TracStar® iSeries Fusion Machines

Models: AT24P0817487, AT24P0888638, AT24P0888654, AT24P0888656, AT900P0807623, AT900P0888634, AT900P0888648, AT900P0888650, AT48P0888642 AT48P0808167, AT48P0888644, AT48P0888646

McELROY

www.mcelroy.com

Operator's Manual

Manual: T48P0898411
Revision: B 08/22
Original Language: English

P.O. Box 580550
Tulsa, Oklahoma 74158-0550, USA

Important Safety Information

Most accidents that involve product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards. This person should also have necessary training, skills and tools to perform these functions properly.

Advanced training is offered through McElroy University. Course offerings are meant to enhance your efficiency, productivity and safety in the proper use of McElroy equipment.

Improper operation, maintenance or repair of this product can be dangerous and could result in injury or death.

Do not operate this product until you have carefully read, and understand all the sections of this manual, and all other equipment manuals that will be used with it.

Follow all applicable federal, state, local, and industry specific regulations.

The hazards are identified by the "Safety Alert Symbol" and followed by a "Signal Word" such as "DANGER", "WARNING" or "CAUTION". The Safety Alerts are shown below.

The meaning of these safety alert symbols are as follows:

⚠ DANGER - Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING - Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION - Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

Signal words "**NOTICE**" and "**IMPORTANT**" are used to bring attention to important information.

The meaning of these signal words are as follows:

"**NOTICE**" - Can keep you from doing something that might damage the machine or someone's property. It may also be used to alert against unsafe practices.

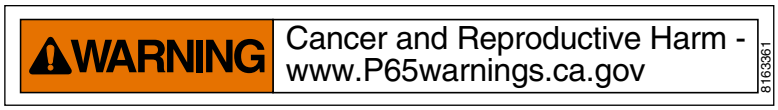
"**IMPORTANT**" - Can help you do a better job or make your job easier in some way.

McElroy cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are, therefore, not all inclusive. If a tool, procedure, work method or operating technique that is not specifically recommended by McElroy is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the product will not be damaged or be made unsafe by the operation, maintenance or repair procedures that you choose.

The information, specifications, and illustrations in the publication are on the basis of information that was available at the time that the publication was written. The specifications, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service that is given to the product. Obtain the complete and most current information before you start any job. The most current information is available at our website

www.mcelroy.com.

TX05337-04-18



⚠ WARNING

When replacement parts are required for this product McElroy recommends using McElroy replacement parts or parts with equivalent specifications including, but not limited to, physical dimensions, type, strength and material.

Failure to heed this warning can lead to premature failures, product damage, personal injury or death.

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FOREWORD

Literature Information

This manual should be stored in a protected location for future reference. Use the literature holder if provided with the product. Digital copy will contain hyperlinks. Press Alt + Left Arrow to return to the selected hyperlink.

This manual contains safety information, operation instructions, transportation information, lubrication information and maintenance information.

Some photographs or illustrations in this publication show details or equipment that can be different from your machine. Guards and covers might have been removed for illustrative purposes.

Continuing improvement and advancement of product design might have caused changes to your machine which are not included in this publication. Read, study and keep this manual with the machine.

Whenever a question arises regarding your machine, or this publication, please contact McElroy Technical Services at 918-831-9224 or techsupport@mcelroy.com

Safety

The safety section lists basic safety precautions. In addition, this section identifies the text and locations of warning signs and labels used on the machine.

Read and understand the basic precautions listed in the safety section before operating or performing maintenance and repair on this machine.

Operation

The operation section is a reference for the new operator and a refresher for the experienced operator. This section includes a discussion of gauges, switches, machine controls, accessories and transportation.

Photographs and illustrations guide the operator through correct procedures of setting up, checking and operating the machine.

Operating techniques outlined in this publication are basic. Proficiency develops as the operator gains knowledge and experience with the machine and its capabilities.

Maintenance

The maintenance section is a guide to equipment care. The maintenance schedule lists the items to be maintained at a specific service interval. Items without specific intervals are listed under the "As Needed" service interval. The schedule lists the page for the step-by-step instructions required to accomplish the scheduled maintenance. Use the schedule as an index for all maintenance procedures.

Some maintenance procedures may be referenced in a manual pertaining to that component of the machine. For example, maintenance for an engine component would have its intervals and procedures in the engine operator's manual.

Use the hour meter (if equipped) to determine servicing intervals. Calendar intervals will be used instead of hour meter intervals if no hour meter is equipped on a machine. Recommended service should always be performed at the interval that occurs first.

Under extremely severe, dusty or wet operating conditions, more frequent lubrication than is specified in the maintenance schedule might be necessary.

McElroy University

For more than 30 years, McElroy has been the only pipe fusion machine manufacturer to continuously offer advanced training. Course offerings are meant to enhance your efficiency, productivity and safety in the proper use of McElroy machines. McElroy University classes are structured so that the skills learned and the machines used in each class closely match the machines found on pipelining jobsites. We offer training at our facility or yours. Our uniquely qualified McElroy University course instructors offer years of industry experience.

Tuition for each course includes lunches, course materials and a certificate of completion. Online registration, as well as up-to-date course offerings and dates, is available at **www.mcelroy.com/university**

This manual is intended as a guide only and does not take the place of proper training by qualified instructors. The information in this manual is not all inclusive and can not encompass all possible situations that can be encountered during various operations.

Patent Information

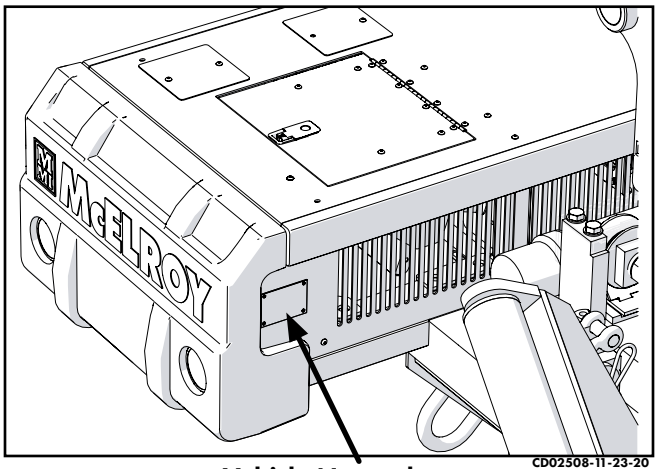
This product and other products could be protected by patents or have patents pending. All the latest patent information is available at patent.mcelroy.com

Replacement Literature

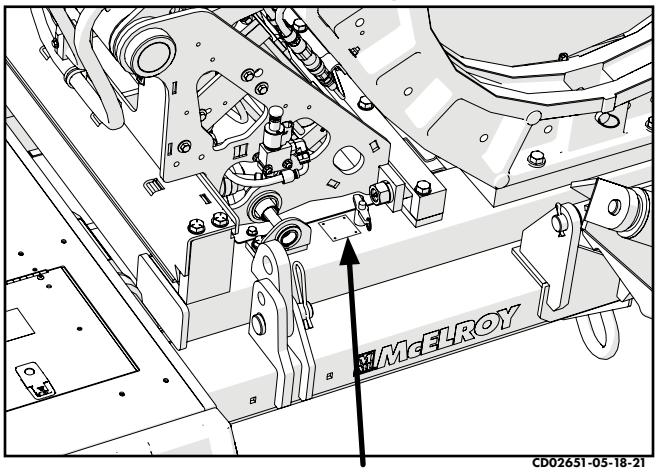
This product is shipped with a printed operator's manual. If the manual becomes lost or damaged, order a replacement manual or download and print a copy of the manual at www.mcelroy.com.

Nameplate Location

Every machine has a name plate that includes the machine's model number, serial number, and power requirements. The model and serial numbers can be used to register the machine online and activate the warranty. Reference warranty card for information on registering your product.



Vehicle Nameplate



Carriage Nameplate

Replacement Parts

Refer to the McElroy parts finder at www.mcelroy.com to locate parts for purchase. Reference the model number on the nameplate of the machine when using the parts finder.

Contact your McElroy distributor to order replacement parts. Find your closest distributor on our website at www.mcelroy.com.

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Limited Warranty

McElroy Manufacturing, Inc. (McElroy) warrants all products manufactured, sold and repaired by it to be free from defects in materials and workmanship, its obligation under this warranty being limited to repairing or replacing at its factory and new products, within **5 years** after shipment, with the exception of purchased items (such as electronic devices, pumps, switches, etc.), in which case that manufacturer's warranty applies. Warranty applies when returned freight is prepaid and which, upon examination, shall disclose to have been defective. This warranty does not apply to any product or component which has been repaired or altered by anyone other than McElroy or has become damaged due to misuse, negligence or casualty, or has not been operated or maintained according to McElroy's printed instructions and warnings. This warranty is expressly in lieu of all other warranties expressed or implied. The remedies of the Buyer are the exclusive and sole remedies available and Buyer shall not be entitled to receive any incidental or consequential damages. Buyer waives the benefit of any rule that disclaimer of warranty shall be construed against McElroy and agrees that such disclaimers herein shall be construed liberally in favor of McElroy.

Return of Goods

Buyer agrees not to return goods for any reason except upon the written consent of McElroy obtained in advance of such return, which consent, if given, shall specify the terms and conditions and charges upon which any such return may be made. Materials returned to McElroy, for warranty work, repair, etc., **must have a Return Material Authorization (RMA) number**, and be so noted on the package at time of shipment. For assistance, inquiry shall be directed to:

McElroy Manufacturing, Inc.
P.O. Box 580550
833 North Fulton Street Tulsa, Oklahoma 74158-0550

PHONE: (918) 836–8611, FAX: (918) 831–9285.
EMAIL: fusion@McElroy.com

Note: Certain repairs, warranty work, and inquiries may be directed, at McElroy's discretion, to an authorized service center or distributor.

Disclaimer of Liability

McElroy accepts no responsibility of liability for fusion joints. Operation and maintenance of the product is the responsibility of others. We recommend qualified joining procedures be followed when using McElroy fusion equipment.

McElroy makes no other warranty of any kind whatever, express or implied; and all implied warranties of merchantability and fitness for a particular purpose which exceed the aforestated obligation are hereby disclaimed by McElroy.

Product Improvement

McElroy reserves the right to make any changes in or improvements on its products without incurring any liability or obligation to update or change previously sold machines and/or the accessories thereto.

Information Disclosed

No information of knowledge heretofore or hereafter disclosed to McElroy in the performance of or in connection with the terms hereof, shall be deemed to be confidential or proprietary, unless otherwise expressly agreed to in writing by McElroy and any such information or knowledge shall be free from restrictions, other than a claim for patent infringement, is part of the consideration hereof.

Proprietary Rights

All proprietary rights pertaining to the equipment or the components of the equipment to be delivered by McElroy hereunder, and all patent rights therein, arising prior to, or in the course of, or as a result of the design or fabrication of the said product, are exclusively the property of McElroy.

Law Applicable

All sales shall be governed by the Uniform Commercial Code of Oklahoma, U.S.A.

Register your product online to activate your warranty: www.McElroy.com/fusion

(Copy information listed on the machine nameplate here for your records).

Model No. _____

Serial No. _____

Date Received _____

Distributor _____

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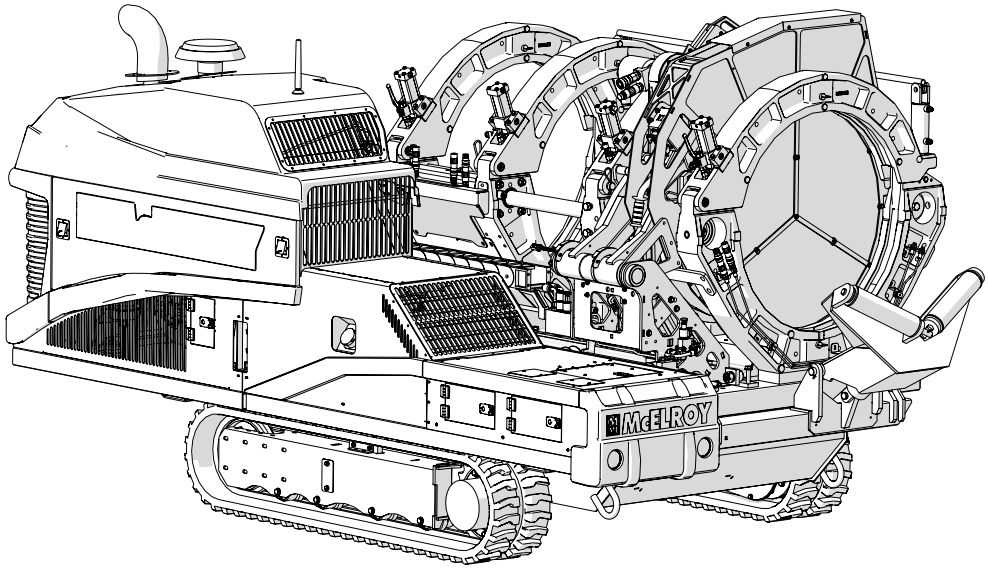
SAFETY



There can be several specific safety messages on this machine. The exact location of the hazards and the description of the hazards are reviewed in this section. Please become familiarized with all safety messages.

Make sure that all of the safety messages on the machine are legible. Clean the safety messages or replace the safety messages if you cannot read the words. Replace if the illustrations are not legible. When you clean the safety messages, use a cloth, water and soap. Do not use solvent, gasoline, or other harsh chemicals to clean the safety messages. Solvents, gasoline, or harsh chemicals could loosen the adhesive that secures the safety message or damage the print of the safety message.

Replace any safety message that are damaged, or missing. If a safety message is attached to a part that is replaced, install a safety message on the replacement part. New safety messages can be ordered from McElroy using the part number listed.

General Safety

Safety is important. Report anything unusual that you notice during set up or operation.

LISTEN for thumps, bumps, rattles, squeals, air leaks, or unusual sounds.

SMELL odors like burning insulation, hot metal, burning rubber, hot oil, or natural gas.

FEEL any changes in the way the equipment operates.

SEE problems with wiring and cables, hydraulic connections, or other equipment.

REPORT anything you see, feel, smell, or hear that is different from what you expect, or that you think may be unsafe.

SAFE1ST-2-21-18

Safety Equipment

Wear a hard hat, safety shoes, safety glasses, and other applicable personal protective equipment.

Remove jewelry and rings, and do not wear loose fitting clothing or long hair that could catch on controls or moving machinery. Remove any loose safety equipment during an operation that could be drawn into or caught in the machine.

Ensure proper fire prevention or other fire-fighting equipment is available and all personnel know how and when to use it.

Do Not Operate in a Hazardous Environment

⚠ DANGER

Electric motors and heaters are not explosion proof. Operation of these components in an explosive atmosphere will result in serious injury or death.

If operating in an explosive atmosphere, the carriage must be removed from the vehicle and the vehicle must be operated in a non-explosive atmosphere. The heater should be brought up to temperature in a non-explosive atmosphere, then unplugged before entering the explosive atmosphere for fusion.

WR00080-2-21-18

Fuel Handling

⚠ DANGER

Gasoline and diesel fuels are extremely flammable, and their vapors will explode if ignited.

⚠ WARNING

Ultra Low Sulfur Diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations with higher sulfur content. Avoid death or serious injury from fire or explosion; consult with your fuel or fuel system supplier to ensure the delivery system is in compliance with fueling standards for proper grounding and bonding practices.

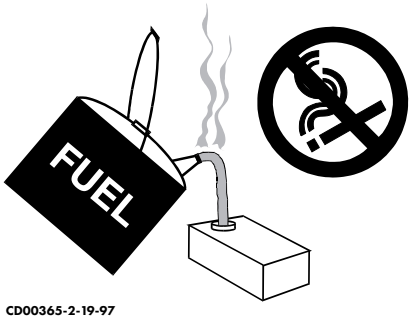
Do not fill the fuel tank while the engine is hot or running, as spilled fuel could ignite.

Refuel in a well ventilated area. Do not smoke or allow flames or sparks in the area where the engine is refueled, or where fuel is stored.

Do not start the engine near spilled fuel. Wipe up spills immediately.

Make sure the fuel tank cap is closed tightly and properly secured.

Avoid repeated or prolonged fuel contact with skin or breathing of fuel vapor.



CD00365-2-19-97

Units With Engine

⚠ DANGER

Combustion engines can cause explosions when operated in an explosive atmosphere. Do not operate gas or diesel powered machines in an explosive atmosphere.

When operating in an explosive atmosphere, keep vehicle in a safe area by using hydraulic extension hoses to the carriage.

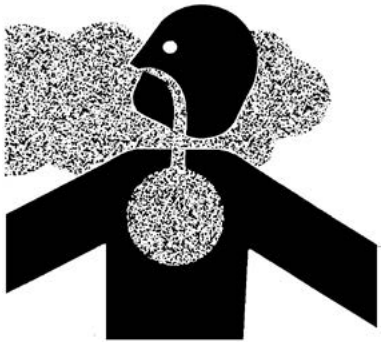
Help prevent fires by keeping machine clean of accumulated trash, debris and facer shavings.

WR00080-2-21-18

Carbon Monoxide

⚠ DANGER

Engine exhaust gases contain poisonous carbon monoxide. Carbon monoxide can cause severe nausea, fainting and death. Avoid inhaling exhaust fumes, and never run the engine in a closed or confined area.



WR00093-5-14-96

Pipe Handling Safety

⚠WARNING

Do not position yourself or any other personnel under supported or raised pipe. Pipe is heavy and could fall unexpectedly.

⚠WARNING

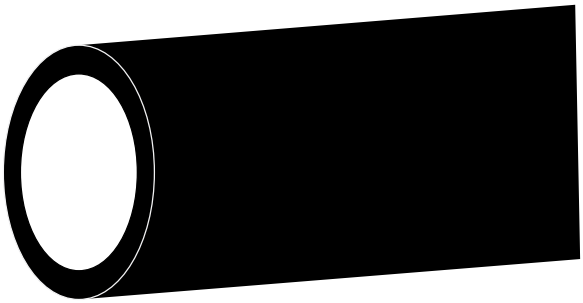
Pipe that is bent can store a great amount of energy. Do not bend and force the pipe into the machine. A bent pipe with stored energy can generate tremendous force when that energy is released.

It is recommended that the pipe is always held securely by either being clamped in the fusion machine jaws or properly attached to a lifting device.

NOTICE: Do not leave machine unattended to unauthorized personnel. Do not allow unauthorized personnel to operate the machine.

Keep persons that are not involved in handling pipe away from pipe handling operations. Keep away from the pipe when the pipe and handling equipment are in motion. When in motion, all persons involved in handling pipe should be able to see all other persons at all times. If any handling person is not in sight, immediately stop moving equipment and pipe and locate that person. Do not continue until all persons are accounted for and in sight.

Never push, roll, dump or drop pipe lengths, bundles or coils off the delivery truck, off handling equipment, or into a trench. Always use appropriate equipment to lift, move, and lower the pipe.



WR00097-4-17-13

Crush Points

⚠WARNING

Hydraulically operated equipment operates under high pressure and generates extremely high forces. Anything inadvertently caught in the machine will be crushed. Keep fingers, feet, arms, legs, and head out of the machine while hydraulics are activated. Always ensure machine power is off before entering the machine for any reason.

WR00012-12-4-92

Battery

⚠WARNING

Do not expose the battery to flames or electrical sparks. Hydrogen gas generated by the battery is explosive. Serious injury can result from an exploding battery.

⚠WARNING

The battery contains acid that can cause burns. Do not allow battery fluid to contact your skin, eyes, fabrics, or painted surfaces. After touching a battery or battery cap, do not touch or rub your eyes.

Eye Contact: Flush eyes with large amounts of water for at least 15 minutes. Seek immediate medical attention if eyes have been exposed directly to acid.

Skin Contact: Flush affected area(s) with large amounts of water using deluge emergency shower, if available, for at least 15 minutes. Remove contaminated clothing. If symptoms persist, seek medical attention.

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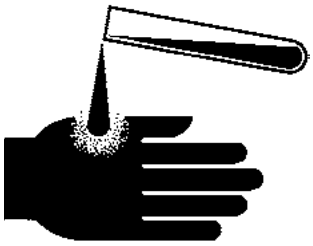
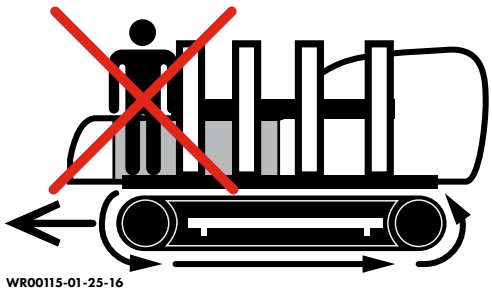


CD00177-9-14-95

Do Not Ride Machine

⚠WARNING

Do not ride on the machine while it is moving. Riding on the machine could cause the person to fall from or into the machine. Do not drive or tow the machine while persons are on the machine.



WR00115-01-25-16

Electrical Safety

⚠WARNING

Always ensure equipment is properly grounded. It is important to remember that you are working in a wet environment with electrical devices. Proper ground connections help to minimize the chances of an electric shock.

Frequently inspect electrical cords and unit for damage. Have damaged components replaced and service performed by a qualified electrician.

NOTICE: Always connect units to the proper power source as listed on the unit, or in the owner's manual.

NOTICE: Disconnect the machine from the power source before attempting any maintenance or adjustment.

WR00065-2-21-18

Unit With Hydraulics

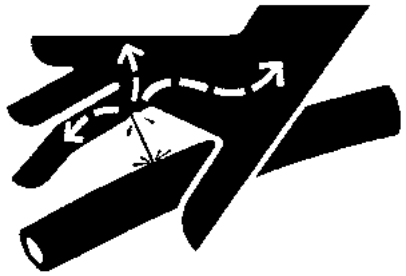
It is important to remember that a sudden hydraulic oil leak can cause serious injury, or even be fatal if the pressure or oil temperature is high enough.

⚠WARNING

Escaping fluid under pressure can penetrate the skin causing serious injury. Keep hands and body away from pinholes which eject fluid under pressure. Use a piece of cardboard or paper to search for leaks. If any fluid is injected into the skin, it must be immediately removed by a doctor familiar with this type of injury.

⚠WARNING

Unwanted movement of the machine could result in serious injury or damage to machine. Unwanted movement of the machine may take place if switches do not match machine state when the machine power is turned on.



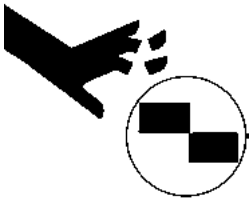
WR00078-4-8-93

Facer Blades Are Sharp

⚠WARNING

Facer blades are sharp and can cut. Never attempt to remove shavings while the facer is running, or is in the facing position between the jaws. Use care when operating the facer, and when handling the unit.

NOTICE: Never extend the facer blades beyond the inner or outer circumference of the facer.



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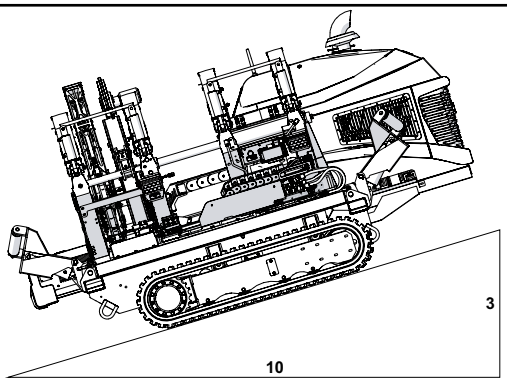
Positioning and Setting Fusion Machine

Place fusion machine on as level ground as possible.

If it is necessary to operate machine on unlevel grade, make sure that the ground is stable. Some unstable conditions may be ice, snow, mud and loose gravel.

⚠WARNING

For operation safety, never operate the machine on a grade steeper than 30 %. (A 3 foot elevation change in 10 feet)



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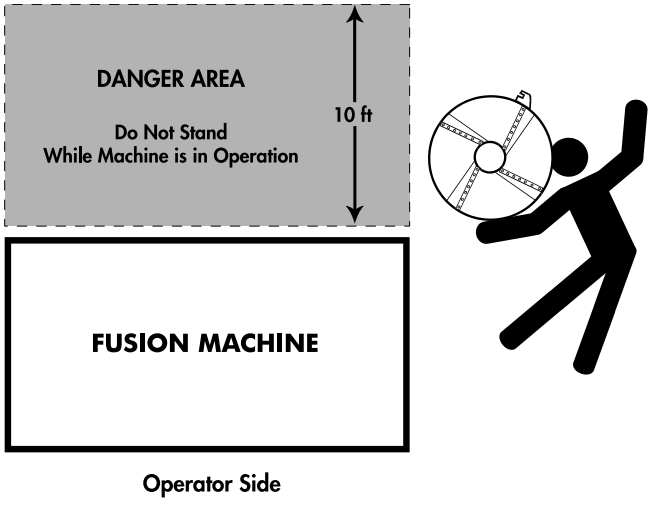
Stand Clear

⚠WARNING

Jaws, heater and facer pivot rapidly and can cause severe bodily injury if someone is standing too close. All personnel must stand clear of the back of the machine when operating.

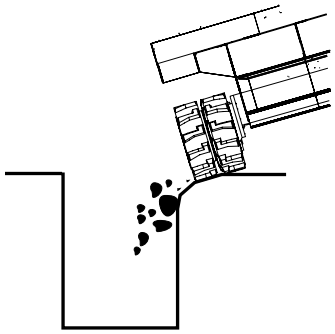
Be aware of yourself and others when operating this machine and when sections of pipe are being moved.



Keep Machine Away From Edge of Ditch

⚠WARNING

Heavy equipment too close to a ditch can cause the walls of the ditch to cave-in. Keep the machine far enough away from the edge of the ditch to prevent personnel injury and equipment damage resulting from a cave-in.



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Lifting Safety

Follow all applicable federal, state, local, and industry specific regulations when lifting.

⚠WARNING

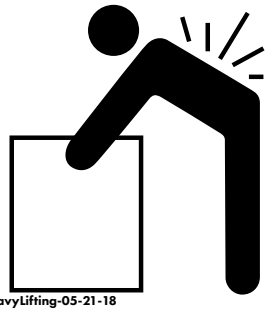
Safety warnings:

1. **Do not exceed rated load or lift loads greater than the rated load of the lifting device.**
2. **Do not operate a damaged or malfunctioning lifting device.**
3. **Do not lift persons.**
4. **Do not lift a suspended load over persons.**
5. **Do not leave a suspended load unattended.**
6. **Do not remove or obscure warning labels.**
7. **Read and understand the lifting device operator's manual before use.**
8. **Stay clear of the suspended load.**
9. **Lift loads only as high as necessary.**
10. **Do not alter or modify the lifting device.**
11. **Employ generally accepted safe lifting practices.**
12. **Do not shock or impact load the lifting device.**
13. **Inspect all lifting pins for damage.**

Personal Lifting Safety

⚠CAUTION

The machine components are heavy. Using one person to some machine components may result in an injury. Use two people to lift those machine components.



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Heater is Hot

⚠CAUTION

The heater is hot and will burn clothing and skin. Keep the heater protected from personnel when not in use and use care when handling heater and heating pipe.

NOTICE: Use only a clean dry lint free non-synthetic cloth to clean the heater plates.

WR00030-2-21-18

Sound Information

The operator position Equivalent Sound Pressure Level is 84 dB(A) max at full engine RPM and 76 dB(A) max at low engine RPM. This is measured from the operator location at the carriage of the machine.

At the vehicle console the Equivalent Sound Pressure Level is 85 dB(A) max at full engine RPM and 77 dB(A) max at low engine RPM. This is measured from the operator location at the vehicle console.

Hearing protection may be needed when the machine is operated at full engine RPM or in a noisy environment.

Fusion Procedures

Obtain a copy of the pipe manufacturer's fusion procedures or appropriate joining standard for the pipe being fused. Follow the procedure carefully, and adhere to all specified parameters.

NOTICE: Failure to follow the pipe manufacturer's fusion procedures or appropriate joining standard could result in a bad fusion joint.

Do Not Modify Machine

Make no modifications to your equipment unless specifically recommended or requested by McElroy.

Theory of Butt Fusion

The principle of heat fusion is to heat two pipe surfaces to a designated temperature, and then fuse them together by application of force. This develops pressure which causes flow of the melted materials, which causes mixing and thus fusion. When the thermoplastic material is heated, the molecular structure is transformed into an amorphous condition. When fusion pressure is applied, the molecules from each thermoplastic part mix. As the joint cools, the molecules return to their form, the original interfaces are gone, and the fitting and pipe have become one monolithic unit. A strong, fully leak tight connection is the result.

The principal operations include:

Clamping The pipe pieces are held axially and radially to allow all subsequent operations to take place.

Facing The pipe ends are faced to establish clean, parallel mating surfaces perpendicular to the centerline of the pipes.

Aligning The pipe ends are aligned with each other to minimize mismatch of the pipe walls.

Heating A melt pattern that penetrates into the pipe is formed around both pipe ends.

Fusing The melt patterns are joined with a specified force, which is constant around the pipe interfacial area.

Cooling The fusion joint is held immobile with a specified force until adequately cooled.

Inspecting Visually examine the entire circumference of the joint for compliance with the standard or fusion procedure used.

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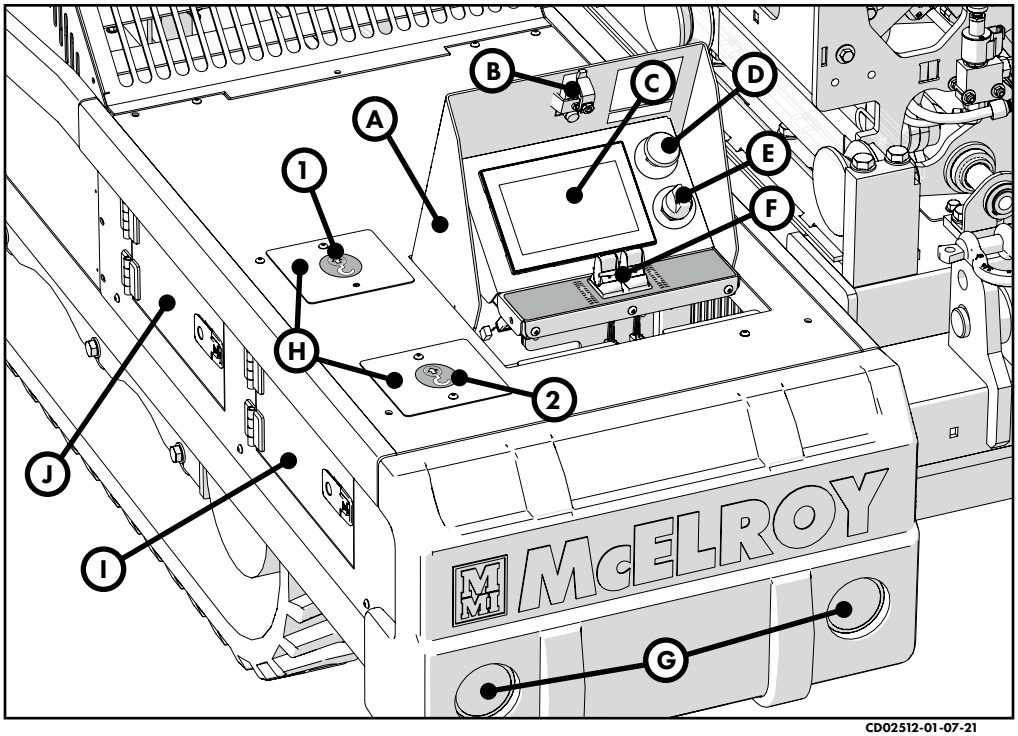

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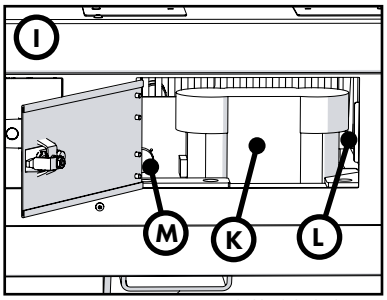

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Nomenclature

Vehicle Console

A - Vehicle Controls Cover

Contains the vehicle controls and rotates to reveal the controls and can be stowed and locked below the top cover.

B - Vehicle Controls Lock

Locks the vehicle controls below the top cover.

C - Vehicle Display

Touch screen that displays vehicle information and also has some vehicle controls (refer to Vehicle Display screens for an index of screens).

D - Emergency Stop Button

Button used to completely shut off and disable the machine in case of an emergency.

E - Engine Keyswitch

Keyswitch used to start and stop the engine.

F - Track Drive Paddle Levers

Paddle levers used to drive the vehicle. Move the lever in the direction you want to drive the vehicle. The levers offer proportional control of the track movement. The track speed can be changed on the vehicle display.

