or explosions may occur.
- **DO NOT** smoke near or around the equipment; contact with fuel vapors may cause fire or explosion.
- **DO NOT** expose fuel to open flames when filling the fuel tank or working with fuel.
- Ensure adequate water pressure. Cutting may generate sparks, especially when cutting through metal (such as rebar), which could potentially start a fire in combustible materials such as dry grass, wood, and fuel.
- **DO NOT** overfill the fuel tank. Overfilling may result in fuel spillage, which poses a fire hazard and may damage equipment or harm personnel.
- **DO NOT** operate the equipment before checking for leaks.
- **ALWAYS** use extreme caution when working with flammable liquids. When refueling or adding oil, stop the engine and allow it to cool down.
- **ALWAYS** keep a fire extinguisher nearby.

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Hot Surfaces and Moving Parts

- **DO NOT** service the equipment with the engine running; contact with hot surfaces and rotating machinery will result in serious injury.
- **DO NOT** service the equipment until it has cooled down to avoid hot surfaces and components.
- **DO NOT** place the equipment into storage until it has cooled down.

⚠WARNING If you experience tingling, numbness, pain, or changes in skin color, particularly in your fingers, hands, or wrists, stop using the saw immediately. If the problem persists, seek medical attention.

Routine Maintenance

- **DO NOT** use accessories or attachments that have not been recommended by ICS/Merit, as they may result in damage to the equipment and/or user. Use of unapproved attachments or accessories will void all warranties.
- **ALWAYS** check the equipment for loose or damaged nuts, screws, or bolts.
- Keep components clean and free of slurry, concrete dust, and debris.
- Inspect, clean, and replace damaged water hoses and fittings.
- Repair or replace broken or damaged parts immediately. Failure to properly maintain the equipment may result in serious injury and/or death and void the warranty.
- Normal wear and tear can cause small variables in the accuracy of your saw (e.g., worn-down rubber wheels, stretched cables, etc.).
- All non-routine maintenance tasks should be performed by an authorized service center or following the manufacturer's specifications.
- Replace operator control and/or safety decals when they become difficult to read.
- Inspect all battery connections and ground connections on the equipment.
- Ensure battery posts are free from corrosion.
- Inspect all belts and replace them if they are worn, cracked, or torn.
- Grease the front wheels and lift cylinder pin daily.
- Grease the front axle bearings and blade shaft weekly.

Blade Safety

⚠DANGER Failure to follow the safety instructions below may result in serious injury and/or death.

⚠WARNING Do not exceed the blade's maximum recommended rpm when cutting; excessive blade speeds can cause blade breakage, resulting in serious injury and/or death.

- Wear gloves and be alert to the surrounding environment when handling blades.
- **DO NOT** use damaged blades when cutting; the blade must be in serviceable condition to prevent failure, fracture, and thrown-object hazards that could result in serious injury and/or death. The arbor hole must be undamaged, true, and properly round to ensure safe and effective operation. Inspect all blades prior to usage and discard damaged blades.
- Inspect the blade collars for damage, wear, and cleanliness before mounting.
- Replace damaged components immediately. Inner and outer blade flange should be replaced as a set.
- **ALWAYS** use reinforced, abrasive blades or steel-sintered diamond blades that are in compliance with national or regional standards.
- Diamond blades must be applicable to the same speed or a higher speed than the value given on the product.
- **ALWAYS** consult the blade manufacturer's specifications and configure speeds based on the blade manufacturer's recommended rpm.
- **DO NOT** exceed the blade manufacturer's recommended speed/rpm.

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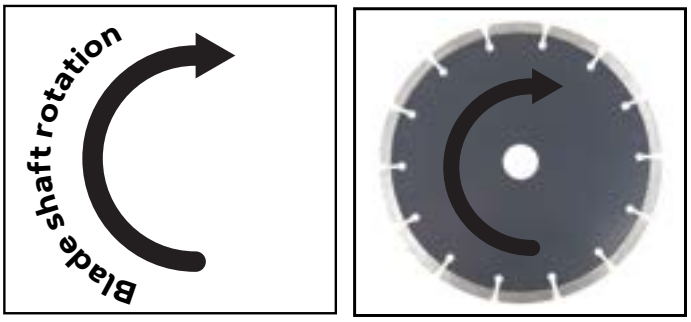
Blade Safety

CAUTION Always read the blade manufacturer's instructions and follow their warnings and procedures for blade speeds and maintenance.

WARNING Incorrect usage or setup can cause the blade to break, which may result in equipment damage and/or personal injury.

- **ALWAYS** tighten the blade shaft bolt/screw as directed to properly secure the outer flange and blade. Failure to properly secure the outer flange and blade may cause parts to loosen or fall off the shaft.
- Blades have a specified direction of rotation. Install the blade in the direction marked on the blade: point the arrow printed on the blade in the direction of the blade shaft's rotation; if an arrow is not on the blade, contact the blade manufacturer and ask for assistance.

Figure: Blade Rotation



Blade shown for reference only.

- **ALWAYS** use the correct blade type (size, thickness, and diamond segment) for the specific application and material being cut.
- **ALWAYS** follow the manufacturer's recommendations for pulley configurations, belt types, torque specifications, engine rpm, and gearbox position (if applicable).
- Failure to follow these guidelines may result in equipment damage or compromised cutting performance.

WARNING

TO AVOID BLADE DAMAGE AND THROWN SEGMENTS, DO NOT EXCEED THE MAXIMUM BLADE SIZE RECOMMENDED FOR THIS TOOL.

DO NOT EXCEED MAXIMUM SPEED OF BLADE PER MANUFACTURERS SPECIFICATION.

RPM TARGET TO 10,000 - 14,000 SFM (ANSI) FOR MEDIUM TO SOFT AGGREGATE CONCRETE IN MEDIUM TO LIGHT STEEL.

CHART IS A RECOMMENDATION ONLY. ADJUST BASED ON THE MEDIA BEING CUT.

BLADE SIZE	26"	30"	36"	42"
UNLOADED ENGINE RPM	2600	2400	2400	2200
BLADE COLLAR SIZE	5"	5"	6"	7"
BLADE SHAFT RPM	1926	1673	1497	1242
MAX CUTTING DEPTH	10.50"	12.50"	15.00"	17.50"
ENGINE PULLEY	4.00"	4.00"	4.00"	4.00"
BLADE SHAFT PULLEY	4.00"	4.25"	4.75"	5.25"

NOTICE When changing the blade size, refer to the **M700 Parts List** for required adjustments to saw components. This may include changes to the pulley, belts, and the blade guard. Always ensure the correct parts are installed to match the blade size.

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Installing the Blade

DANGER Do not install or remove a blade with the engine running. The blade will cause serious injury, including amputation, and/or death if you make contact while it's rotating. Even when the engine is off, the blade can still spin and cause serious injury.

WARNING Ensure all bystanders and nonessential personnel remain at least 20 feet away when changing the blade. Failure to do so may result in serious injury and/or death due to unexpected blade movement or component failure.

Proceed as follows:

1. Raise the saw to necessary height to install desired blade.
2. Ensure the engine is off, the key is removed, and the emergency stop button is depressed.
3. Disconnect the water hose connection and remove the blade guard by lifting upwards off the saw as needed.

CAUTION A two-person lift is suggested for all blade guards larger than 30 inches due to weight and risk of ergonomic injury.

4. Remove the blade collar retaining bolt and outer blade collar.
    - o Note: From the operator's point of view, the right-hand side of the saw is left-hand thread. Left-hand side of the saw is a right-hand thread.
5. Place blade between outer collar and inner collar.
    - o Ensure that the shear pins are through the corresponding holes in the blade.
    - o Verify proper orientation of blade rotation; refer to the blade manufacturer for details.
6. Ensure threads are clean. Install blade collar retaining bolt. Ensure that the shear pins on the outer collar are aligned with the holes in the inner blade collar.
7. Tighten blade collar retaining bolt to 112.6 ft/lbs.
8. Pull the blade so that the shear pin is tight against the pin hole while tightening the blade bolt.
9. Lower the blade to the surface to prevent the blade from rotating when tightening the blade bolt.

WARNING Failure to properly tighten the blade collar retaining bolt per these instructions may result in damage to the equipment, loss of blade retention, serious injury, and/or death. Use only the bolt provided from the factory for this application.

10. Reinstall blade guard and connect water hose.

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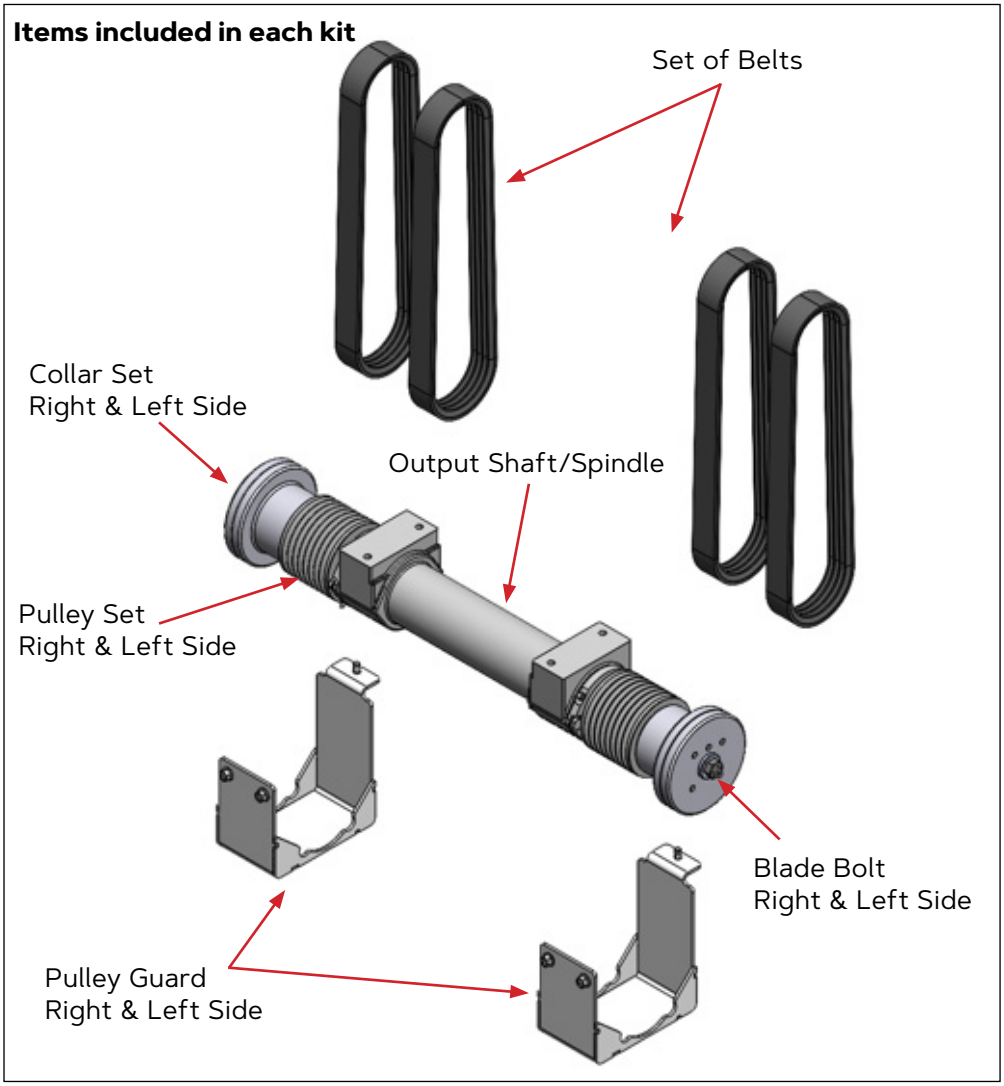
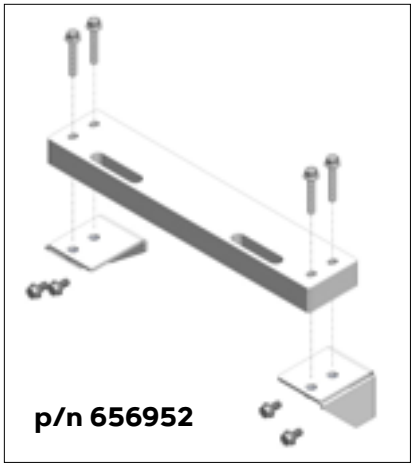
Choosing the Correct Blade Collar

To prevent improper operation or damage, always use the correct blade collar when changing blade sizes. Refer to the chart below.

BLADE SIZE	PART NUMBER	BLADE COLLAR SIZE	BLADE SHAFT SPEED	BELT SIZE
26″	M700PK - 26	5″ Blade Collars	1,926 RPM	4-3VX450
30″	M700PK - 30	5″ Blade Collars	1,673 RPM	4-3VX450
36″	M700PK - 36	6″ Blade Collars	1,497 RPM	4-3VX465
42″	M700PK - 42	7″ Blade Collars	1,242 RPM	4-3VX475
M700 - D, 68LB -WEIGHT KIT			Part # 656952	

Items included in each kit





NOTICE The output shaft, pulleys, and collars ship factory assembled.

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Using the Blade Guard

⚠ DANGER To prevent entanglement, serious injury, including dismemberment, and/or death, the blade guard must be installed properly before operating the saw. Always ensure the saw is turned off prior to installing or removing the blade guard.

- **ALWAYS** use a blade guard.
- **ALWAYS** use a blade guard that matches the blade size.
- **DO NOT** operate the saw with a damaged blade guard or with the blade guard raised or removed. Exposure of the blade must not exceed 180 degrees.
- Ensure the engine is turned off before mounting the blade guard.
- Use caution when lowering the front half of the blade guard to avoid serious injuries.
- Inspect the blade guard and water hoses prior to starting the saw. Clean or replace dirty/damaged components immediately.

Blade Guard

Cutting Safety

- **DO NOT** dry cut. Dry cutting is strictly prohibited. Always use water when cutting.
- Dry cutting can produce excessive silica dust, sparks, and may cause severe damage to the machine.
- Never use a wet cutting blade without an adequate water supply to properly lubricate and cool the blade.

NOTICE To properly lubricate and cool the blade, a minimum of 2 gpm / 8 lpm at 20 psi / 1.5 bar is recommended.

- **NEVER** stand in front of or behind the blade path while the engine is running. The operator should always stand between the 2 handlebars.
- Use extreme caution when maneuvering between cuts, ensuring the blade travel direction is clear and that the blade does not come into contact with ground or surface.
- In case of an emergency, immediately stop the saw using the emergency stop button (Emergency Stop) shown below.

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Engine Safety

⚠ DANGER Failure to follow engine safety instructions may result in serious injury and/or death. Refer to the engine manual for all safety, maintenance, and operational procedures.

⚠ DANGER Running an engine in a confined or poorly ventilated area can result in death due to asphyxiation or carbon monoxide poisoning.

⚠ WARNING Never run engine without an air filter. Severe engine damage will occur. Service the air cleaner frequently to prevent fuel/combustion system malfunction. Unauthorized equipment modifications void all warranties.

- **DO NOT** fuel the saw with the engine running; fill the fuel tank and check the oil level prior to starting the engine.
- Exhaust fumes from the engine are hot and may contain sparks which can start a fire.
- Never start the engine indoors or near combustible material.
- **DO NOT** allow dust to enter the air intake tube when cleaning/replacing air filters.
- **DO NOT** use any starter substances or starter fluids (e.g., starter fluid sprayed into the air filter).
- Immediately replace damaged saw components that may allow dust to enter the engine.
- Avoid contact with hot surfaces and moving components.
- **DO NOT** touch the engine/muffler assembly with the engine running.
- Make sure the forward/reverse mechanism is in the STOP position when starting the engine.
- Allow the engine to cool prior to changing the oil; oil may be hot, handle with care.
- Wash engine, saw exterior, and guards after use.
- Allow the engine to cool before spraying the engine with water to prevent engine damage.
- Allow the engine cooling system to cool prior to servicing.

⚠ CAUTION Removing the expansion tank cap while coolant is hot may result in severe burns.

NOTICE Clean the engine cooling system regularly to prevent high operating temperatures. Failure to do so may result in the engine overheating.

NOTICE Pre-alarm MIL (Malfunction Indicator Light) illuminates when coolant reaches 230 degrees °F; engine shuts down when coolant reaches 240 degrees °F.

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Fuel Safety

WARNING This is a diesel saw; **do not use gasoline**. Use only ultra-low-sulfur diesel fuel, as instructed by the engine manual.

NOTICE Consult the engine manual for acceptable fuel types. Failure to comply voids all warranties.

- **DO NOT** operate the equipment with a fuel leak.
- **DO NOT** use fuel as a cleaning agent.
- Use caution when handling fuel and ensure there is adequate ventilation.
- Fuel and fuel fumes are highly flammable and can cause serious injury when inhaled or allowed to come into contact with the skin.
- **DO NOT** smoke and/or place any hot objects in the vicinity of fuel.
- If the fuel tank has been overfilled, fuel may seep out from the fuel cap vent when raising the saw.
- Drain the fuel tank and fuel lines when storing the saw for long periods of time. Refer to the engine manufacturer's manual for additional recommendations.
- Store all fuel in appropriate safety containers.
- Clean up any spilled fuel around the engine and components prior to starting the engine.
- Put away any fuel containers prior to starting the engine.

Belt Safety

DANGER Never make adjustments to belts and pulleys while the engine is running. Failure to follow this instruction may result in severe injury and/or death.

- **DO NOT** use old and new belts on the same sheave together.
- **ALWAYS** check belt alignment prior to operating the equipment.
- Turn off the engine and let belts cool down prior to servicing them.
- Inspect belts daily for fraying, stress cracks, and/or breakage. Replace immediately when damaged.
- Over-tensioning belts may damage the gearbox. Under-tensioning belts may cause slippage, shorter belt life, and/or poor saw performance.
- The best tension for a v-belt drive is the lowest tension at which the belts will not slip under a full load.
- Squealing belts indicate looseness.
- Check the belt tension as necessary during operation; check the belt tension on the new belts after 8-10 hours of use and re-tension if necessary.
- Belt guards must be installed when the engine is running.
- There is a risk of pinch points when belts are being installed.
- **ALWAYS** use the correct belts for your saw's set up/pulley configuration, as specified by the manufacturer. Failure to use the correct belts will result in poor performance or belt failure.

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Hydraulic Safety

⚠ DANGER Exercise extreme caution when raising/lowering the saw. Failure to follow this instruction may result in severe injury and/or death.

- Turn off the engine prior to servicing and/or disconnecting hydraulic components.
- Raise the saw to a proper height for access when working underneath the saw. Use chocks to block the wheels, and fit blocks or jacks under the frame at the front and rear for additional support.
- **ALWAYS** secure or support the weight of the saw prior to disconnecting hydraulic hoses.
- When using a jack to raise the saw, ensure saw is on level ground, then place the jack against a solid part of the frame to properly support the saw while lifting
- Lower the saw completely to relieve some hydraulic fluid pressure prior to servicing.
- Keep all body parts away from leaks and or areas that may eject hydraulic fluid.

⚠ DANGER Pressurized hydraulic fluid can penetrate the skin, causing serious injury and/or death. Oil injected into the skin can cause gangrene or death if not treated by a medical professional. Seek medical attention immediately if an oil injection injury may have occurred.

Battery and Electrical

⚠ WARNING Ignitable and explosive gases are emitted from the battery. Never expose the battery to sparks or open flames.