G - Fixed End Drive Lights

Drive lights are attached to the fixed end bumper. The lights are turned on and off from the vehicle display on the vehicle console.

H - Lifting Point Covers

Covers for the fixed end engine side lifting point. There are two covers

1) 630*i* and 900*i* lifting point

2) 1200*i* lifting point

The cover will have a lift point label on the cover for the lift point used on that machine.

I - Vehicle Remote Storage Access Door

Locking door that accesses the remote storage and also remote battery charging. There is also a diagnostic connector for the engine controller.

J - Electrical Fuse and Relay Access Door

Locking door that accesses the fuses and relays. The DataLogger® tablet can be stored in the panel. There is a vehicle diagnostic port in this location. An electrical panel layout label is on the inside of the access door.

K - Vehicle Radio Remote

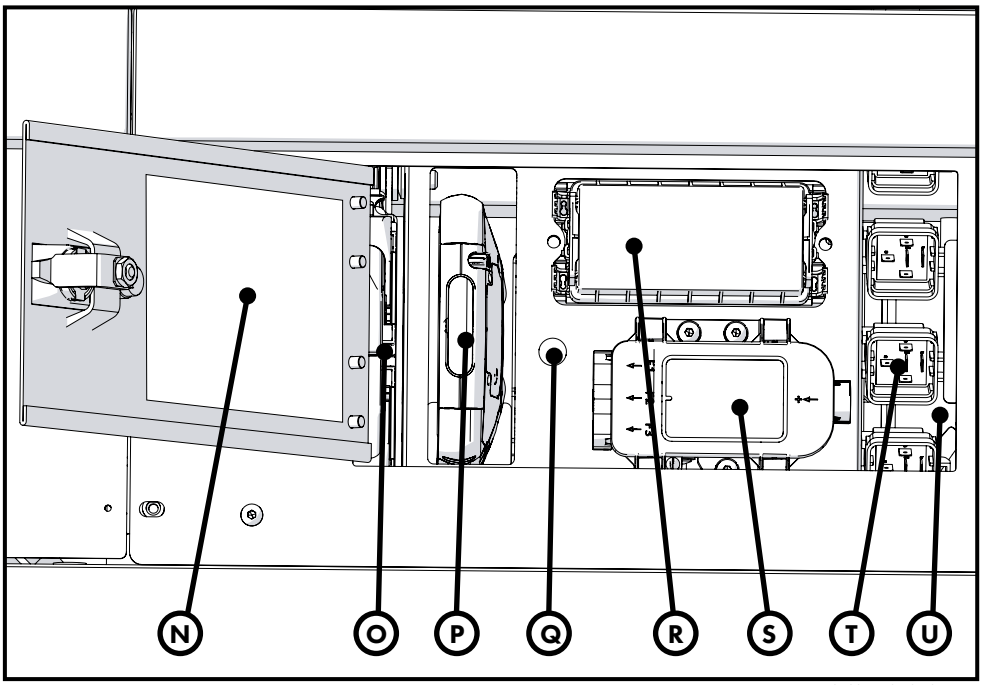
Used to drive the vehicle by remote. It is powered by rechargeable battery packs.

L - Remote Battery Charger

Used to charge the radio remote battery pack. The battery will charge when the machine is running. The remote comes with two battery packs and one can be charged while the other is being used.

M - Engine Controller Diagnostic Connector

Used to connect to the engine controller for engine troubleshooting.



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Fuse and Relay Panel

N - Fuse and Relay Legend Label

Lists all the fuses and relays contained in this area. Each component is labeled with identifiers, names and any amperage information for fuses.

O - Vehicle Controller

Controller for all the functions and components on the vehicle.

P - DataLogger® Tablet Storage

Storage area for tablet when the tablet is not being used.

Q - Vehicle Controller Diagnostic Port

Used to connect to the vehicle controller for diagnostics and software updates.

R - Fuse and Relay Block

Contains several different fuses and relays for machine components.

S - Fuse Block

Contains three engine system related fuses.

T - Relays

Four single component relays.

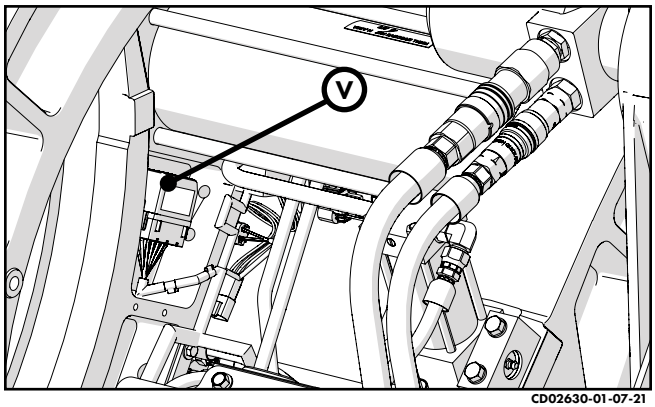
U - Radio Remote Receiver

Receives commands from the radio remote and sends the command to the vehicle controller.

Carriage Fuse and Relay Block

V - Fuse and Relay Block

Contains several different fuses and relays for carriage components. Location of block may vary slightly depending on fusion machine carriage.



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Radio Remote

Remote control of engine and track functions.

1) Engine Speed

Change engine speed between low and high.

2) Drive Lights

Turn drive lights on and off.

3) Track Speed

Change track speed between low and high.

4) Radio Disable

Press in to disable the radio and pull out to enable.

5) Carriage Side Track

Drive the carriage side track forward or backward.

6) Crawl Switch

Toggles crawl driving mode on and off.

7) Power Light

Indicates the remote is on.

8) Radio Standby

Set switch to standby to disable drive controls and to run to enable drive controls

9) Engine Side Track

Drive the engine side track forward or backward.

10) Remote Pairing

Pairs the transmitter to the receiver on the fusion machine.

11) Engine Preheat

This button is not used with this machine.

12) Power Switch

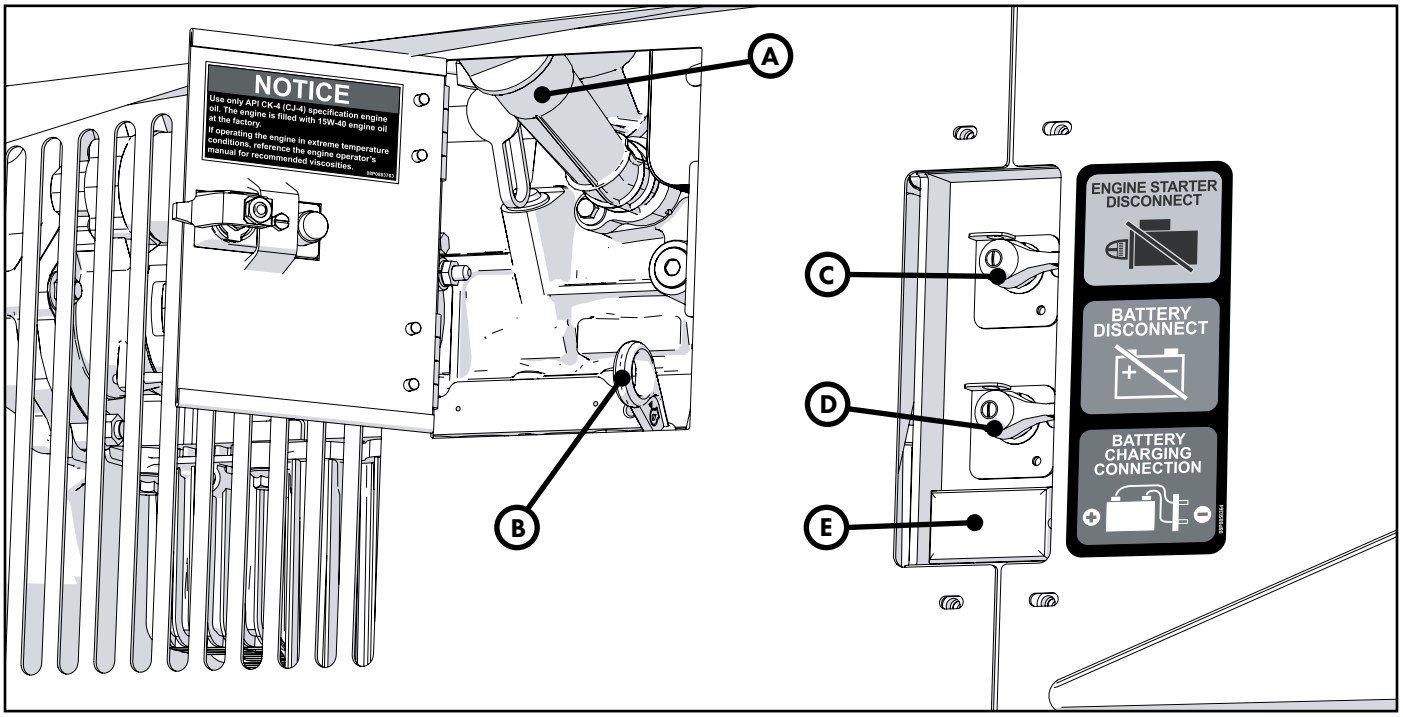
Powers the radio remote on and off.

13) Engine Stop

Stops the engine.

14) Engine Start

Starts the engine.



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Outboard Vehicle

A - Engine Oil Fill

Filler neck for the engine oil. Refer to Engine Operator's manual for checking oil and oil recommendations.

B - Engine Oil Dipstick

Use to check the oil level of the engine. Refer to Engine Operator's manual for checking oil and oil recommendations.

C - Engine Starter Disconnect

Switch to disconnect the engine starter preventing starting of the engine. The switch is lockable for lockout/tagout and security.

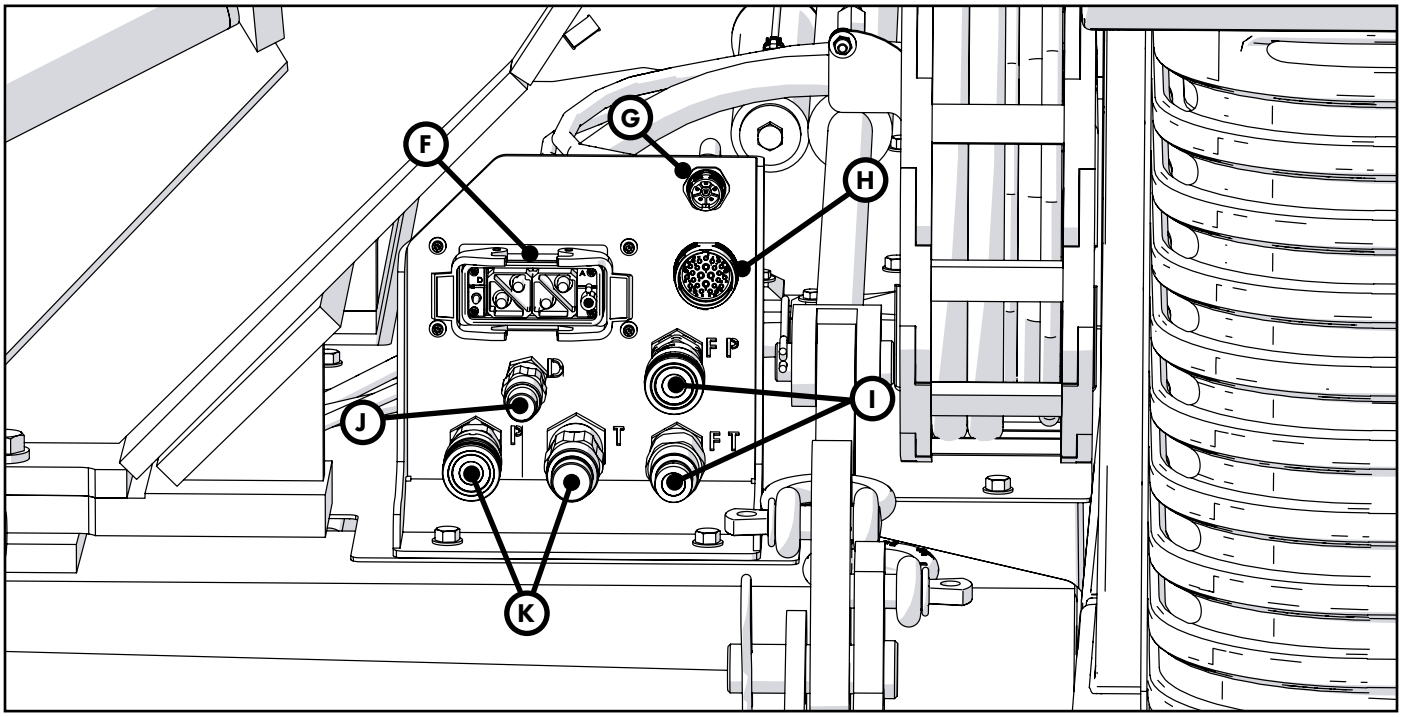
D - Battery Disconnect

Switch to disconnect the battery power cutting off all power to machine electrical components.

E - Battery Charging Connection

Plug connection to allow charging of the machine's battery without having to access the battery. The plug connection is a quick disconnect battery connector.

The plug is a Anderson Power Products part number SB175.



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Carriage Bulkhead

F - Heater Power Receptacle

Connects the heater power to the carriage.

G - RTD Receptacle

Connects the RTD cable to the carriage to measure heater temperature.

H - Electrical Control Receptacle

Connects the electrical cable to the carriage for electrical control functions.

I - Facer Hydraulic Quick Disconnects

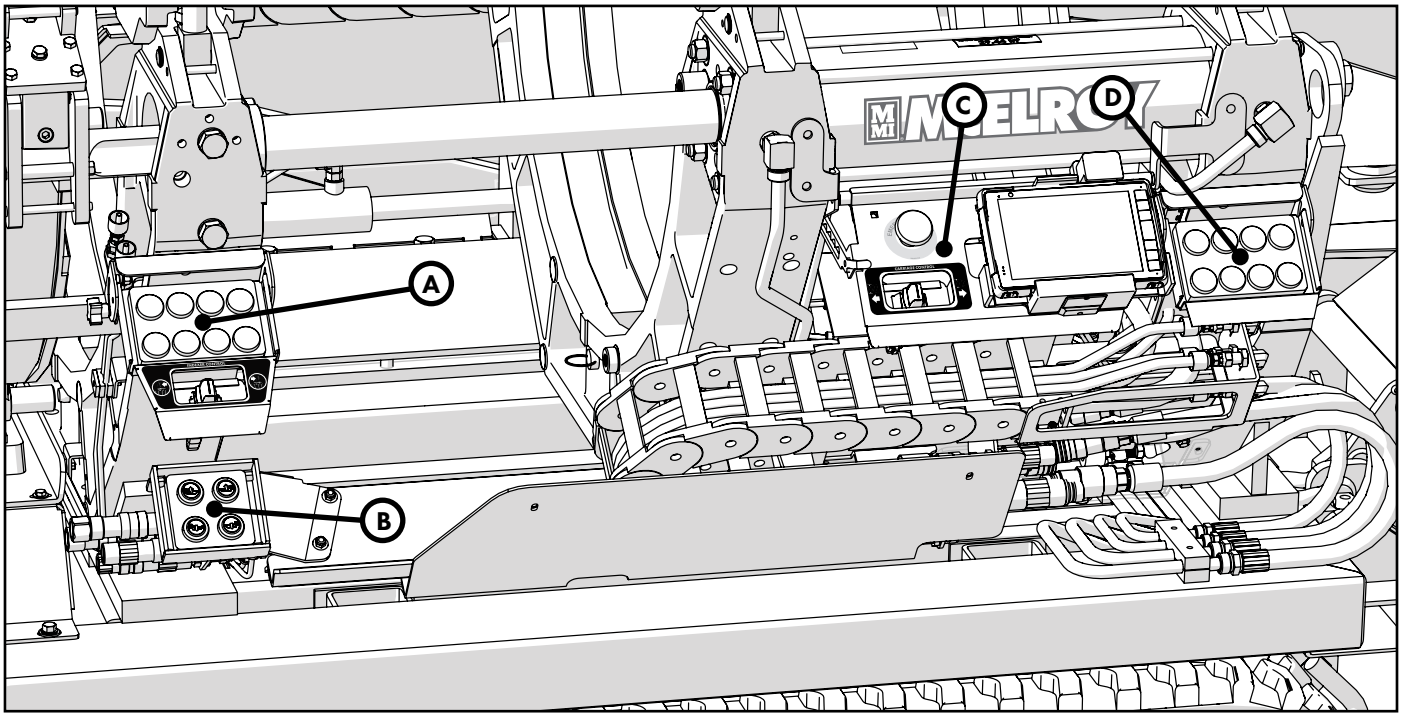
Connects the pressure and return tank lines to supply hydraulic fluid to the facer.

J - Hydraulic Drain Quick Disconnect

Connects the drain line from the hydraulic valves back to the upper hydraulic reservoir.

K - Carriage Hydraulic Quick Disconnects

Connects the pressure and return tank lines to supply hydraulic fluid to the carriage.



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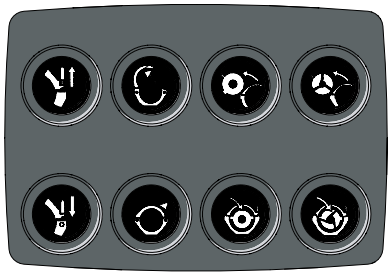
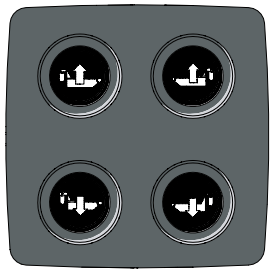
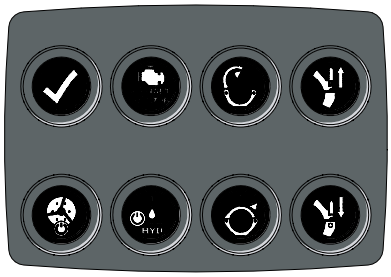
Carriage Control Panels







A - Fixed End Indexer Control Panel

Has a 8 button pad for controlling the fixed jaw clamps, fixed jaw pivots, heater and facer pivots. There is a lever for moving the indexer right and left. The panel can be loosened and repositioned in for stowing and out for operation.

B - Pipe Lift Control Panel

Has a 4 button pad for controlling fixed end and movable end pipe lifts.

On the 1200*i*, the panel can be loosened and repositioned in for stowing and out for operation.

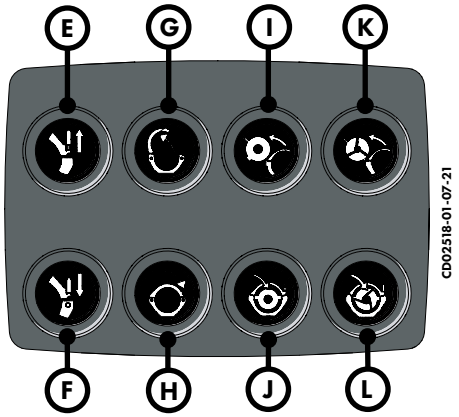
On the 900*i* and 630*i*, the pad is fixed on a bracket.

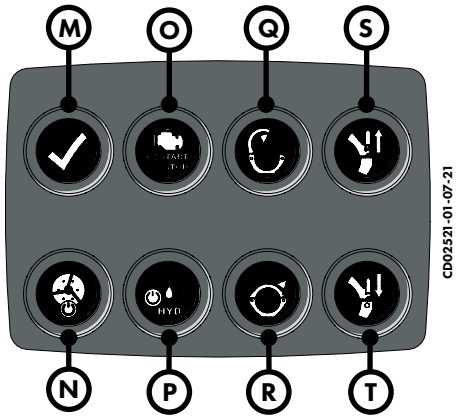
C - Carriage Control Panel

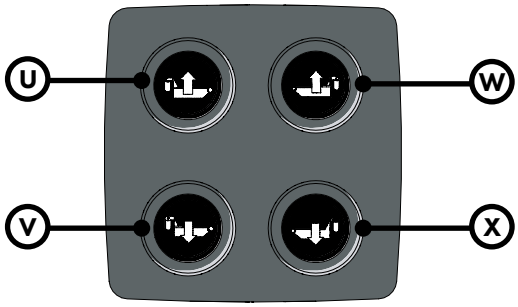
Holds the DataLogger® tablet mounted to a 15 degrees swivel and can be removed to store in the tablet storage area. There is a lever used to open/close the carriage. The lever has detents to enable the user to hold the lever in the open or close position. An emergency stop button is above the carriage lever and is used to completely shut off and disable the machine in case of an emergency. The panel can be adjusted in for stowing and out for operation.

D - Movable End Control Panel

Has a 8 button pad for controlling the movable jaw clamps, movable jaw pivots, engine start/stop, confirm command, facer power on/off and hydraulic disable. The panel can be loosened and repositioned in for stowing and out for operation.







Carriage Control Pads

Fixed End Indexer Control Panel

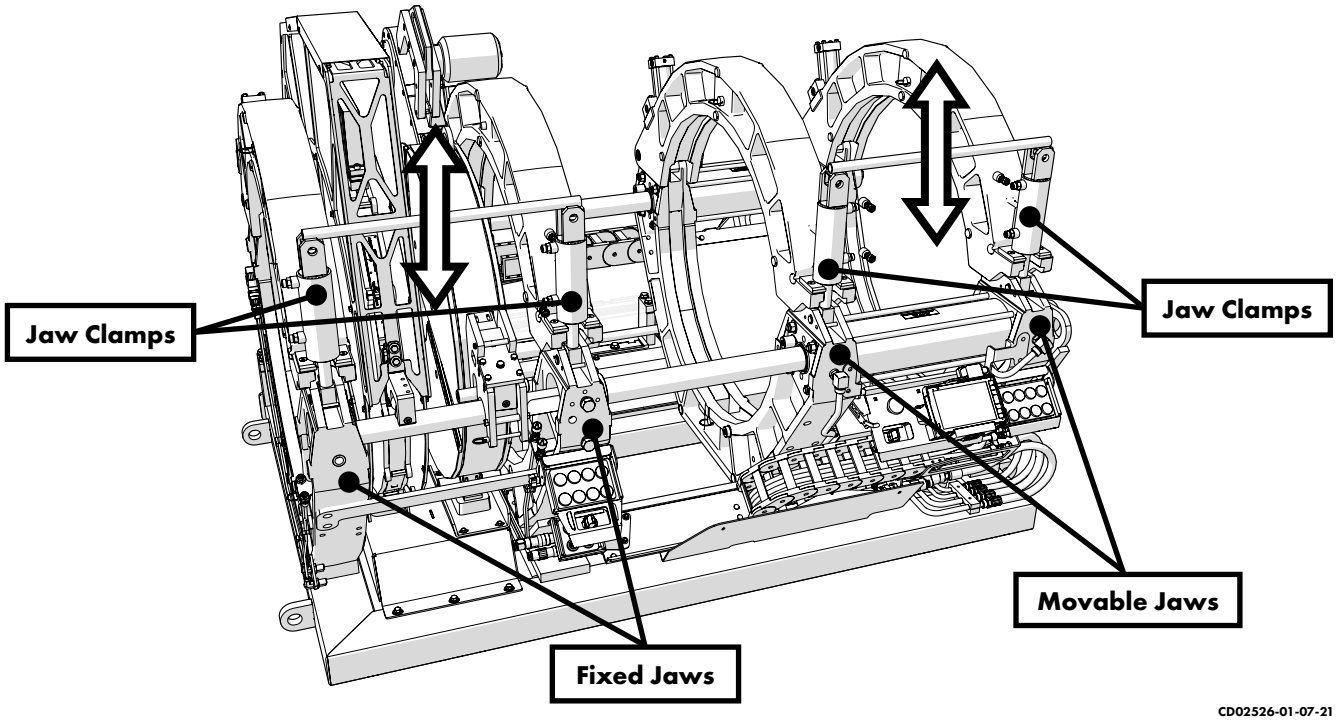
E - Unclamp Fixed Jaws	Extends clamping cylinders unclamping the jaws.
F - Clamp Fixed Jaws	Retracts clamping cylinders clamping the jaws.
G - Open Fixed Jaws	Pivots fixed jaws to the open position.
H - Close Fixed Jaws	Pivots fixed jaws to the closed position.
I - Pivot Heater Out	Pivots heater to the out position.
J - Pivot Heater In	Pivots heater to the in position.
K - Pivot Facer Out	Pivots facer to the out position.
L - Pivot Facer In	Pivots facer to the in position.

Movable End Control Panel

M - Confirm Command	Confirm commands on the DataLogger® tablet.
N - Facer Power	Turns the facer on and off. The facer pressure adjustment screen appears.
O - Engine Start/Stop	Starts and stops the engine.
P - Hydraulic Disable	Disables the hydraulic system. Pushed to disable and can be re-enabled by holding the button for 3 seconds.
Q - Open Movable Jaws	Pivots movable jaws to the open position.
R - Close Movable Jaws	Pivots movable jaws to the closed position.
S - Unclamp Fixed Jaws	Extends clamping cylinders unclamping the jaws.
T - Clamp Fixed Jaws	Retracts clamping cylinders clamping the jaws.

Pipe Lift Control Panel

U - Raise Fixed End Pipe Lift	Raises the fixed end pipe lift.
V - Lower Fixed End Pipe Lift	Lowers the fixed end pipe lift.
W - Raise Movable End Pipe Lift	Raises the movable end pipe lift.
X - Lower Movable End Pipe Lift	Lowers the movable end pipe lift.



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Carriage Assembly

The carriage assembly consists of two fixed jaws and two hydraulically operated movable jaws.

The carriage assembly can be removed from the machine in a 3-Jaw or 4-Jaw configuration.

Jaw Clamps

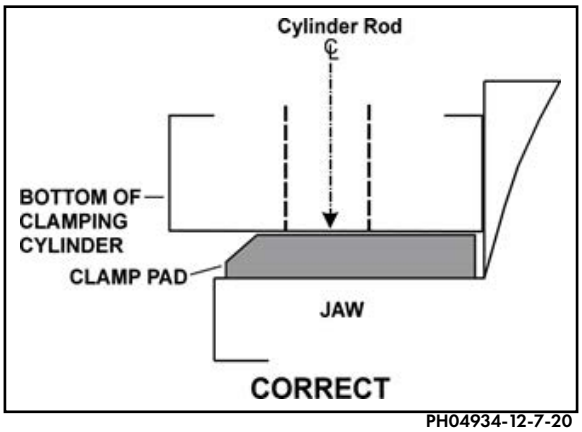
Jaw clamps are hydraulically operated for clamping and unclamping the upper jaws.

There are handles connecting both clamping cylinder sets, fixed and movable jaws, that are used for pivoting the clamps away from and towards the upper jaws.

⚠ CAUTION

The clamp cylinders are heavy and can fall causing injury. Hold the handle between both cylinders when clamping or unclamping the cylinders. Failure to do so could result in injury.

NOTICE: The jaw clamping cylinders are designed to clamp when in the upright position, evenly applying pressure over the entire base of the cylinder. Always ensure the clamping cylinders are upright over the clamp pads before clamping the jaw. Damage to the cylinder and jaw can occur if not clamped properly. Clamp marks on the bottom of the cylinder are an indication that the cylinder was not in the proper position when clamped down.



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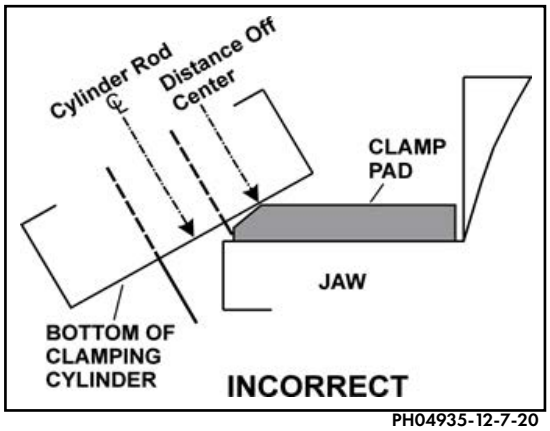

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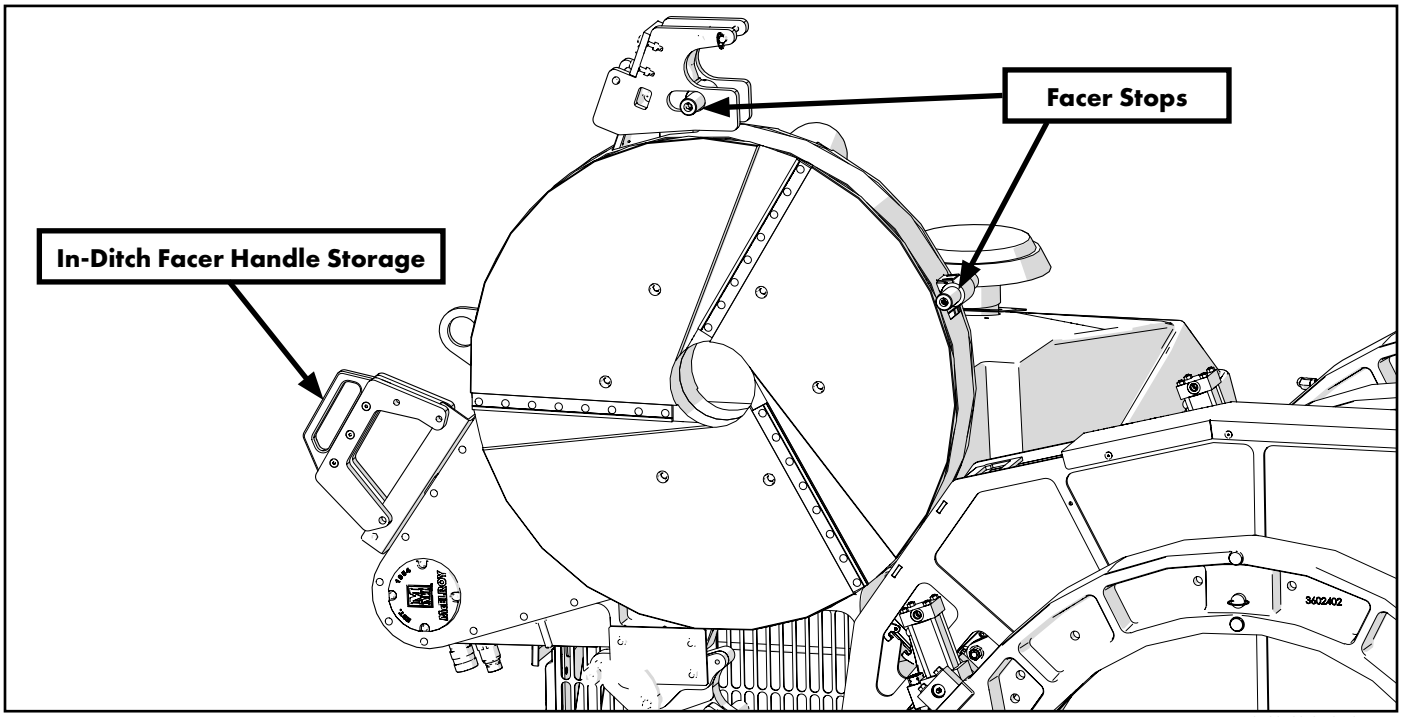

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Facer

The facer is a rotating planer-block design. The blade holders each contain three blades and are chain driven (enclosed in lubricant) by a hydraulic motor. There are facer stops that allow for a specific amount of faced pipe to protrude from the jaws.

When needed for 3-Jaw off-vehicle modular operation, the facer can be removed from its carriage skid-mounted pivot arm.

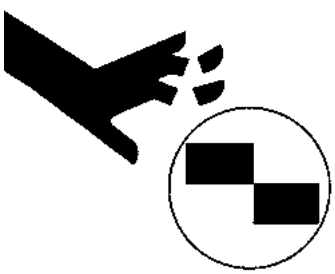
The optional extension kit is needed for 4-Jaw and 3-Jaw modular facer operation.

1200*i*: The optional top loading accessory kit is needed for 3-Jaw modular operation.

⚠WARNING

Facer blades are sharp and can cut. Never attempt to remove shavings while the facer is running, or is in the facing position between the jaws. Use care when operating the facer, and when handling the unit.

NOTICE: Never extend the facer blades beyond the inner or outer circumference of the facer.



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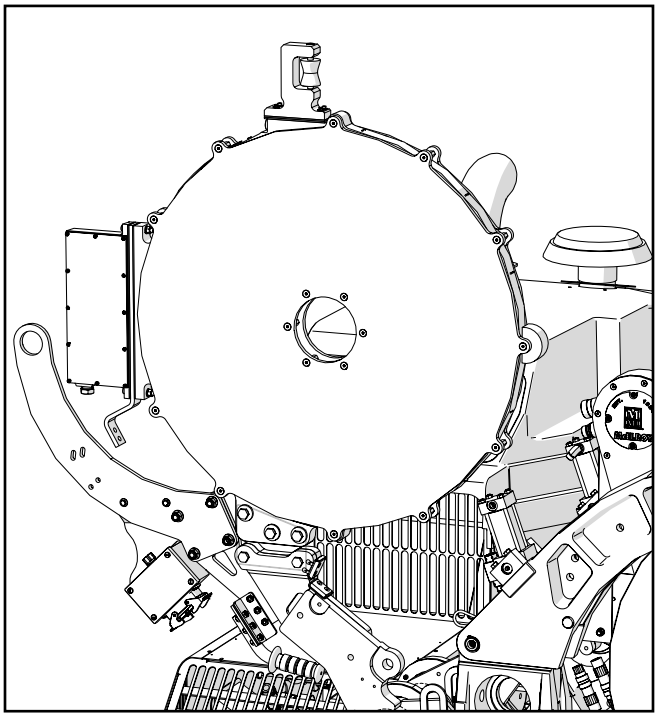
630*i* and 900*i*: For modular facer operations, the in-ditch facer handle can be un-pinned and re-pinned in the in-ditch position. When the facer is remounted to the facer arm, the handle will need to be moved back to the storage bracket (shown above) to prevent damage due to collision with the jaw clamp bar.

1200*i*: For modular facer operations, the in-ditch facer handles will need to be taken from the top loading accessory kit and installed on the facer.



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Heater

The heater is equipped with butt fusion heater plates, coated with an antistick coating.

⚠ DANGER

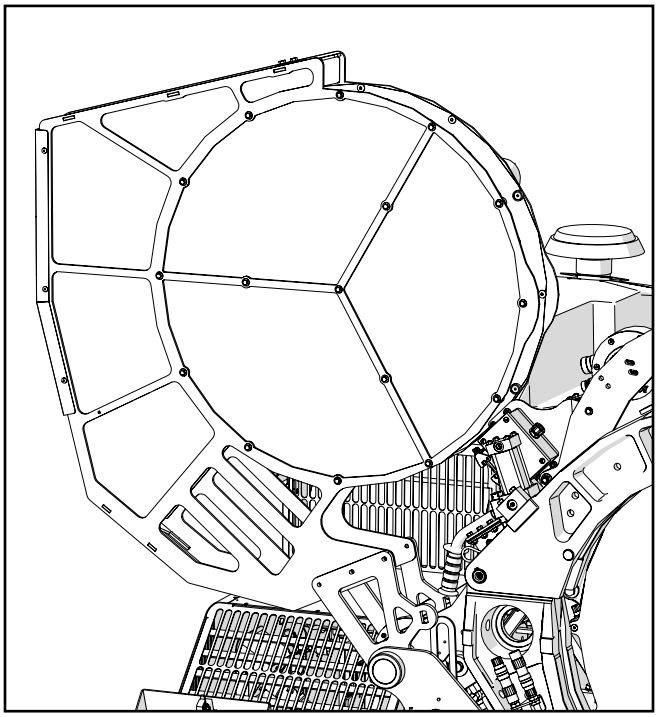
This heater is not explosion proof. Operation of heater in an explosive atmosphere without necessary safety precautions will result in serious injury or death.

When needed for off-vehicle modular operation, the heater can be removed from its carriage skid-mounted pivot arm.

The optional extension kit is needed for 4-Jaw and 3-Jaw modular heater operation.

630*i* and 900*i*: A stripper bar kit is needed for 3-Jaw modular heater operation.

1200*i*: The optional top loading accessory kit is needed for 3-Jaw modular operation.



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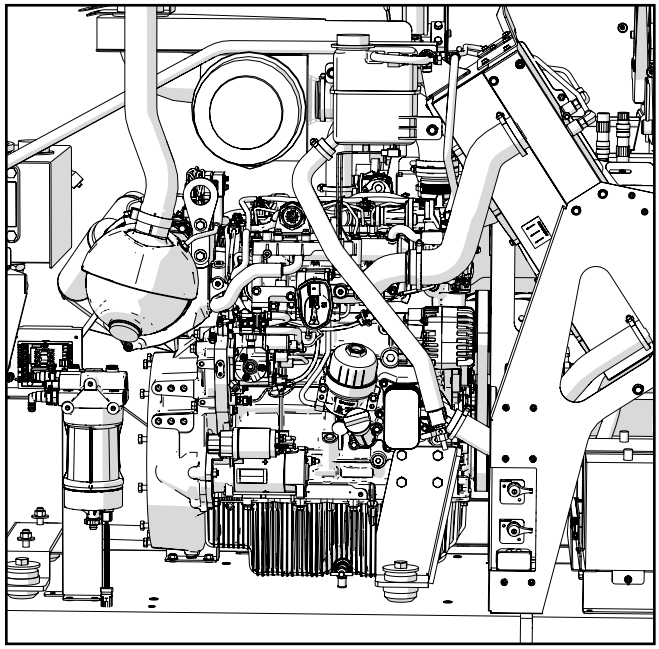
Heater Bag Frame

The heater bag frame protects and insulates the heater when the heater is not in use.

630*i* and 900*i* - The frame must be manually positioned onto the heater when pivoting the heater in the machine.

1200*i* - The frame pins to the heater for pivoting in/out of the machine. For fusing operation, the frame is unpinned from the heater in the pivot out position.



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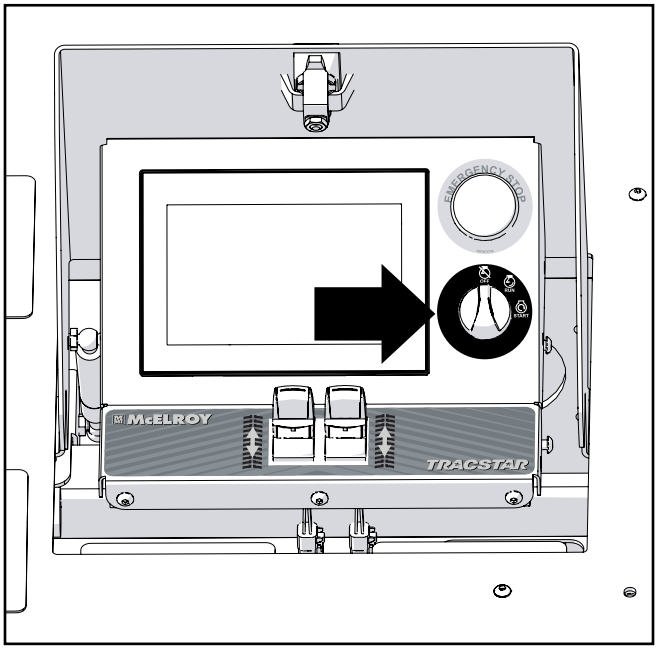

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Diesel Engine

Read and understand the engine owner's manual instructions before operating. The engine owner's manual can be viewed on the Perkins® My Engine App which can be downloaded and installed from your devices app store.

A machine with the Diesel Fuel Only label has an engine capable of using high sulfur diesel fuel.

A machine with the Ultra Low Sulfur Diesel Fuel Only label has an engine that uses only ultra low sulfur diesel fuel.

⚠ DANGER

Combustion engines can cause explosions when operated in an explosive atmosphere. Do not operate gas or diesel powered machines in an explosive atmosphere.

When operating in an explosive atmosphere, keep vehicle in a safe area by using hydraulic extension hoses to the carriage.

Help prevent fires by keeping machine clean of accumulated trash, debris and facer shavings.

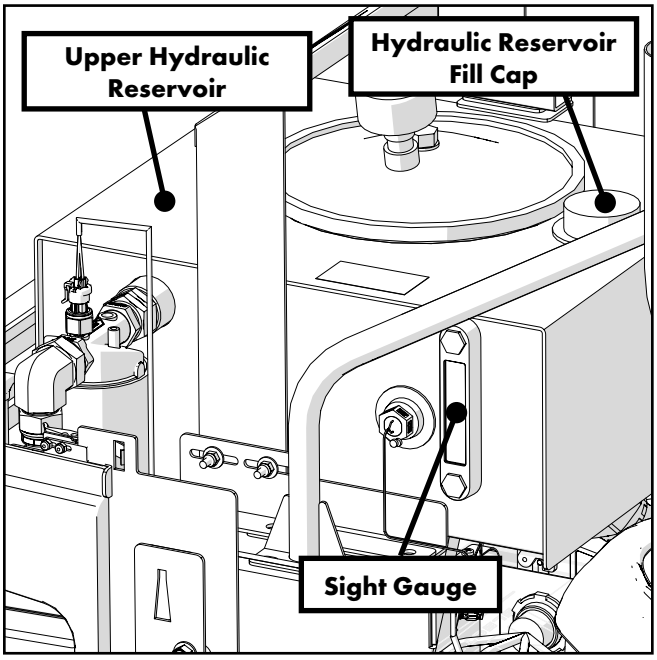
The engine can be started using the keyswitch at the vehicle console.

Hydraulic Fluid Reservoirs

The upper fluid reservoir is located under the cowling at the movable end of the machine. The lower fluid reservoir is located under the carriage at the fixed end of the machine.

The fluid level sight gauge is located on the upper fluid reservoir. It includes a thermometer which indicates fluid reservoir temperature. A lever sensor is also installed on the upper fluid reservoir.

Refer to the "Hydraulic Fluids" section of this manual for hydraulic fluid recommendations.



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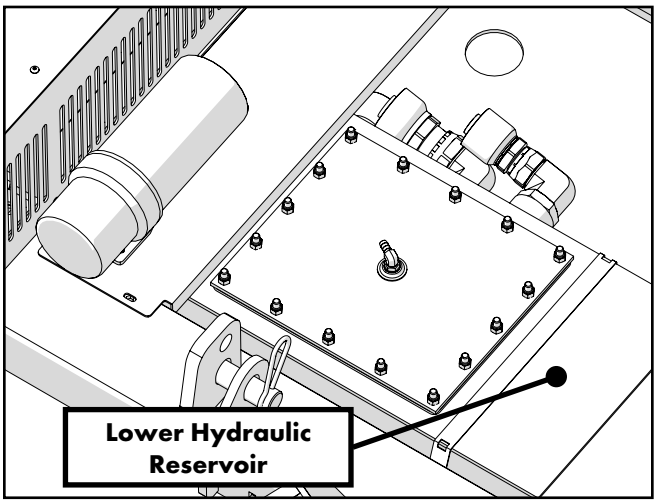

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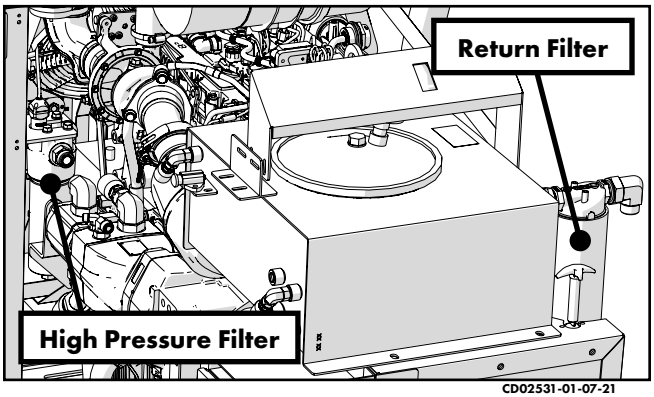
Hydraulic Fluid Filters

These machines are equipped with three filters and two magnetic suction filters. One return filter is located on the return side of the upper reservoir and another is a high pressure filter located below the radiator and the other return filter is located behind a door near the indexer of the carriage.

The suction filters are located inside the lower fluid reservoir and are accessed by removing the lower reservoir top access plate.

IMPORTANT: Drain the hydraulic system before removing any component of the lower reservoir. A large amount of hydraulic fluid will leak from the system.



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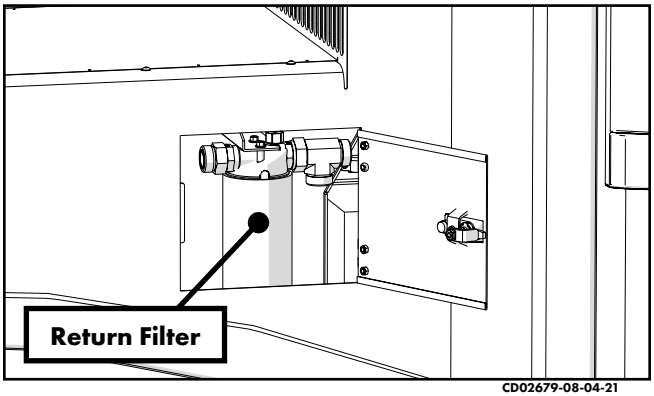

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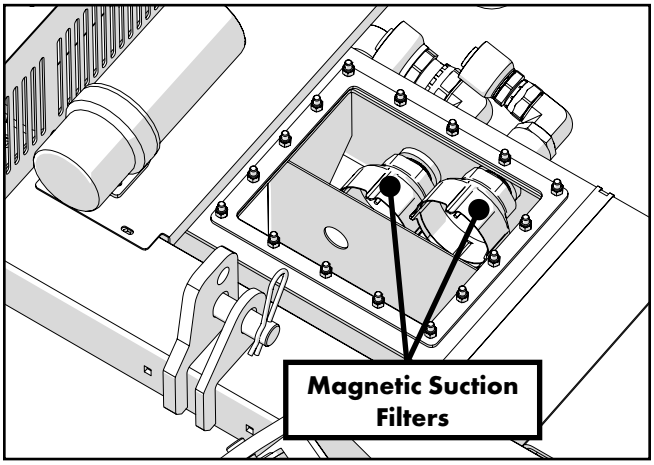

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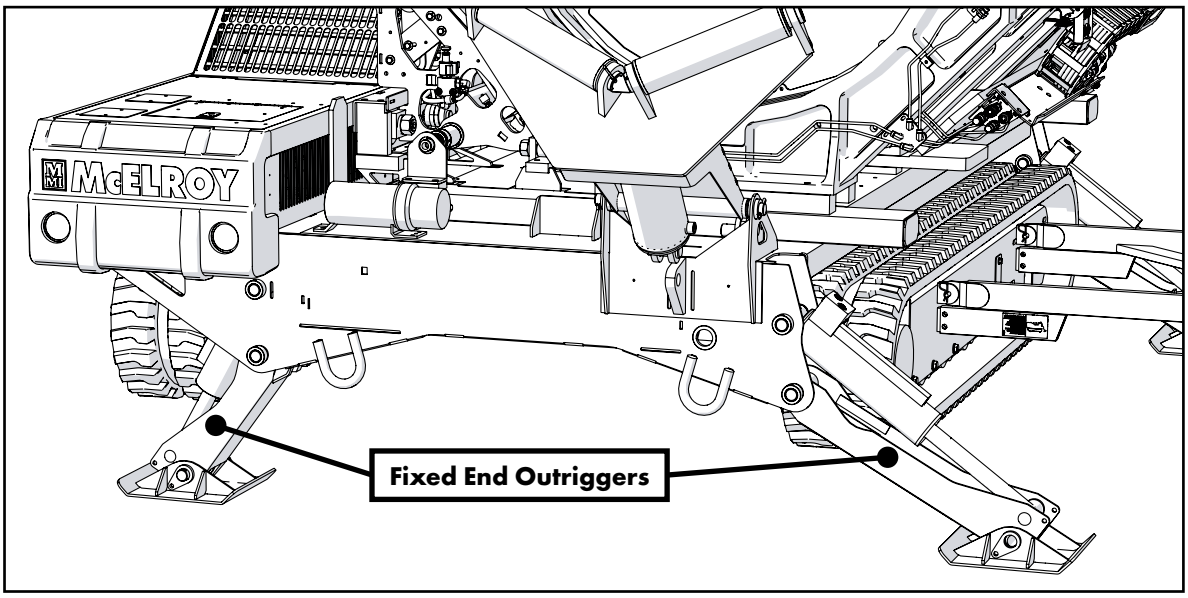

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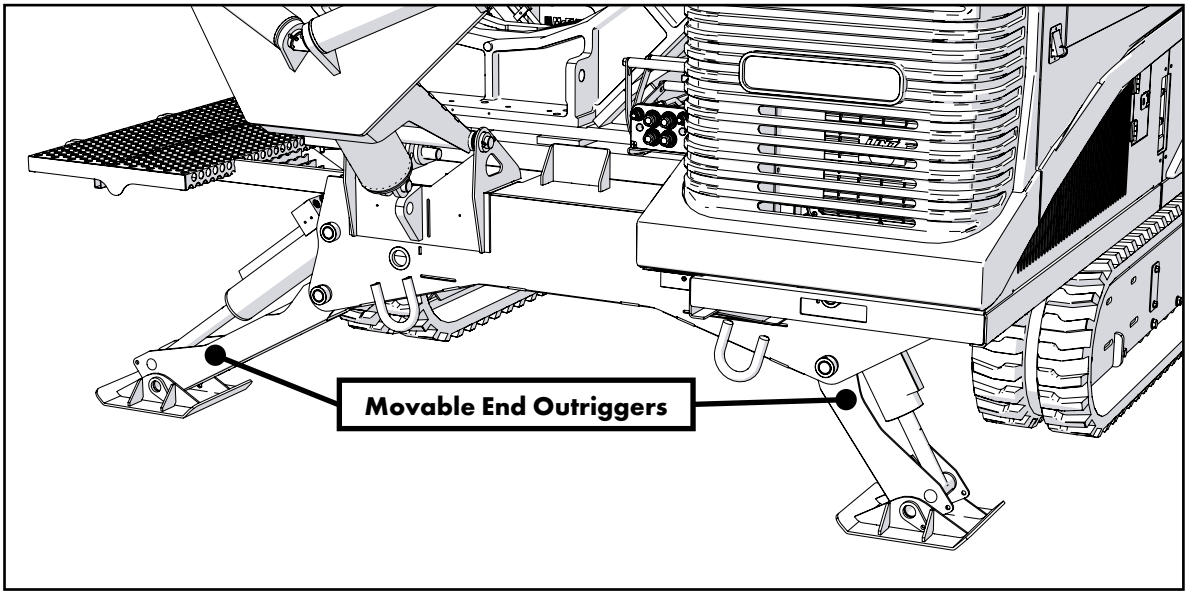

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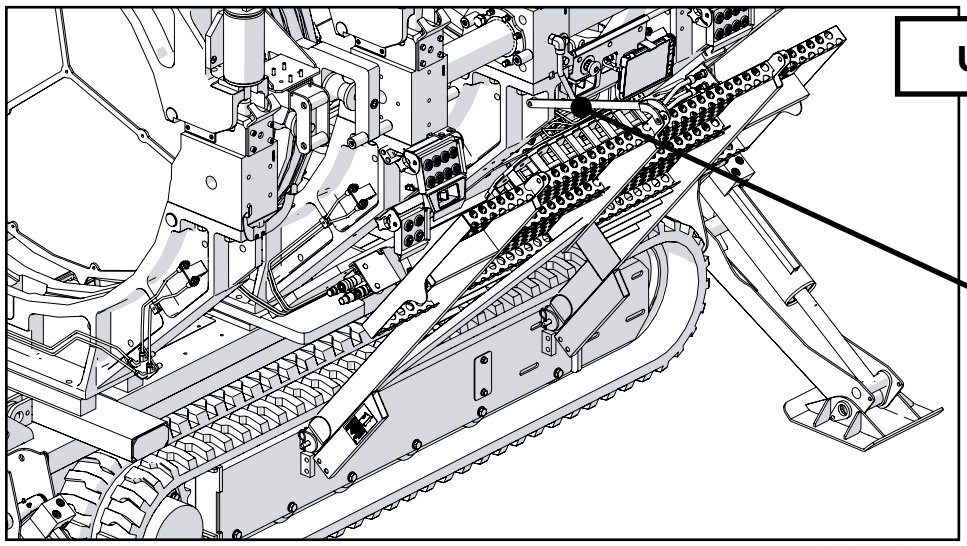
Vehicle Outriggers (1200*i*)

1200*i*:

The use of outriggers is recommended to make the machine as level and stable as possible before performing fusion operations. Position the fusion machine on as level ground as possible. Extend the outriggers and adjust to make it as level and stable as possible.

IMPORTANT: The tracks will not move if the outriggers are not fully retracted. Ensure all outriggers are fully retracted before driving the vehicle.

The outrigger controls are located on the vehicle console on the vehicle display.



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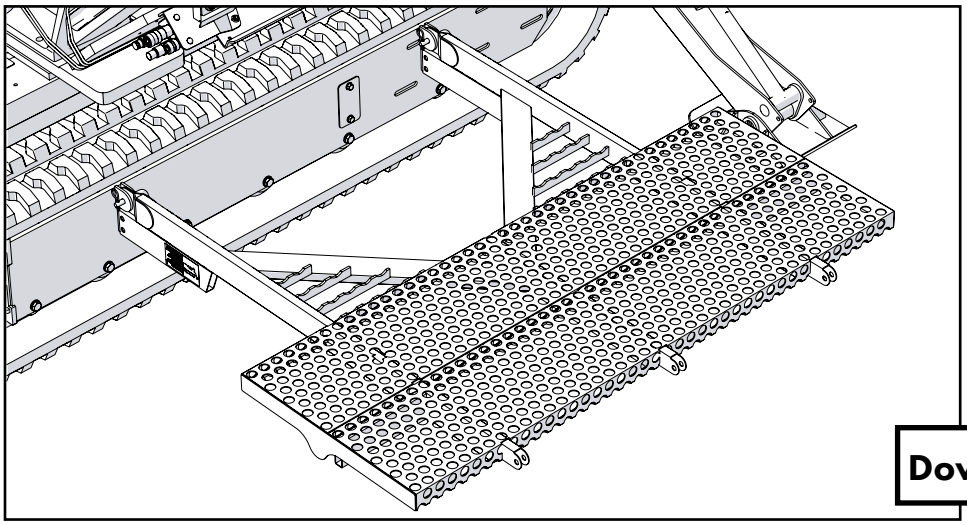

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Operator Platform (1200*i*)

The operator platform is intended to place the operator at a good machine operation height when the machine is stationary.

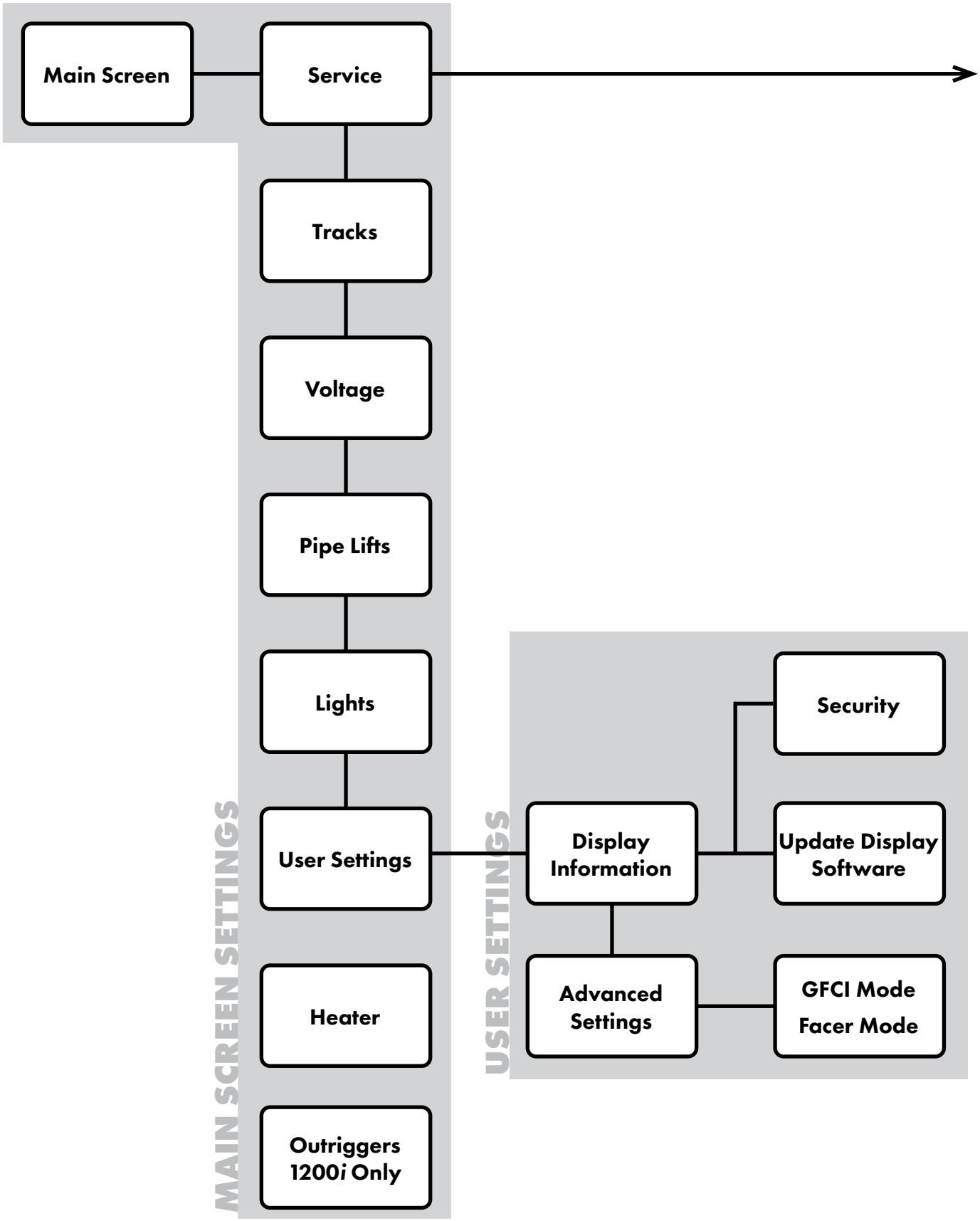
⚠WARNING

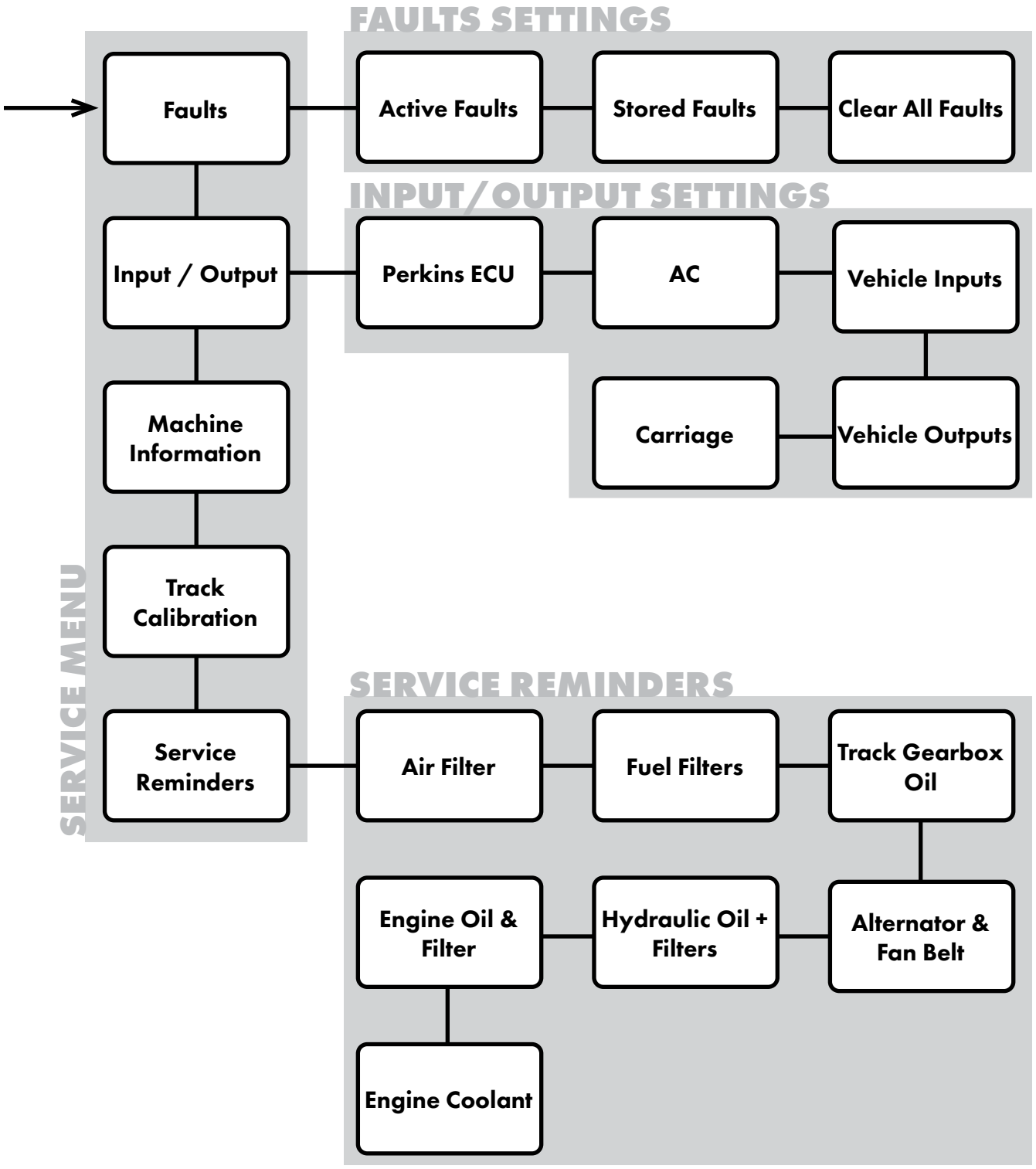
Do not ride on the machine while it is moving. Riding on the machine could cause the person to fall from or into the machine. Do not drive the machine while persons are on the machine.

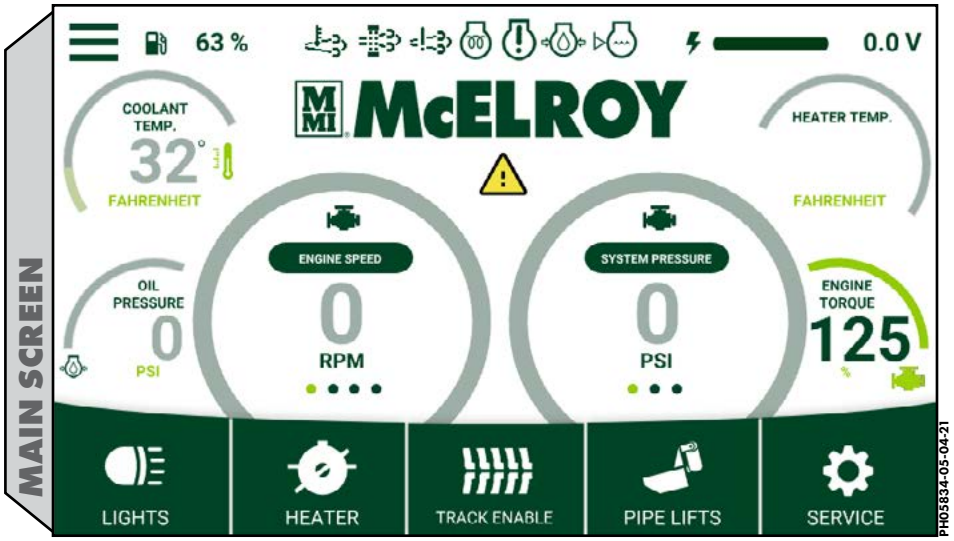
Before driving or towing the machine, place the platform in the stowed position or remove the platform from the machine.

The operator platform can be pivoted to the stowed up position and held in place by a removable platform link or pivoted to the operation down position.

Vehicle Display Navigation Map




FAULTS SETTINGS
Faults
Active Faults
Stored Faults
Clear All Faults
INPUT/OUTPUT SETTINGS
Input / Output
Perkins ECU
AC
Vehicle Inputs
Machine Information
Carriage
Vehicle Outputs
SERVICE MENU
Track Calibration
SERVICE REMINDERS
Service Reminders
Air Filter
Fuel Filters
Track Gearbox Oil
Engine Oil & Filter
Hydraulic Oil + Filters
Alternator & Fan Belt
Engine Coolant



Vehicle Display Screens

Main Screen

Has live information on the engine and hydraulic systems of the machine. The units of measure can be changed on the user settings screen by touching the menu icon in the top left corner of the screen.

The two large gauges can be swiped right or left to display other information.

Left Gauge (Engine Information):

Displays the current engine speed in (RPMs).

Displays the current manifold temperature in (°F, °C).

Displays the current fuel rate in (gal/hr, liters/hr).

Displays the current engine hours in (hours).

Right Gauge (Hydraulics Information):

Displays the current system pressure in (psi, bar, kPa).

Displays the current hydraulic level.

Displays the current hydraulic oil temperature in (°F, °C).