- Keep the area around the battery well-ventilated.
- When handling or servicing the battery, keep it level.
- Use protective eyewear and avoid contact with the skin.
- Before charging, completely disconnect the cables from battery. Failure to disconnect could cause a power surge and damage the electrical components.
- **ALWAYS** connect the battery cables to the proper terminal when reconnecting the cables.
- Disconnect the battery prior to servicing all saw components and keep the battery cable clamps away from the battery terminals when the battery is disconnected to avoid accidental connections.
- Remove the battery when storing the saw for long periods of time.
- **ALWAYS** use the correct size (amps) fuses.
- Use a proper battery tester when testing battery strength.
- Regularly inspect the battery, cables, clamps, and terminals for damages. Clean, replace, tighten, and grease components as necessary.

⚠ CAUTION Immediately rinse your clothing, skin, or eyes with water if exposed to battery acid and seek medical attention.

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Battery Charging Safety

WARNING Always follow the proper steps when charging the battery. Incorrect connections or contact with fuses can cause electrical damage and/or serious injury.

Ensure safety precautions:

- Wear safety glasses and gloves.
- Work in a well-ventilated area to prevent exposure to harmful gases.
- Turn off the equipment and remove the key from the ignition.

Inspect the battery:

- Check for corrosion or damage on the terminals.
- Clean the terminals with a wire brush if necessary.
- Ensure the battery is not cracked or leaking.

Connect the battery charger:

- Turn off the charger before connecting it.
- Attach the positive (red) clamp to the positive terminal (+) of the battery.
- Attach the negative (black) clamp to the negative terminal (–) of the battery.
- Double-check the connections to ensure they are secure.

Set the charger:

- Select the appropriate voltage (12V) and battery type.
- For standard charging, use a slow charge (2–10 amps) to extend battery life.
- For a quicker charge, use a medium setting (10–20 amps), but avoid overcharging.

Begin charging:

- Turn on the charger.
- Monitor the charging process and check the battery periodically.
- Avoid leaving the battery unattended for long periods of time.

Check the charge level:

- Use a multimeter or the charger's display to monitor the voltage.
- A fully charged battery should read around 12.6 to 12.8 volts.

Turn off and disconnect:

- Once fully charged, turn off the charger.
- Remove the negative clamp first, then the positive clamp.

Final inspection:

- Inspect the battery for any signs of overheating or leaks.
- Reinstall the battery in the unit if it was removed.
- Ensure all connections are secure.

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WARNING Always follow the proper steps for jump-starting the battery with a battery pack. Incorrect connections or contact with fuses can cause electrical damage and/or serious injury.

How to Jump-Start the Battery

Connect the Jumper Cables to the Battery Pack:
- Connect the red clamp to the positive (+) terminal of the dead battery.
- Connect the other red clamp to the positive (+) terminal of the working battery.
- Connect the black clamp to the negative (−) terminal of the working battery.
- Connect the other black clamp to the chassis ground.

Start the Engines:
- Start the vehicle with the working battery.
- Let it run for a few minutes.
- Start the vehicle with the dead battery.

Disconnect the Jumper Cables:
Remove the cables in reverse order:
- Black clamp from the metal surface.
- Black clamp from the working battery.
- Red clamp from the working battery.
- Red clamp from the dead battery.

Run the Vehicle:
- Let the jump-started vehicle run for 15-30 minutes to recharge the battery.

How to Adjust Tracking

WARNING Make small adjustments and always maintain full control of the flat saw when adjusting the rear wheel tracking.

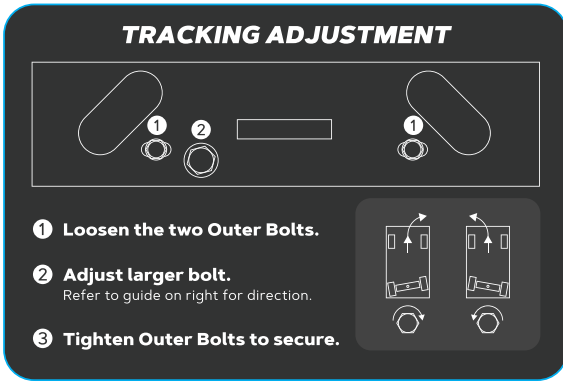
If the flat saw is pulling off the cutting line, make the necessary adjustments below.

Turning Left

a. To turn the saw to the left (Operator POV) back the traction locking bolts, **(bolt 1)** away from the frame using a 9/16" wrench, giving yourself enough room to rotate the rear wheels under the frame of the saw.
b. Turn bolt **(bolt 2)** counterclockwise making minor adjustments until the saw tracks as desired.

Turning Right

a. To turn the saw to the right (Operator POV) back the traction locking bolts, **(bolt 1)** away from the frame using a 9/16" wrench giving yourself enough room to rotate the rear wheels under the frame of the saw. Turn bolt **(bolt 2)** clockwise making minor adjustments until the saw tracks as desired.



After cutting, it is necessary to straigten wheels back to center to move the saw.

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Transportation and Storage

NOTICE

Failure to transport the equipment properly may result in damage to the equipment.

- **DO NOT** tow the equipment behind a transport vehicle.
- **DO NOT** transport the equipment on the lift gate of a transport vehicle.
- Make sure the truck/trailer is in good working condition and has the rated capacity to transport the load.
- Remove the blade prior to transporting the equipment.
- Turn off the engine once the equipment is loaded onto the transport vehicle.
- For self-propelled models, place the speed control lever at stop prior to turning off the engine.
- Lower the saw all the way down during transport to depressurize the hydraulic system.
- Ensure that the pointer bar is in the UP position to minimize the risk of damage.

⚠ DANGER

Use extreme caution when offloading equipment from the truck or transport. Equipment must be offloaded only on level ground. Offloading on a slope or unlevel ground may result in serious injury and/or death due to falling equipment.

- **DO NOT** assume the equipment will remain still when in neutral or when parking/stopping on a slope.
- **DO NOT** use the handlebars and/or front pointer as lifting points.
- Ensure the equipment is not in neutral to prevent rolling.
- Chock the wheels and secure the equipment in a transport vehicle prior to transporting.
- Use appropriately rated heavy-duty straps based on the conditions to secure the equipment.
- Secure straps only at designated tie-down spots on the front and rear of the saw to avoid equipment damage.
- Ensure ramps used for transportation meet or exceed saw weight restrictions.
- Raise the saw as needed to avoid damaging components while moving up and down ramps.
- Use extreme caution when guiding the equipment up and down a ramp: you may need to use the forward speed/motion of the saw to slowly drive/push the saw forward down the ramp.

⚠ WARNING

To avoid injury, **DO NOT** stand directly downhill from the saw.

Secure only using provided D-rings on front and/or rear of chassis - make sure you use straps rated for more than the load of the saw.

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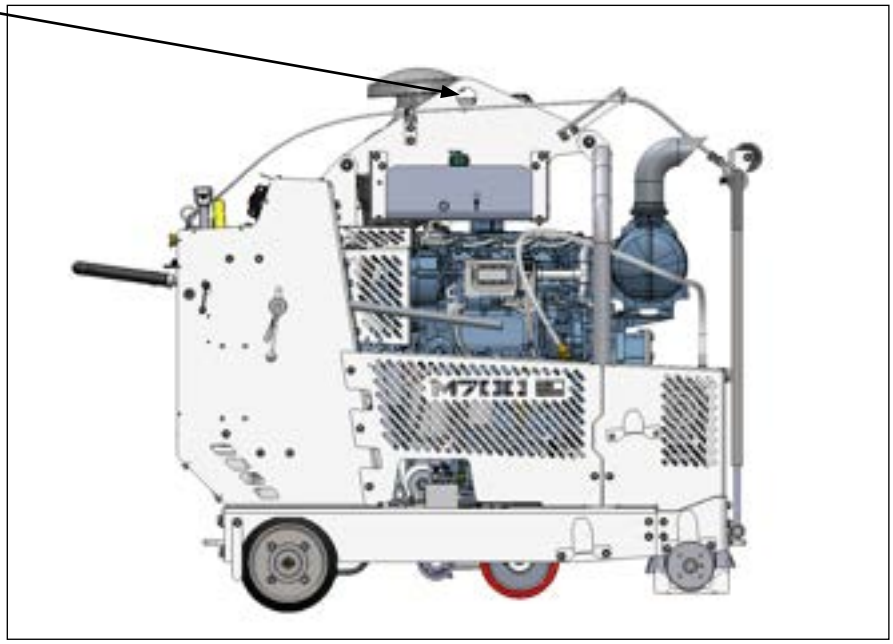
Transportation and Storage (Cont'd)

DANGER To avoid damage, serious injury, and/or death, lift the equipment only from the designated lift eye.

- **ALWAYS** use the lift eye and only certified equipment, chains, or straps rated to handle the weight of the saw.
- Make sure the equipment is powered off and sitting on level ground before lifting.
- Move all personnel away from lifting area prior to lifting to avoid injury.

NOTICE When lifting the saw, the pointer frame may swing forward. Secure it to the saw frame or another fixed point to prevent movement.

Lifting Point



NOTICE Refer to the Department of Transportation (DOT) for additional information on proper transportation techniques and transport vehicle requirements.

NOTICE Always drain water from gearbox when storing to avoid corrosion or damage from freezing.

- **ALWAYS** store equipment properly when it is not being used.
- **ALWAYS** store equipment in a clean, dry location out of reach from children, bystanders, and animals.
- Disconnect the battery cables when storing long term (30+ days).
- **ALWAYS** Keep all inexperienced and unauthorized people away from the equipment at all times.

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Upper Control Panel

Emergency Stop Button: Use to stop the engine in case of emergency. Not to be used for normal on-and-off operations.

Ignition Key: Powers on flat saw essential electrical components and starts the engine. To start the engine, ensure the Forward/Revers handle is in the STOP position then turn the key to the start position.

Nightlight Switch: Use to turn the work light on and off. (Light not included: ordered as an accessory.)

Blade Depth Stop Switch: Turn on or Off the Depth stop system.

Throttle Switch: Used to increase or decrease the engines RPM.

Display Controller: Displays Engine parameters, including increases or decreases in engine RPM, Displays Engine DTC (Diagnostic Trouble Codes).

Saw RPM Chart: ALWAYS use the correct blade type (size, thickness, and diamond segment) for the specific application and material being cut.

⚠WARNING Make sure the forward and reverse handle is in the stop position before starting the engine. Failure to do so may cause the equipment to move unexpectedly.

NOTICE Failure to match engine speed per pulley configuration and blade diameter can introduce harmful vibrations that can damage the blade/equipment and reduce cutting quality.

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Lower Control Panel

Blade Lower Speed Valve: Used to increase or decrease the blade lowering speed

Cutting Depth Indicator: Used to set a pre determined depth and stop the saw from lowering when the Depth stop system is in the ON position.

1. Lower the saw until the blade touches the cutting surface, then set the depth wheel to the desired cutting depth.
2. Flip the blade depth control toggle switch to the ON position.
3. Lower the blade into the cut until the depth wheel moves back to zero and the saw stops lowering.
4. To turn the blade depth control off, flip the toggle switch to the OFF position.

Drive Control Handle: To travel or move the saw in a forward motion, the handle must be pushed away from the operator. To move in reverse, the handle must be pulled toward the operator. The further the lever is moved past neutral, the greater the speed will be in the corresponding direction. When moving the equipment, it is recommended the engine is set to RPM of 1,600 minimum.

Raise/Lower Switch: To lower the saw, press the toggle switch down; to raise the saw, press the toggle switch up.

Blade Water Supply: Open and close the water valve to direct cooling water to the blade and gearbox. This valve should always be open when the equipment is in operation to avoid overheating critical parts.

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Starting the Engine

NOTICE Do not increase engine RPM immediately to a high speed/full load operation from cold.

⚠WARNING Failure to follow the steps below can cause inadvertent movement of the equipment and may lead to serious injury.

⚠WARNING Before starting the saw, if there is a blade installed, ensure the blade is not in contact with any surface. Contact may result in damage to equipment or injury to the operator.

First steps:

1. Check Gearbox oil level.
2. Check Coolant level.
3. Check Hydraulic fluids.
4. Check belts, clamps, and hoses, ensuring there are no frays, loose screws, cracks, or exposed cords.
5. Ensure there are no leaks by inspecting underneath the saw to see if there is any liquid. If you find liquid, stop and fix the leak before operating the equipment.
6. Inspect the air filter for any restrictions or excessive dust. Do not beat or bang the filter on the ground to remove dust; replace the filter instead.
7. Ensure all guards are in the proper position and undamaged, including rear panel.
8. Ensure all decals are legible and in good condition. Replace immediately if damaged.

Cold start:

1. When starting the saw always be in the operator ready position, and ready to handle the saw.
2. Ensure there are no bystanders, animals, or other hazards in the work area.
3. Ensure the ignition key is in the OFF position.
4. Ensure the forward/reverse handle is in the STOP position.
5. If the blade is in contact with surface, turn the key to the ON position and raise the blade using the raise switch.
6. Turn the key to the ON position.
7. Allow the system to pressurize the fuel system and for the glow plugs to come up to temperature (20 seconds).
8. After 20 seconds, turn the key to the START position.
9. Release the key when the engine starts.
10. Allow the engine to warm up before bringing it to high idle speed. Refer to the engine manufacturer's manual for additional information.

Hot start:

1. When starting the saw always be in the operator ready position, and ready to handle the saw.
2. Ensure there are no bystanders, animals, or other hazards in the work area.
3. Ensure the ignition key is in the OFF position.
4. Ensure the forward/reverse handle is in the STOP position.
5. If the blade is in contact with surface, turn the key to the ON position and raise the blade using the raise switch.
6. Turn the key to the ON position.
7. Allow the system to pressurize the fuel system and for the glow plugs to come up to temperature (5 seconds).
8. After 5 seconds turn the key to the START position.
9. Release the key when the engine starts.

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Throttle Operation

- To increase engine/blade speed, press the throttle switch in the upward direction.
- To decrease the engine/blade speed, press the throttle switch in the downward direction.

WARNING Always operate the saw at the recommended rpm listed on the saw decal. Exceeding the blade's rated rpm may result in equipment damage, blade failure, or serious injury. Never exceed the manufacturer's specified rpm for the blade.

Stopping the Engine

WARNING An emergency supersedes the steps below; use the emergency stop button to stop the engine in case of an emergency.

1. Before shutting down the engine, reduce the speed to 1,800 rpm and allow the coolant to reduce to 195 degrees.
2. Once the target temperature has been reached, reduce the speed to an idle speed of 900 rpm.
3. Turn the ignition key to the STOP position.

WARNING Before stopping the engine, ensure saw is on a level surface.

WARNING When machine is in the stop position, to prevent unwanted movement of the flat saw, make sure the neutral bypass valve is fully closed.

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Speed Control

- To move the saw, push the handle from the STOP position to PARK.
- To move the saw forward, push handle away from the operator.
- To reverse, the handle must be pulled toward the operator.
- The further the lever is moved past PARK, the greater the speed will be in the corresponding direction.

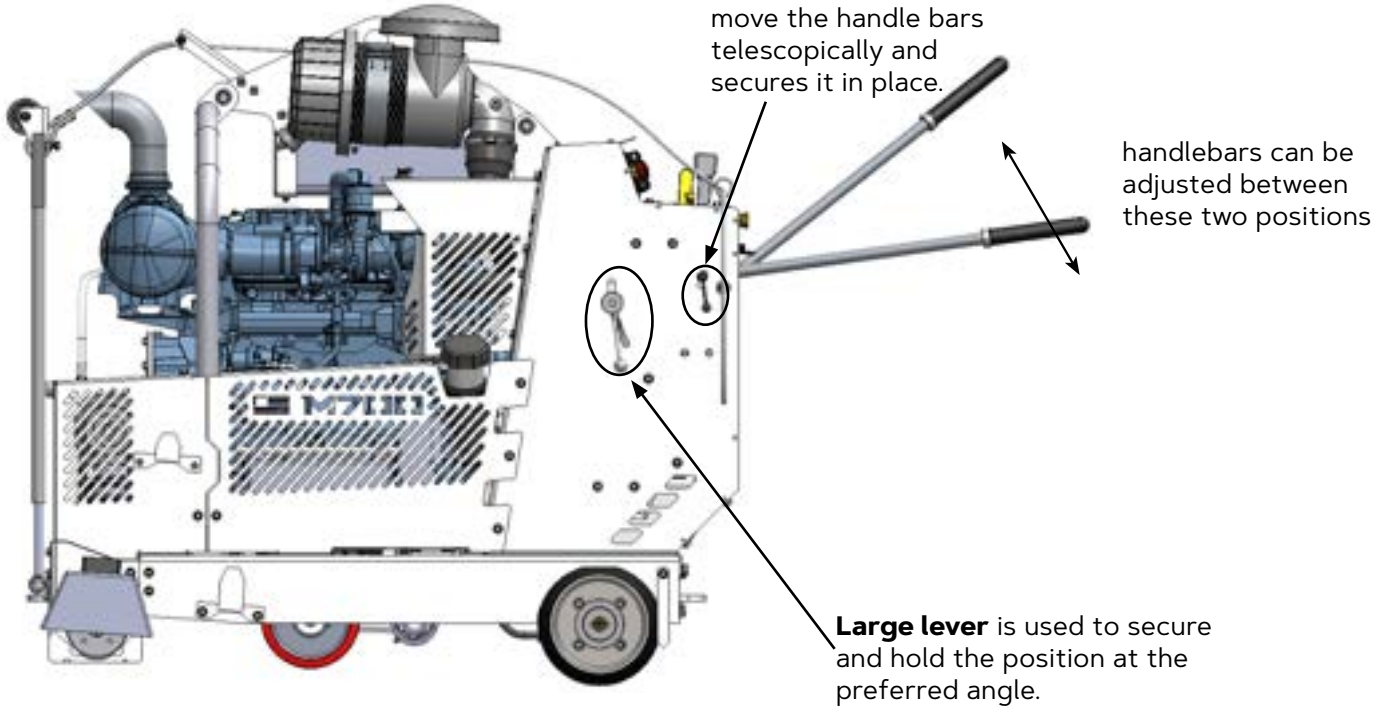
When moving the saw around, it is recommended to increase the engine to a minimum of 1600 RPM.

NOTICE The higher the rpm, the faster the travel speed.

NOTICE Ensure the blade is lifted out of the cut before moving the saw in between cuts.

Variable Position Handlebars

The handlebars are used to control and maneuver the saw when being moved or during cutting operation. Variable position allows the handlebars to be positioned at a desired angle for operator comfort and preference. Always ensure locking handles are securely tightened.



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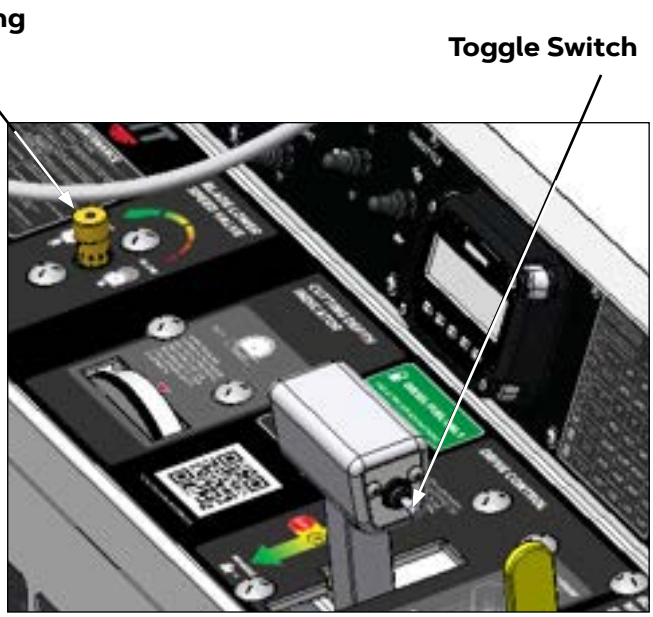
Raise and Lower Toggle Switch

To raise the saw: Press the toggle switch up.