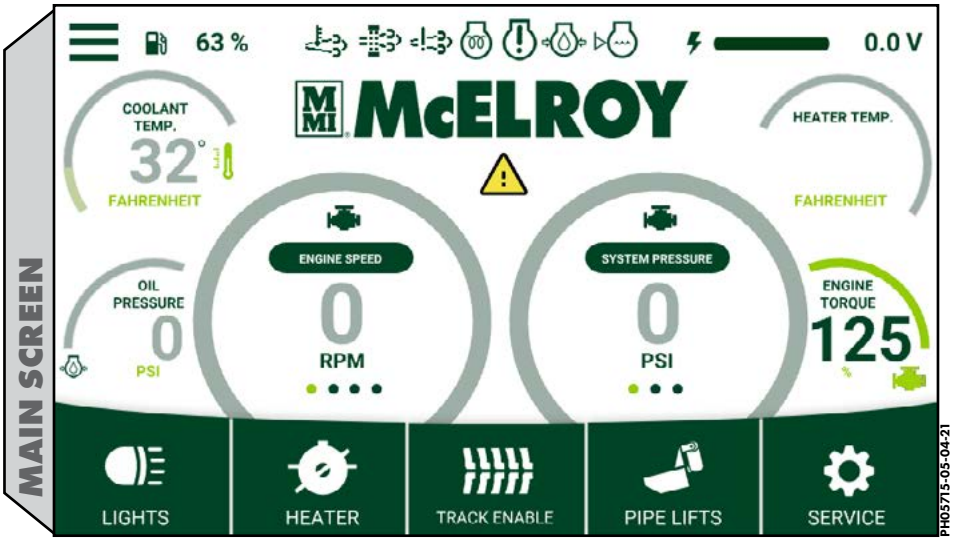
Other Gauges:

Displays the current engine coolant temperature in (°F, °C).

Displays the current engine oil pressure in (psi, bar, kPa).

Displays the current fusion heater temperature in (°F, °C).

Displays the current engine torque in (percent).



Opens the user settings screen.

Displays the current fuel level of the machine. The gauge displays the percentage of the level. The bar will display color depending on level: Green 100% - 25%, Yellow 25% - 12%, Red 12% - 0%.

Displays the current battery voltage. Touching the indicator opens the Voltage screen.

These engine alert icons are displayed between the fuel level and battery voltage if an alert is active.

Indicates that the exhaust system may be hot as a Diesel Particulate Filter (DPF) regeneration is active.

Indicates that active regeneration of the DPF is required.

Indicates a failure of an emissions critical component.

Indicates pre-heat phase has been completed.

Used to indicate engine and emissions system diagnostics.

Indicates low oil pressure.

Indicates low coolant level.

Indicates that the hydraulic system is disabled. The hydraulics can be re-enabled again from the carriage.

Indicates an active fault. Touching this icon will open the faults screen.

Toggles the drive lights on/off.

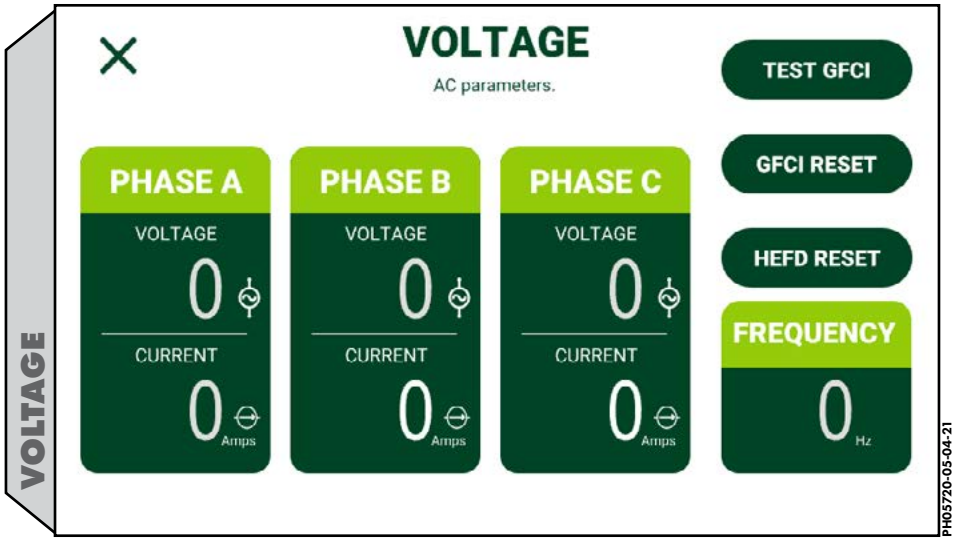
Toggles the fusion Heater on/off.

Toggles the Track Enable on/off and opens the tracks screen.

Opens the Pipe Lifts screen.

Opens the Service screen.

1200*i* Only - Opens the Outriggers screen.



Voltage Screen

Has live information on the AC parameters of the machine. It displays the phase voltages and currents as well as the frequency. This screen provides a means to test and reset the Ground Fault Circuit Interrupter (GFCI) and reset the Heater Element Failure Detection (HEFD).

To test the GFCI, touch the button on the right side of the screen to start test. A prompt displays to confirm the test. Touch continue to start the test. The GFCI will reset after the test is complete.

To reset the GFCI, touch the button on the right side of the screen to reset. A prompt displays to confirm the reset. Touch continue to reset.

To reset the HEFD, touch the button on the right side of the screen to reset. A prompt displays to confirm the reset. Touch continue to reset.

Heater Button

This button on the display turns the heater on and off.

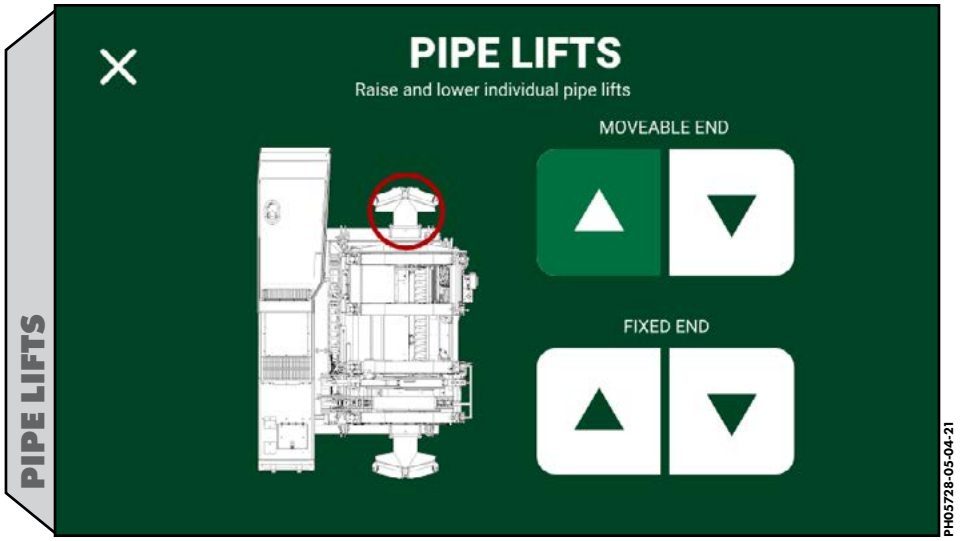
Tracks Screen

Screen that displays the speed controls for the tracks of the machine. The 2 speeds are Normal and Crawl.

Slide your finger across the bar to change the track speed.

The track speeds can be calibrated from the Track Calibration screen in the Service Menu.

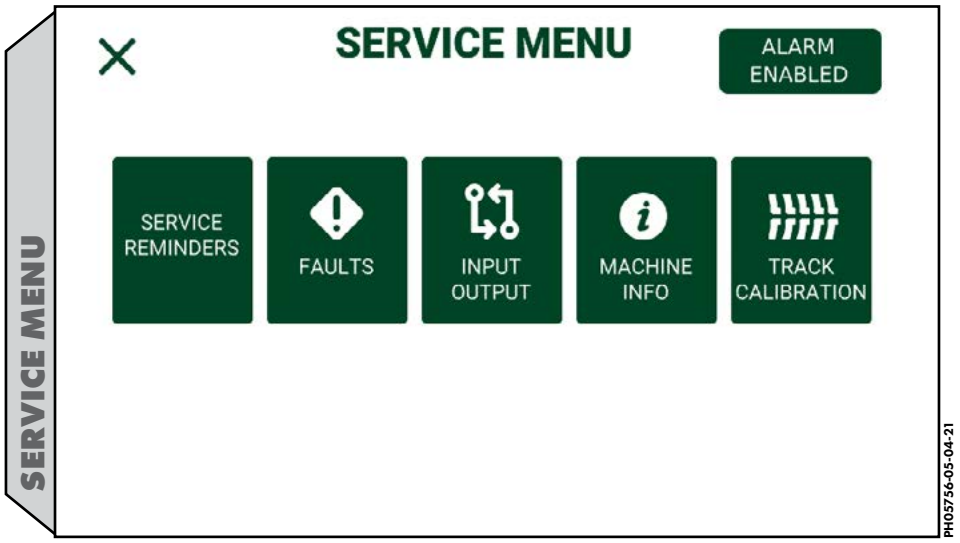
Touch the **X** to close this screen.



Pipe Lifts Screen

Screen displays the controls for raising and lowering the pipe lifts on each end of the machine. Touch the appropriate indicator arrow to make that adjustment to that pipe lift.

Touch the **X** to close this screen.



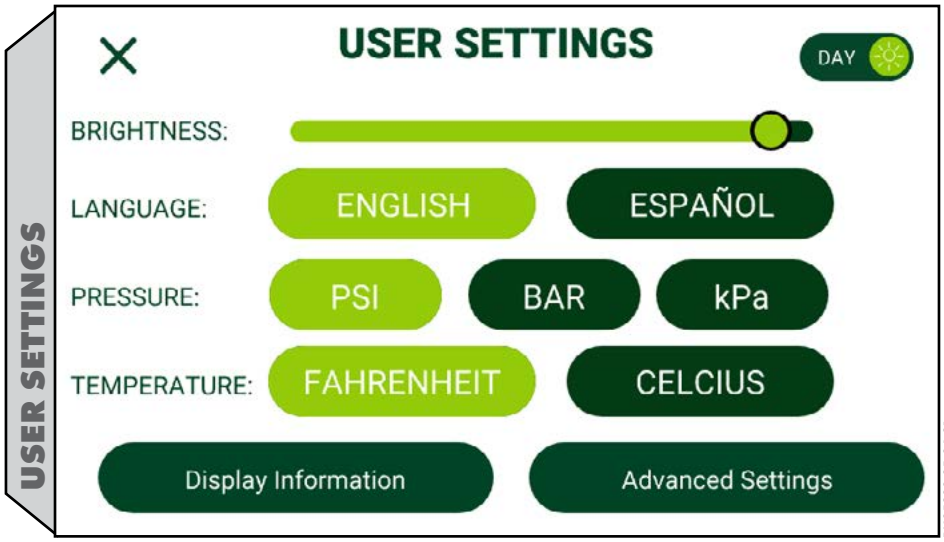
Service Menu Screen

Displays a menu of service items and touching the button will open that service screen. Touching the alarm button in the top right will enable and disable the alarm when the engine is off.

Service Menu Items:

- Service Reminders
- Faults
- Input / Output
- Machine Information
- Track Calibration

Touch the **X** to close this screen.



User Settings Screen

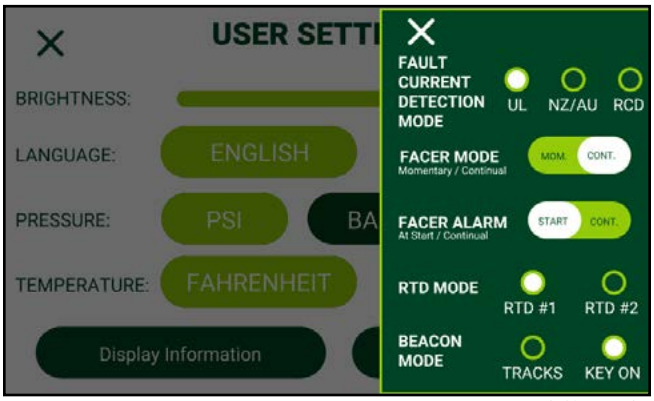
Contains user settings for changing:

- Display brightness
- Display language
- Pressure units of measure
- Temperature in °F or °C
- Display mode for Day or Night viewing

This screen has 2 buttons at the bottom for Display Information and Advanced Settings.

Advanced Settings:

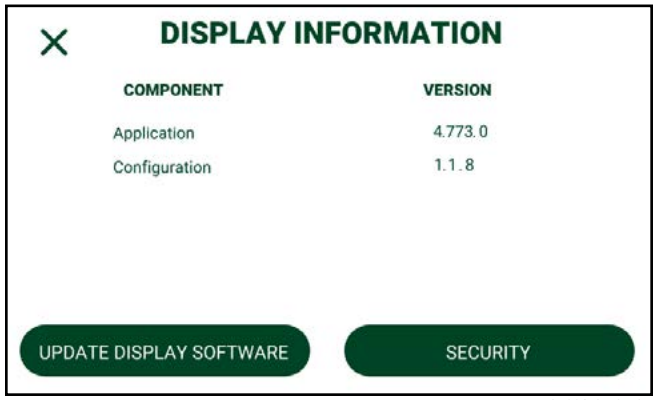
Touching the Advanced Settings opens a screen with mode selections for GFCI, Facer and RTD.



- Change the GFCI mode. Will be displayed as selected mode on GFCI references.
  UL: UL standard for GFCI
  NZ/AU: New Zealand/Australia GFCI
  RCD: Residual-Current Device (United Kingdom)
- Facer mode [Momentary or Continual]
- Facer alarm [At Start or Continual]
- RTD mode [RTD #1, RTD #2]
- Beacon Mode [When tracking, When Key On]

Display Information:

Shows display information with the component and version. An Update Display Software button is at the bottom of screen.



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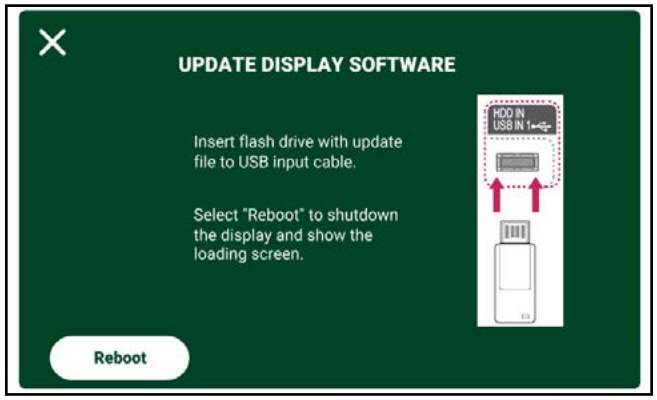
Touching the Update Display Software will open the screen to update the display software.

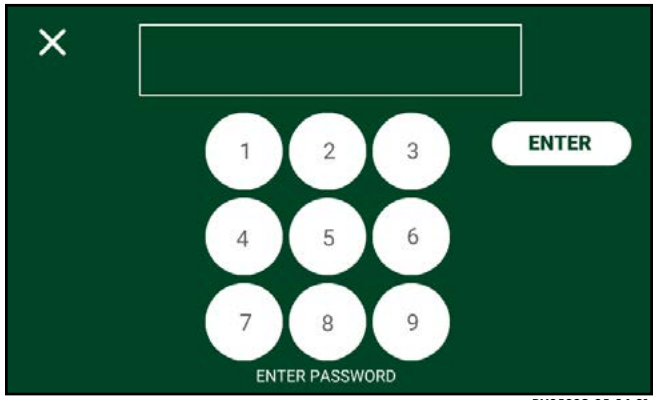


PH05731-05-04-21

Follow the on-screen instructions to update.

Security:

Touching the Security button will open a keypad to enter a password. Enter the password to gain access to the security option screen.



PH05839-05-04-21

On the Security Options screen, the user can select which settings of the machine require a password to change.

The settings that can be password protected are:

- Fault Current Detection Mode
- Facer Mode
- Facer Alarm
- RTD Mode
- Service Reminder Reset
- Service Reminder Selections
- Track Calibration
- Beacon Mode

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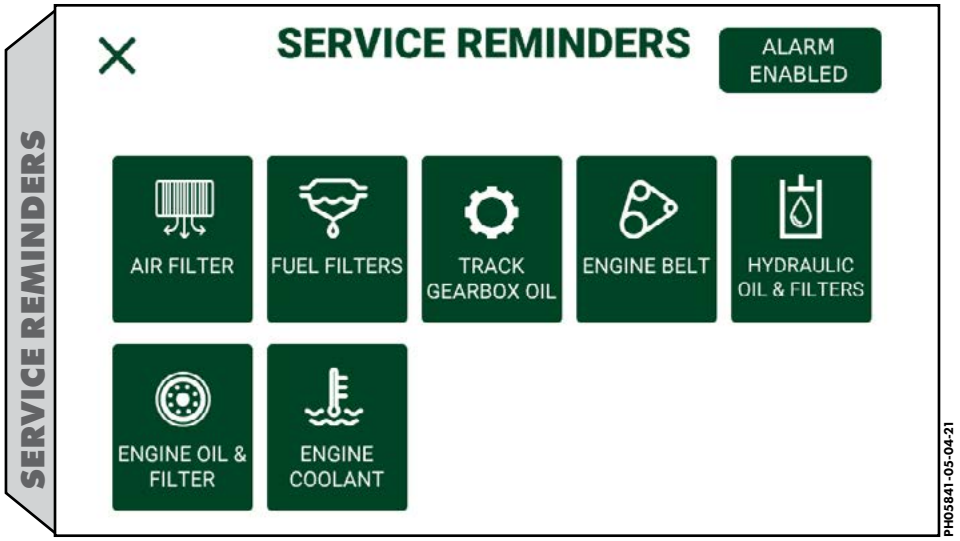
Touch the Set Custom Password button to set a custom password.



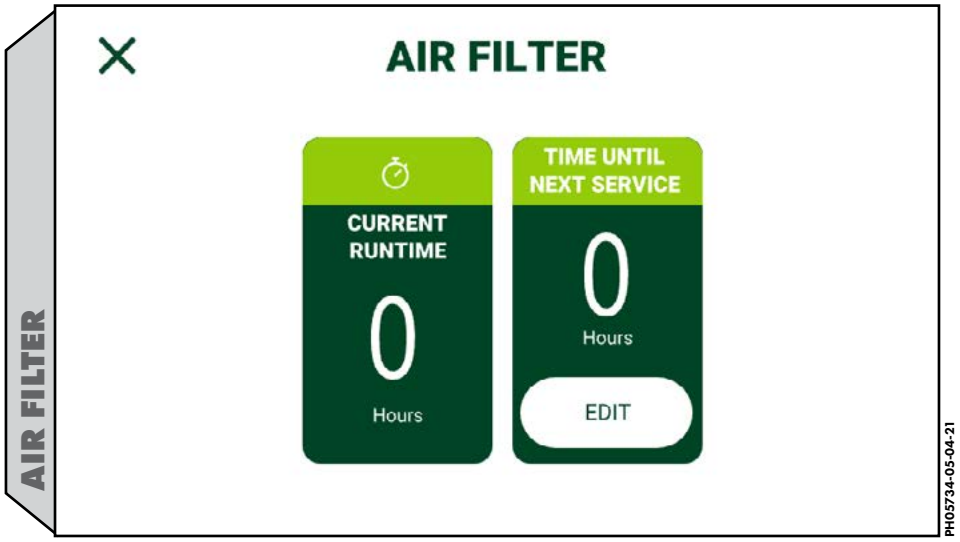
Service Reminders Screen

Displays a menu of service reminders and touching the button will open that service reminder screen. Touching the alarm button in the top right will enable and disable the alarm.

Service Reminder Items:

- Air Filter
- Fuel Filters
- Track Gearbox Oil
- Alternator & Fan Belt
- Hydraulic Oil Filters
- Engine Oil & Filter
- Engine Coolant

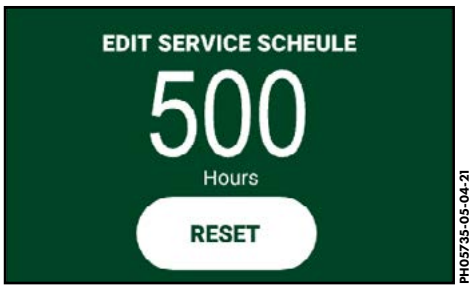
Touch the **X** to close this screen.

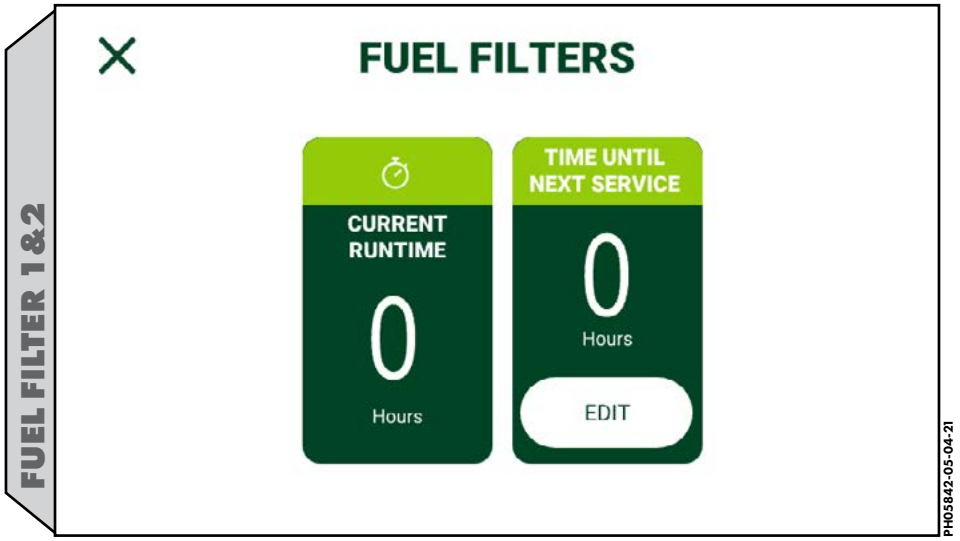


Air Filter Screen

Displays live information about the current run time in (Hours). Displays the time until the next air filter service in (Hours) and the time can be reset by pressing the edit button and resetting the service schedule hours. A prompt to confirm the service reminder reset appears. Touch reset and a prompt to confirm reset appears, touch continue to reset.

Touch the **X** to close this screen.

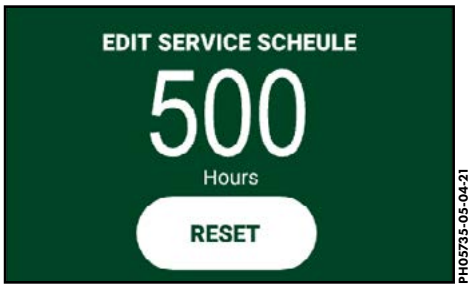




Fuel Filters Screen

Displays live information about the current run time in (Hours). Displays the time until the next fuel filter service in (Hours) and the time can be reset by pressing the edit button and resetting the service schedule hours. A prompt to confirm the service reminder reset appears. Touch reset and a prompt to confirm reset appears, touch continue to reset.

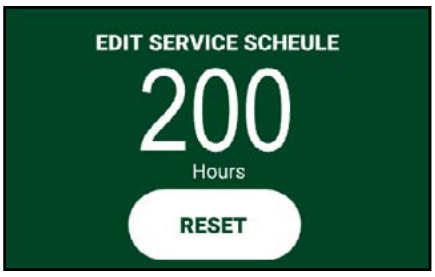
Touch the **X** to close this screen.

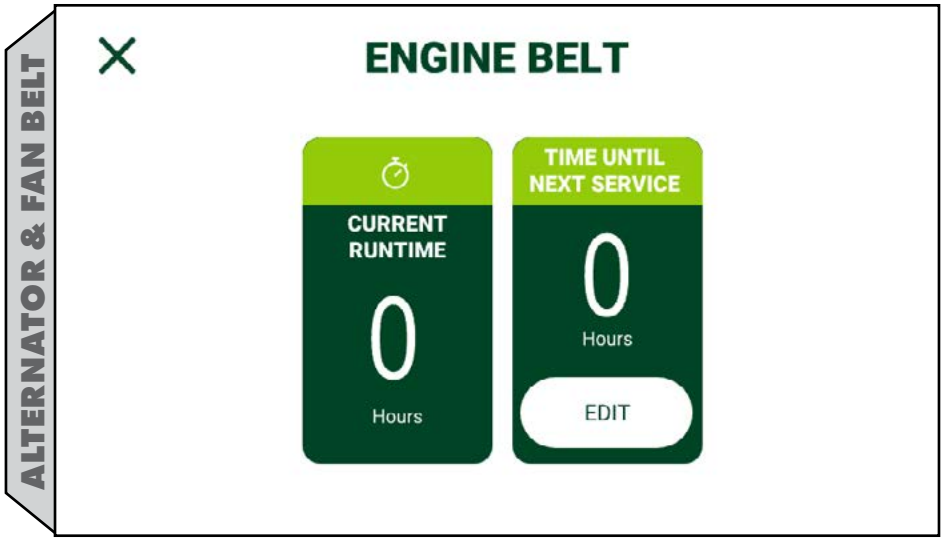


Track Gearbox Screen

Displays the two intervals for gearbox oil service and allows for the resetting of the hours. Change the gearbox oil after the first 200 hours then every year or 1000 hours.

Touch the **X** to close this screen.

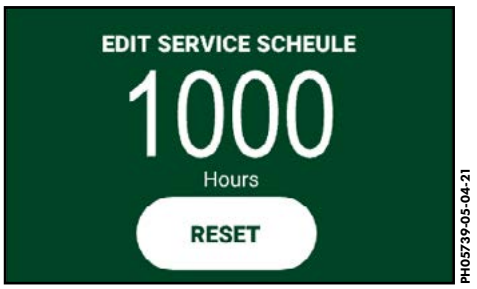


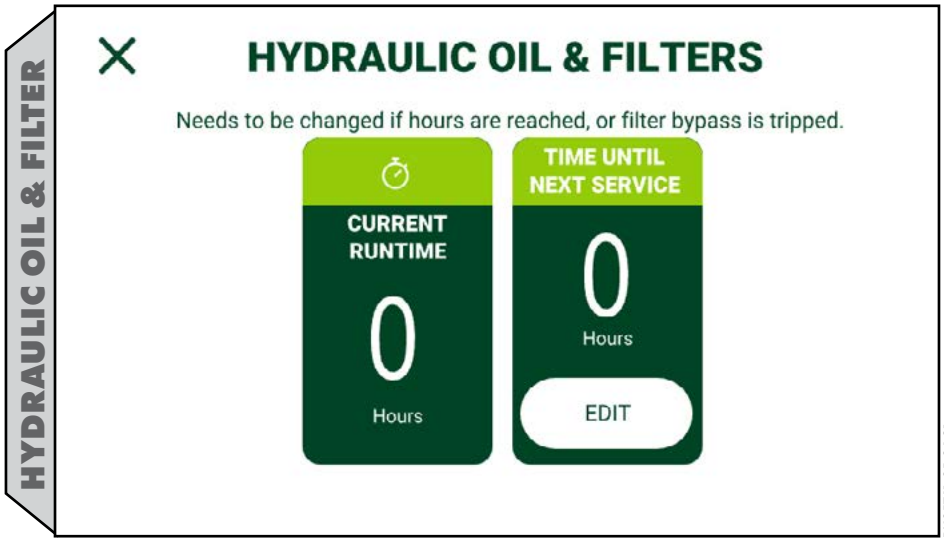


Engine Belt Screen

Displays live information about the current run time in (Hours). Displays the time until the next engine belt service in (Hours) and the time can be reset by pressing the edit button and resetting the service schedule hours. A prompt to confirm the service reminder reset appears. Touch reset and a prompt to confirm reset appears, touch continue to reset.

Touch the **X** to close this screen.



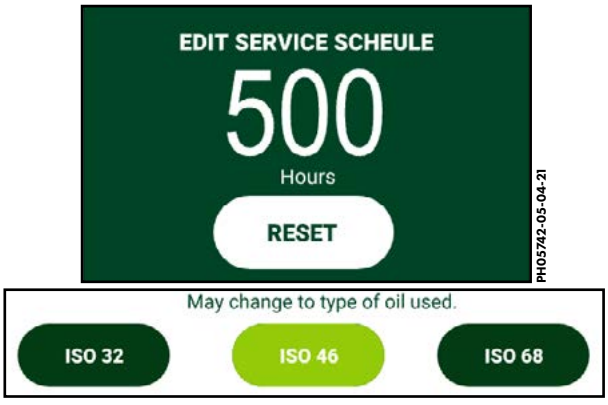


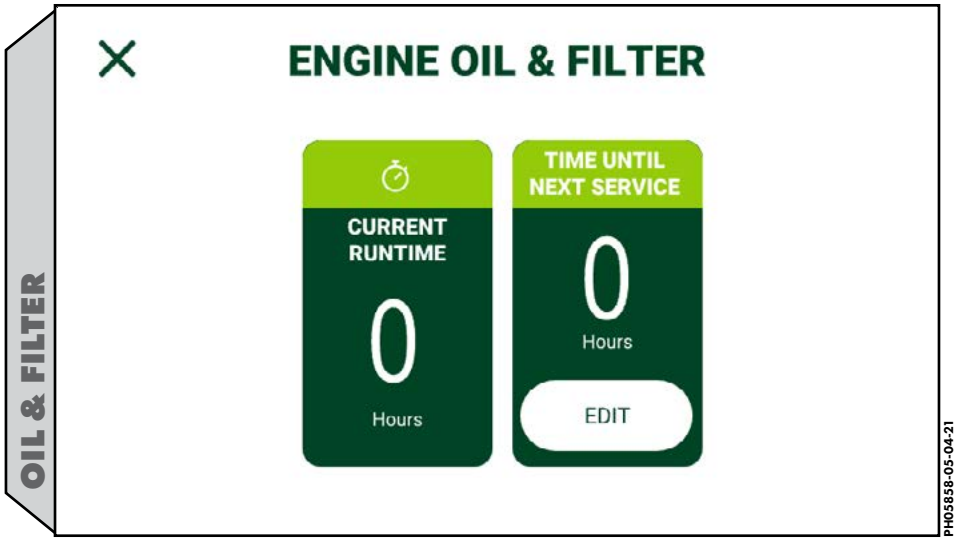
Hydraulic Oil & Filters Screen

Displays live information about the current run time in (Hours). Displays the time until the next hydraulic filter service in (Hours) and the time can be reset by pressing the edit button and resetting the service schedule hours. A prompt to confirm the service reminder reset appears. Touch reset and a prompt to confirm reset appears, touch continue to reset.

Select the oil viscosity used to allow the system to shut down when there is a high oil temperature event. The different viscosities have different shut down temperatures.

Touch the **X** to close this screen.

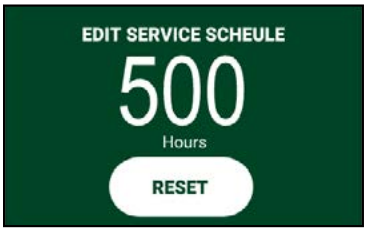


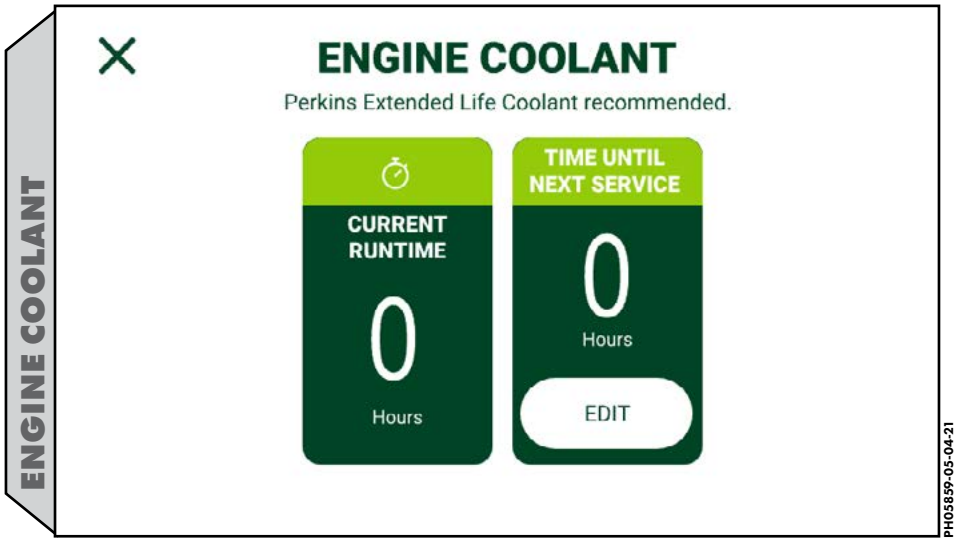


Engine Oil & Filter Screen

Displays the oil and filter service schedule in (Hours). Touching the button resets the service schedule hours.

Touch the **X** to close this screen.





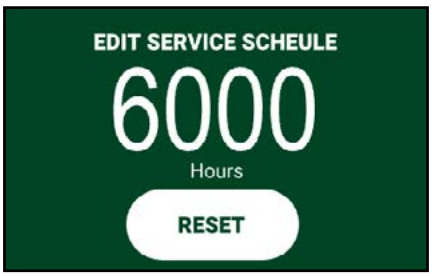
Engine Coolant Screen

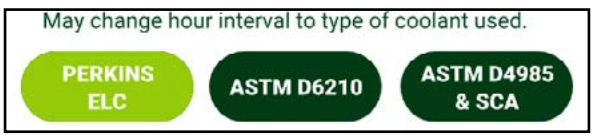
Displays the engine coolant service schedule in (Hours). The time can be reset by pressing the edit button and resetting the service schedule hours. A prompt to confirm the service reminder reset appears. Touch reset and a prompt to confirm reset appears, touch continue to reset.

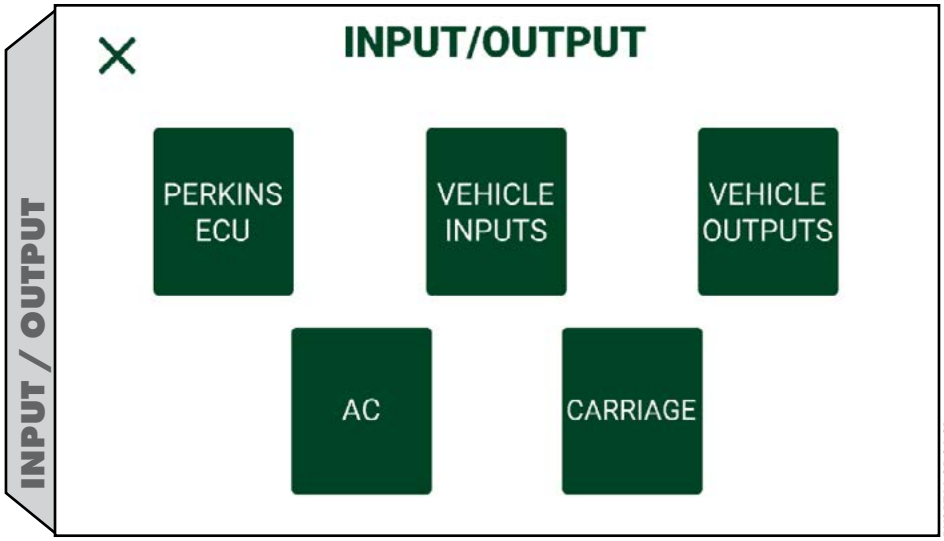
Change coolant at the recommended interval based on the type of coolant selected.

ASTM D2610 is the type of coolant used on the machine as shipped from the factory. Change ASTM D2610 every 2 years or 3000 hours.

Touch the **X** to close this screen.





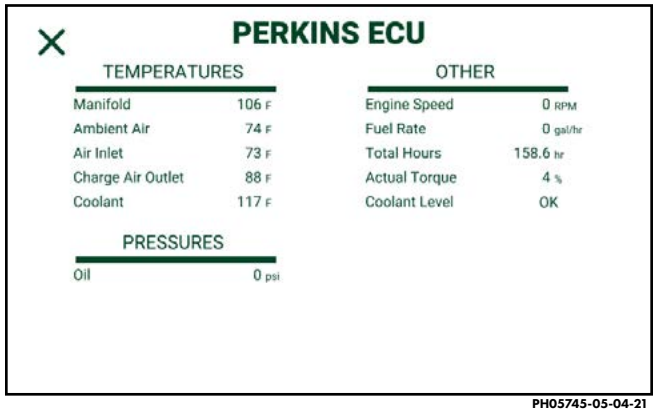


Input / Output Screen

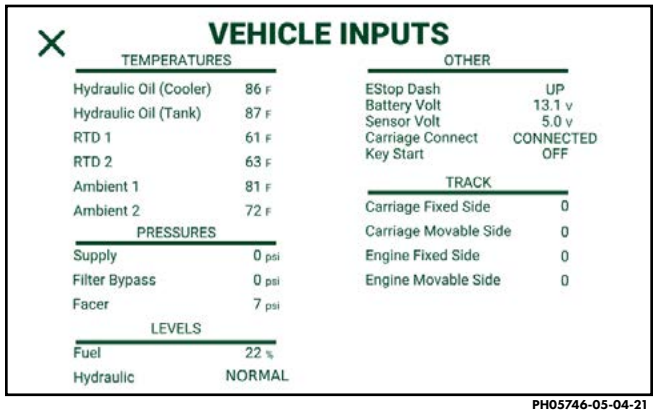
Displays different input/output sections of the machine and touching any of the buttons will open the screen of that section providing information.

Touch the **X** to close any of these screens.

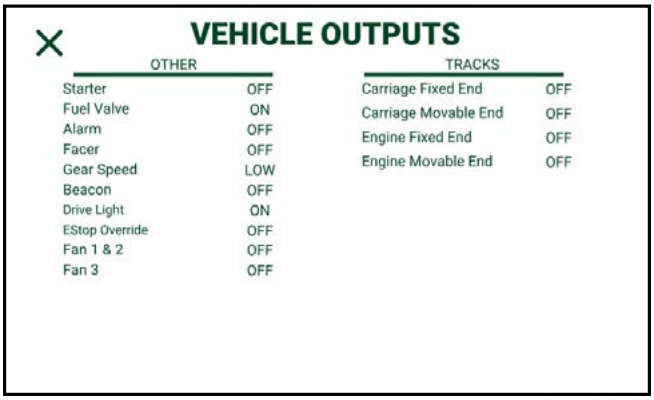
Perkins ECU:



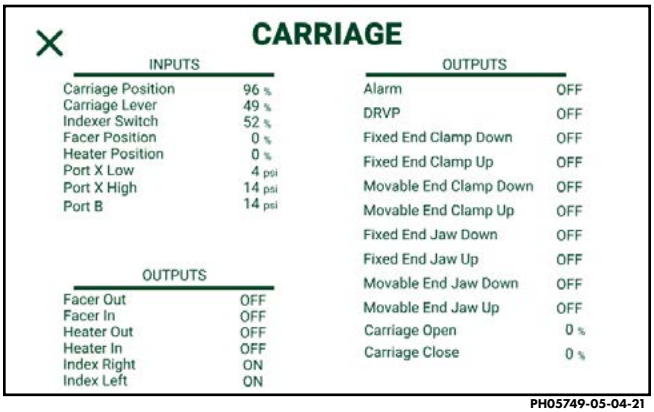
Vehicle Inputs:



Vehicle Outputs:

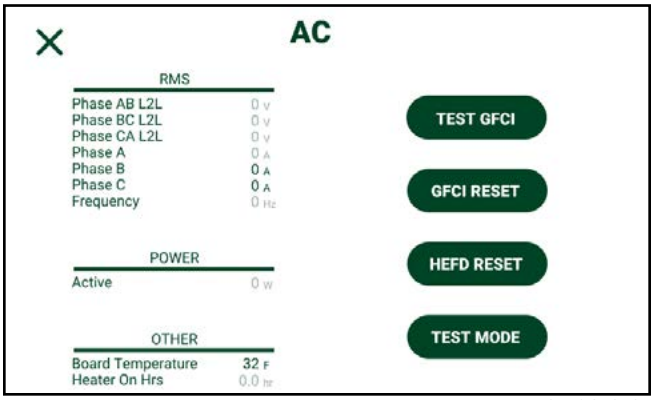


Carriage:



AC:

This screen will also allow the testing and resetting of the GFCI.



PH05748-05-04-21

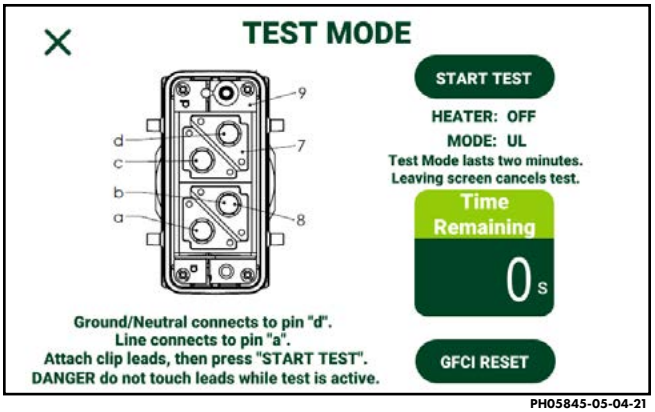
IMPORTANT: The Fault Current Detection mode displayed during the test is based on the selection made from the Advanced Settings section of the User Settings screen.

To test the GFCI, touch the button on the right side of the screen to start test. A prompt displays to confirm the test. Touch continue to start the test.

To reset the GFCI, touch the button on the right side of the screen to reset. A prompt displays to confirm the reset. Touch continue to reset.

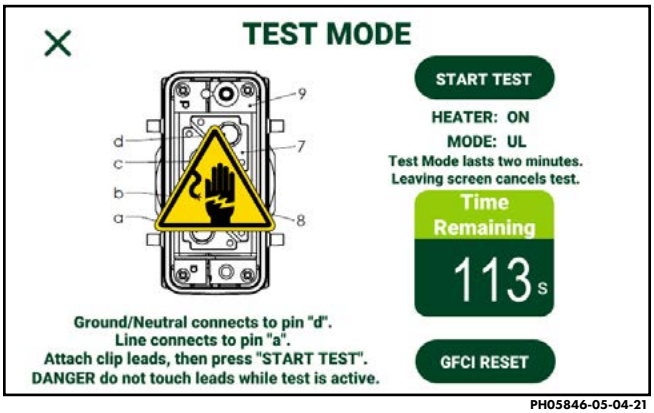
To reset the HEFD, touch the button on the right side of the screen to reset. A prompt displays to confirm the reset. Touch continue to reset.

Touch Test Mode to enter the Test Mode screen.



PH05845-05-04-21

Attach the test leads. Touch Start Test to begin test. The test lasts 2 minutes and leaving the screen will cancel the test.



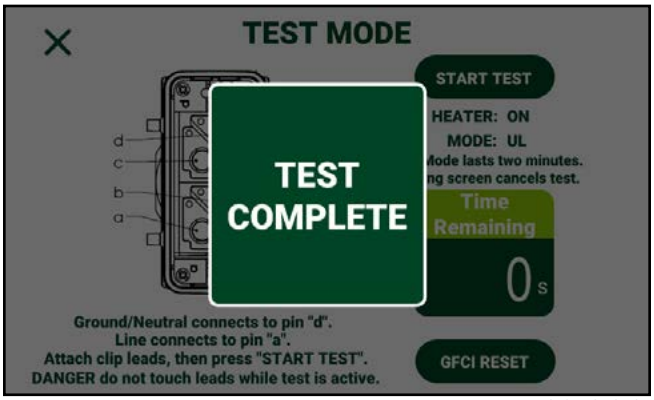
PH05846-05-04-21

Do not touch the test leads during the test.

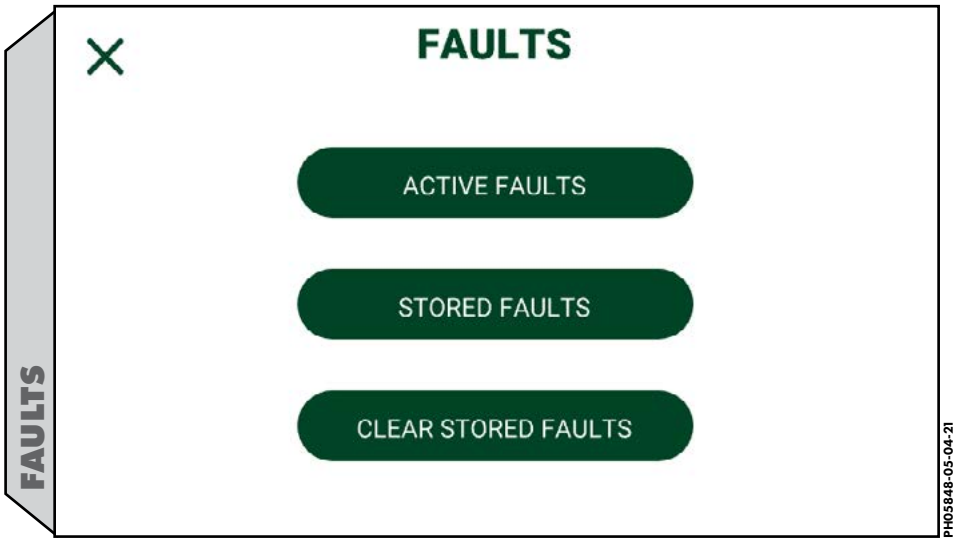
⚠ DANGER

Do not touch live heater connector pins. Failure to do so could result in electric shock. Cancel or complete test before removing test leads.

Screen will display "TEST COMPLETE" when the test has completed.



PH05847-05-04-21



PH05848-05-04-21

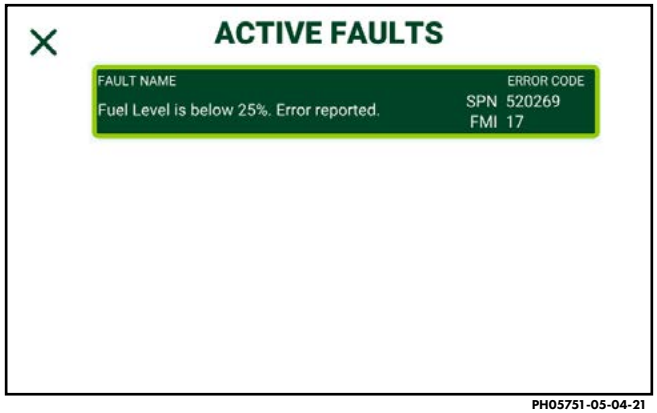
Faults Screen

Displays menu for active faults, stored faults and clear all faults. Touching any of the buttons will open the screen of that menu item.

Touch the **X** to close any of these screens.

Active Faults:

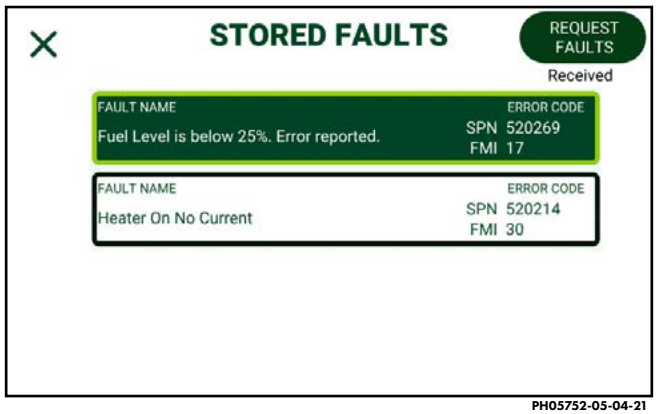
Displays all the active faults.



PH05751-05-04-21

Stored Faults:

Displays all the stored faults that the system has received

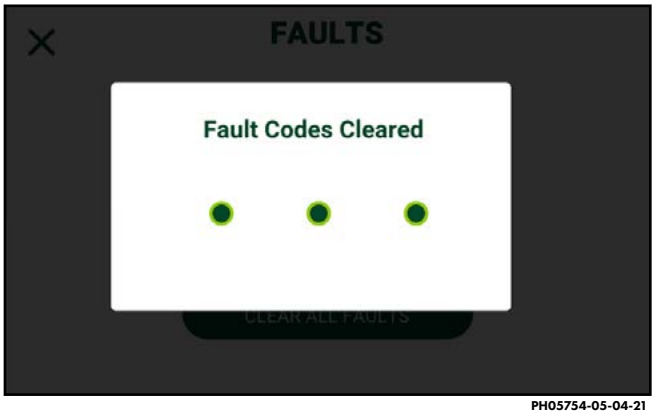


PH05752-05-04-21

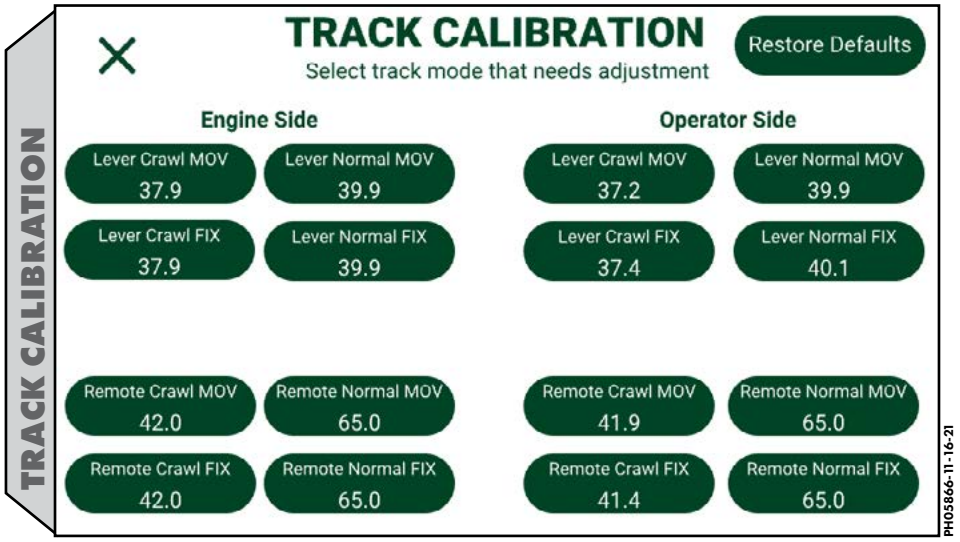
Clear Stored Faults:

Will display the option to clear Perkins ECU or Vehicle GCM faults. Touching the clear button will clear that type of fault codes. Faults cannot be cleared while engine is running.

PH05849-05-04-21



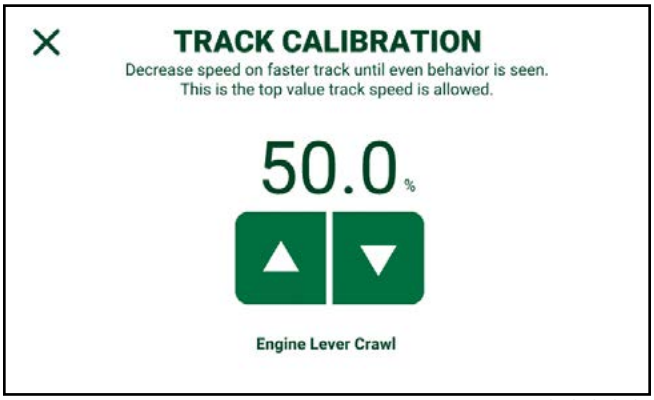
PH05754-05-04-21



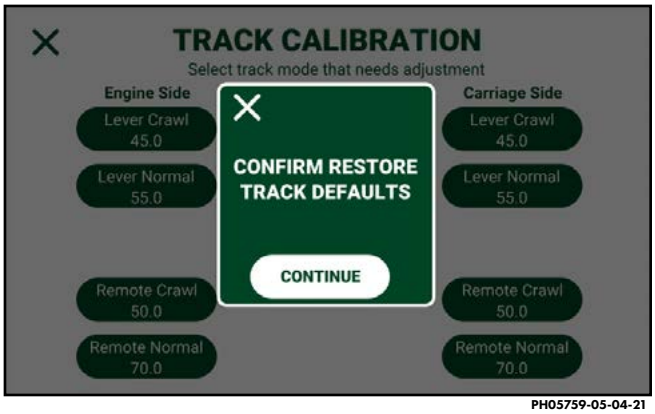
Track Calibration Screen

Displays menu of track adjustments. On this screen you can adjust speeds per track for each track speed selection. The speeds can be adjusted for the lever controls and the remote controls.

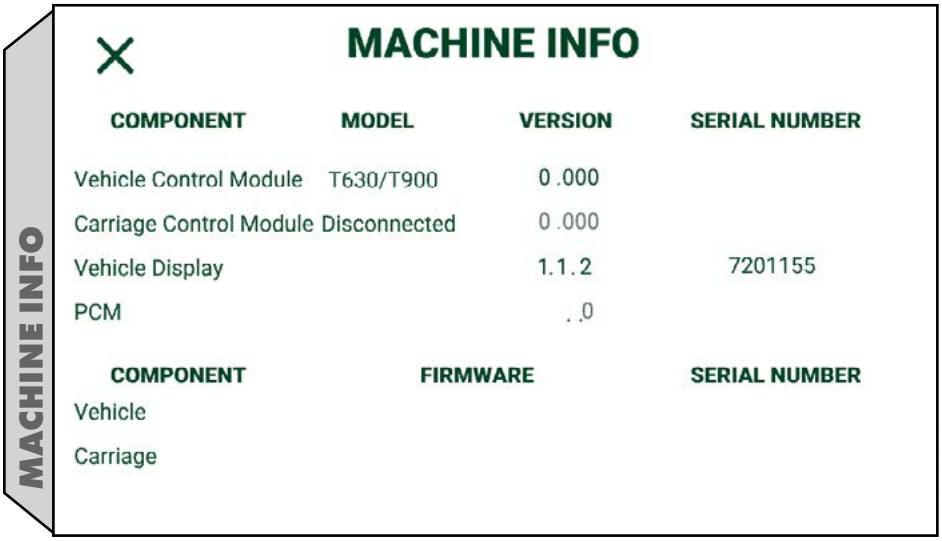
Touching one of these buttons will open an adjustment screen for changing the percent value of the track speed.



Touching Restore Defaults will reset the speeds to the default values.



Touch the **X** to close the screen.



Machine Info Screen

Displays machine information about the control and display components on the machine.

Touch the **X** to close this screen.

OPERATION - BUTT FUSION

Read Before Operating

STOP-05-04-21

Before operating this machine, please read this manual thoroughly and keep a copy available for future reference.

Return manual to the protective storage container when not in use. This manual is to be considered part of your machine.

Starting Instructions

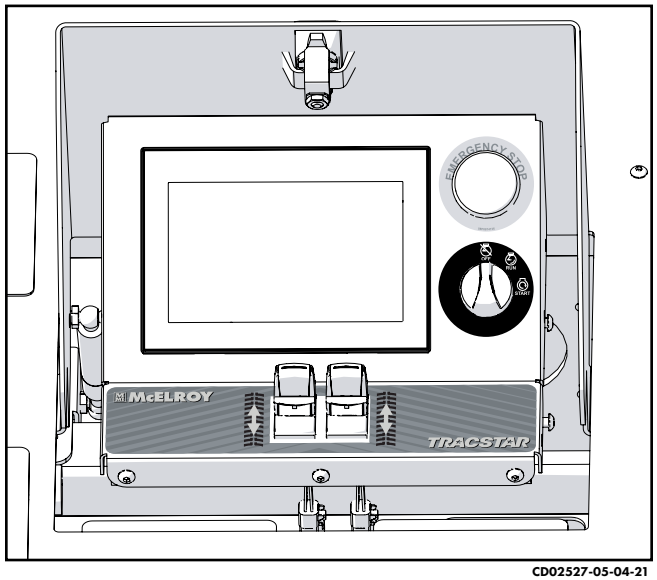
Read and understand the engine owner's manual before operating.

The ignition key has three positions: off, run and start.

Starting at Vehicle Display

Turn the key switch to **RUN** to allow the display to power on.

Turn the key switch to **START** to start the engine.



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Starting from Remote

Turn the key switch to **RUN** to allow the display to power on.

Turn the remote power switch **(12)** to **On** (I).

Ensure remote disable **(4)** is pulled out.

The remote can be paired in **Run** or **Standby (8)**. Pairing in Run requires the joysticks to be centered.

Press the **Remote Pairing** button **(10)** to connect remote to receiver.

Set engine speed **(1)** to low .

Push the engine start button **(14)** (until the engine starts).

Ensure switch is in **Run (8)** mode to drive the vehicle.

To stop the engine, press the engine stop button **(13)** until the engine is off.

Actuate the track speed switch **(3)** to change between high and low track speed or switch the track speed to crawl on for crawl mode **(6)**.

Actuate the drive switch **(2)** to turn the lights on and off.

The remote has an engine preheat button **(11)** which is not used on this machine.

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PH05766-04-21-21

PH05765-04-21-21

Driving Vehicle

⚠WARNING

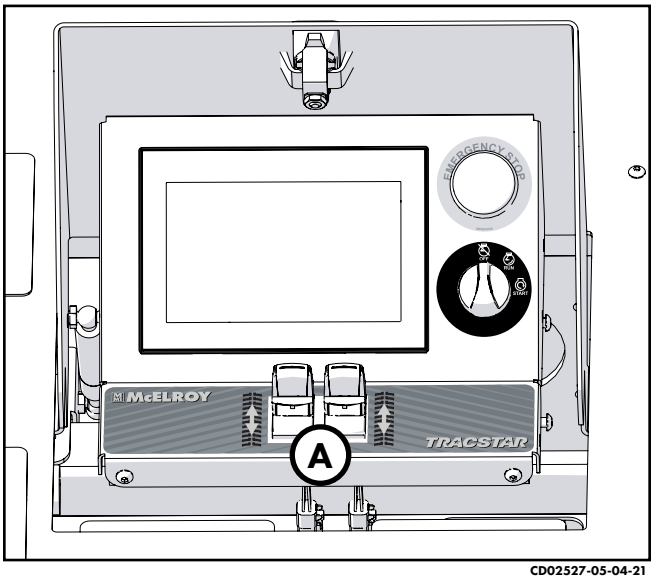
Before and while driving machine, ensure all jobsite personnel are visible to the machine operator at all times. If all personnel are not visible, stop machine movement and locate all personnel before proceeding.

IMPORTANT: **(1200*i*)** The tracks will not move if the outriggers are not fully retracted. Ensure all outriggers are fully retracted before driving the vehicle.

From Vehicle Display

The tracks are operated by the levers **(A)** on the vehicle console.

Left drive lever engages the track on the engine side of the machine. Right drive lever engages the track on the carriage side of the machine.



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From Remote

⚠CAUTION

When using remote mode, move the Radio Standby Switch to "standby" when not driving the vehicle to prevent accidental machine movement.

With the Radio Standby switch in "RUN" position and standing at the movable jaw end of the machine, the radio remote left drive joystick drives the carriage side track and the right drive joystick drives the engine side track.

NOTICE: Be aware that standing at a location other than the movable jaw end of the machine will affect the orientation of the radio remote track drive joystick movements relative to the machine's tracks.

The track speed switches are used to switch between:

High Speed / Low Torque
Normal Speed / High Torque — 3

Crawl Mode On
Crawl Mode Off — 6

Crawl mode is used to move the machine slowly and make fine steering adjustments.

IMPORTANT: The tracks may not have sufficient torque to turn the machine in all ground conditions when in the high speed/ low torque setting. If so, switch to the low speed / high torque setting.

IMPORTANT: The remote will auto power off if left idle for more than 10 minutes.

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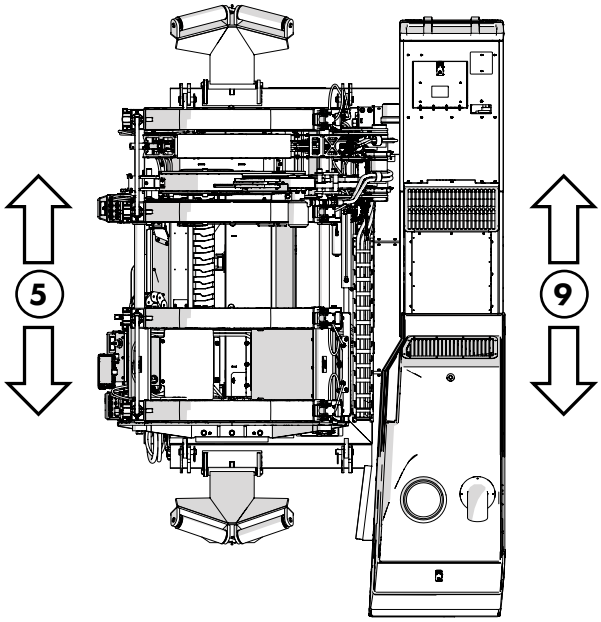


CD02636-05-04-21

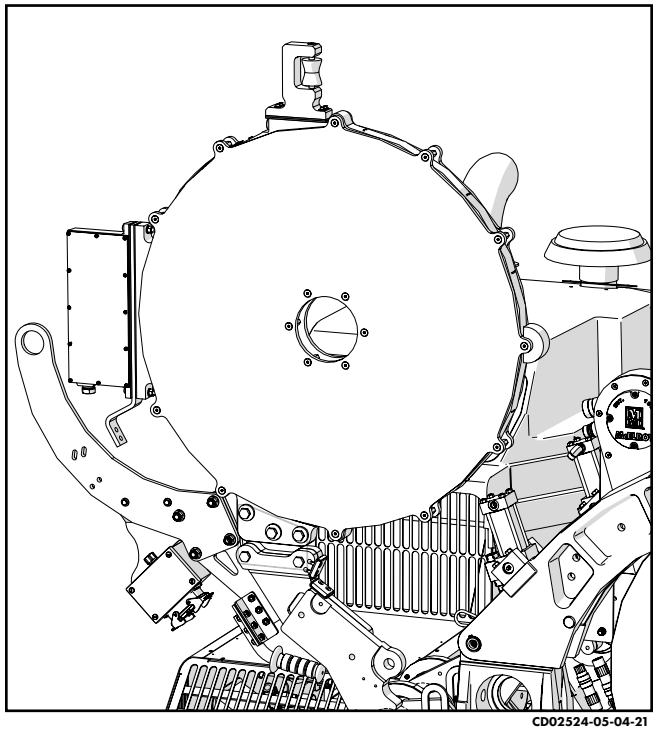
Prepare Heater

⚠ DANGER

Heater is not explosion proof. Operation of heater in an explosive atmosphere without necessary safety precautions will result in serious injury or death.

Make sure both butt fusion heater plates are properly installed.

NOTICE: Non-coated heaters should never be used without both butt fusion heater plates installed. Install heater butt plates before using the heater.



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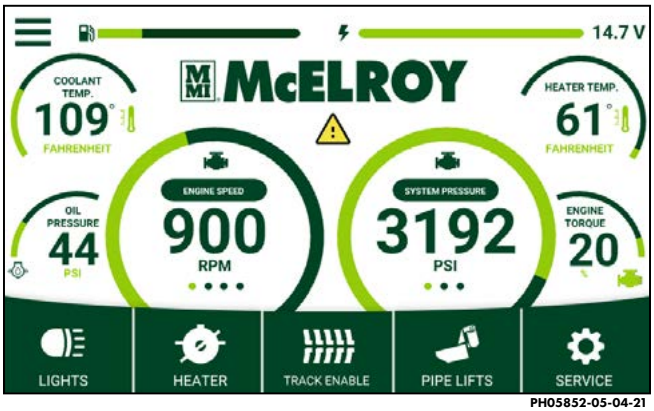
Refer to the "Temperatures" in the Fusion Process section of this manual for instructions on how to adjust heater temperature.

⚠ WARNING

Ensure heater power is off before connecting or disconnecting heater power cables. Failure to do so may result in electrical shock.

Ensure the heater power and RTD cables are plugged in at the heater receptacles on the carriage.

Turn on the heater from the main screen of the vehicle console.



PH05852-05-04-21

Controls for Indexer

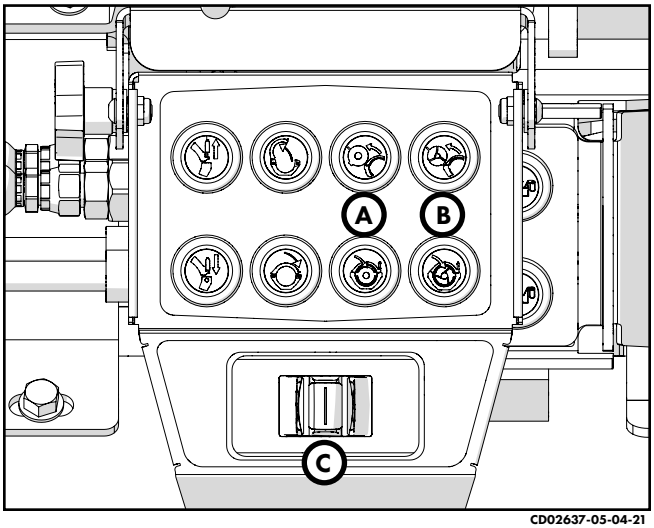
A Pivots the heater in and out. The heater bag frame pivots with the heater when attached or positioned over the heater.