To lower the saw:
- Press the toggle switch down.
- The blade lowering speed valve is on the control panel.
    - Turn clockwise to reduce speed; turn counterclockwise to increase speed.



⚠CAUTION When adjusting blade lowering speed, start small and be aware of the blade's height from the ground. Too large of an adjustment can cause the saw to fall too quickly and potentially damage the blade or cause injury to the operator.

Steering and Turning the Saw

When steering and turning the saw, use the proper technique, based on the blade size.
- **For blades under 36 inches:** the saw may be lifted and repositioned.
- **For blades 36 inches and larger:** the saw must be slid into position — Do not lift.

Use the handlebars to pivot and steer the saw. Always ensure the handlebars are securely tightened to prevent unintended movement or injury.

Using the Water Supply

⚠CAUTION Failure to use adequate water can result in dust and respiratory harm, damage to the saw and blade core, and will void the gearbox warranty.

NOTICE The water supply cools the gearbox and blade while minimizing dust.

NOTICE Always test the water supply for adequate flow (2 GPM/8 LPM minimum) prior to cutting.

NOTICE Ensure blade guard hoses are in working condition, with no cracks, tears, or holes.

1. Ensure the water valve is shut.
2. Connect the water source hose to the female garden hose (FGH) inlet on the left side of the saw.
3. Connect water supply hose from the discharge of the gearbox to the water manifold on the blade guard.
4. Move the water valve lever to full open. Slowly decrease water flow by moving the valve lever connected to the source hose. Ensure a minimum flow of 2 GPM/8 GPM. Do not exceed 100 PSI.
5. When finished cutting, shut off water supply to the blade guard, shut off water supply at the source, and remove the source hose from the saw.
6. Drain water from the gearbox cooling jacket using the lower petcock.
7. Drain cooling water to prevent freezing or rust.

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Pre-Job Assessment

WARNING This saw is to be used for wet cutting only. Dry cutting will result in a dust that can damage lungs and will result in blade overheating and damage to the equipment.

1. Review project specifications

- **Understand the Requirements:** Review the project plans and specifications to know exactly what needs to be cut and where.
- **Identify Cut Locations:** Determine the exact areas and depths for cutting based on the project's requirements.

2. Inspect the site

- **Evaluate the Concrete Surface:** Check the condition of the concrete (cracks, thickness, reinforcements) to understand the difficulty of the job.
- **Identify Obstacles:** Look for any obstructions like pipes, wires, or other utilities that could interfere with the cutting.

3. Check for Utilities

- **Locate Underground Utilities**: Use tools like a utility locator to detect water lines, electrical cables, or gas pipes under the surface.
- **Verify No Interference:** Confirm that cutting won't damage these utilities and take necessary precautions

4. Assess Safety Hazards

- **Identify Potential Hazards:** Look for safety hazards such as loose debris, tripping hazards, or areas with poor lighting.
- **Ensure Personal Safety:** Confirm that all workers have the proper safety gear (gloves, goggles, hearing protection, etc.).

5. Select Appropriate Equipment

- **Choose the Right Saw and Blade:** Decide on the correct type of saw (slab saw) and blade (diamond blade, etc.) based on the job's requirements.
- **Ensure Equipment is in Good Condition:** Inspect all equipment for any damage or needed repairs.

6. Saw Set-up:

- Set up the saw according to the blade being used for the job.

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Cutting Best Practices

⚠WARNING To avoid contact with the blade and prevent damage, only start the engine with the blade already installed. Make sure the blade is clear of the ground and that the handle is in PARK.

NOTICE Don't use oversized blades for shallow cuts. Start with a small blade and change to larger blades and blade guards as the cut gets deeper. Remember to change gear according to the blade size being used.

1. Start the engine and let it warm up. Make sure the engine is up to the correct rpm corresponding to the blade being used.
2. Use the cutting pointer guide as needed to follow the cut line.
3. **ALWAYS** check the front and rear pointers for proper alignment with the blade prior to cutting. Make sure the ground or surface has been correctly marked. Align the blade and guide over the mark to ensure a straight cut.
4. Open the water valve and ensure the correct amount of water flows to the blade.
    a. Proper water flow maximizes blade efficiency and prevents the gearbox from overheating.
    b. Thicker slurry means insufficient water and thinner slurry means too much water.

⚠CAUTION Never dry cut. Dry-cutting will create excessive dust, compromise the life of the blade, and void gearbox warranty.

5. For a specific depth of cut, use the cutting depth stop system:
    a. Lower the blade to just above the cutting surface and stop.
    b. Set the required depth by turning the depth stop wheel to desired depth (in inches).
    c. Turn on the depth stop switch. As a safety check, monitor the depth gauge wheel and ensure that it stops at zero.
    d. Slowly lower the saw to the desired depth and begin cutting as normal.
6. Ease the saw forward, exerting enough pressure so the engine begins to labor but does not slow down. Pay attention to the engine sound and avoid stalling the engine with an excessive load, reducing speed or depth.
    a. If the engine begins to stall, slow forward movement until full rpm is restored to the blade.
    b. If engine does stall, raise the blade out of the cut before restarting.
    c. To ensure a straight cut, travel across the entire cutting surface at an adequate speed and depth.
    d. Avoid sudden changes in direction or forcing the saw forward too fast; this can stall the engine and/or cause the blade to ride out of the cut.
    e. If the blade starts to ride out of the cut, decrease your travel speed or depth.
    f. After the saw blade reaches desired depth, move the speed control handle forward until saw reaches the proper cutting speed. Refer to the blade manufacturer's manual for proper cutting speed. Do not overstress the saw by stalling the engine.

NOTICE For deeper cuts (4 inches or more), avoid cutting at full depth in one pass. "Step-cutting" is recommended — beginning with an initial cut of 1-1/2 inch to 2 inches and continuing with 3-inch passes at a time for maximum efficiency.

7. At the end of each pass, raise the blade out of the cut and return the saw to the beginning of the cut.

NOTICE Never travel backward while the blade is in the cut. Always raise the blade to provide proper clearance between the blade and the ground when maneuvering the saw. Avoid contact with the ground from the blade mounting flanges to prevent premature wear.

8. After returning the saw to the beginning, re-align the blade with the cut and make another pass across the entire cut line length.

9. Continue to step-cut until the maximum cutting depth is achieved. Avoid cutting deeper than required.

NOTICE To avoid belt failure, pay special attention to belt squealing when cutting. If this occurs, stop cutting, stop the engine completely, and re-tension the belts for better cutting performance. Loose belts can cause excessive heat that may damage other components.

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Cutting Best Practices (Cont'd)

NOTICE Let the engine cool off for at least 3 to 5 minutes after reaching full operating temperature. Doing so will help prevent unwanted heat soaking, especially in extreme heat environments.

10. When the cut is finished, raise the saw until the blade clears the surface. Do not immediately shut off the saw, rather bring it to an idle and allow for the engine to cool down.

11. Turn off the depth stop system switch when not in use or after cutting is complete.

Cutting in Cold Environments

Take note of the temperature gauge when operating or servicing in cold environments. If the temperature approaches 32 °F or 0 °C, run an air hose through the water inlet port to purge the system of cold water at the completion of your cut and before storage.

Post-Job Equipment Care

NOTICE To maintain the longevity and peak performance of your saw, always follow the post-job care steps outlined below.

1. Turn Off and Clean the Equipment
- **Turn Off the Saw:** Ensure the saw is turned off and the engine is cool before handling it.
- **Clean the Saw:** Remove any concrete dust, slurry, and debris from the saw and surrounding components. Use a brush to clean hard-to-reach areas.

2. Inspect the Blade
- **Clean and check the Blade for Damage:** Inspect the blade for cracks, chips, or signs of wear. Replace the blade if needed.

3. Check the Cooling System (for Wet Cutting)
- **Clean the Water System:** Flush out any remaining slurry or debris in the water lines to prevent clogging.

4. Lubricate Moving Parts
- **Lubricate the Saw:** Apply lubricant to moving parts, such as the blade shaft and other pivoting areas, to ensure smooth operation and prevent rust or corrosion.

5. Check Filters: Clean or replace air filters to ensure optimal engine performance.

6. Store the Equipment Properly
- **Store in a Dry Place:** Keep the saw in a dry, clean location, away from moisture and extreme temperatures.
- **Cover the Saw:** If not in use for an extended period, cover the saw to protect it from dust and debris.

7. Perform Regular Maintenance
- **Schedule Regular Checks:** Follow the manufacturer's maintenance schedule for routine checks, including blade replacement, engine maintenance, and overall inspection.
- **Proper post-care** ensures the saw operates effectively and lasts longer.

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General Instructions

ICS/Merit examines and tests each piece of equipment prior to shipment. A Quality Control form, listing all equipment on the saw to be tested, is used to ensure quality is maintained during the build process.

Complete the following tasks as required. Do not delay maintenance. Print the **Daily Maintenance Task Chart** found at the end of this manual to help keep track of maintenance tasks completed daily.

- All equipment should be washed after each use using a soft bristle brush.
- Keep water out of electrical components and the engine's fuel tank.

NOTICE Do not use a pressure washer on electronic components, including the display/controller. Doing so will void the warranty and damage may occur to equipment.

- Ensure the machine is on solid, level ground before starting maintenance.
- To avoid the risk of accidents, use the correct tool for the job and keep tools clean.
- Remove all necessary guards and access panels prior to servicing and re-install prior to operating.

⚠ DANGER Failure to replace guards prior to using can cause serious injury and/or death.

- Check all fluid levels, wiring, hoses (air, fuel, water), and lubricate saw components prior to storing and after each use. See Daily Maintenance Task Chart for details.
- Check to ensure the saw has a full set of matching belts (same brand, same replacement timeline. Do not mix brands or old with new belts) and that belts are properly tensioned.
- Check the blade shaft bolt and ensure threads are not worn or damaged. Replace blade shaft bolt if damaged or worn before further operation.
- Grease the spindle bearings daily.
- Check the spindle daily for excessive wear. It should be tight, with no axial or radial play.
- Ensure the blade collars are clean, free of nicks and burrs, with no diameter wear and are not out of round.
- Check to ensure the blade pin(s) are not excessively worn or bent and free of gouges.

⚠ WARNING Check to ensure all guards are in place and secure.

⚠ WARNING Check to ensure all fasteners are tight and secure.

- Check for any leaks and repair before using the saw again.

⚠ WARNING Repair or replace worn or damaged components immediately. Any mechanical issues caused by regular usage should be repaired by a qualified and trained technician.

- To ensure the best performance of your equipment, use only ICS/Merit supplied parts.
- Refer to the engine manual for the recommended engine oil and air filter and as the primary source for all safety, operation, replacement parts, and maintenance instructions for the engine.
- For additional information and detailed diagrams on individual components, refer to the Replacement Parts List.

NOTICE If using a pressure washer, keep the sprayer nozzle at least 2 feet from the equipment and avoid electronics. Pressure washing the electronics will void the warranty. Always wear eye protection when pressure washing to avoid getting dirt or debris in eyes.

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Lubrication

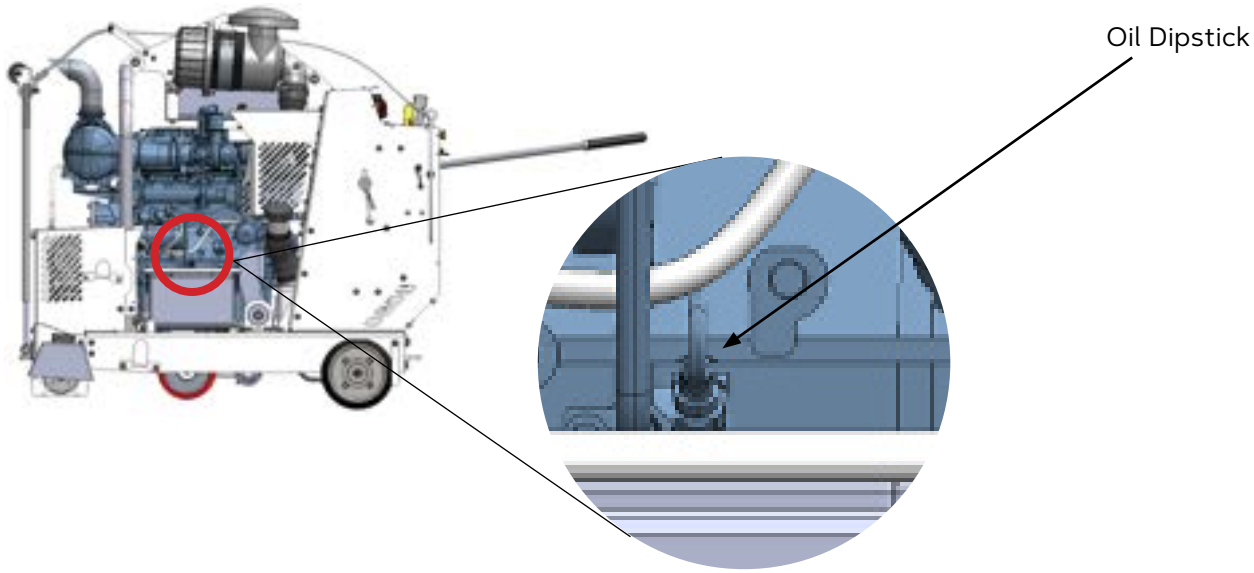
Always clean the equipment before lubrication and ensure that the working environment is as clean as possible to reduce risk of contamination. Lubricate all necessary parts on schedule for maximum efficiency. Occasionally lubricate controls, cables, and linkages with a spray lubricant when movement becomes stiff and/or sluggish.

Use one to two full pumps of NLGI No. 2 premium, lithium-based grease when lubricating all grease fittings, i.e., Lucas Oil X-Tra Heavy Duty Grease.

⚠ DANGER Do not grease parts while the engine is running. Failure to follow this instruction may result in serious Injury and/or death.

Checking the Engine Oil

Oil levels can be checked using the dipstick located on the engine, see location below.



- Low oil or overfilling oil can cause engine damage.
- Only check oil when the engine is switched off and in a level position.
- Check oil within 5 minutes after shutting down a warm engine.

⚠ CAUTION Never remove the dipstick while the engine is running, as it increases the risk of injury. Hot oil can cause scalding. Handle with care.

To check the oil:

1. Ensure the engine is switched off, warm, and in a level position.
2. Pull out the dipstick and wipe off any excess oil with a lint-free cloth.
3. Fully insert the dipstick back into the engine, then remove it to read the oil level.
    a. The oil level must be between the MIN and MAX marks.
    b. Add additional oil as needed, up to the MAX mark, ensuring that the oil is not overfilled.

NOTICE Failure to maintain correct engine oil levels will void the engine manufacturer's warranty.

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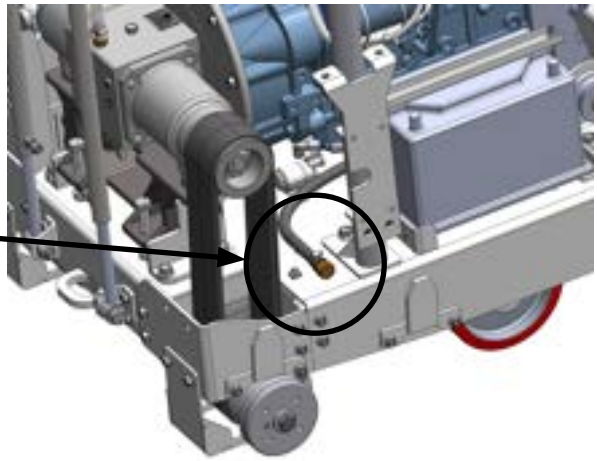
Changing the Engine Oil

⚠CAUTION The draining of engine oil is best carried out when the oil is warm and not hot.

NOTICE Use only clean containers for oil and only clean, fresh oils and grease of the correct grade.

To change the oil:

1. Warm up the engine to at least 176 °F (80 °C).
2. Ensure the engine is in a level position.
3. Switch off the engine.
4. Place a collection receptacle below the oil drain hose.
5. Unscrew the drain cap and allow oil to fully drain.
6. Reinstall the oil hose cap.
7. Refill with the correct oil based on engine type. (See chart below.)
8. Warm up engine again to >176 °F (80 °C), ensure level position, and recheck oil level. Top off if necessary.



Engine Oil
API CJ-4
ACEA E6-08
ACEA E9-08
SAE15W-40 or SAE10W-30

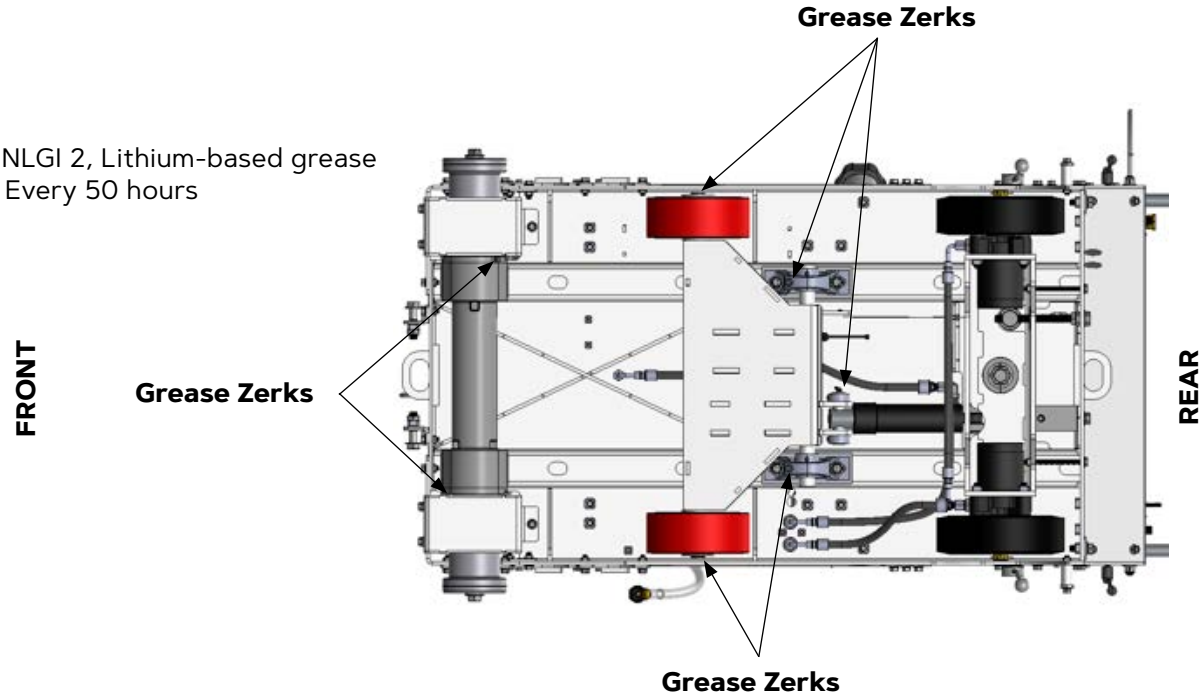
Oil change intervals depend on oil quality, the fuel's sulfur content, and the type of engine application. Refer to the engine's operator manual for specific intervals.

Halve the oil change interval if the ambient temperature is consistently below 14 °F (-10 °C) or oil temperature is below 140 °F (60 °C), if diesel fuel contains ≥0.05% sulfur by weight, or if the standard interval is not reached within a year, change oil annually.

NOTICE Follow the engine manufacturer's guidelines for recommended service intervals for oil and other engine-related items. Failure to follow these guidelines will result in the engine warranty being voided.

Greasing Points

Recommended grease: NLGI 2, Lithium-based grease
Maintenance interval: Every 50 hours



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Tensioning Belts

DANGER To avoid serious injury and/or death, Never make adjustments to V-belts while the engine is running.