630*i* and 900*i* - The frame must be manually pushed onto the heater when pivoting the heater in the machine.

1200*i* - The frame pins to the heater for pivoting in/out of the machine. For fusing operation, the frame is unpinned from the heater in the pivot out position.

B Pivot the facer in and out.

C Move the indexer left and right.



CD02637-05-04-21

Jaws

Firmly grasp the clamping handle before unclamping.

Press the unclamp button (**A**) to unclamp the jaws and swing the clamp cylinders out away from the upper jaws.

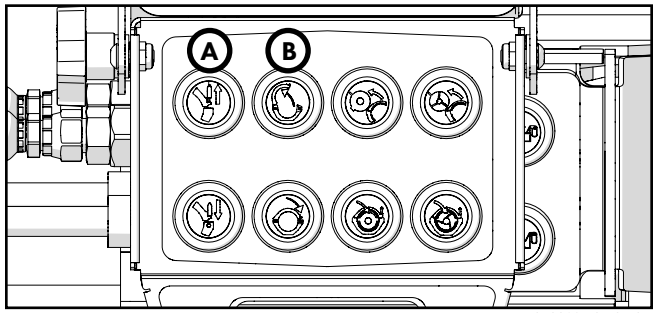
⚠CAUTION

Support the clamping cylinders using the handle when clamping or unclamping the jaws. Clamping cylinders are heavy and could fall causing injury.

NOTICE: Do not let the clamp cylinders drop. Dropping the cylinders can damage the equipment.

NOTICE: Verify the position of the indexer will not interfere with opening the upper jaws.

Press the open jaw button (**B**) to open jaws.



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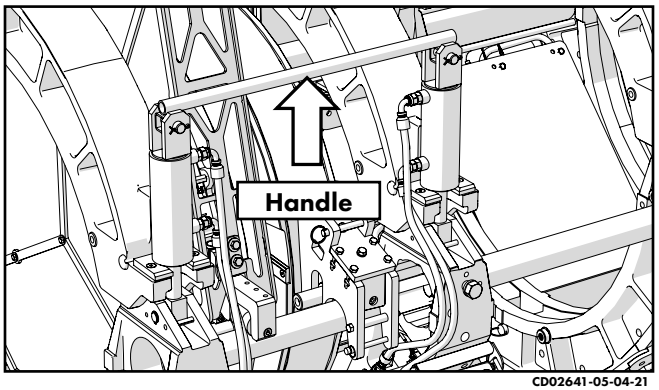

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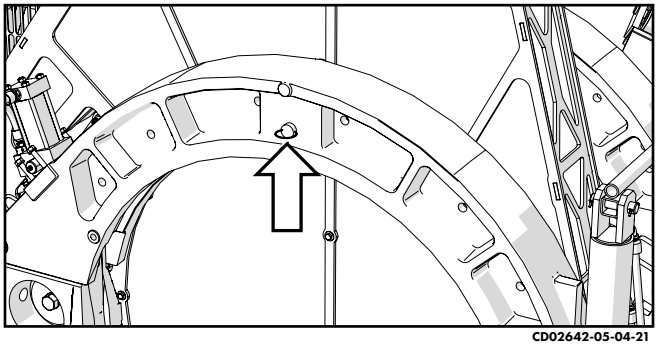
Jaw Inserts

If required, install appropriate size jaw inserts for the pipe that is being fused. The inserts are held in place by detent pins.



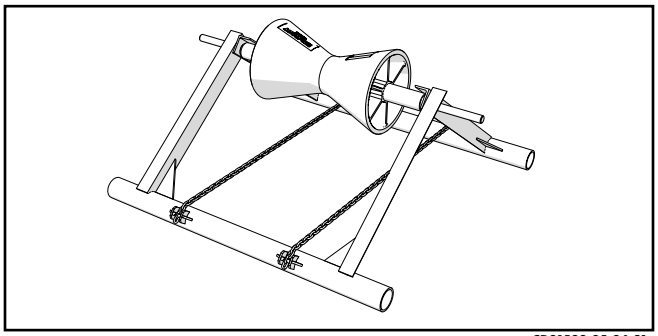
CD02642-05-04-21

Loading Pipe into Machine

Position pipe support stands slightly more than half the pipe length from each end of the machine to help support and align the pipe.

Raise pipe lifts on the machine to allow pipe to roll into position.

Position pipe with enough material protruding past the jaw faces to allow for complete facing of both pipe ends.



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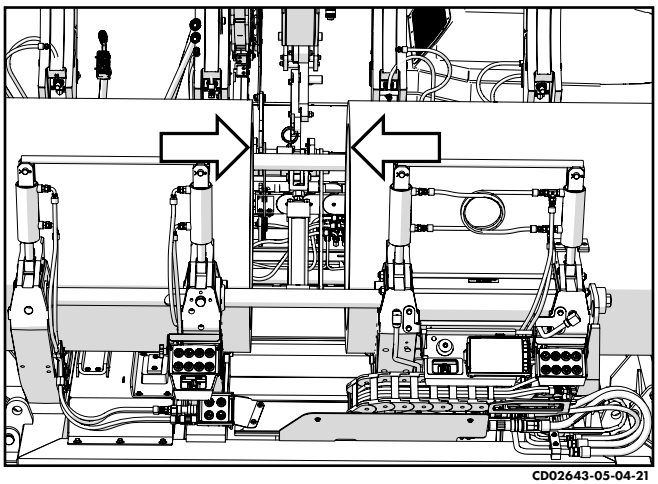
Standard Pipe Stand

MegaMc® Pipe Stand (Hydraulic)



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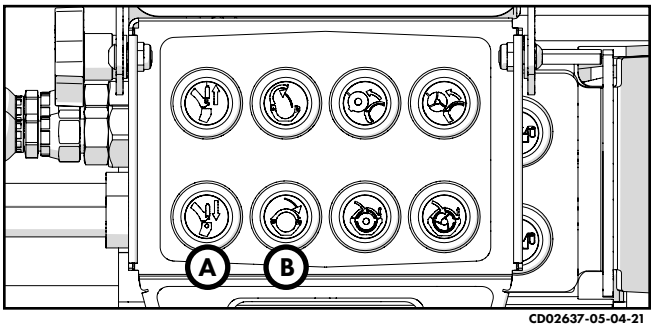
Closing Jaws

Press the jaw close button (**B**) to close the jaws.

Firmly grasp the clamping handle, move the clamp cylinders into the vertical position and then press the jaw clamp button (**A**) to clamp the jaws.

NOTICE: The jaw clamping cylinders are designed to clamp when in the upright position, evenly applying pressure over the entire base of the cylinder. Always ensure the clamping cylinders are upright over the clamp pads before clamping the jaw. Damage to the cylinder and jaw can occur if not clamped properly. Clamp marks on the bottom of the cylinder are an indication that the cylinder was not in the proper position when clamped down.



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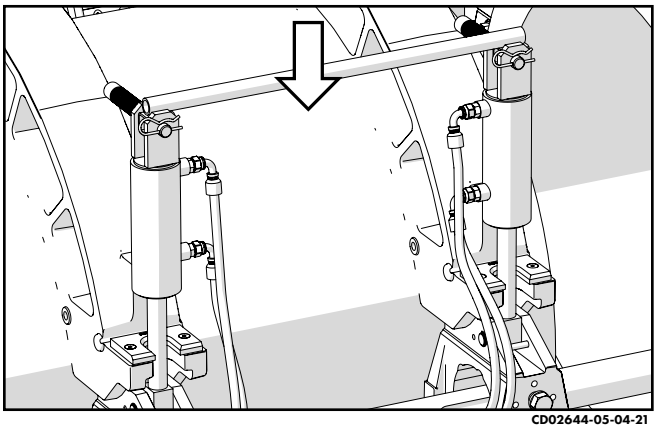

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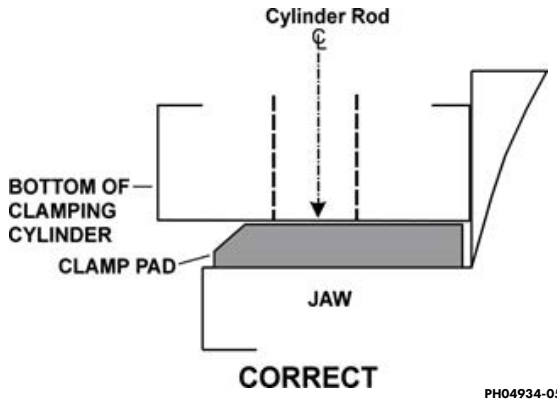

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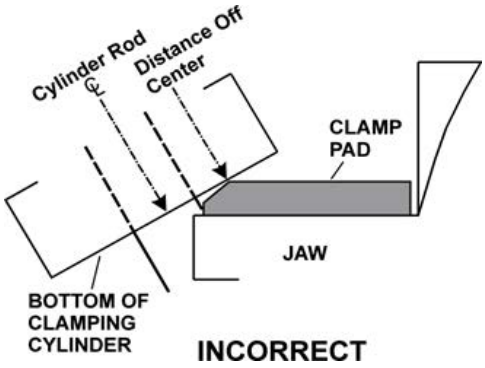


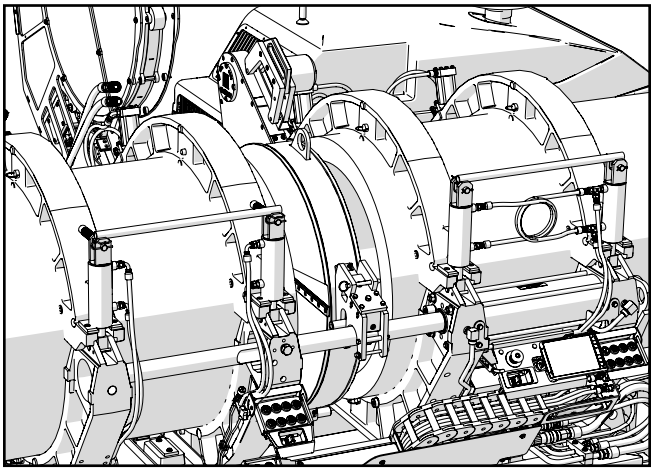
PH04935-05-04-21

Positioning Facer

Actuate the indexer lever (**A**) to position the facer between the pipe ends.

NOTICE: Ensure proper clearance from pipe and jaws for the facer stops before pivoting facer in.

Pivot the facer between the open pipe ends by pressing the facer in button (**B**).



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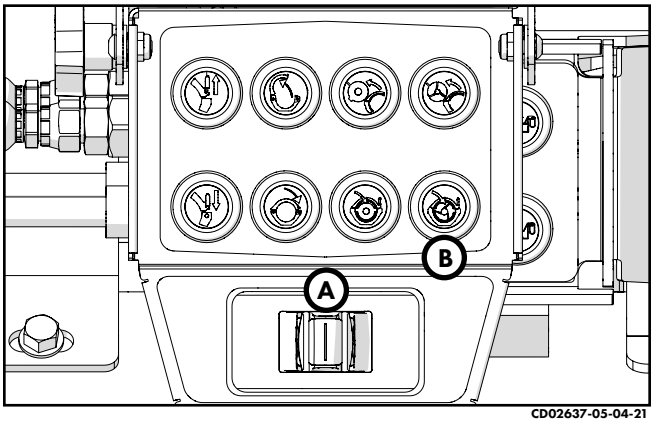

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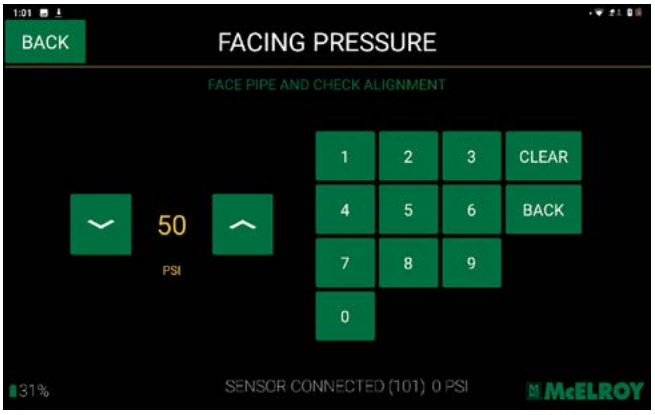
Begin Facing

Turn facer on by pressing the facer power button (**A**).



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Turning on the facer opens the facing pressure screen on the tablet. The facing pressure can be adjusted.

The facing pressure should be set as low as possible while still facing pipe. Excessive facing pressure can damage the facer. It may be necessary to adjust the facing pressure.

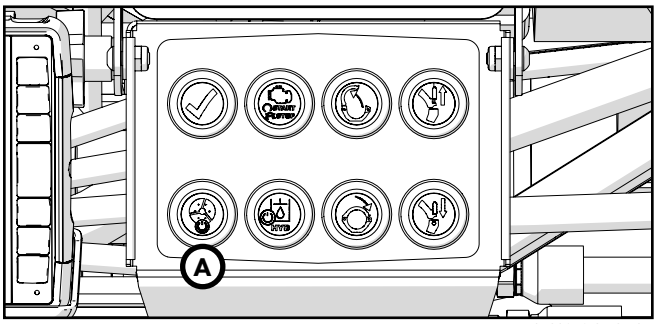
When the facer is set to momentary, press and hold the facer power button to keep the facer on.

⚠WARNING

Facer blades are sharp and can cut. Never attempt to remove shavings while the facer is running, or is in the facing position between the jaws. Use care when operating the facer, and when handling the facer.

Move the carriage directional control (**B**) to the left to close the carriage and begin facing. Continue facing the pipe until the rest buttons on the jaws contact the facer rest stops (**C**) on both the fixed jaw and movable jaw sides.

Turn facer off by pressing the facer power button (**A**).



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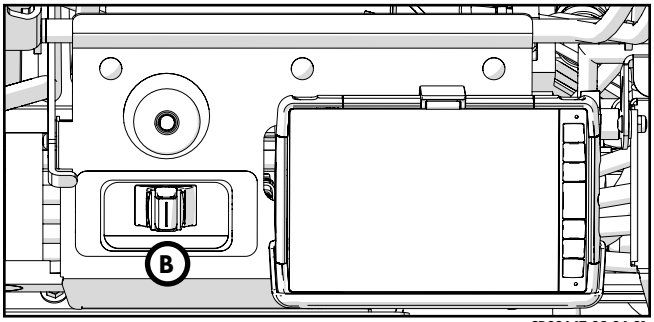
Touch the **Back** button to close the facing pressure screen.



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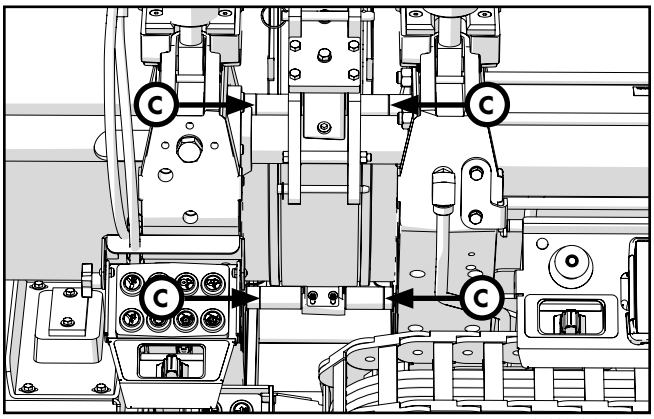

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After Facing

Move the carriage directional control (**A**) to the right and allow the carriage to open completely. Move indexer (**B**) to the right to center the facer in between the pipe ends to avoid striking facer stops on the pipe ends. Pivot the facer (**C**) to the out position.

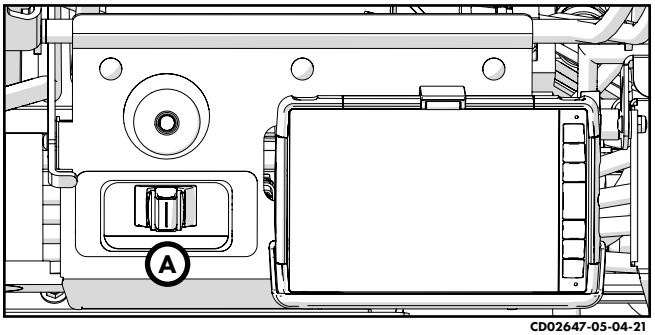
⚠WARNING

Use the hydraulic disable (D) to turn the hydraulics off before entering the unit for maintenance or chip removal. Serious injury or death could result if the hydraulic power remains on and the hydraulics are activated while personnel are between movable machine parts.

All keypad buttons for hydraulic functions will light up red when the hydraulics are disabled.

Clean shavings out of pipe ends and from between the jaws. Do not touch faced pipe ends.

The hydraulics can be re-enabled by pressing and holding the hydraulic disable button (**D**) for 3 seconds.



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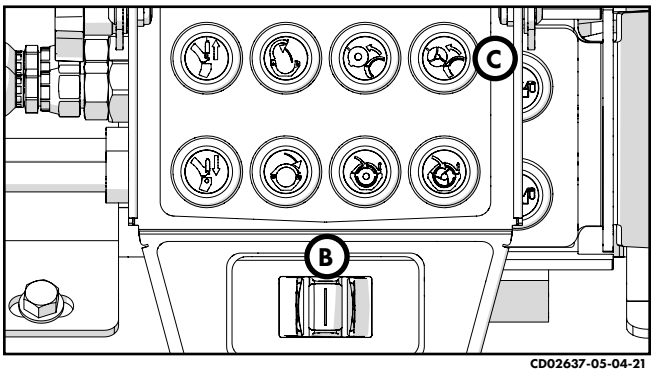

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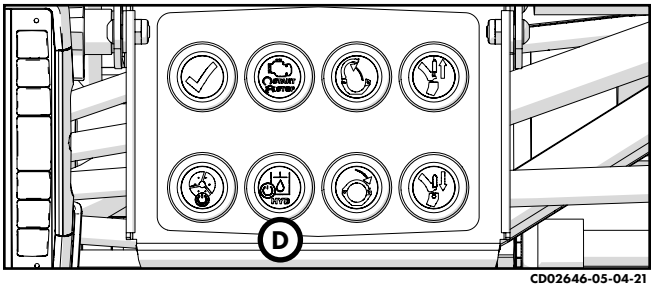

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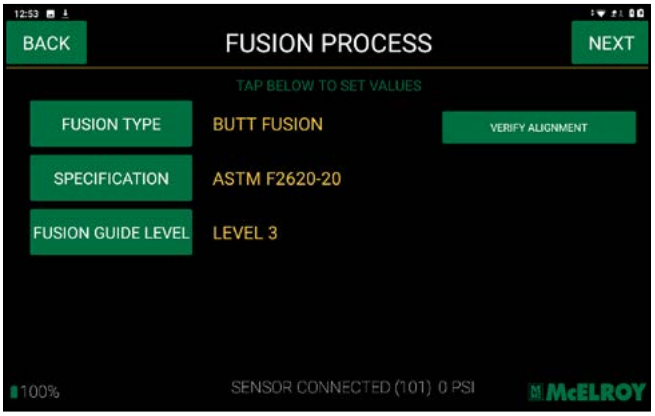
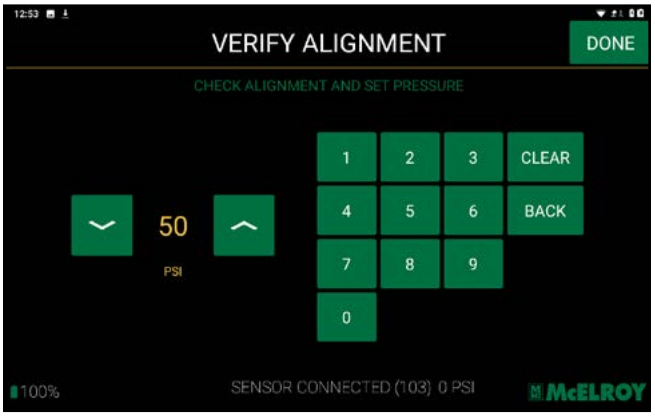
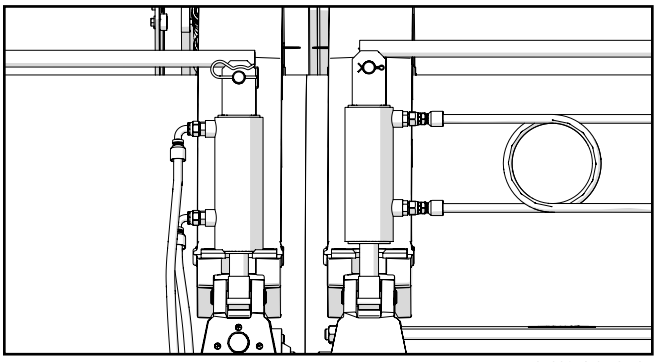
Check Pipe Alignment

From the Fusion Process screen, touch Verify Alignment to open the Check Alignment and Set Pressure screen.





Move carriage to the left until pipe ends contact. Look across the top surface of pipe ends to check alignment. If there is a HI/LO misalignment between pipe ends, adjustments must be made. If HI/LO alignment is acceptable, proceed to "Setup Fusion Process".



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To correct HI/LO misalignment:

⚠CAUTION

Support the clamping cylinders by firmly grasping the clamping handle when clamping or unclamping the jaws. Clamping cylinders are heavy and could fall causing injury.

Adjusting bolts (**A**) are located on top of both inner lower jaws. The jaws must be opened to perform the adjustment. Open the carriage at least 2 inches so pipe ends are not touching.

Place carriage directional control in neutral. On the jaw holding the high side pipe only, turn the bolt clockwise on the lower jaw to improve alignment. Close jaws and re-clamp pipe.

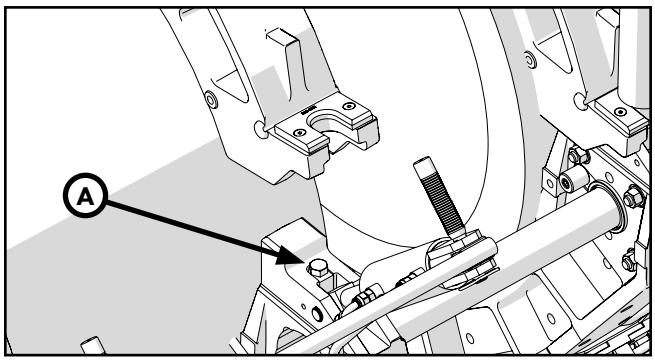
IMPORTANT: Always adjust the side that is higher, never adjust the low side.

⚠WARNING

Hydraulically operated equipment generates high forces. Anything caught in the machine will be crushed. Keep body parts out of the machine while hydraulics are activated.

Insert facer and reface the pipe ends if adjustments were made. Check HI/LO alignment again and make further adjustments if necessary.

Ensure there is no unacceptable gap between the pipe ends. If there is an unacceptable gap, return to Loading Pipe into Machine.



CD02650-05-04-21

Check Heater Temperature

⚠CAUTION

The heater is hot and will burn clothing and skin. Keep the heater protected from personnel when not in use and use care when handling heater and heating pipe.

NOTICE: Incorrect heating temperature can result in questionable fusion joints. Check heater plates periodically with a pyrometer and make necessary adjustments.

⚠WARNING

Use the hydraulic disable (D) to turn the hydraulics off before entering the unit for maintenance or chip removal. Serious injury or death could result if the hydraulic power remains on and the hydraulics are activated while personnel are between movable machine parts.

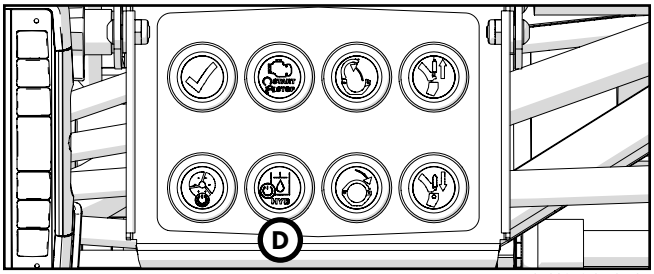
Lower the heater and disable hydraulics using the hydraulic disable (**D**).

Check heater surface temperature where the pipe will contact the heater. Enter the recorded temperatures on the Temperatures screen during the Fusion Setup.

The dial thermometer on the heater body is for reference only and does not indicate heater butt plate surface temperature.

Refer to the pipe manufacturer's recommendations or appropriate joining standard for proper heater temperature.

Hold the hydraulic disable button (**D**) for 3 seconds to re-enable the hydraulics.



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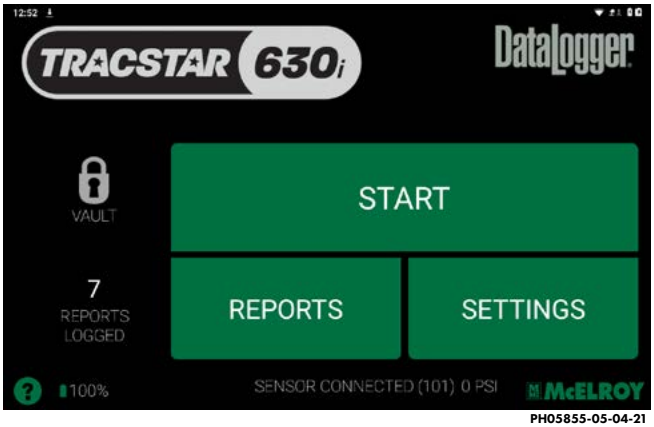
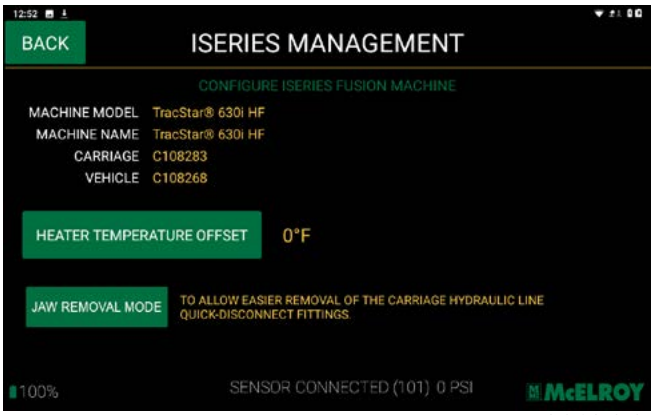
Setup Fusion Process



PH05855-05-04-21

Displays the machine connected to in the top left corner. Touch the logo to open the machine management screen. Touch Reports button to view joint reports. Touch Settings button to change tablet settings.

To begin the fusion process select **Start** on the main menu.



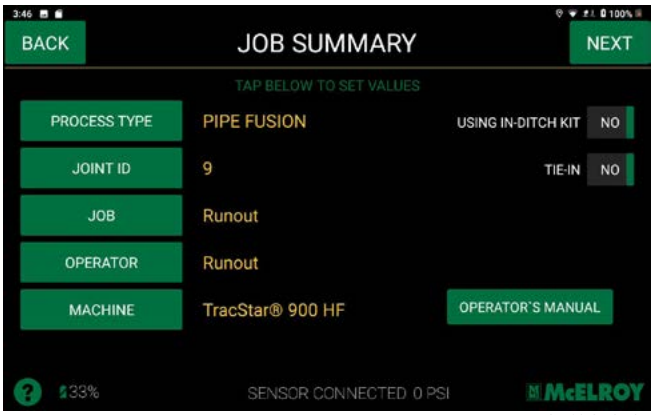
PH05856-05-04-21

Machine Management:

Displays machine information and serial numbers.

Touch **Heater Temperature Offset** to change the offset temperature of the heater.

Touch **Jaw Removal Mode** to relieve pressure in the carriage hydraulic lines to allow easier removal of quick-disconnect fittings.

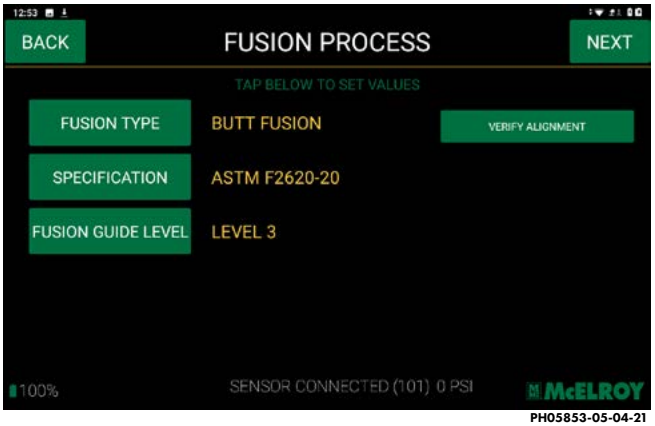


PH05768-05-04-21

Job Summary:

Process Type:	Select the type of fusion to perform.
Joint ID:	Enter a joint ID number, this number will increase incrementally for every following fusion joint.
Job:	Job Description.
Operator:	Operator Identification.
Machine:	Displays machine tablet is connected to.
Using In-Ditch Kit:	Select if the fusion is utilizing an in-ditch kit. This will show in the joint report as a data point and also affects the way data is collected.
Tie-in:	Select if the fusion is a tie-in. This will show in the joint report as a data point and also affects the way data is collected.
Operator's Manual:	Opens a digital copy of the operator's manual.

Touch **Next** to proceed to the next screen.



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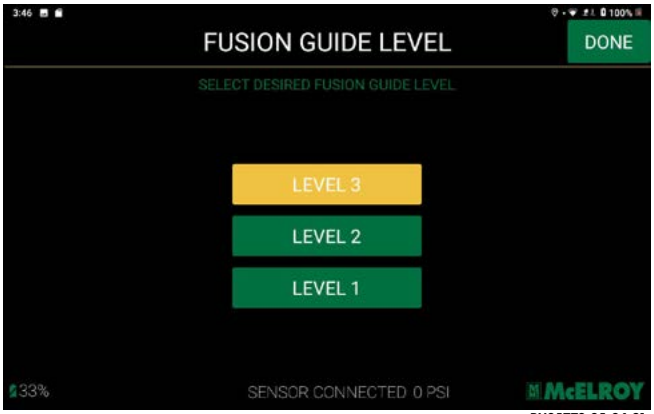
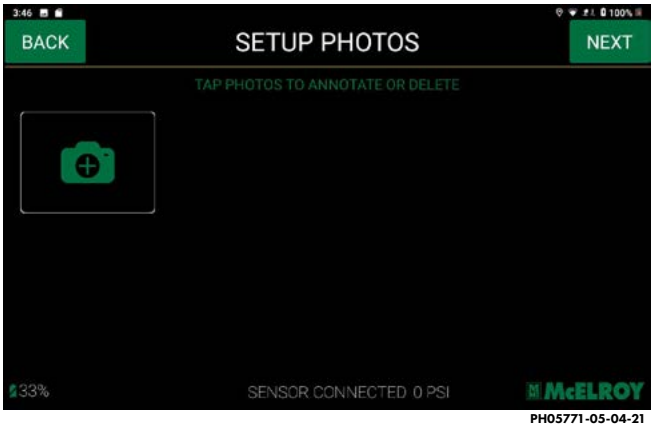
Fusion Process:

Fusion Type:	Select fusion type.
Specification:	Select the joining standard or specification to use.
Fusion Guide Level:	Select the fusion guide level. **Level 3** - Automatic fusion **Level 2** - Enhanced Guided Workflow **Level 1** - Manually controlled fusion
Verify Alignment	Select to adjust pressure and check alignment.



PH05770-05-04-21

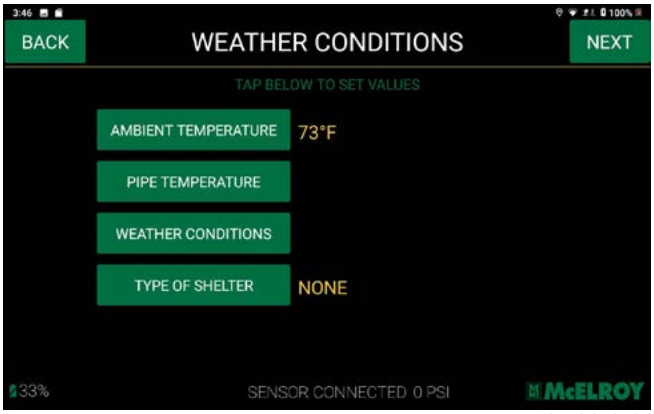


PH05771-05-04-21

Setup Photos:

Take and annotate setup photos of the fusion joint.

Touch **Next** to proceed to the next screen.