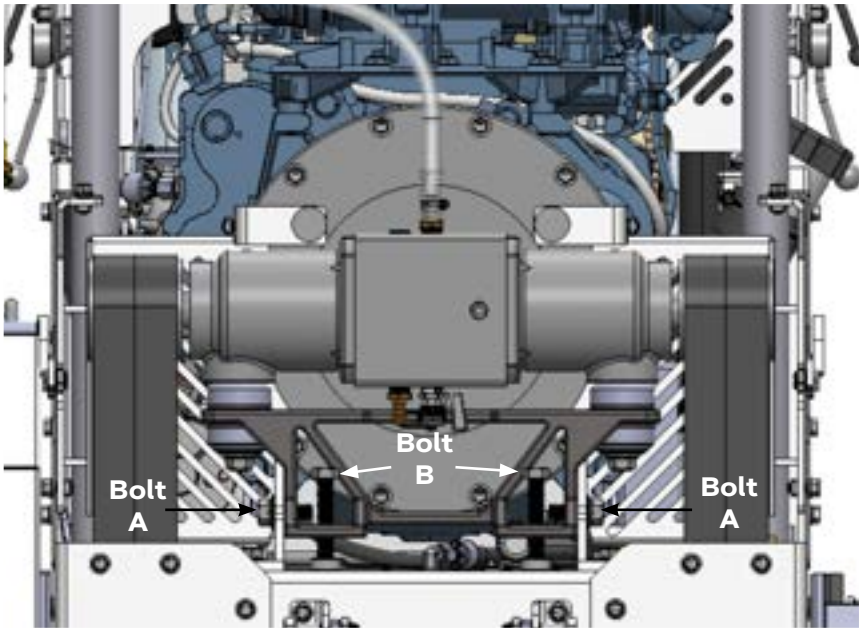
WARNING Do not operate saw with missing guards. This may result in injury to the operator.

CAUTION Belts must be properly tensioned before each use: Over-tensioned belts may cause belt damage, belt failure, and/or damage to the gearbox. Loose belts cause accelerated wear.

Do not operate saw with missing belts. The life of the remaining belts will be compromised and the saw will function suboptimally.

NOTICE Be sure to re-tension belts after ten hours of use. Belts that are cracking, tearing, slipping, or sticking should be replaced. When replacing one belt, replace all belts.

Step 1: Loosen Bolt A on both sides of the gearbox. Support bracket and back out about 1/8”
Step 2: Turn Bolt B clockwise on both sides equally to stretch the belts until the belts are properly tensioned.
Step 3: Tighten Bolt A on both sides.
Step 4: Loosen Bolt B about 1/16 of a turn



Properly tensioned belts allow for approximately ¼-inch deflection between pulley centers under finger pressure. Remove guards if necessary to visually check belt deflection.

- The best tension is the lowest tension at which the belts will not slip under a full load.
- Belts are properly tensioned at the factory, but will stretch and become loose.
- Take up tension until the belts are snug in the grooves. Run the drive for about 5 minutes to “seat” the belts. Then impose the peak load. If the belts slip, tighten them until they no longer slip at the peak load. Most new belts will need additional tensioning after seating.
- Check the tension by plucking the belt like a string. The belt should give a long tone rather than a dull sound. Ensure both sides are equally tensioned.
- Do not tension belts after the saw has been under load for more than 10 minutes. Tensioning belts while they are hot can cause them to snap under load.
- After replacing belts, check the tension after the first two hours of operation. Check belt tension every 10 hours thereafter and make any necessary adjustments. If you see slippage or hear squealing, adjust accordingly.

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Changing Belts

NOTICE Swing the pointer away from the frame to access the tensioning and pinch bolts.

- **ALWAYS** follow ICS/Merit recommendation for pulley configurations, belt types, torque specifications, engine rpm, and gearbox position (if applicable).
- Failure to follow these guidelines may result in equipment damage or compromised cutting performance.

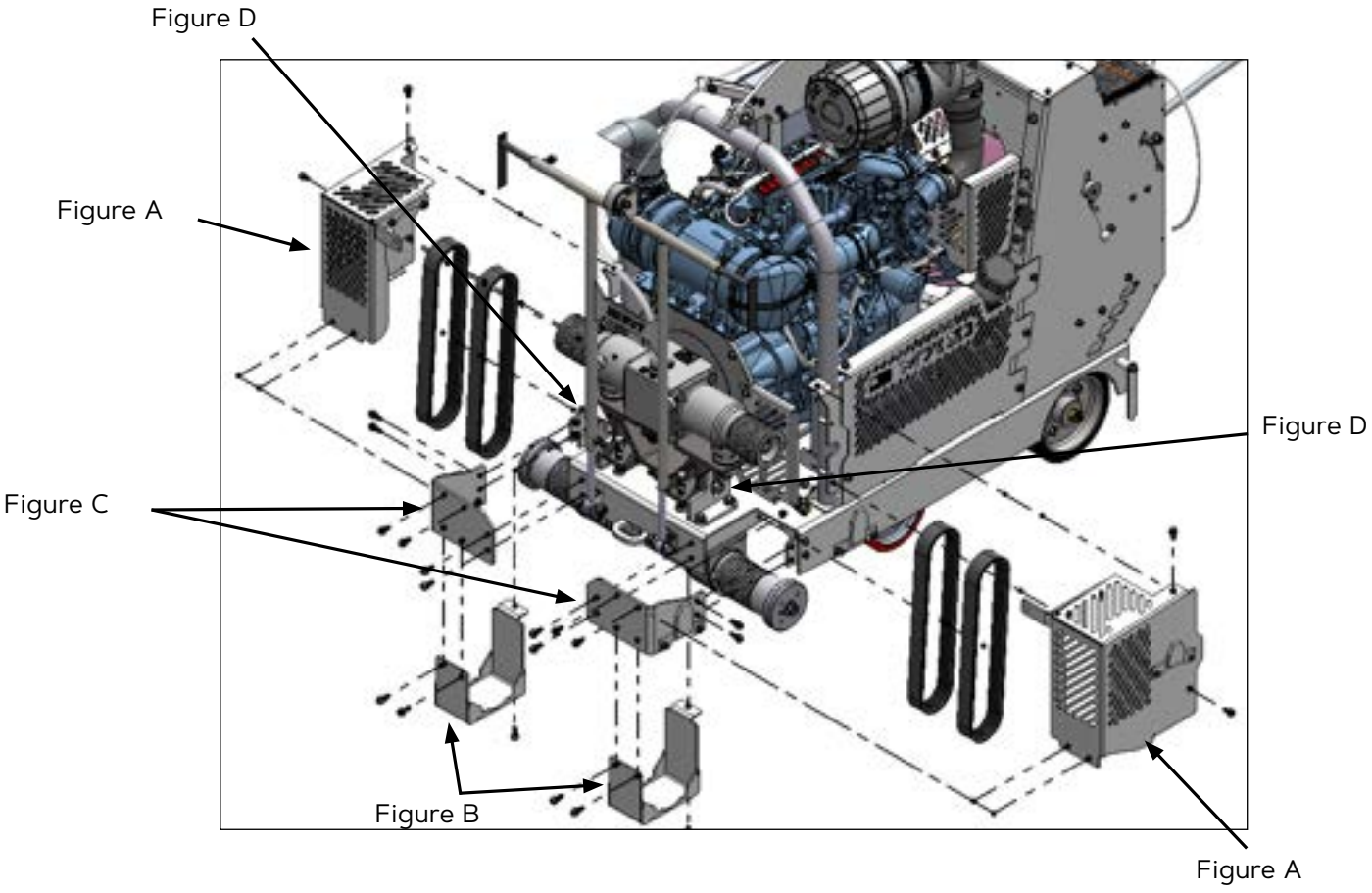
Step 1: Remove Left and Right Belt Guards (Figure A)
Step 2: Remove Pulley Guards (Figure B)
Step 3: Remove Left and Right Chassis Caps (Figure C)
Step 4: Release tension from the belts by loosening Horizontal pinch bolts on either side of the gearbox supporting brackets. (Figure D)
Step 5: Loosen the tensioning vertical bolts until the belts can be easily removed from both pulleys.

Reinstalling the Belts

NOTICE When changing to a new set of belts always use matching sets and do not mix old belts with new belts.

Step 1: Install new belts by looping them over the bottom and upper pulleys. Do this on both sides of the road until all belts are in place.
Step 2: Follow the belt tensioning instructions provided on the belt tensioning page.

⚠ DANGER Make sure to install all the safety belt guards before using the flat saw to prevent any potential equipment damage, injury, or death.



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Maintaining the Water Supply

DANGER Dry cutting is strictly prohibited. Operating without water can result in blade destruction, excessive dust, and exposure to silica, which may cause silicosis — a serious and irreversible lung disease.

If the water supply stops during cutting, stop immediately to prevent damage and protect operator health.

Affix a water connection to inlet hose in saw. Ensure the flow from the inlet to the blade guard is unobstructed: no kinks or cuts. All water lines should be free of dirt, debris, and ice. Recommended water flow of 2 GPM / 8 LPM at 20 PSI / 1.5 bar minimum is recommended.

WARNING Leaving water in the system after use can cause damage to hoses, fittings, and other equipment components.

Emergency Shut-Off Switch

DANGER Never use the saw with faulty safety equipment.

Testing the Machine Stop

Set forward/reverse mechanism to the STOP position. The engine will not start unless the forward/reverse mechanism is in the distinct STOP position.

1. Start the engine.
2. Turn the engine start switch to ignition ON position.
3. Follow the procedure in the engine manual.
4. Press the machine stop and check that the engine stops.
5. Reset the emergency stop by pulling it outward.

After resetting the emergency button, refer to “Starting the Saw” section

In case of emergency, press the red shut-off button. This will stop the engine. Pull to reset the emergency button.

NOTICE Using the emergency stop as a regular shut-off method will shorten the life of the switch. Use it only for its intended purpose.

NOTICE To regain hydraulic raise/lower controls, key must be in the “ON” position.

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Nightlight

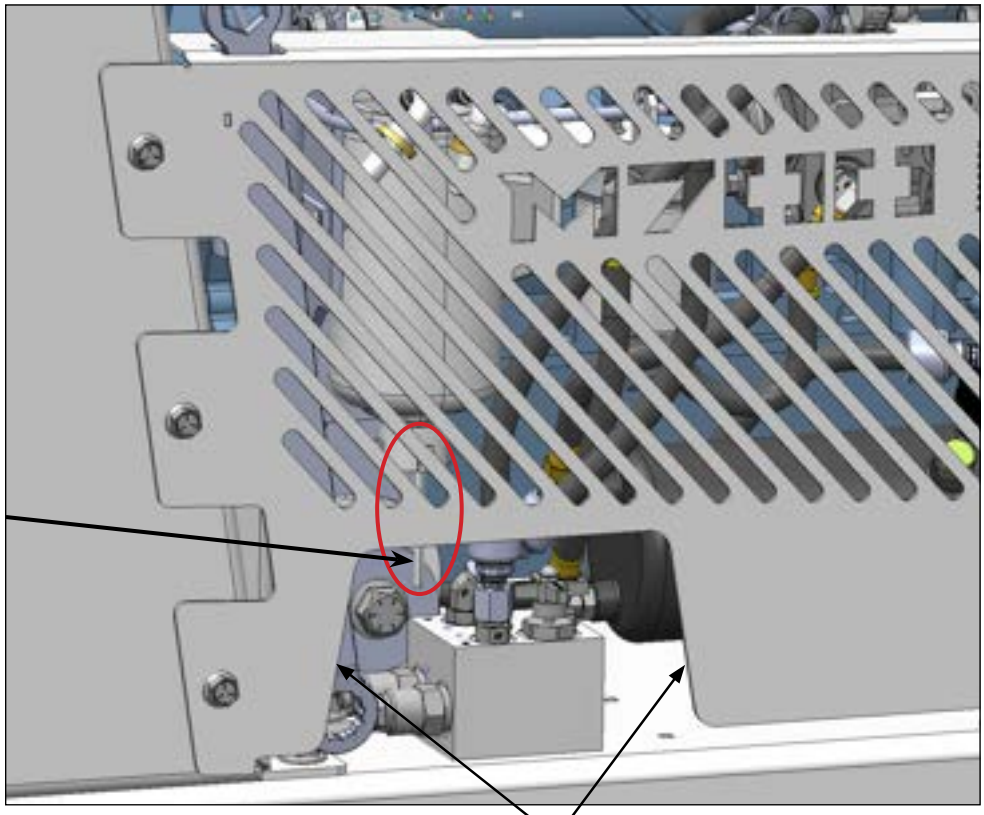
- The nightlight is sold separately as an optional accessory.
- The nightlight toggle switch and connection socket are standard equipment.
- The nightlight is on a magnetized base to easily mount on different surfaces.
- Keep wires away from hot surfaces and moving parts.
- Ensure the surface is clean and free of dust and debris to achieve a secure connection and prevent damage to the nightlight kit.
- Disconnect the nightlight and put away when not in use.
- The nightlight will not work if key is in OFF position and/or if the emergency stop is depressed.
- The nightlight is a supplemental light and is not intended to be the sole light source on a job site.

Fuel/Water Separator

Inspect the fuel/water separator daily and drain as necessary. See image below for location.

1. Locate the drainage cap on the underside of the fuel/water separator.
2. Reach in through the access window to loosen the cap. You do not need to remove the guard.
3. Loosen the cap only enough to allow water to be discharged from drainage hose. Drain onto a container and avoid draining any diesel on the ground. Do not remove the cap.
4. When no more water is discharged, retighten the drainage cap.

⚠CAUTION Always drain fuel/water separator directly into a separate container. Do not drain onto ground. Water is already contaminated with diesel and may cause environmental damage. Always dispose of water/diesel mix according to local state/federal regulations.



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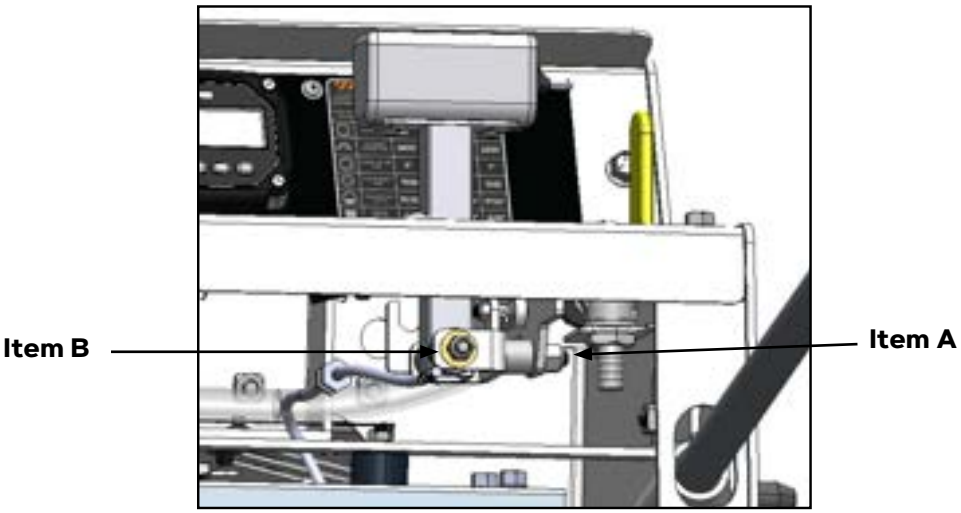
Adjusting the Forward/Reverse Mechanism

⚠WARNING Only perform this adjustment when the flat saw engine is completely OFF and the flat saw is on flat level ground



To adjust the forward and reverse handles, follow the steps below.

Step 1:
Remove the rear panel door

Forward & Reverse motion:
Step 2:.
For more resistance in the forward and reverse motion, tighten the lock nut shown as item A until the handle motion of your preference. (Use a 9/16" wrench)
From Park to Stop/Drive motion:
Step 3:
Using a 3/16" allen hex key, hold the shoulder bolt from one end and using a ½" wrench begin turning the lock nut item B until the motion of your preference.
Step 4:
Reinstall the rear panel door

Maintaining the Inner Blade Collar

1. Inspect the inner & outer blade collars for damage.
2. Clean or replace damaged and worn out components as necessary.

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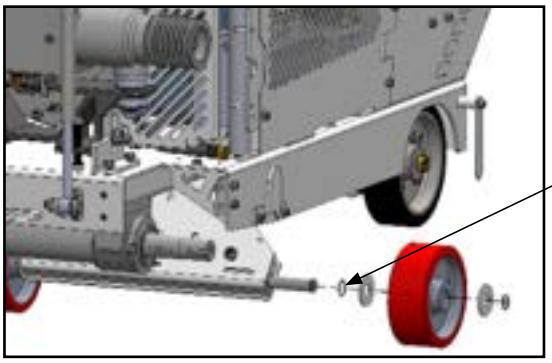
Maintaining the Wheels

WARNING Raise the saw to a proper height for access when working underneath. Use chocks to block the wheels and fit blocks or jacks under the frame edges at the front and back of the frame.

Replacing the Front Wheels

Replace the front wheels if they are damaged or affecting the saw's performance.

1. The flat saw must be on a hard surface and level ground.
2. Lift the flat saw to gain access to the front wheels.
3. Use jack stands to safely hold the weight of the flat saw, (Use correct weight rating jack stands only).
4. Remove the front wheels one at a time, by removing the external snap ring, washer and pull the wheel away from the flat saw sub-frame.
5. Install new wheel (always change both wheels at the same time for best flat saw performance).
6. Re-Install the washer and external snap ring back on the wheels.
7. Safely remove the jack stands from under the flat saw frame.
8. Drive the saw forward and reverse for no more than 10 feet to ensure the wheels stay in place.



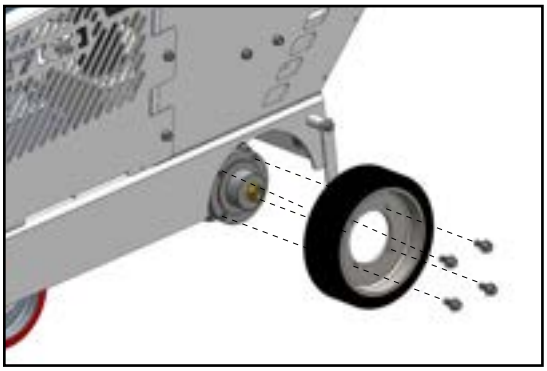
NOTICE

Ensure wave washer is included/ reinstalled on wheels

Replacing the Rear Wheels

Replace the rear wheels if they are damaged or affecting the saw's performance.

1. The flat saw must be on a hard surface and level ground.
2. Lift the rear of the saw using a jack until the rear wheel are clear from the surface.
3. Remove the wheel lug bolts and pull the wheel away.
4. Install the new wheel (always change wheels in pairs) by using the pilot on the wheel hub to center the wheel.
5. Re-Install the wheel lug bolts and tighten to the correct torque specifications.
6. Lower the saw back on on the ground and drive for no more than 10 feet to ensure the wheels stay in place.



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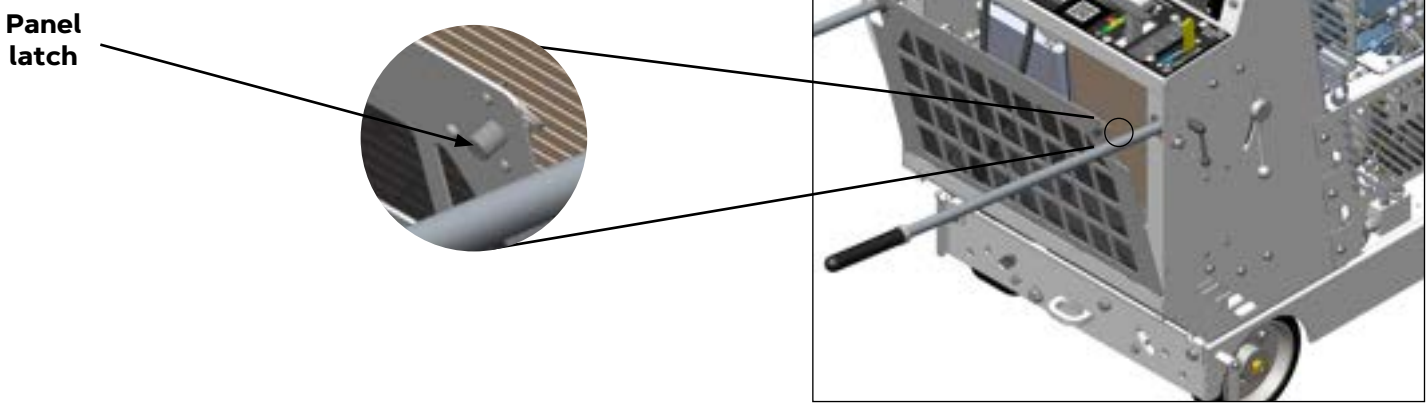
Removing the Rear Access Panel

To remove the rear panel and gain access to the controls and other components, turn the panel latches counterclockwise 180 degrees, then pull and lift the panel away from the saw.



Servicing the Battery

⚠CAUTION Use a proper battery tester when testing battery strength. Use protective eyewear or a face shield and avoid contact with skin when handling or servicing the battery.

Replacing the battery:

1. Unsecure the battery from the hold-down bracket.
    a. Remove the two ratchet knobs from the battery hold-down tie rods and lift the hold-down bracket off.
2. Disconnect the negative the cable lead from the negative terminal.

NOTICE Always disconnect the negative cable first.

3. Disconnect the positive cable lead from the positive terminal.
4. Carefully remove the battery from the battery tray.
5. When replacing the battery, carefully place a new battery into the battery tray. Bring the old battery to a recycling facility; many battery retailers also accept old batteries.
6. Carefully place the newbattery back into the battery tray.
7. Reconnect the positive cable lead to the positive battery terminal
8. Reconnect the negative cable lead to the negative battery terminal.
9. Re-secure the battery to the hold-down bracket as follows:
    a. Re-insert the hold-down battery lid over the two tie rod bolts and tighten it using the two ratchet knobs.

NOTICE Always reconnect the positive cable first.

⚠WARNING Remove the battery prior to charging. Never jump start a battery.

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Engine Coolant System

CAUTION Do not use a high-pressure spray to clean the radiator, as this will damage the radiator fins and reduce cooling capacity.

Turn off the saw and inspect the cooling system when the coolant temperature light turns on or when the coolant temperature gauge passes the red mark.

The equipment's cooling system is a pressurized system.

NOTICE Allow the system to cool down before servicing.

1. Make sure the saw is level before servicing the coolant system.
2. Remove the coolant reservoir cap.
3. Always use manufacturer-approved coolant.
4. When adding coolant, use the coolant reservoir level sight glass for correct amount.

NOTICE If the coolant system was drained empty follow the proper procedure for refilling the coolant system again

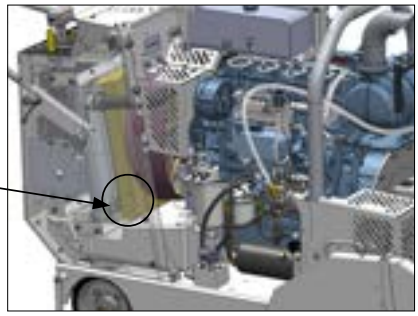
Changing the Radiator Coolant Fluid

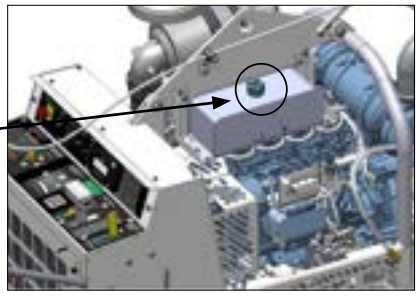
Change the radiator coolant fluid every 500 hours of operation, or every two years (whichever comes first).

WARNING Risk of burn injuries. Allow the engine to cool completely before removing the radiator coolant cap.

NOTICE Remove the expansion tank cap only when it feels cool to the touch, and always open it slowly to relieve any built-up pressure.

1. Remove the right side guard panel from (operator's point of view). Locate the radiator drain valve on the front right-hand side of the radiator.
2. Install an extension hose onto the drain valve.
3. Open the drain valve and ensure the hose is positioned to direct coolant into a suitable container.
4. Remove the expansion tank cap to allow the cooling system to drain completely.
5. Close the drain valve once draining is complete.
6. Refill the Cooling System
    1. Fill the radiator cooling system until the coolant level reaches the bottom of the sight tube on the expansion tank.
    2. Use only Deutz approved coolant, such as Valvoline ZEREX, G40 or G48. Deutz Coolant Core Protect, or an equivalent coolant meeting the same approval standard.
    3. If using concentrate, mix per specification (typically 50% coolant / 50% demineralized water).
    4. Reinstall the expansion tank cap and the right side guard panel.





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Radiator & Radiator Foam Filter Maintenance

To Ensure the cooling system optimal performance, follow the steps below to clean the radiator foam filter, and the radiator fins.

⚠CAUTION To prevent damage to the radiator cooling fins, do not use a high-pressure water spray gun. Use low-pressure water from a garden hose and a soft brush.

Cleaning the Radiator filter foam

Step 1:

Remove the rear panel door.

Step 2:

Remove the foam filter away from the back of the rear panel door, making sure not to rip it off, and clean with soap and water until you can see light through the foam again.

Step 3:

Reinstall the foam filter back on the rear panel door.

⚠CAUTION Do not operate the flat saw with the rear filter foam removed to prevent clogging the radiator and reducing cooling capacity.

Cleaning the radiator

Step 1:

a. Shut Down the Machine.
b. Turn off the engine completely.
c. Allow the machine to cool down fully, radiators and coolant lines can be extremely hot right after operation.
d. Remove the key so no one accidentally starts it.

Step 2:

a. Access the Radiator
b. Open the rear panel door compartment
c. Make sure you have enough space to work around the radiator without touching hot or moving parts.

Step 3:

a. Remove Loose Debris
b. Use gloved hands or a soft brush to remove leaves, dust, concrete dust, or other debris sitting on the radiator screen or fins.
c. Use low pressure water source and wash down the radiator fins

⚠CAUTION To prevent damage to the radiator cooling fins, do not use a high-pressure water spray gun. Use low-pressure water from a garden hose and a soft brush.

Step 4:

Reinstall the rear panel door.

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The Hydraulic System

WARNING Always place a piece of cardboard or paper up against hydraulic components or use a leak detection fluid to check for hydraulic fluid leaks.

DANGER Keep all body parts away from leaks and/or areas that may eject hydraulic fluid. Pressurized hydraulic fluid can penetrate the skin, causing serious injury. If necessary, seek medical attention immediately.

WARNING Always make sure any hydraulic components being serviced are not supporting the weight of other saw components. If a particular component is under pressure when connection points are loosened, oil may spray out forcefully.

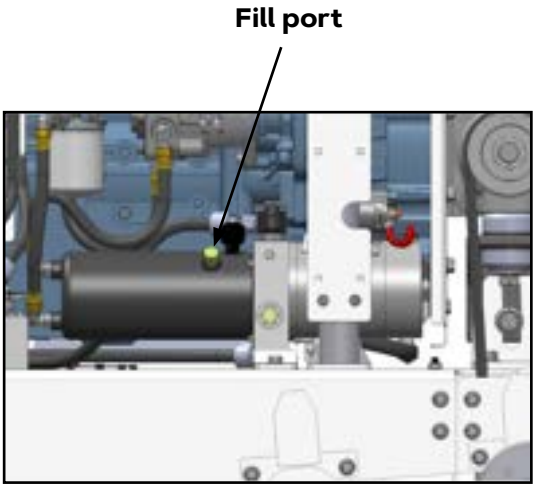
Inspect all hydraulic hoses and fittings daily for leaks. Replace damaged components immediately.

Adding Fluid to the Hydraulic Lift Pump

Check the fluid daily and add fluid to the pump as necessary.

1. Lower the saw to level the frame.
2. Remove engine guard.
3. Remove the hydraulic pump fill cap.
4. Add SAE 15W-20 oil or an equivalent to just below where the fill port extends into the hydraulic pump. **DO NOT** overfill, as this will cause oil leakage through the breather cap when raising the saw.
5. Replace the fill cap and retighten to secure.

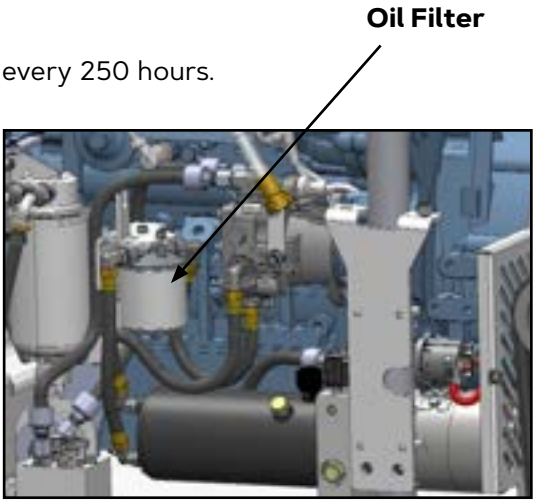
Lift pump fluid and hydraulic drive system fluid are a common reservoir and share same fluid



Replacing the Hydraulic Oil Filter

Replace the hydraulic oil filter after the first 50 hours of operation and then every 250 hours.

1. Lower the saw all the way to the ground.
2. Place a towel/rag under the filter.
3. Remove the filter using appropriate tool.
4. Dispose of the used oil and filter according to city, state, and federal regulations.
5. Wipe down the sealing surface with a clean cloth and use clean oil to lightly oil the filter gasket.
6. Fill new filter with SAE 15W-20 oil before reinstalling filter.
7. Tighten the new filter to the filter head
8. Inspect the seal for leaks and recheck the oil level in the reservoir.



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Cleaning the Engine

Clean and wipe down the engine's exterior, fans, and guards daily to prevent high operating temperatures.

Servicing the Air Filters

Service the air filters when a DTC code and MIL lamp appears on the display. Once serviced, the DTC code and MIL lamp will go away.

Storage

Complete the tasks listed below prior to storing the equipment for longer periods of time:

1. Drain the water lines/hoses.
2. Turn off all switches and controls.
3. Lower the saw completely to remove strain on the lifting mechanism.
4. Clean and wipe down the saw to remove dust, debris, and slurry from saw components (especially fans).
5. Remove the battery and store in a proper location, out of reach from children.
6. Refer to the engine manual for all engine and fuel recommendations prior to storing.
7. Store the equipment in a dry area, protected from outdoor elements and out of reach from children.

Disposal

Dispose of the equipment when it's no longer repairable and/or contains safety hazards not worth repairing or maintaining.

1. Drain all fluids and dispose of according to city, state, and federal regulations.
2. Remove the battery and bring to a recycling facility; many battery retailers also accept old batteries.
3. Transport the saw to a salvage yard or recycling facility.

Ordering New or Replacement Parts

Regularly examine the equipment to identify worn parts before they break. If a new part needs to be ordered, contact ICS/Merit Customer Service: 800-321-1240. View the complete Replacement Parts List on our website: https://icsdiamondtools.com/en/document-library.

Never work on any component or area of the saw while the engine is running.

Always follow safety best practices when working with heavy machinery and fast-moving components. Remove all necessary guards and access panels before servicing the saw. Replace all guards and panels before operating the saw again.

Refer to Fluid Chart for specifications and additional information. Add grease to all necessary parts as per the Daily Maintenance Chart for part longevity and functionality. Remember to lubricate controls, cables, and linkages to avoid stiffness or sluggishness. Use one to two complete NLGI No. 2 premium, lithium-based grease pumps when lubricating all grease fittings.

Refer to the engine manual for more maintenance care and routine tasks. Contact the ICS/Merit or the engine manufacturer with any additional questions.

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Routine Maintenance for Equipment

Performing daily maintenance will ensure the lifespan of the equipment while maintaining the saw's accuracy and efficiency. Complete the tasks in the chart below as required and keep a copy of the chart easily accessible.

Daily Maintenance Task Chart

Task		Check					
		Daily	Every 50h	Every 100h	Every 250h	Every 500h	Annual
1	Check all safety guards, panel covers, belt guards, and rear panels. (Free of damage)	√					
2	Check that all blade guards are in working condition and free of damage	√					
3	Check Radiator Foam Filter and clean or replace as necessary	√					
4	Check for fuel and oil leakage	√					
5	Check coolant system level	√					
6	Check engine oil level	√					
7	Check fuel tank level	√					
8	Check the air filter and clean or replace it if necessary	√					
9	Check the blade mounting inner and outer flange are clean and the blade locking pin is in place. (Change flanges if showing signs of wear)	√					
10	Drain fuel water separator filter	√					
11	Check the blade drive belts tension and wear, adjust or replace if necessary	√					
12	Check all hoses and hose clamps. Tighten clamps and replace hoses if needed	√					
13	Check all water blade cooling water flow starting from the rear inlet to the blade guard outlet. (Free of restrictions)	√					
14	Check exhaust system for visible damage, cracks or leaks	√					
15	Drain water from the gearbox when the ambient temperature is below 32°F/0°C	√					
16	Clean the product before storing or putting it away	√					
17	Check the cooling fan belt. Adjust tension or replace belts if needed		√				
18	Check the alternator belt. Adjust tension or replace belts if needed		√				
19	Lubricate front wheels		√				
20	Lubricate front wheels subframe pillow block bearings		√				
21	Do a check for all bolts and nuts. Make sure there is no loose hardware		√				

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Routine Maintenance for Equipment (Cont'd)

Daily Maintenance Task Chart							
Task		**Check**					
		Daily	**Every 50h**	**Every 100h**	**Every 250h**	**Every 500h**	**Annual**
22	Check the hydraulic oil level on the lift pump system. (The drive system shares the oil with the lift system)			√			
23	Change the oil on the gearbox			√			
24	Change the engine air filter			√			
25	Change main fuel filter				√		
26	Change engine oil and oil filter				√		
27	Check coolant concentration				√		
28	Check the hydraulic oil hoses and fittings for the drive system				√		
29	Check front wheel bearings for wear or damage				√		
30	Change the oil filter for the hydraulic drive system				√		
31	Change the hydraulic oil on the lift pump system. (The drive system shares the oil with the lift system)				√		
32	Change the engines coolant fluid					√	
33	Check battery and battery cable condition					√	
34	Check engine/gearbox mounting locations					√	
35	Change fuel Water separator/pre-filter					√	
26	Check engine monitoring and warning system (authorized personnel only)						√

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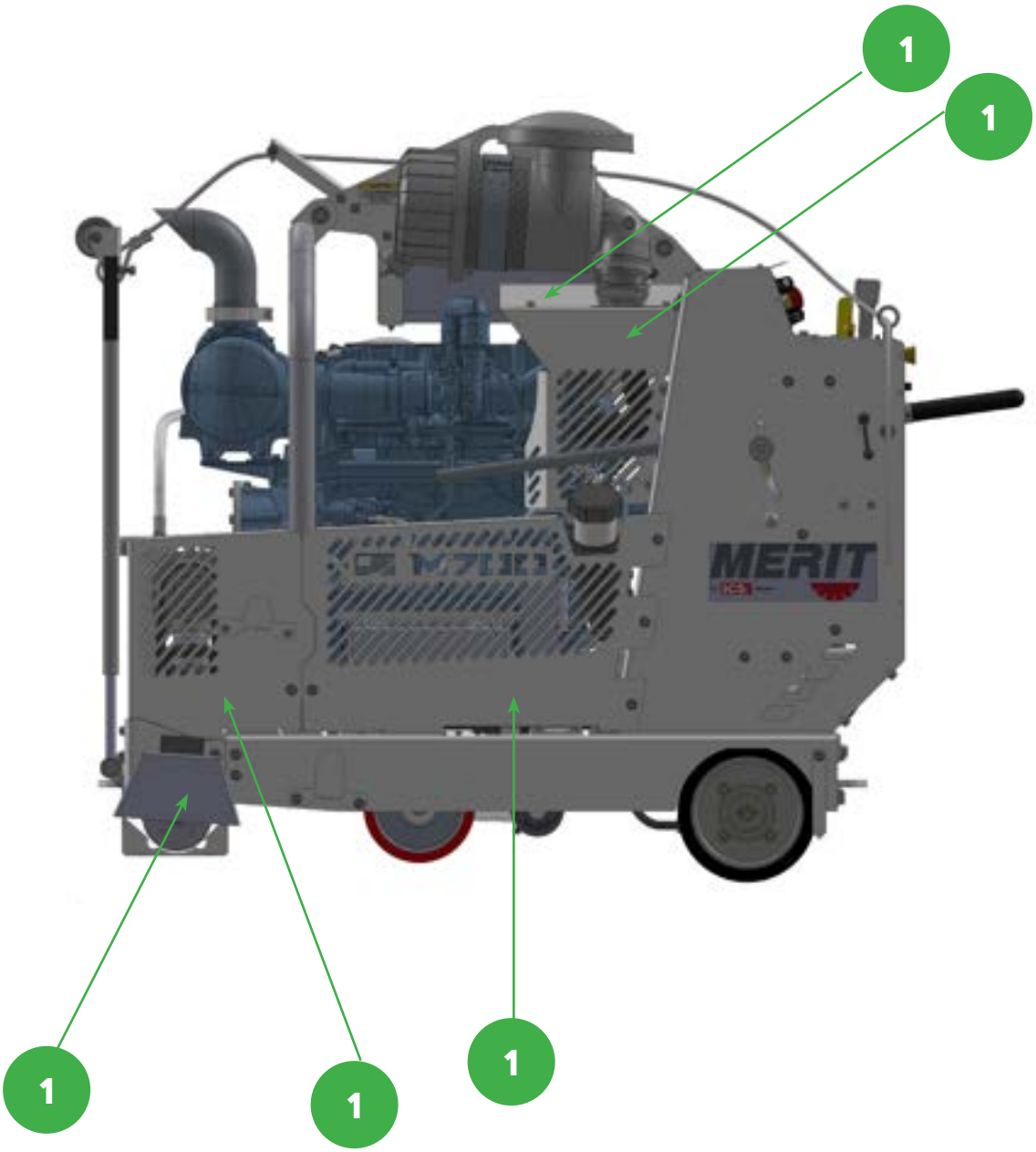
Left Side



1. Check all safety guards, panel covers, belt guards and rear panels:
Check all guards are securely in place and free of damage. Check that all bolts, clips and/or tabs are free of damage.