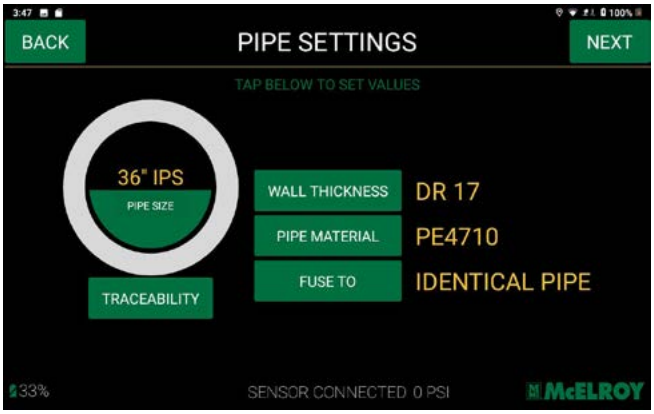


PH05772-05-04-21

Weather Conditions:

Ambient Temperature:	Enter the ambient temperature.
Pipe Temperature:	Enter the temperature of the pipe.
Weather Conditions:	Enter the current weather conditions.
Type of Shelter:	Enter if a shelter is being used and what type.

Touch **Next** to proceed to the next screen.

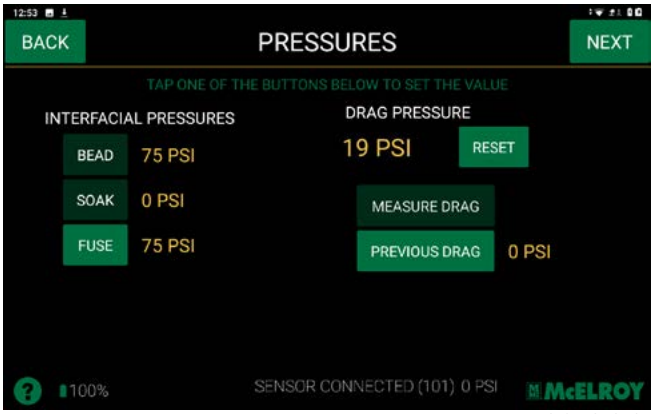


PH05773-05-04-21

Pipe Settings:

Pipe Size:	Select the pipe size being fused.
Traceability:	Select to enter traceability information either from the pipe barcode or manually.
Wall Thickness:	Enter the wall thickness of the pipe.
Pipe Material:	Enter the material of the pipe.
Fuse To:	Select if fusing to identical pipe or select settings for the pipe being fused to.

Touch **Next** to proceed to the next screen.



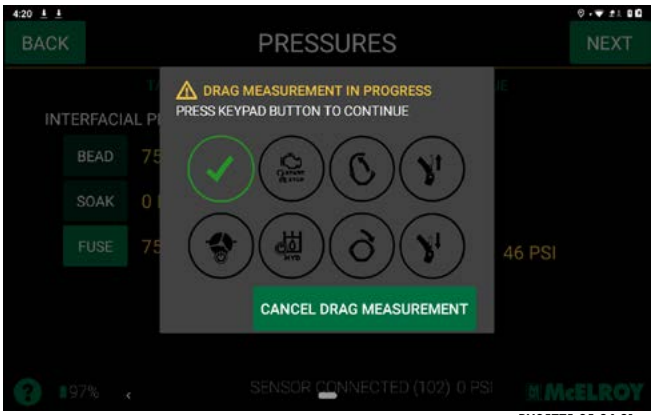
PH05857-05-04-21

Pressures:

Bead:	Select to change the value.
Soak:	Select to change the value.
Fuse:	Select to change the value.
Measure Drag:	Start the Measure Drag process.

Touch **Next** to proceed to the next screen.

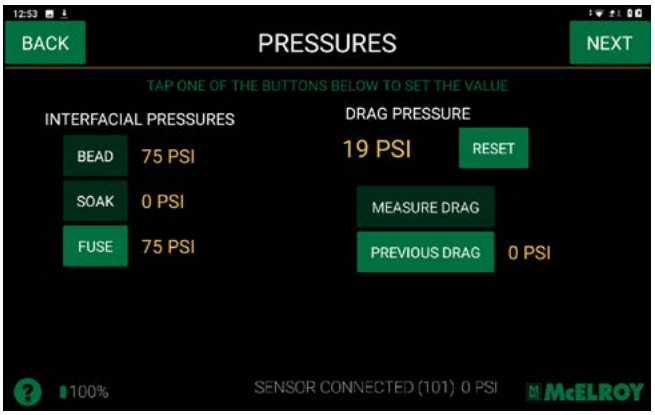
Measure Drag:



PH05775-05-04-21

Press the **Confirm** button on the keypad to continue.

The machine will automatically measure the drag and check for slippage. It will display the measured drag on the Pressures screen when it is complete.

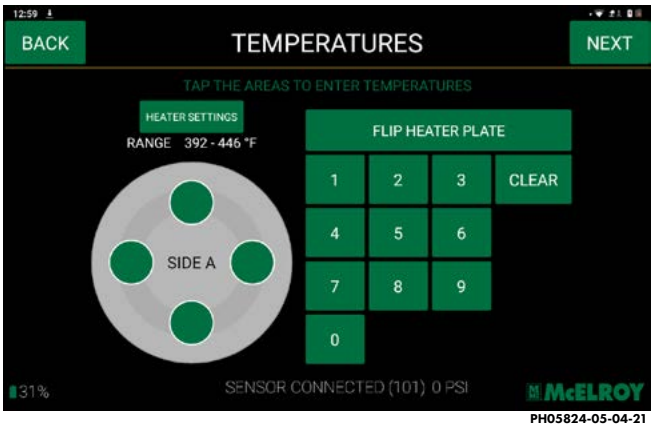


PH05857-05-04-21

Pressures:

Adjust Drag:	Select to change drag value.
Reset:	Select to reset drag pressure.

Touch **Next** to proceed to the next screen.

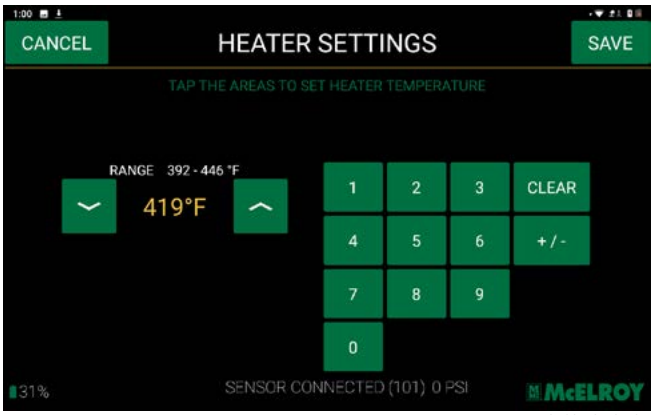


PH05824-05-04-21

Temperatures:

Heater Settings: Change the set heater temperature. A heater offset can be entered from the Machine Manangement screen on the Main screen.

Record the heater temperatures for each side of the heater plate. Clean the heater with a clean non-synthetic cloth.



PH05825-05-04-21

Heater Settings:

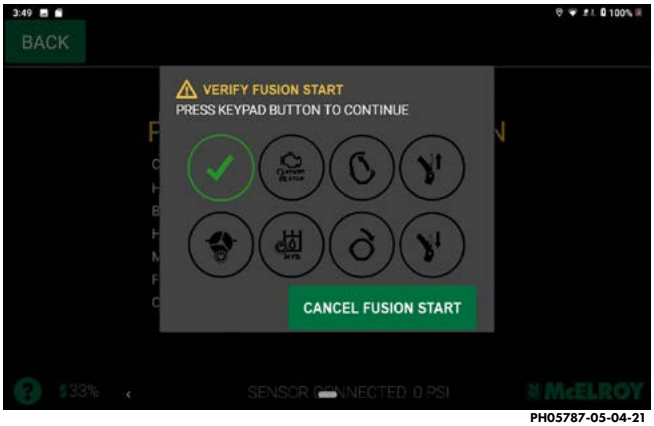
Change the heater set temperature.

Final Review:

PH05786-05-04-21

Review all the fusion parameters for expected values. Touch **Back** to go back and change any parameters in the fusion process.

To start the fusion, touch **Start Fusion**.



PH05787-05-04-21

Press the **Confirm** button to confirm the fusion start.

Level 3 Fusion Process

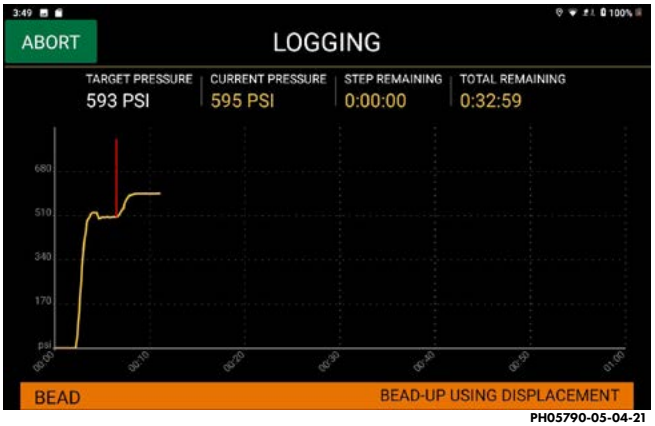
PH05788-05-04-21

The alarm will sound to alert machine movement.

IMPORTANT: Graphs shown on these screens are an example and may not reflect an actual graph of fusion performed to another standard.

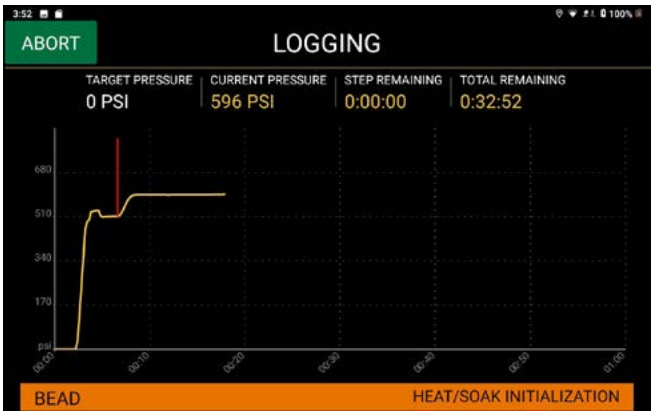
PH05789-05-04-21

Carriage will close at Bead-Up pressure.



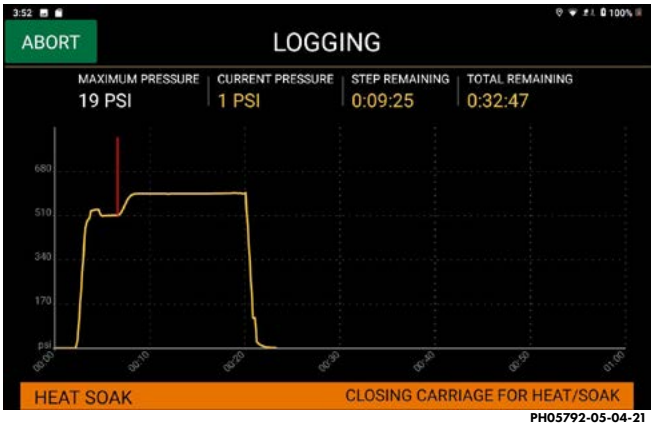
PH05790-05-04-21

Bead-up will take place until the Bead-up conditions are met.



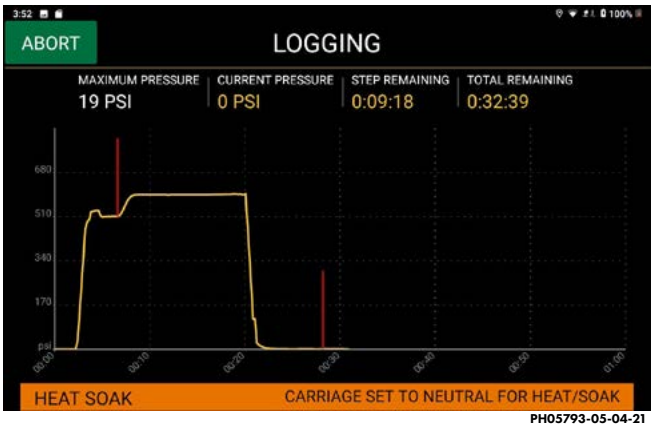
PH05791-05-04-21

Heat/Soak cycle will start.



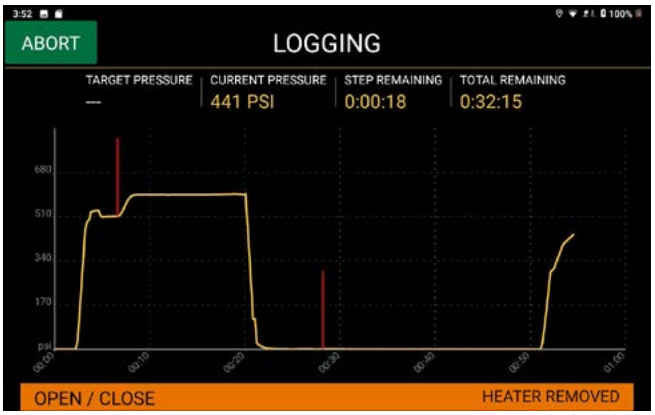
PH05792-05-04-21

Pressure will drop to drag pressure for Heat/Soak.



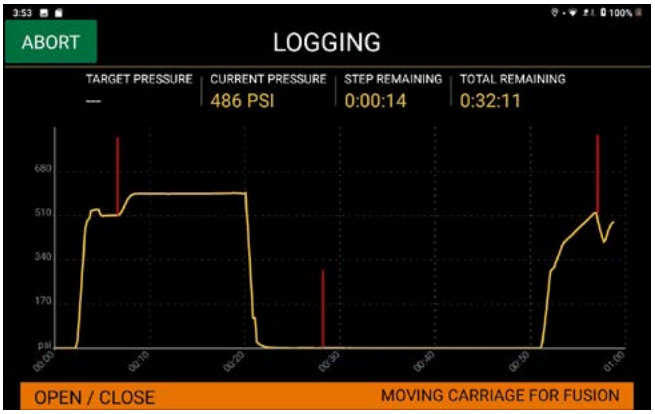
PH05793-05-04-21

Carriage set to neutral for the Heat/Soak.



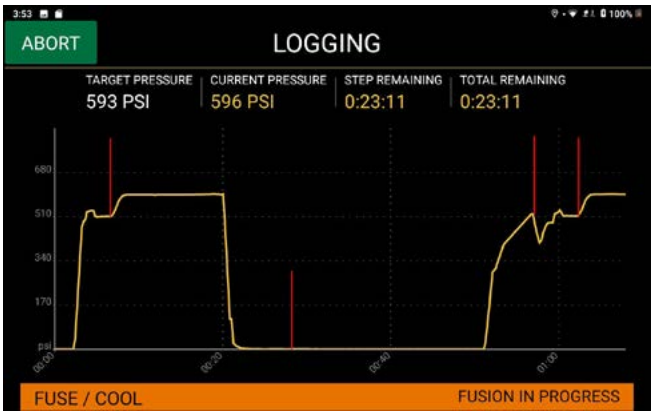
PH05794-05-04-21

Carriage is opened. Indexer is moved right and the heater is removed.



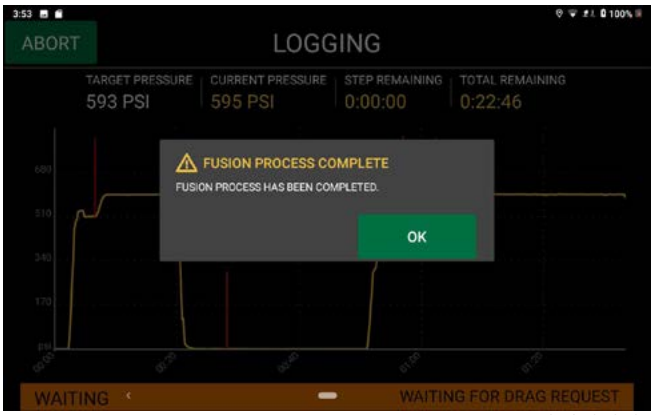
PH05795-05-04-21

The carriage is closing for fusion.



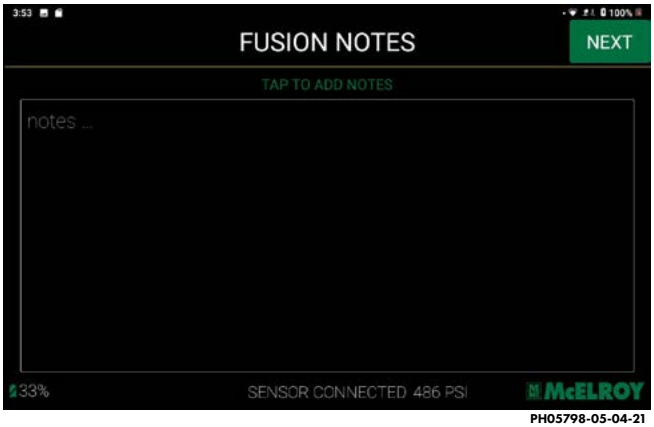
PH05796-05-04-21

The Fuse/Cool cycle starts.



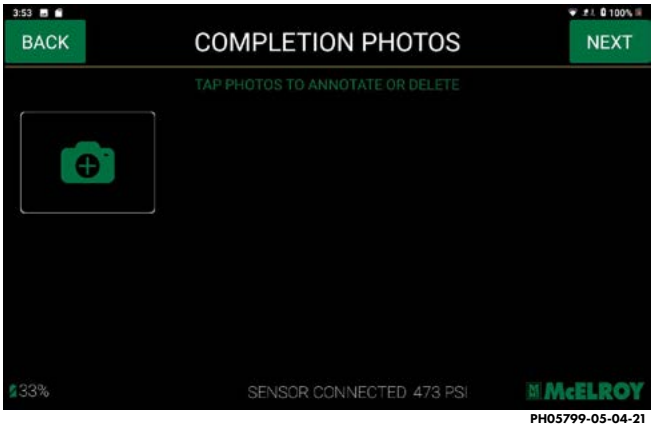
PH05797-05-04-21

When the Fuse/Cool cycle is complete, a prompt that the Fusion Process Complete appears. Touch **OK** to accept completion.



PH05798-05-04-21

Add notes about the completed fusion.



PH05799-05-04-21

Take photos of the completed fusion joint.

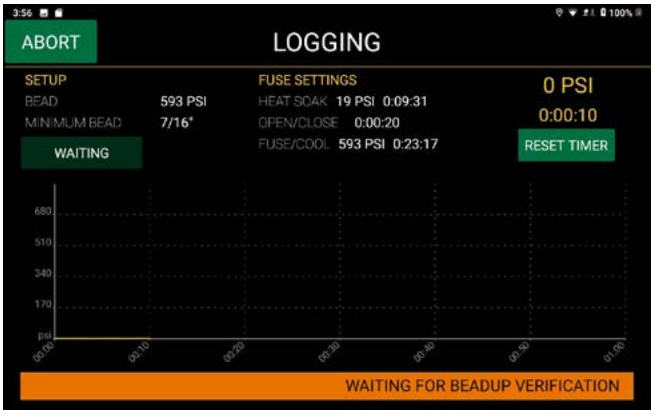
Touch **Next** to view the Joint Report.

Level 2 Fusion Process

PH05801-05-04-21

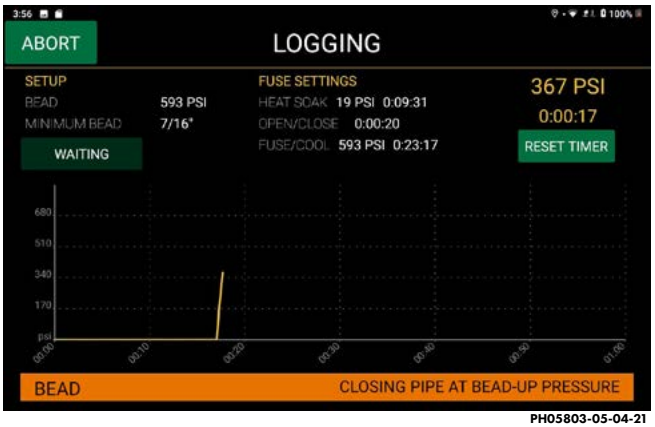
Touch **Start Beadup** to begin bead-up. Press the **Confirm** button to confirm start.

IMPORTANT: Graphs shown on these screens are an example and may not reflect an actual graph of fusion performed to another standard.



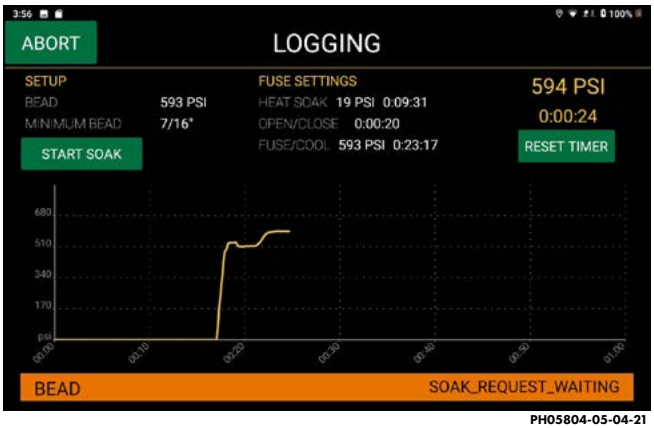
PH05802-05-04-21

Waiting for user to verify bead-up.



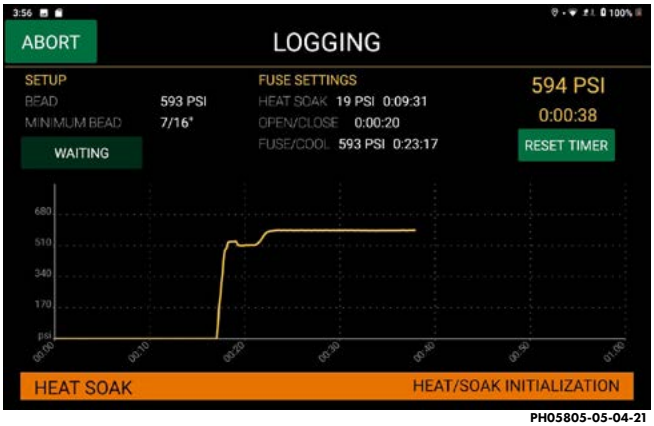
PH05803-05-04-21

Closing carriage at bead-up pressure.



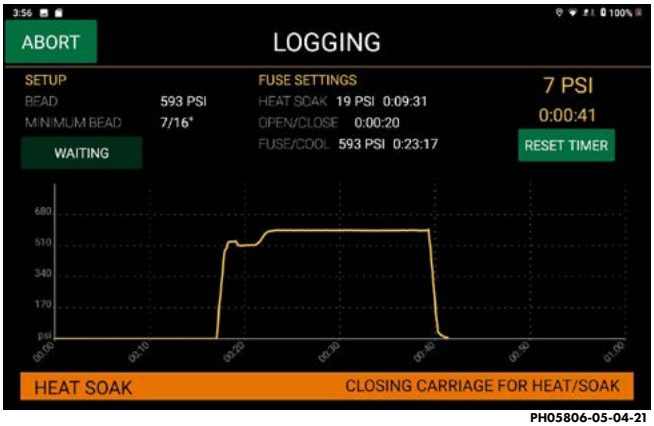
PH05804-05-04-21

Touch **Start Soak** to begin soak.



PH05805-05-04-21

Heat/Soak cycle will start.

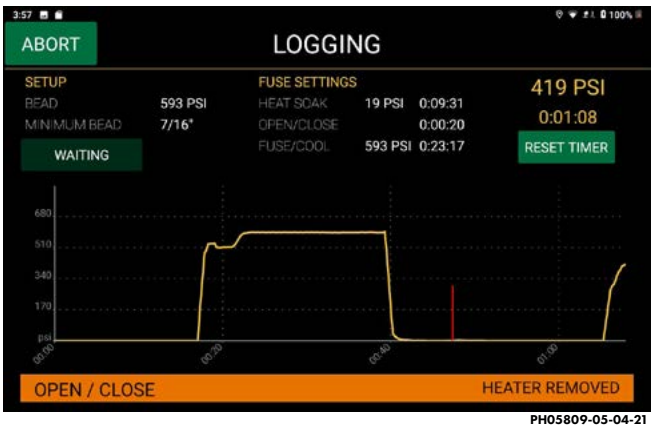


PH05806-05-04-21

Pressure changed to drag pressure for Heat/Soak. Carriage is shifted to neutral for Heat/Soak.

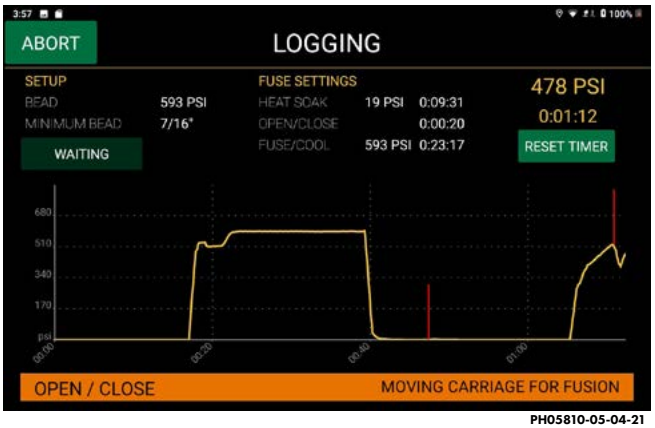
PH05807-05-04-21

Touch **Start Open/Close** to begin open/close. Press the **Confirm** button to confirm start.



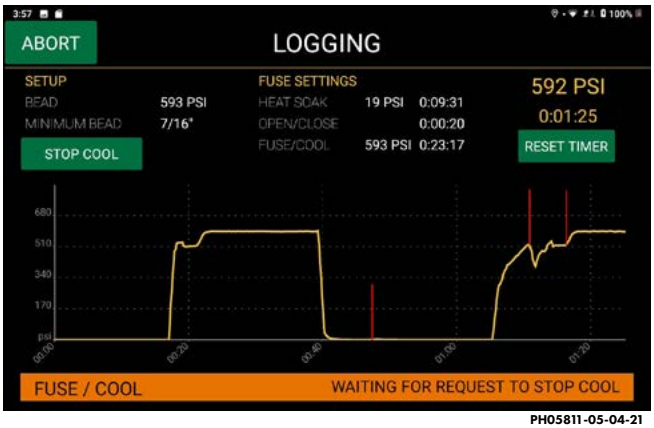
PH05809-05-04-21

Carriage is opened. Indexer is moved right and the heater is removed.



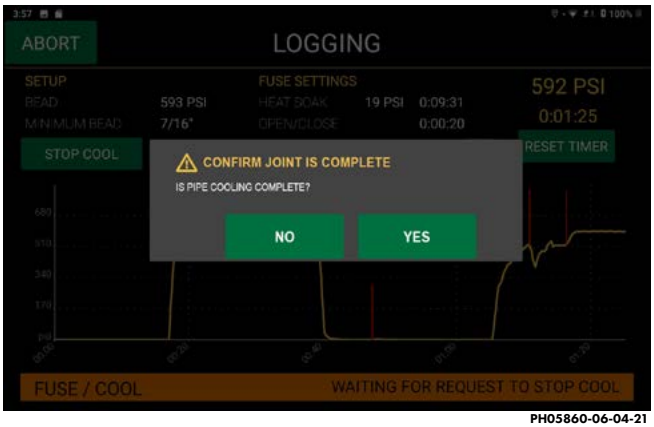
PH05810-05-04-21

The carriage is closing for fusion.



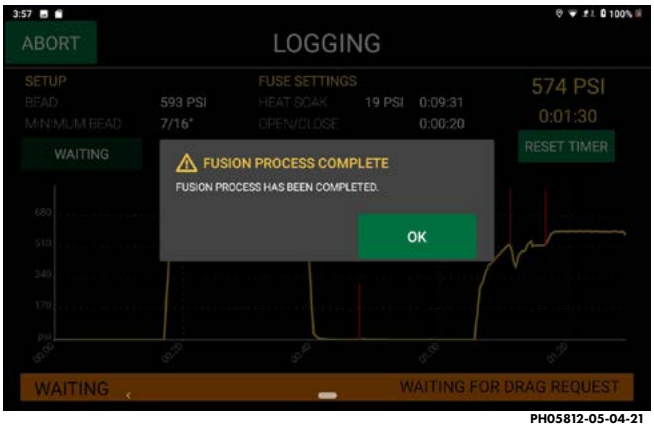
PH05811-05-04-21

Fuse/Cool cycle starts. Touch **Stop Cool** to stop the cycle.



PH05860-06-04-21

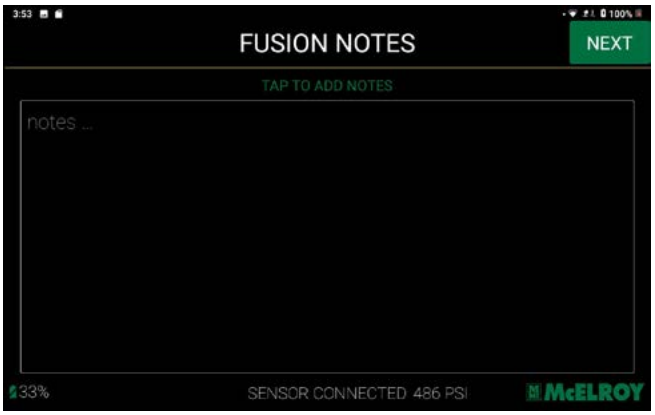
Touch **Yes** to complete the joint and touch **No** to continue with



PH05812-05-04-21

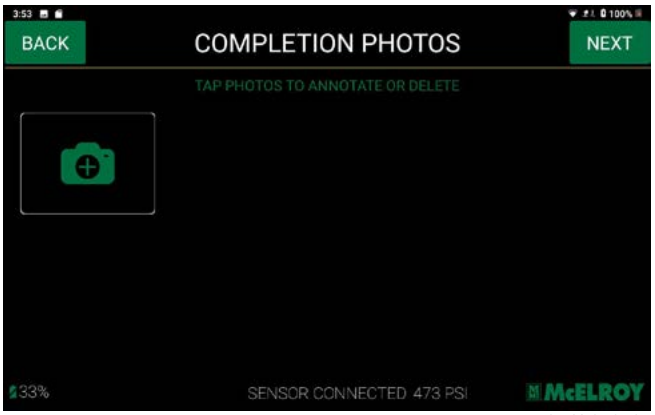
the Fuse/Cool cycle.

When the Fuse/Cool cycle is complete, a prompt that the Fusion Process Complete appears. Touch **OK** to accept completion.



PH05798-05-04-21

Add notes about the completed fusion.

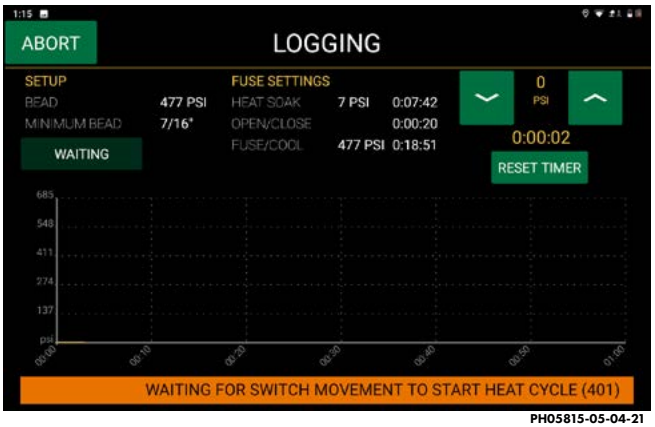


PH05799-05-04-21

Take photos of the completed fusion joint.

Touch **Next** to view the Joint Report.

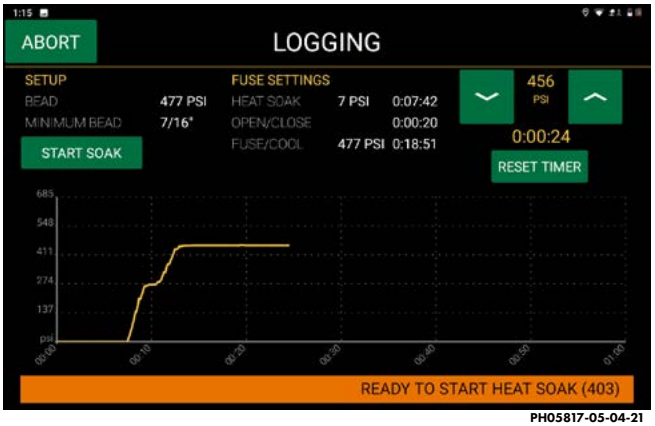
Level 1 Fusion Process



PH05815-05-04-21

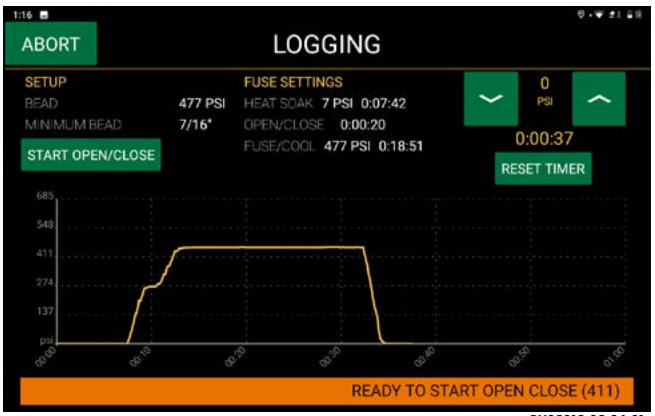
Waiting for carriage switch movement to start bead-up.