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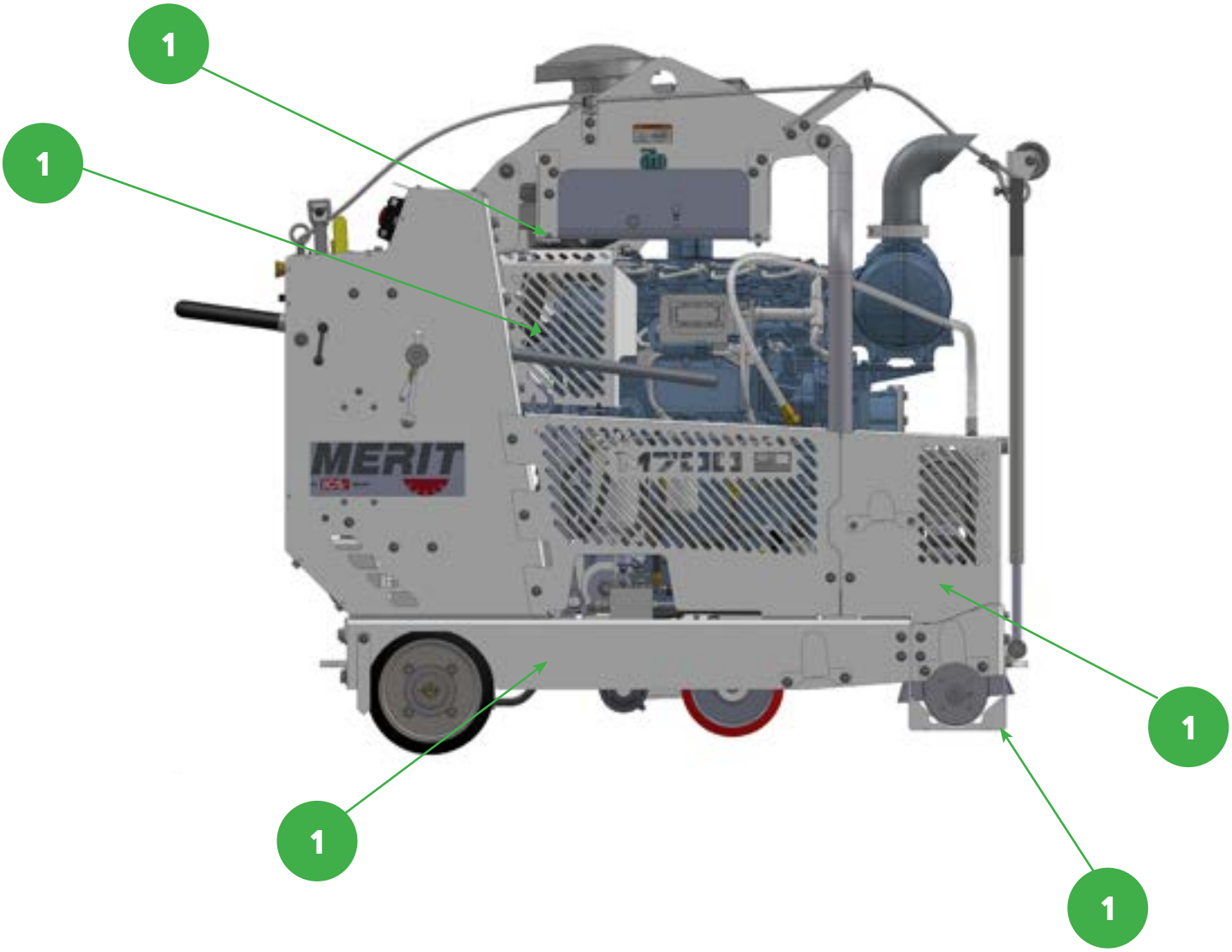
Right Side



1. Check all safety guards, panel covers, belt guards and rear panels:
Check all guards are securely in place and free of damage. Check that all bolts, clips and/or tabs are free of damage.

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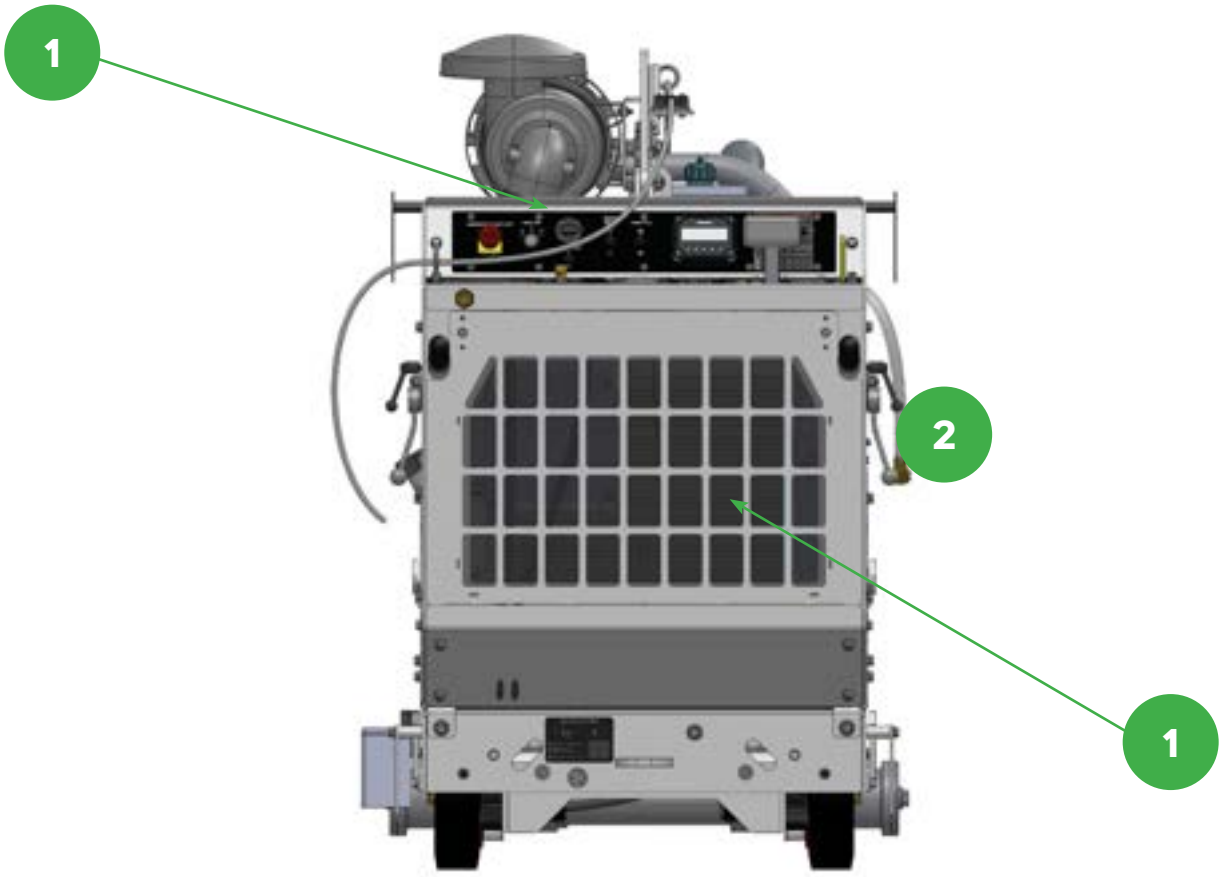
Back Side



1. Check all safety guards, panel covers, belt guards and rear panels:
Check all guards are securely in place and free of damage. Check that all bolts, clips and/or tabs are free of damage.

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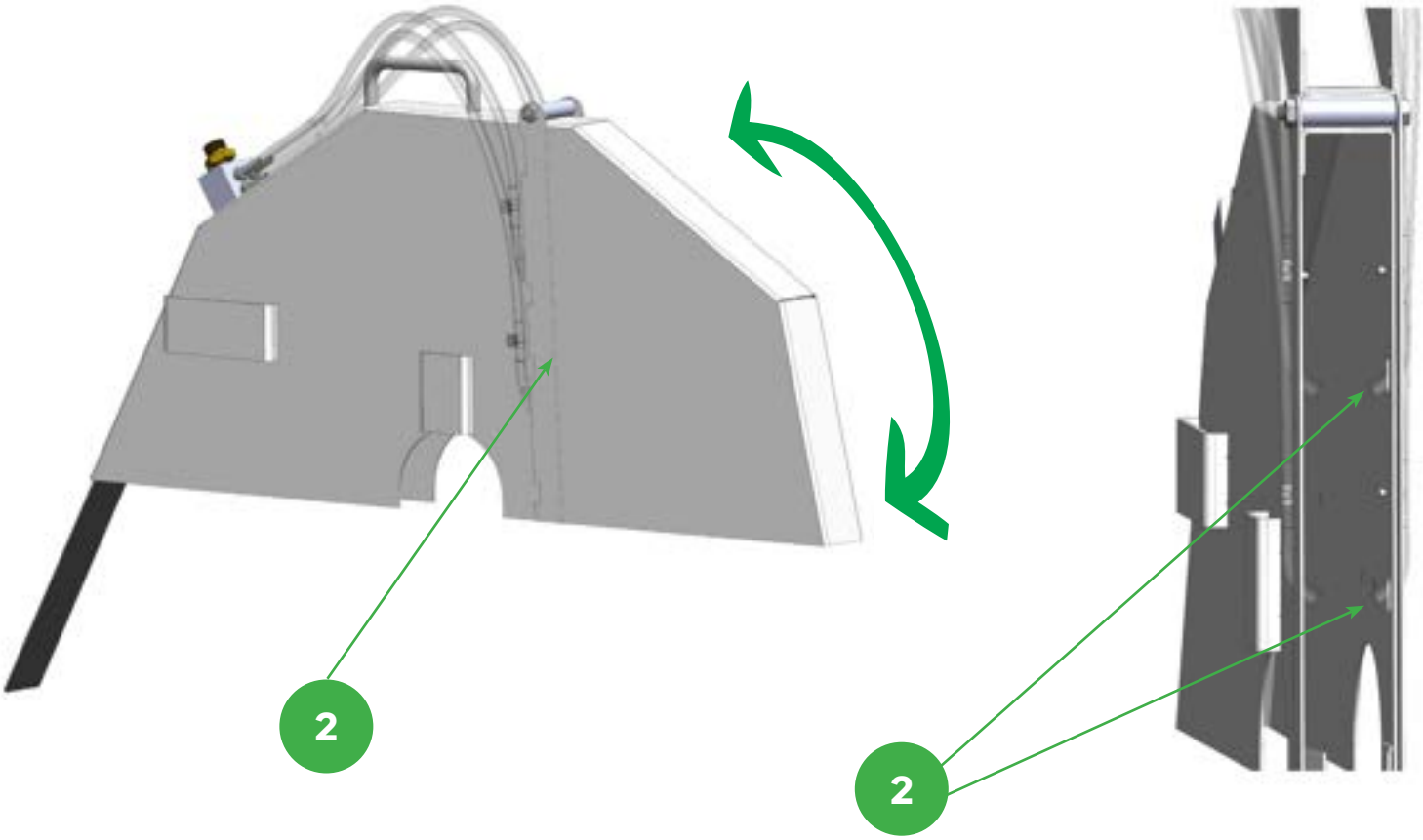
Side View Blade Guard

Inside Blade Guard



2. Check that all blade guards are in working condition and free of damage:
Ensure that blade guards swing open and closed freely. Ensure that when blade guard closes, hinged section fully closes with no gap so no water or debris can escape. Check that all securing clips are in free of damage and in working order. Ensure water lines are clear of debris and no cuts or cracks present.

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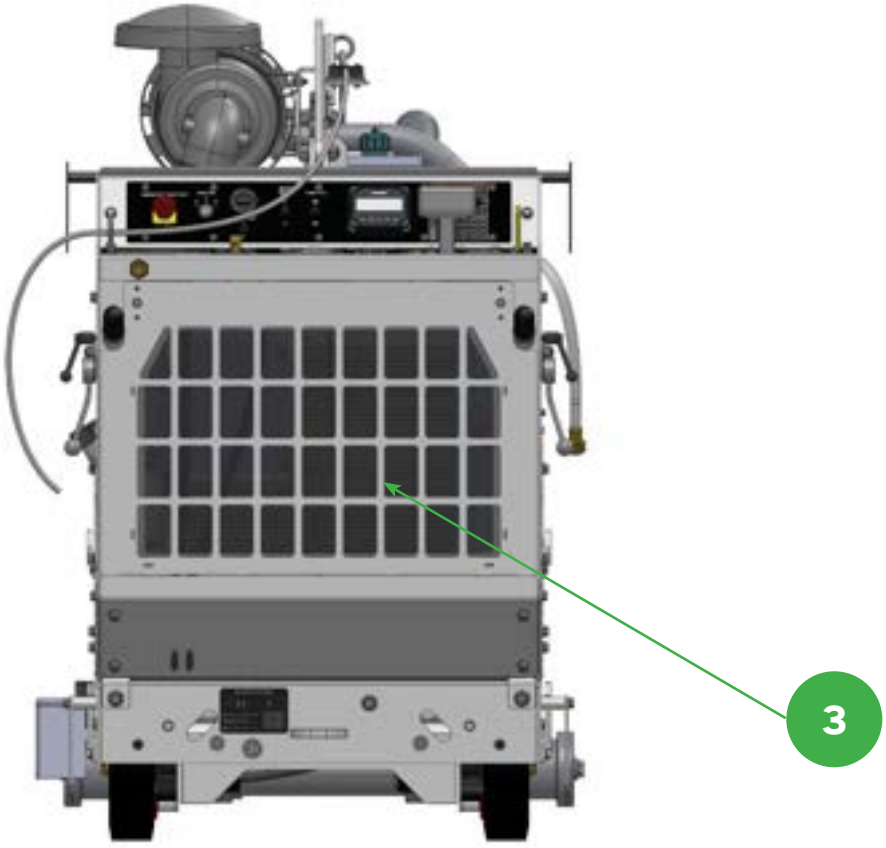
Back Side

Cleaning-Changing Filter



3. Check radiator foam filter and clean or replaces as necessary:
Visually inspect foam filter, if blocked with debris, clean immediately. If cleaning does not remove debris, replace.

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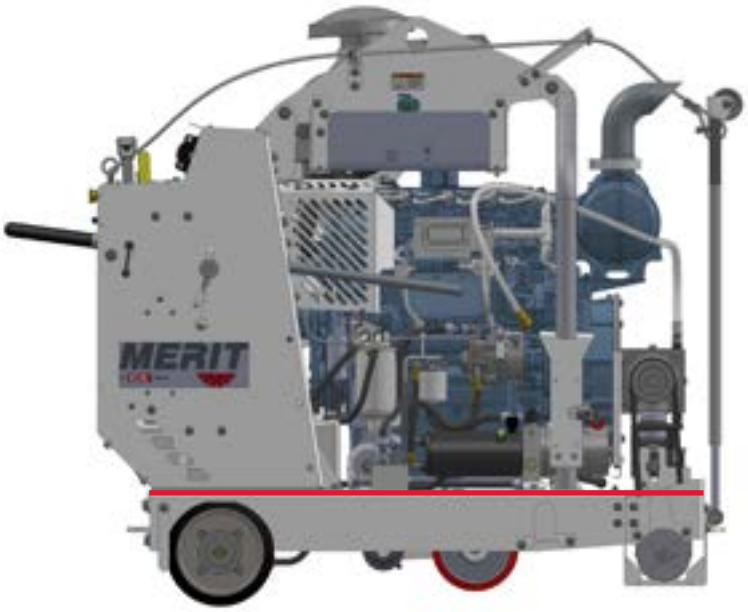
Left Side Detail

Right Side Detail



4. Check for fuel and oil leakage:
Inspect the top of the chassis from front to back and left to right .Any amount of oil and/or fuel leakage should be address immediately. Replace any damage or leaking fuel or oil hose and/or fittings.

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Right Side

5. Check coolant system level:
When the unit is cool, the coolant should cover the sight glass. Alternatively, the coolant level should be at the bottom of the fill neck beneath the cap. If the coolant level is low, top off with 50/50 Valvoline Zerex G48

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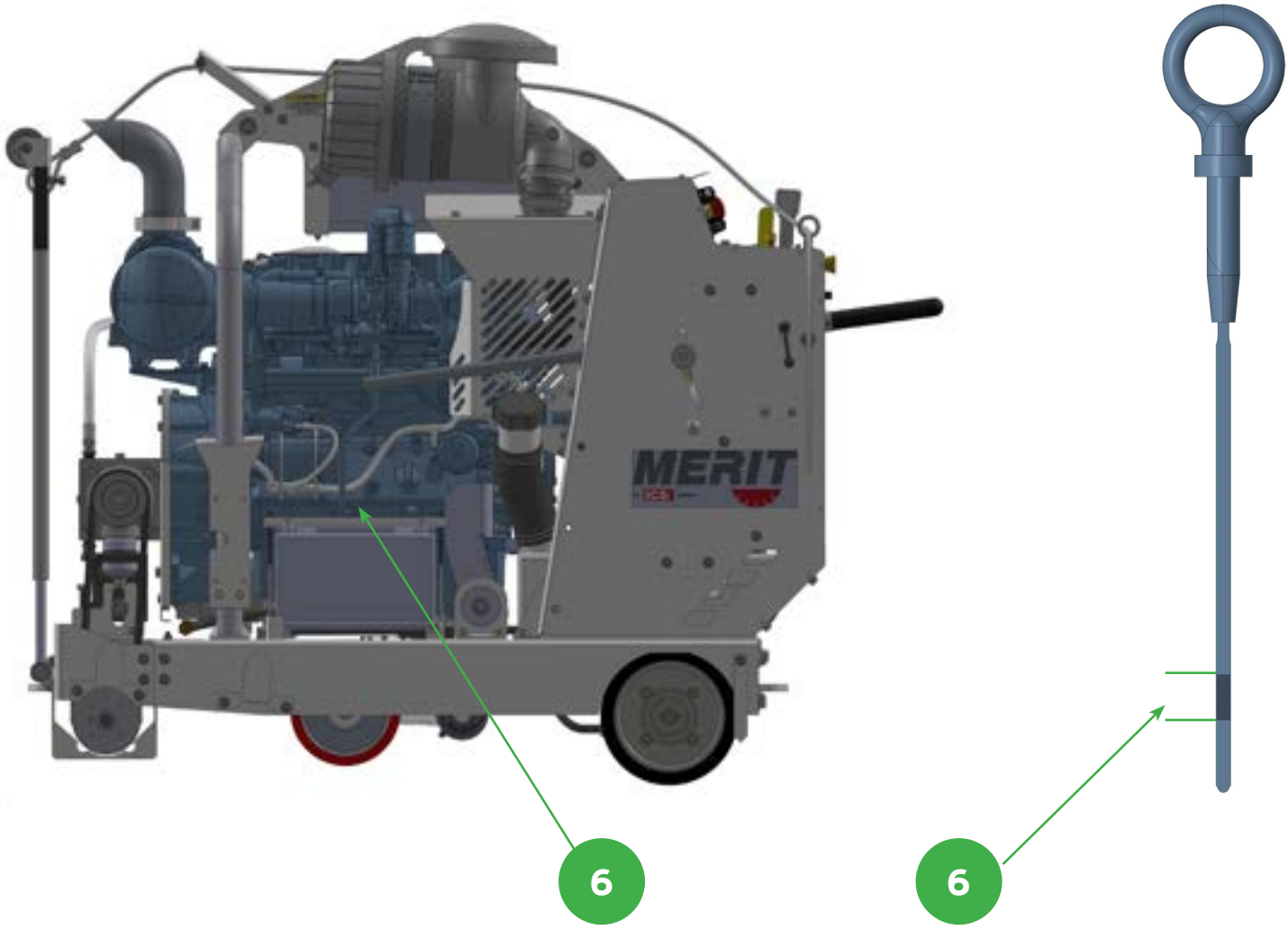
Left Side Detail

Dipstick



6. Check engine oil level:
First, ensure engine is level to the ground by either raising or lowering the saw. Then, on the left-hand side of the saw remove the dipstick, wipe it with a clean cloth, and reinsert. Remove the dipstick and check, the level should be somewhere on the textured surface of the dipstick (between the two lines)

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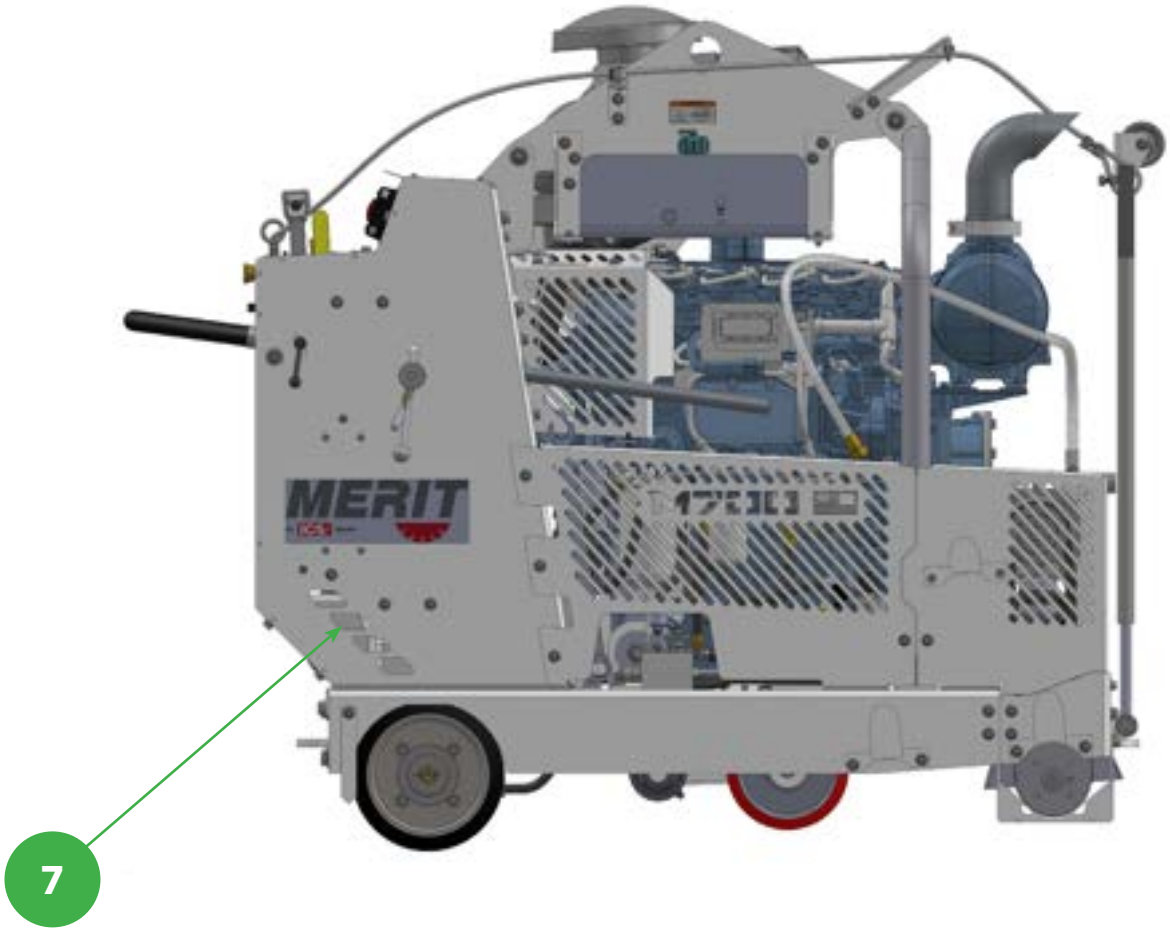
Right Side



7. Check fuel tank level:
Review the fuel level line through the cut outs on the tower and top off fuel as necessary.

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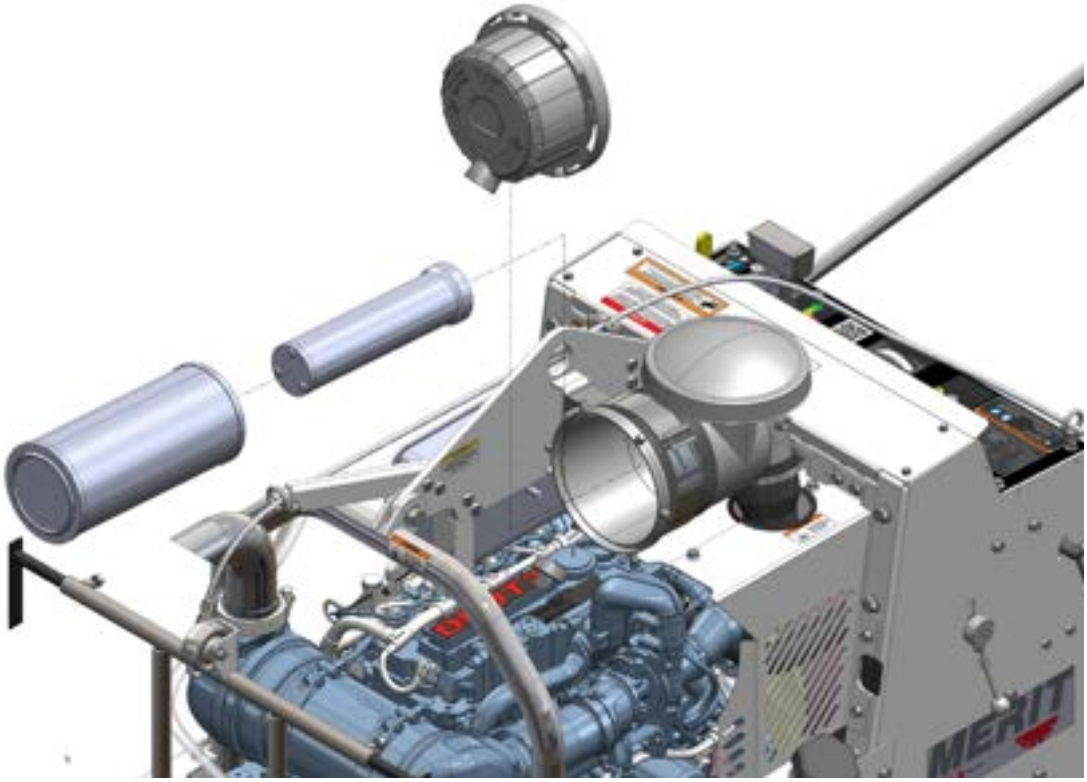

8. Check the air filter and clean or replace it if necessary:
Remove the quick-lock housing cap to expose the primary filter, remove and inspect the secondary filter. Clean or replace and install in reverse order.

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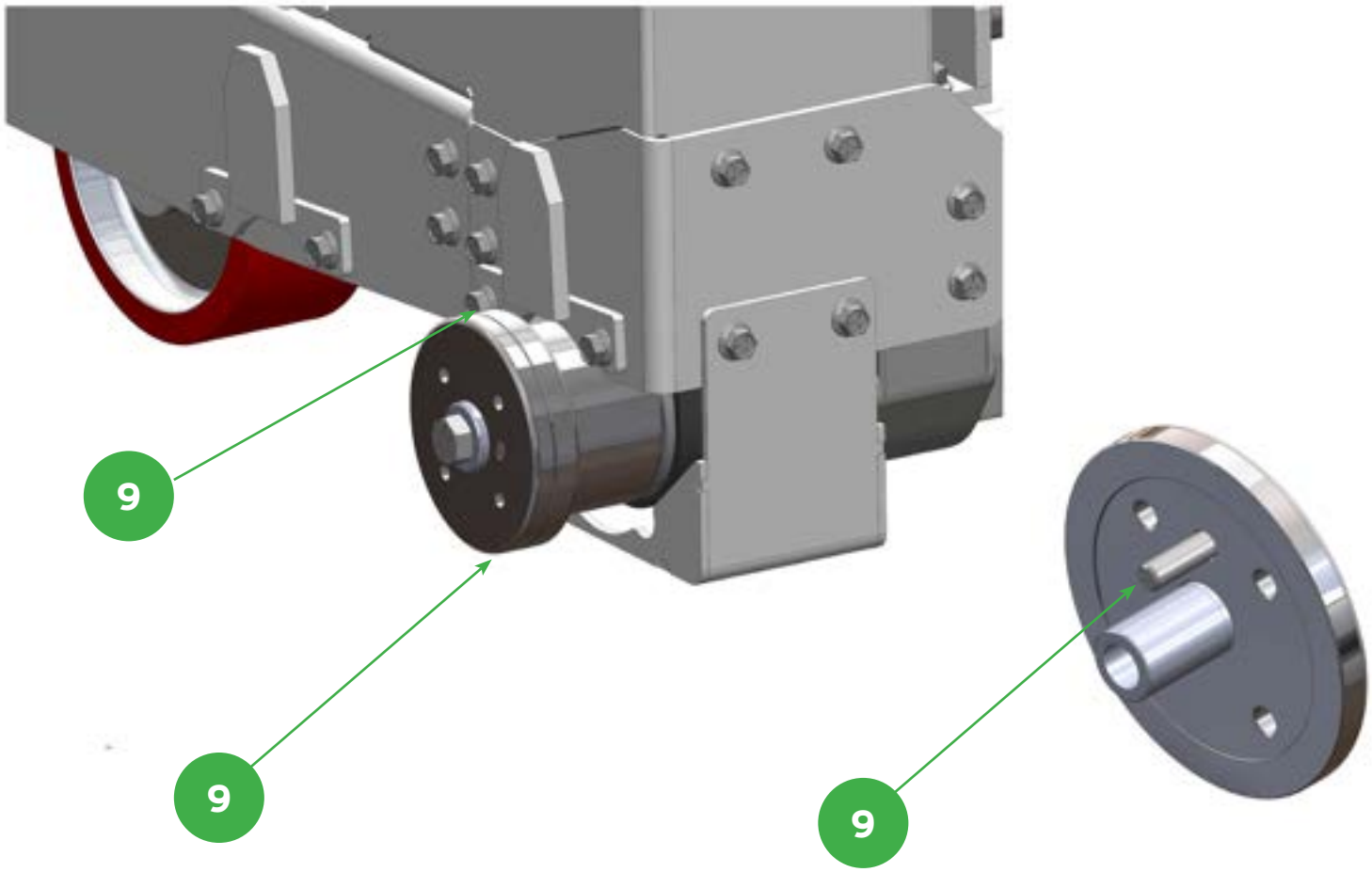
Blade Collar Inspection



9 Check the blade mounting inner and outer flange are clean and the blade locking pin is in place (change flanges if showing signs of wear):

Inspect the outside dimension of the collars, if the measurement is 1/8" or more under the nominal size, replace immediately. If the locking pin is damaged or missing, replace immediately.

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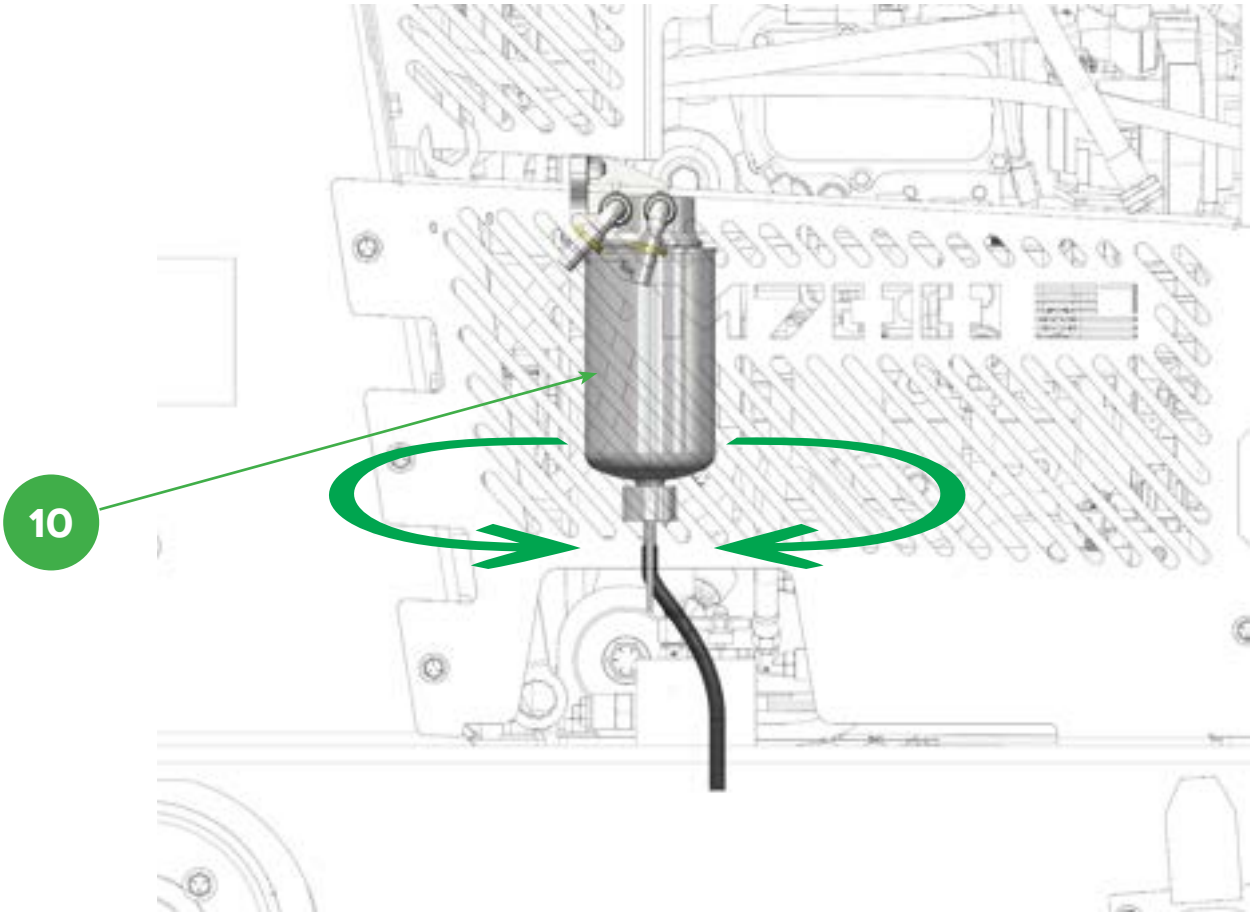

10. Drain fuel water separator:
Disconnect the fuel water separator electrical connector, turn the drain port 1-2 full turns until water starts draining out of the hose on the underside of the chassis.

⚠CAUTION Catch all water and fuel as required by local, state or federal law. Once water has been removed from the filter, tighten the drain port and reconnect the connector.

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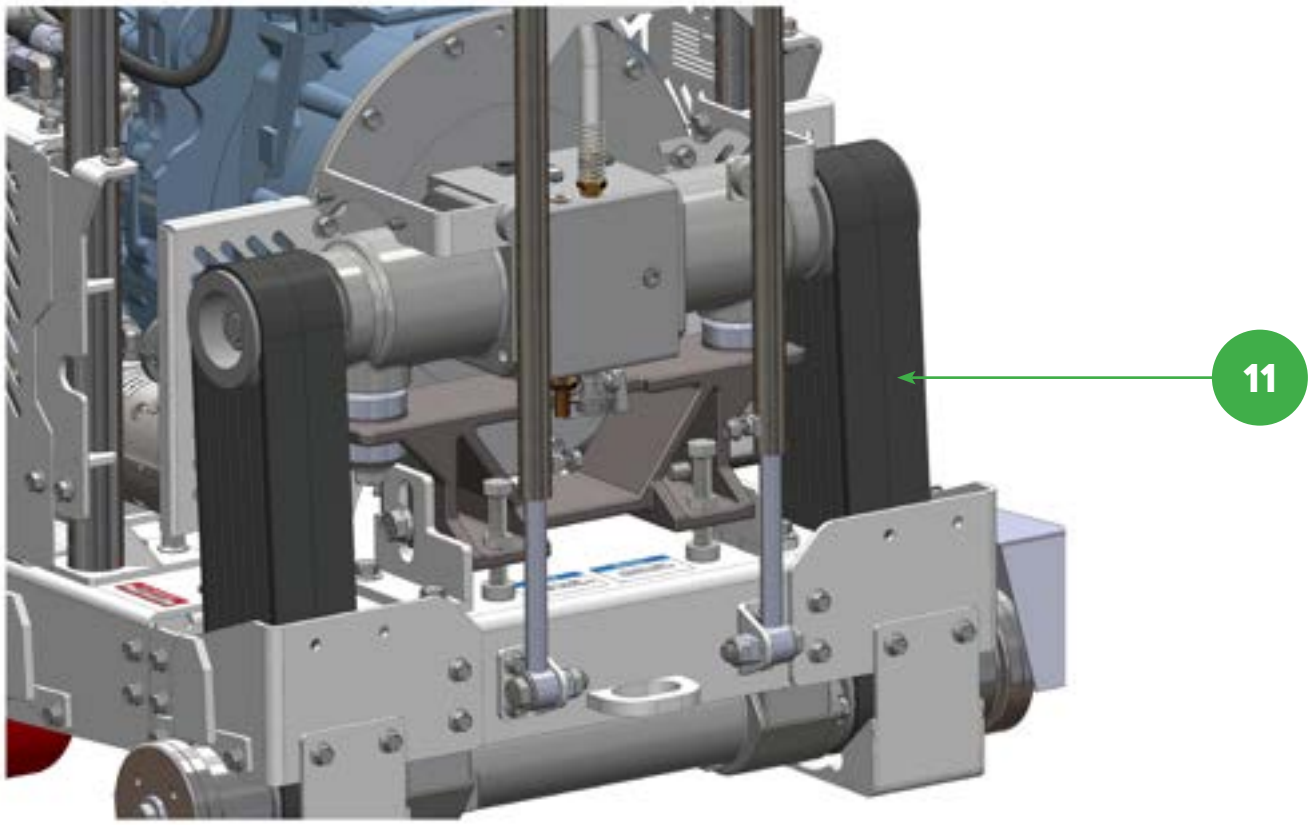
Belt Tension



11. Check the blade drive belts tension and wear, adjust or replace if necessary:

Belts should have ¼" of deflection at 18 lbs of force applied in the center of the belt. Ensure belts are free of cracks, tears and other damage, if not replace immediately.

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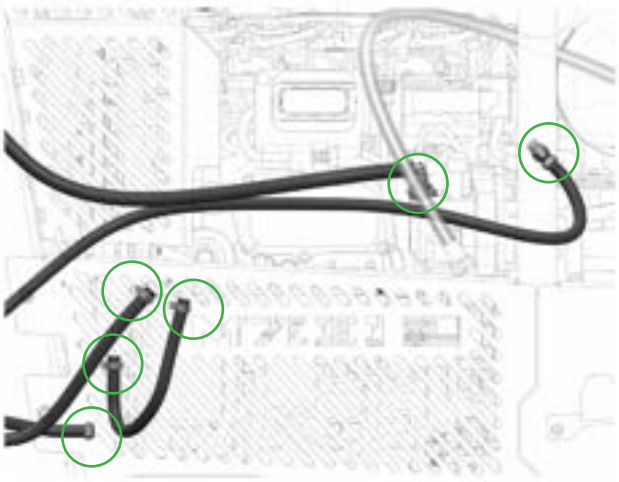

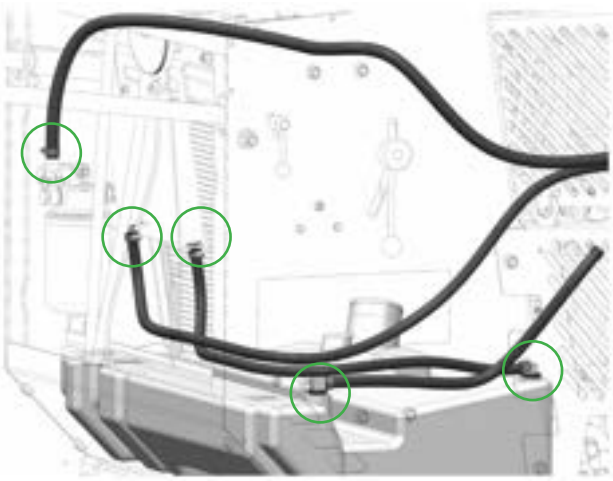

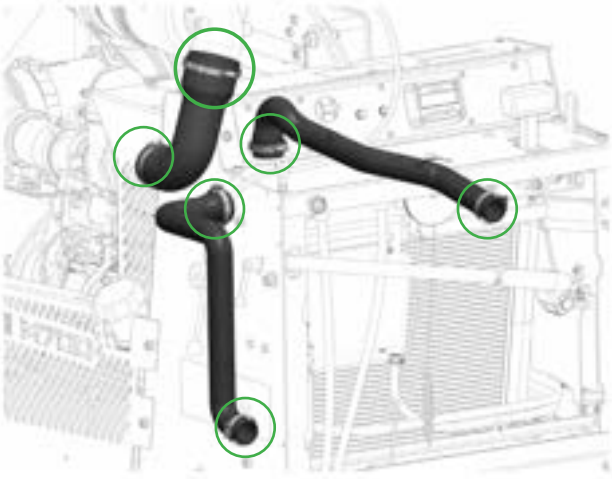

12. Check all hoses and hose clamps.
Tighten clamps and replace hoses if needed: Inspect all hose clamps for damage and tightness. If loose, torque small hose clamps to 10 in-lbs., torque large hose clamps to 30-35 in-lbs.

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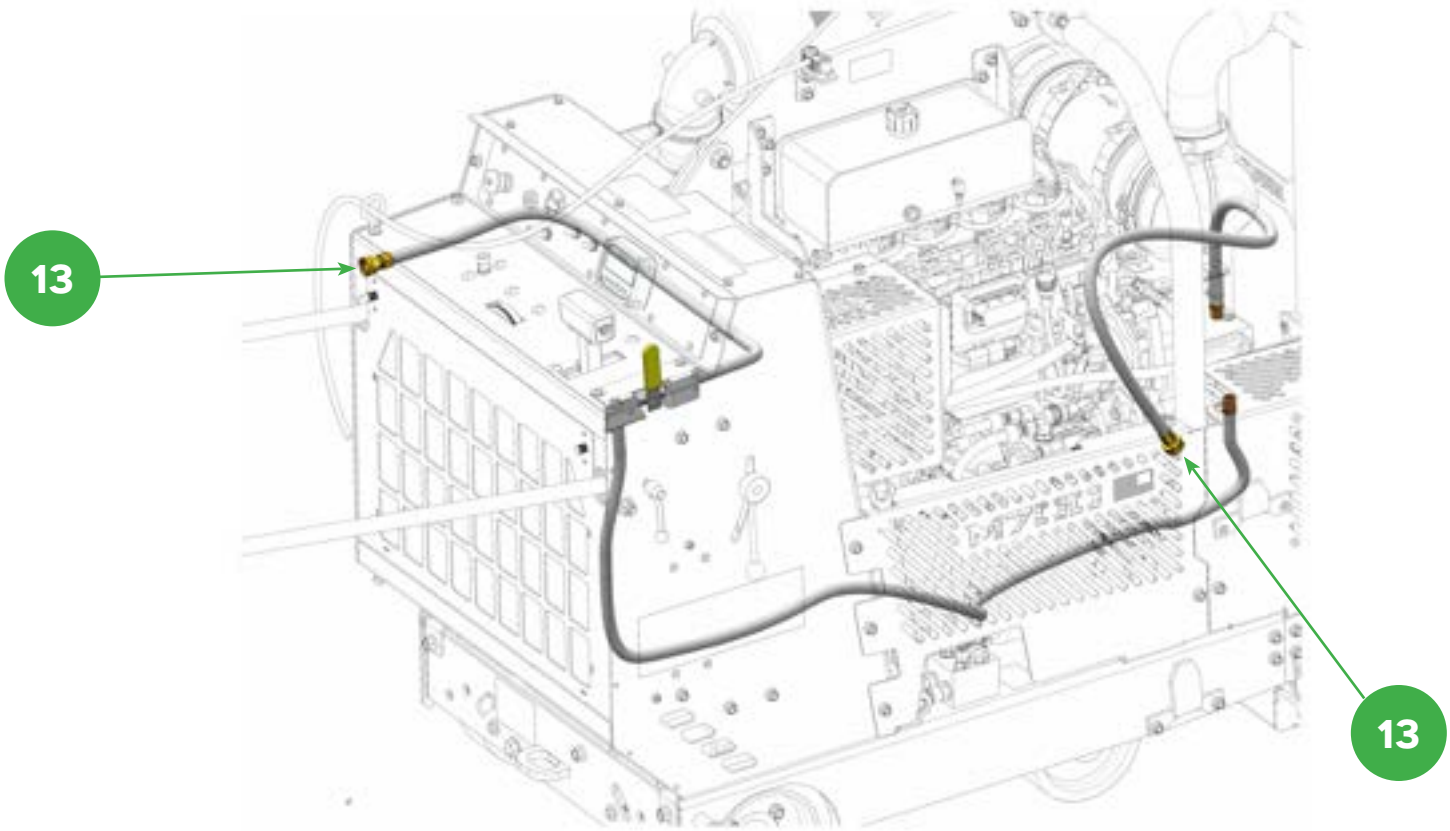
Water Hose



13. Check all water blade cooling water flow starting from the rear inlet to the blade guard outlet (free of restrictions)::

Starting at the water inlet, ensure there are no restrictions, cuts, tears or kinks throughout the water lines ending at the blade guard connection fitting.

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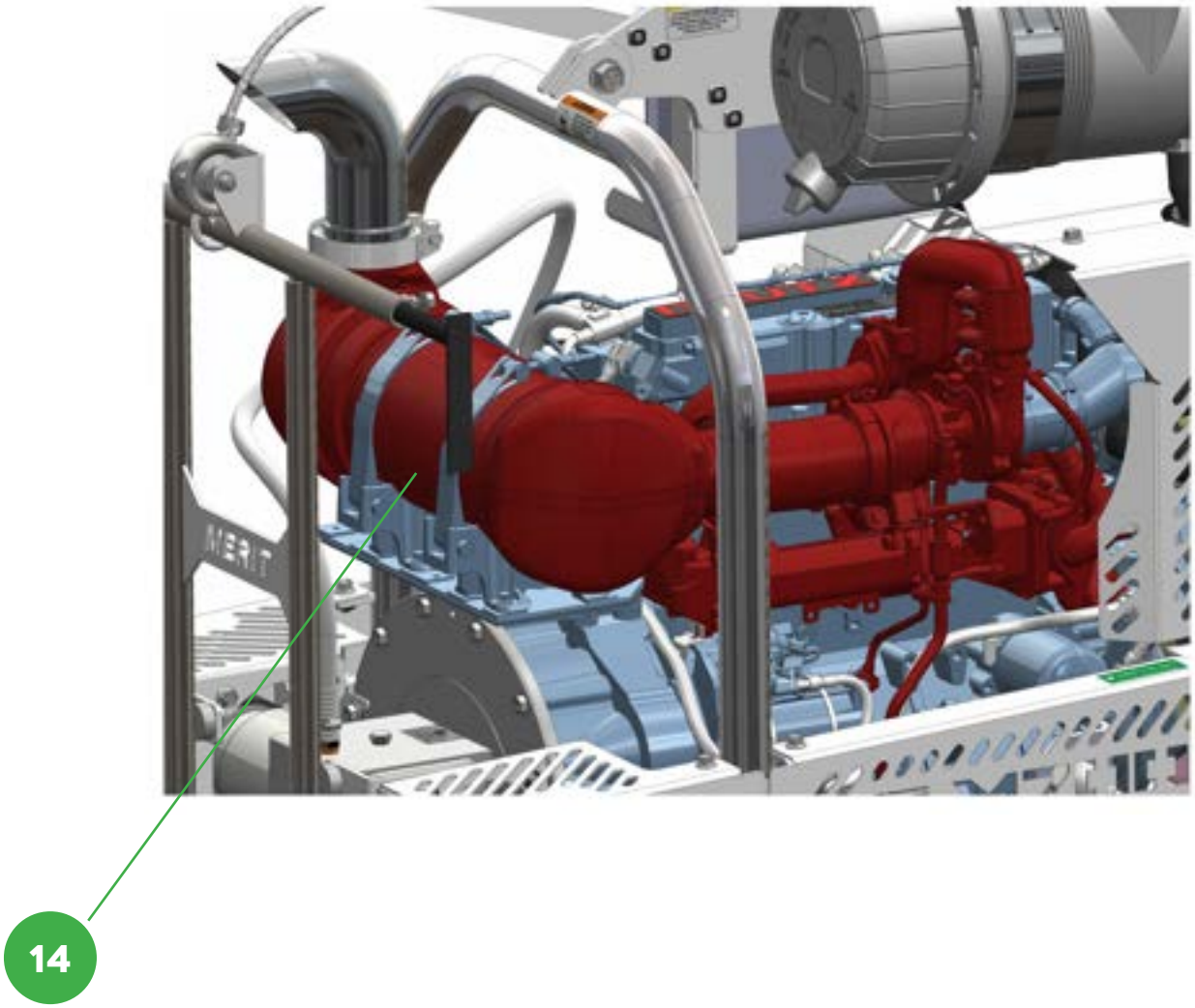

14. Check exhaust system for visible damage, cracks or leaks:
While the engine is cool, inspect all components of the exhaust including the exhaust manifold, turbine, EGR tube, EGR cooler, DOC tube and DOC.

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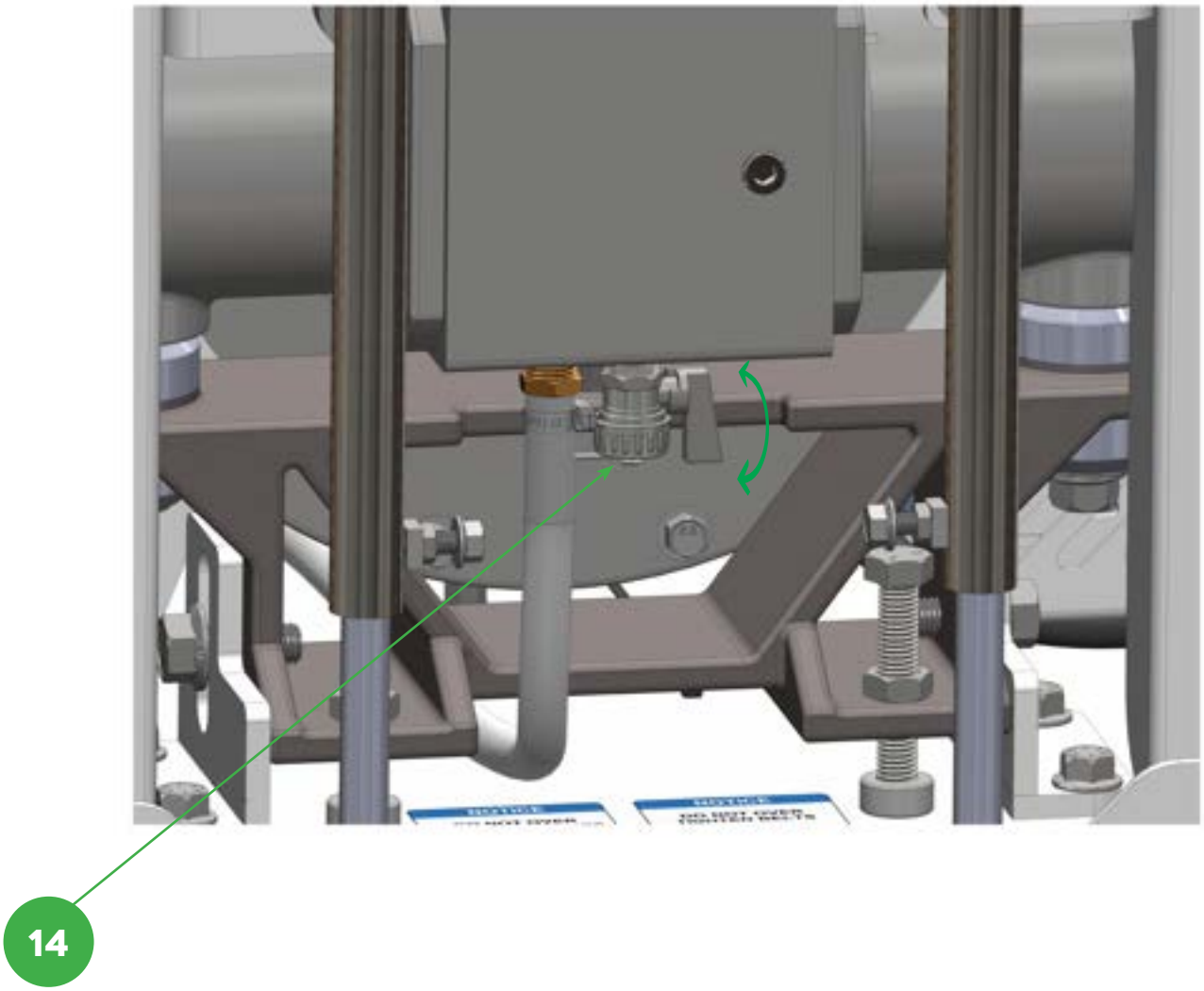
Gearbox Water Drain



15. Drain water from the gearbox when the ambient temperature is below 32°F/0°C:

Remove the protective cover for the water drain valve, connect a hose to recover the water, open the water valve on the main control panel, and turn the drain valve down to empty the gearbox. Compressed air can be used to blow out the system as long as it is kept under 50 PSI.

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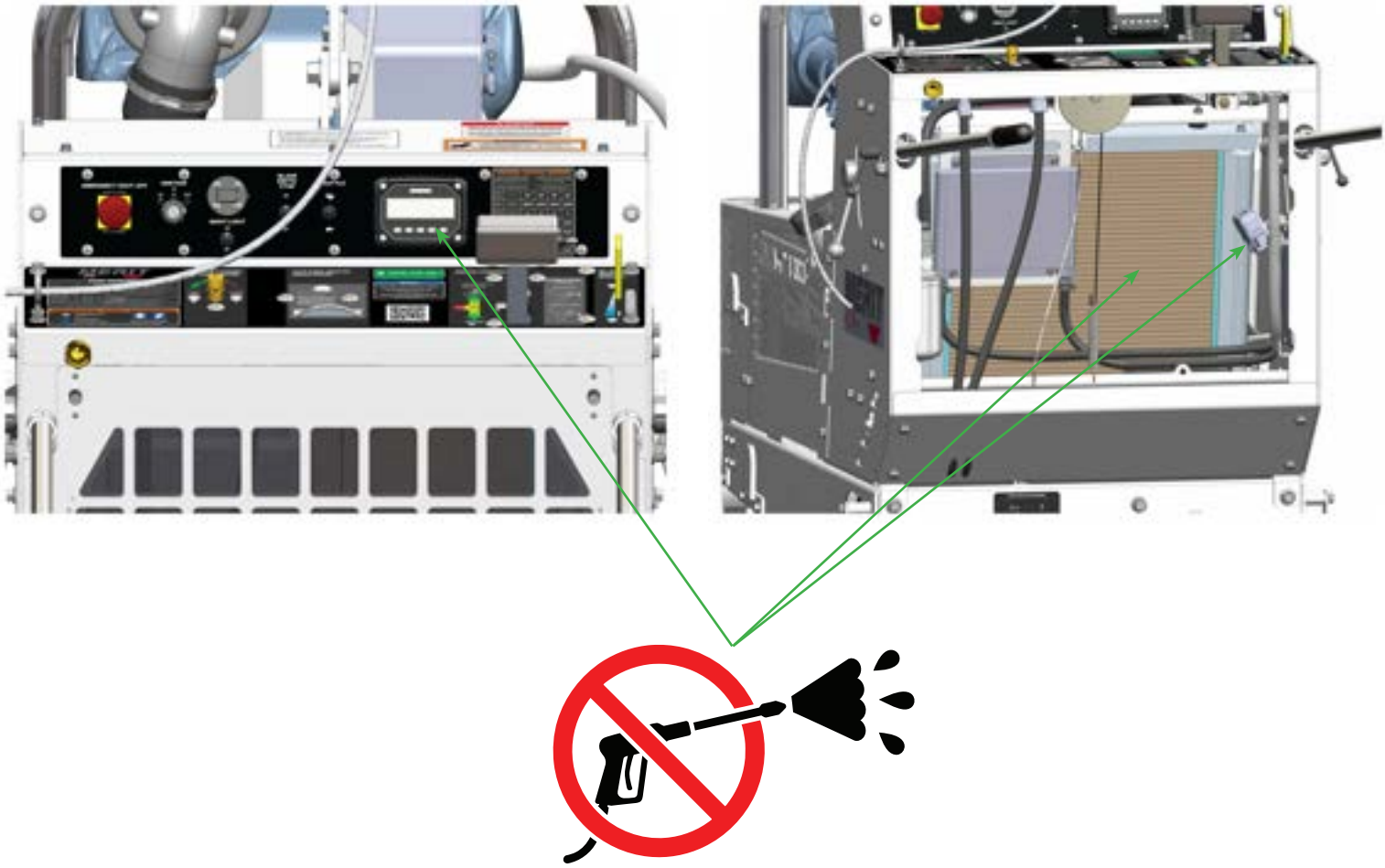

16. Check exhaust system for visible damage, cracks or leaks:

A pressure washer can be used for most surfaces on the M700, but **DO NOT** use a pressure washer on the display, inside the tower panel (radiator and ECU are present) or other electronics on the engine.

⚠CAUTION Never wash the unit while the engine and exhaust components are still hot.

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Additional References

1. [Deutz TD TCD 2.9 L4:]

2. ICS (www.icsdiamondtools.com)

3. Concrete Sawing and Drilling Association (CSDA) (www.csda.org)
   • CSDA has many helpful concrete cutting publications available to members and non-members.

4. Association of Equipment Manufacturers (AEM) (www.aem.org)
   • AEM has a variety of safety and technical manuals available for various types of equipment, along with a list of industry-standardized safety symbols.

5. Occupational Safety & Health Administration (OSHA) (www.osha.gov/)
   • OSHA provides information on work-related safety and health practices.

6. The National Institute for Occupational Safety and Health (NIOSH) (www.cdc.gov/NIOSH/)
   • NIOSH provides information on work-related safety and health practices.

Warranty Information

ICS warrants that products manufactured under the ICS/Merit brand come with the following limited warranty:

Equipment and parts are free from defects in workmanship and material for one year from the date of original purchase. All components not manufactured by ICS/Merit offer separate warranty periods.

During the warranty period, ICS/Merit will repair or replace any product or part manufactured by ICS/Merit that is found to be defective in material or workmanship. ICS/Merit commitment under this warranty is explicitly limited to products confirmed to be defective by ICS/Merit or an authorized service center. Until such a determination is made, all shipping and labor costs will be assumed by the purchaser.

To make a claim under this warranty, the purchaser must:

- Notify ICS/Merit in writing (email is acceptable) of defective product within 10 days of failure.
- Have operated and maintained the product in accordance with ICS/Merit's instructions and/or manual; and
- Provide the product serial number with the claim.

Warranty does not extend to any product that has been abused, misused, neglected, involved in an accident, repaired or modified without ICS/Merit authorization, or used in violation of instructions provided by ICS/Merit.

ICS/Merit shall have no liability for any (a) consequential, special or liquidated damages arising from or related to use of the product or breach of the warranty contained herein, including, without limitation, lost revenue or a loss of production or downtime; (b) damages to or from products or services not provided by ICS/Merit; or (c) repair, replacement or other expenses incurred in correcting any products, including, without limitation, products manufactured by ICS/Merit. There are no express warranties other than those contained in this warranty.

For more information, please call 800.321.1240 or email ics.service@oregontool.com.

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