IMPORTANT: Graphs shown on these screens are an example and may not reflect an actual graph of fusion performed to another standard.



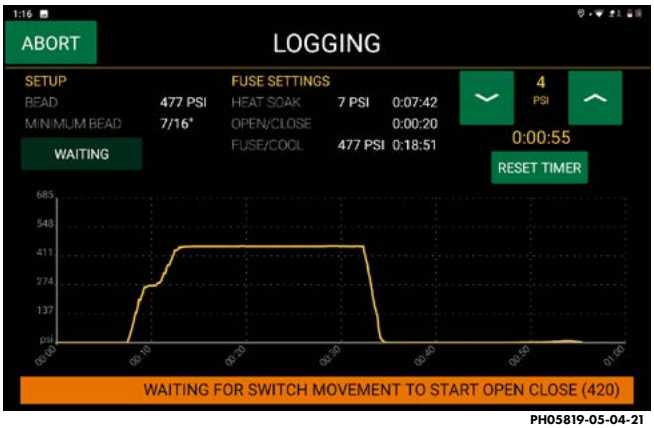
PH05817-05-04-21

Touch **Start Soak** to begin heat/soak. After pressure drops to drag presssure, move the carriage control lever to the neutral position.



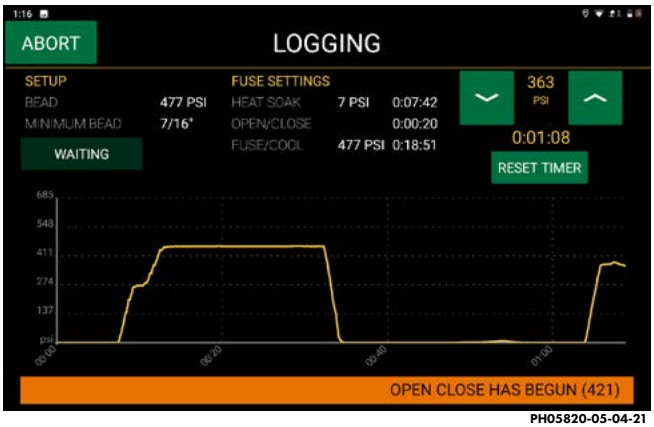
PH05815-05-04-21

After heat/soak, touch **Start Open/Close** to start.



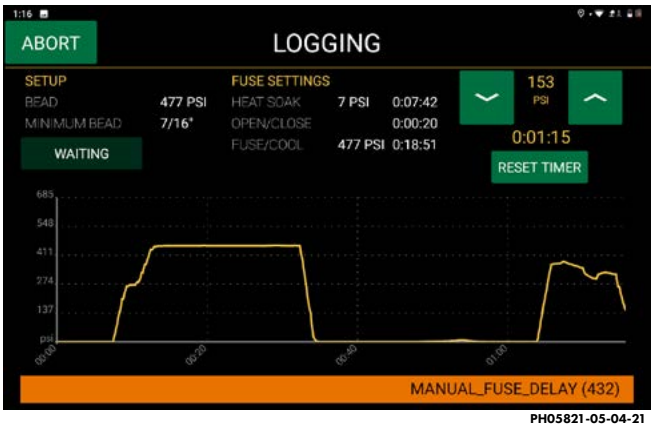
PH05819-05-04-21

Waiting for carriage switch movement to start the Open/Close.



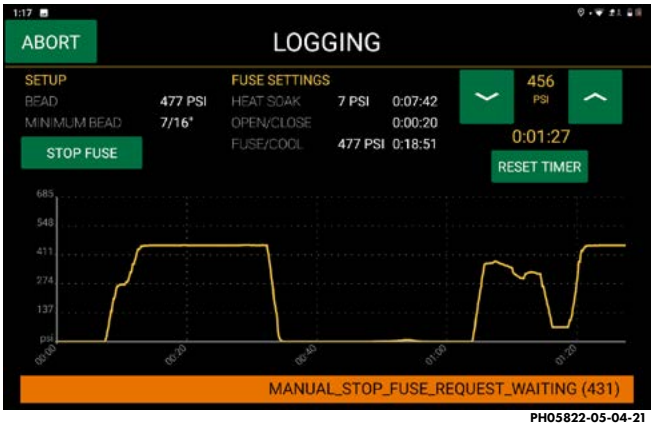
PH05820-05-04-21

Open the carriage, pivot out the heater and close the carriage to complete the Open/Close.



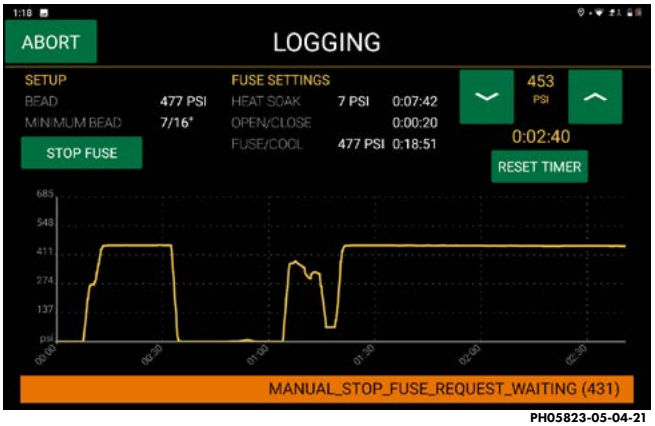
PH05821-05-04-21

Ensure to bring the pipe ends together to start the Fuse/Cool cycle.



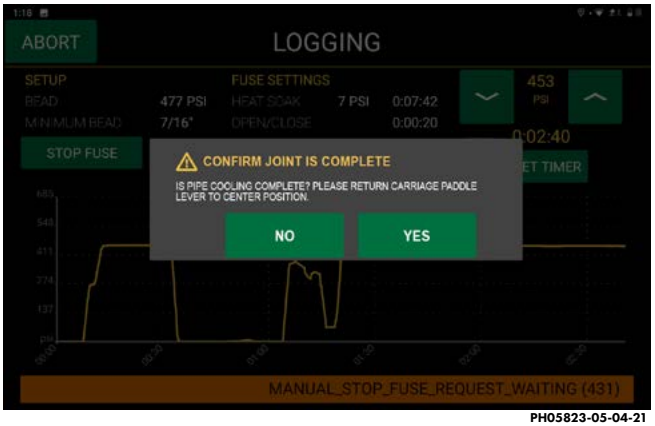
PH05822-05-04-21

Allow Fuse/Cool cycle to run for the specified time.



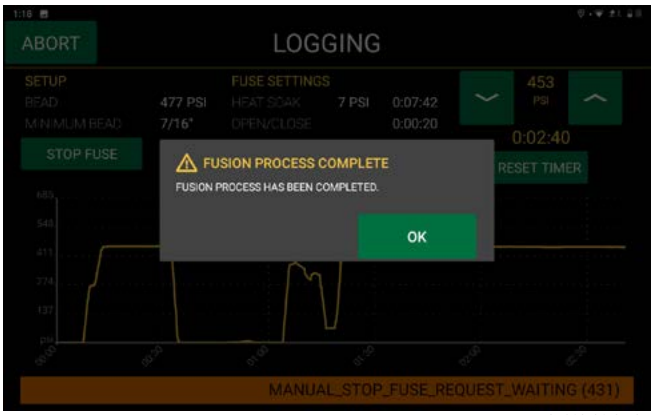
PH05823-05-04-21

Touch **Stop Fuse** to end the Fuse/Cool cycle at any time.



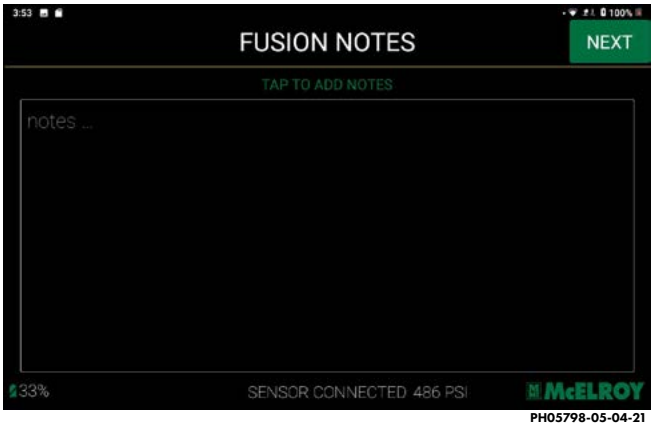
PH05823-05-04-21

Touch **Yes** to complete the joint and touch **No** to continue with the Fuse/Cool cycle. Return the carriage paddle lever to the center (neutral) position.



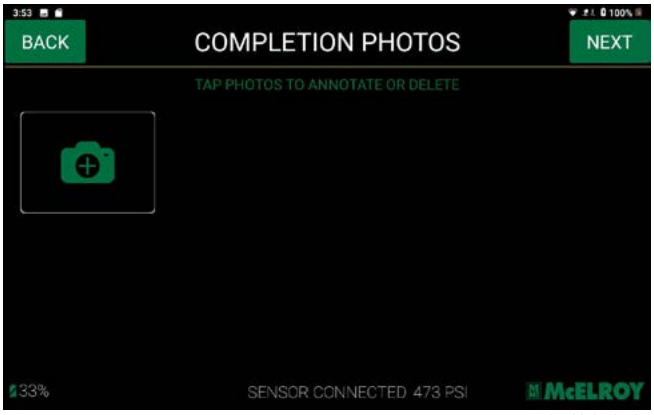
PH05862-06-04-21

When the Fuse/Cool cycle is complete, a prompt that the Fusion Process Complete appears. Touch **OK** to accept completion.



PH05798-05-04-21

Add notes about the completed fusion.

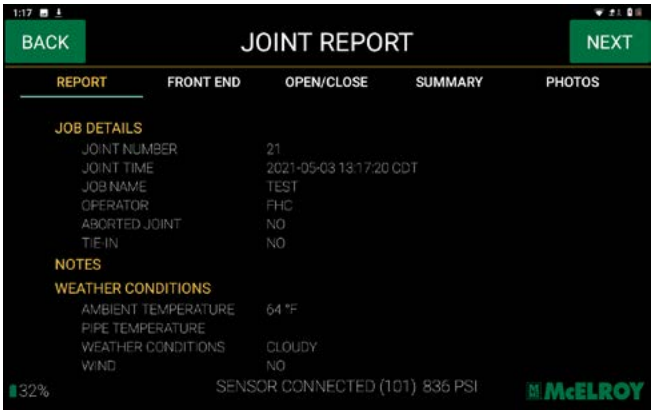


PH05799-05-04-21

Take photos of the completed fusion joint.

Touch **Next** to view the Joint Report.

Joint Report

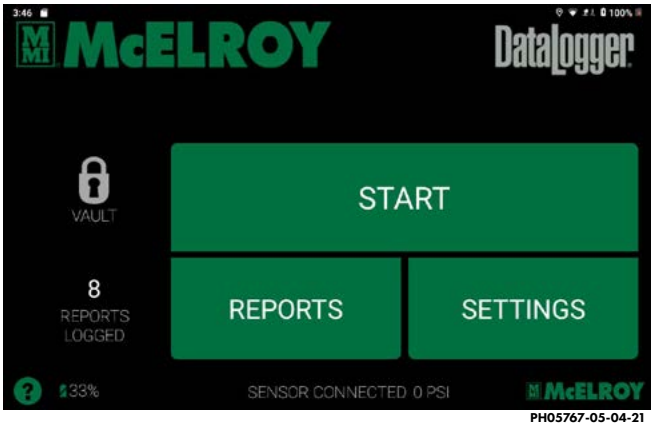


PH05831-05-04-21

After the fusion is completed, the joint report can be viewed.

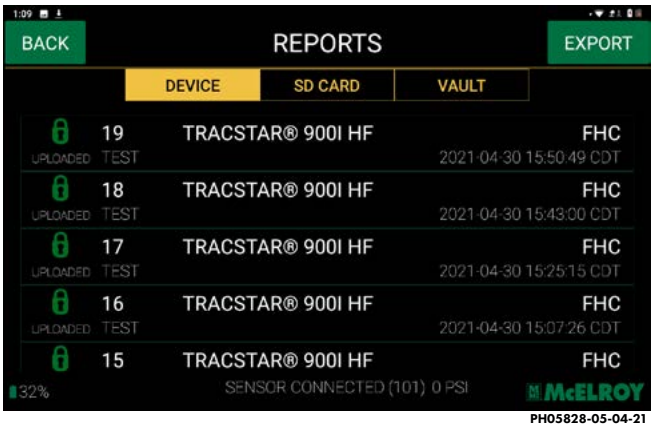
The report, the three plots and any photos taken for the fusion can be viewed at this time.

Touch **Next** to return to the main menu.



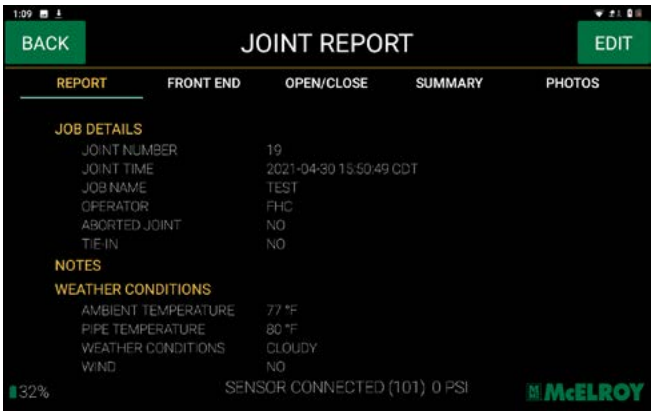
PH05767-05-04-21

Touch **Reports** to view stored joint reports.



PH05828-05-04-21

Select a joint report to view.



PH05829-05-04-21

The report, the three plots and any photos taken for the fusion can be viewed at this time.

SPECIAL OPERATIONS

Special Operations Overview

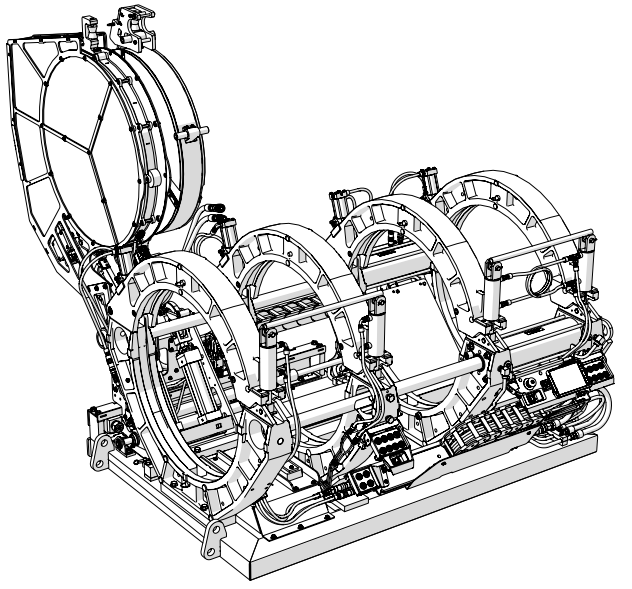
The carriage may be used in a 4-Jaw carriage with just the outer fixed jaw removed or may be used off the vehicle for in-ditch tie-ins and fusing tees or fittings that require more working space than is possible while the carriage is mounted on the vehicle.

All off vehicle operations require the extension kit which includes extension cables and hoses.

Keep the heater and facer clean by using the optional heater/facer stand for top loading fusion.

The Special Operations section is divided into:

- **Outer Fixed Jaw Removal** - Includes the 4-Jaw skid and allows more area to fuse tees or perform tie-ins easier.
- **4-Jaw Carriage Removal** - Includes the complete 4-Jaw carriage. The heater and facer can be used on the indexer or disconnected from indexer and top loaded.
- **3-Jaw Carriage Removal** - For more compact off vehicle fusion operation. The heater and facer must be removed from the indexer and top loaded into the carriage during fusion operation. The 3-Jaw carriage assembly (2 movable jaws and inner fixed jaw) can be removed as a separate unit from the 4-Jaw carriage skid.
- **Remove Upper Jaws** - For maneuvering the carriage around pipe in tight working spaces.
- **3-Jaw Carriage Tee Leg Length** - Modification to achieve the minimum length of tee branch.



CD02590-05-04-21

Outer Fixed Jaw Removal

Certain fusion applications require more clearance than is available in the 4-jaw carriage. When needed, the outer fixed jaw can be removed from the 4-jaw carriage while leaving the rest of the carriage skid assembly intact.

To remove the outer fixed jaw:

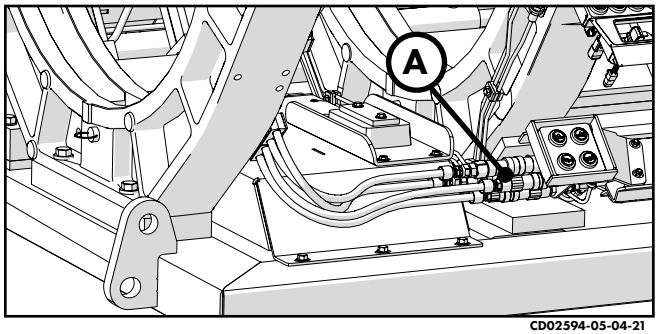
Remove all the inserts from the upper and lower jaws.

Unclamp the clamping cylinders halfway.

Turn machine power off.

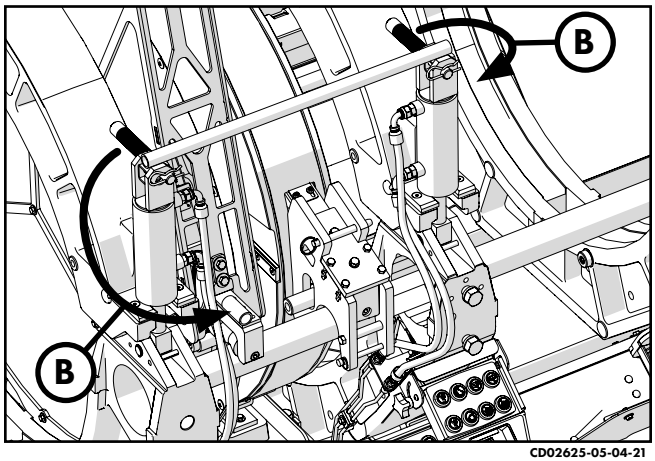
Open the **Machine Management** screen and touch the **Jaw Removal Mode** button. This will relieve pressure in the system to make it easier to disconnect hydraulic quick disconnects.

A Remove the 4 hydraulic hoses between the fixed jaws using the quick disconnects. Once the hoses are disconnected, exit Jaw Removal Mode on the tablet, start the engine or re-enable the hydraulics.



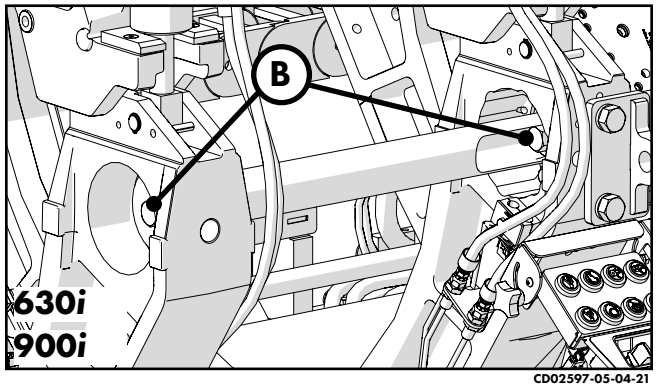
CD02594-05-04-21

B Remove the handle pins from the clamp cylinders and remove the clamping cylinder tie bar. Install the outer fixed jaw handle in the receiver on the heater. Install the inner fixed jaw handle rotated 180° back into the inner fixed jaw clamping cylinder with the tie bar removed for 3-Jaw configuration.

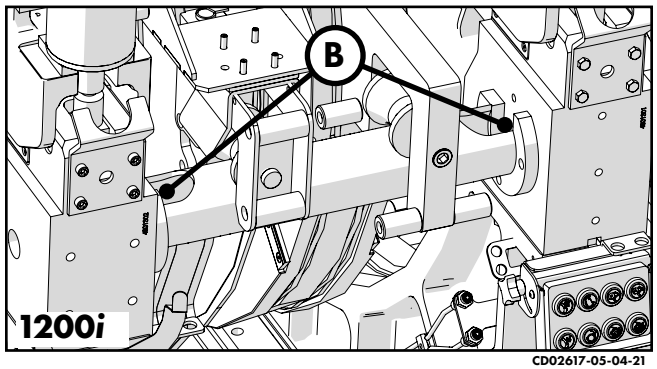


CD02625-05-04-21

B Loosen the outer fixed jaw. Remove the 2 bolts securing the jaw brace and remove. Repeat for the opposite side. Re-tighten the outer fixed jaw.

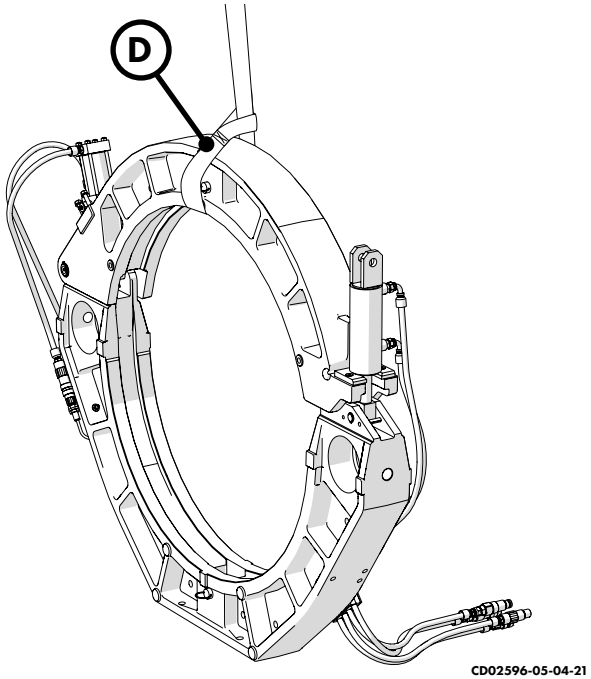


CD02597-05-04-21



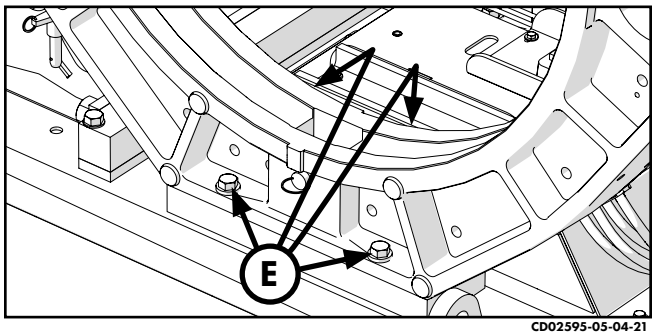
CD02617-05-04-21

D Connect a lifting strap of appropriate load rating to the upper jaw. Attach the lifting strap to lifting equipment. Remove the slack from the lifting strap to support the jaw assembly once it is unbolted.



CD02596-05-04-21

E Remove the four bolts securing the outer fixed jaw to the 4-jaw skid and lift the jaw.



CD02595-05-04-21

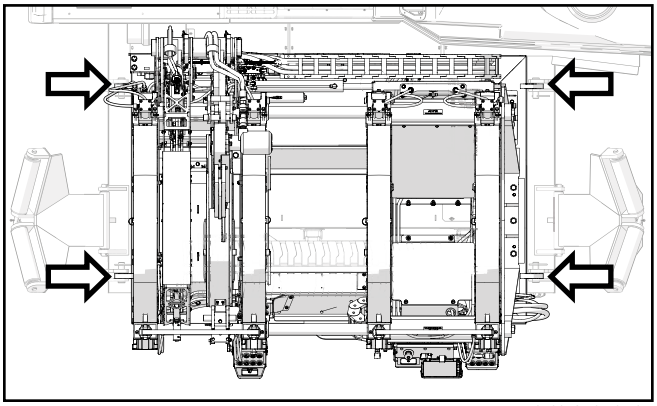
Reverse procedure to re-attach the outer fixed jaw.

4-Jaw Carriage Removal

Ensure heater and facer are pivoted into the stowage position between the fixed jaws.

Turn machine power off.

Remove the four clevis pins at carriage base.

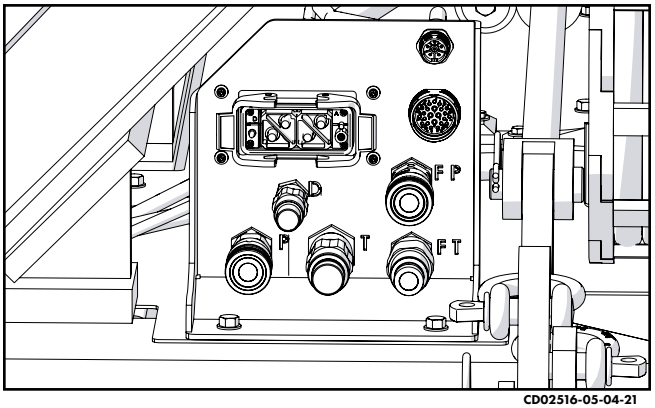


CD02591-05-04-21

⚠WARNING

Ensure heater power is off before connecting or disconnecting heater power cables. Failure to do so may result in electrical shock.

Disconnect all carriage hoses and cables using quick disconnects on the carriage.

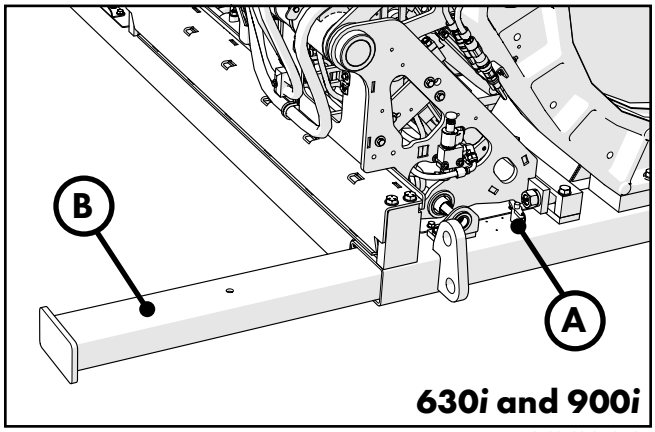


CD02516-05-04-21

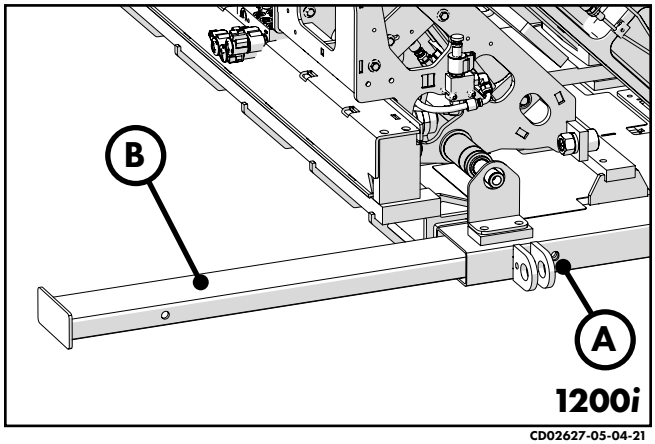
Refer to the Lifting 4-Jaw Carriage section of this manual for instructions for lifting the 4-jaw carriage.

Remove the detent pin (**A**) and extend carriage skid outrigger (**B**) under the outer fixed jaw. Reinstall the detent pin (**A**) into the skid with outrigger in open position.

NOTICE: The carriage skid outrigger must be extended to prevent the 4-jaw carriage from tipping over and damaging the carriage when heater, facer, and jaws are pivoted out.



CD02592-05-04-21



CD02627-05-04-21

Attach extension kit (cables and hoses) between carriage and vehicle.

Facer Removal

When operating the fusion machine in the 3-Jaw carriage configuration, the facer must be removed from the indexer pivot.

⚠WARNING

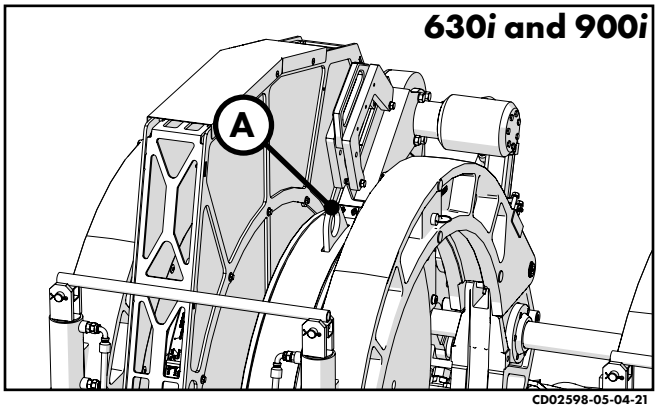
Facer blades are sharp and can cut. Never attempt to remove shavings while the facer is running, or is in the facing position between the jaws. Use care when operating the facer, and when handling the facer.

To remove the facer from its indexer pivot arm:

Ensure heater and facer are pivoted into the stowage position between the fixed jaws.

Turn off the machine.

Attach a lifting strap of adequate load rating to the lifting eye on the top of the facer (**A**).



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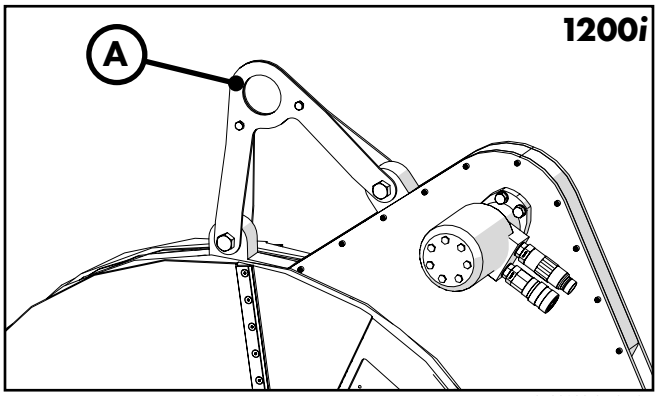
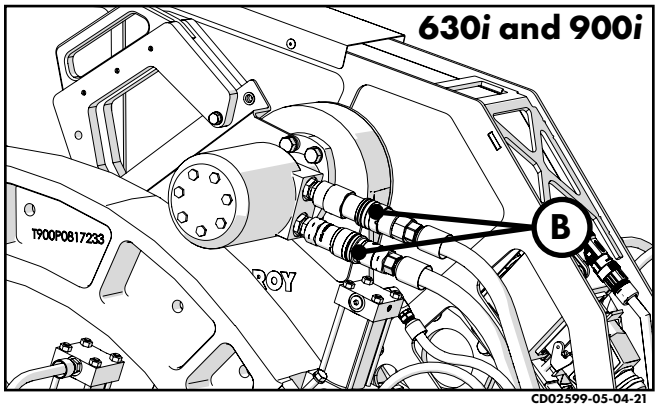
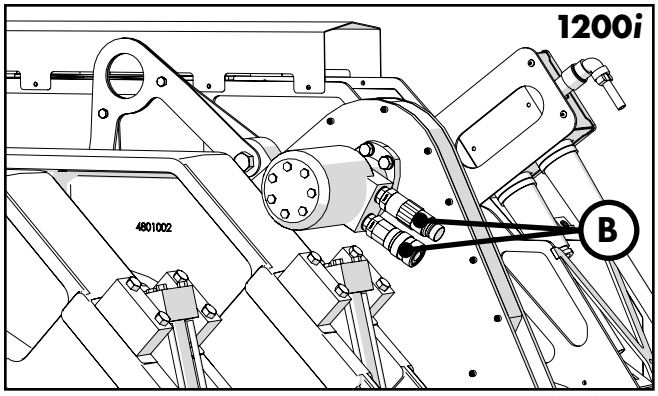


CD02600-05-04-21

Disconnect the hydraulic hoses to the facer motor (**B**)



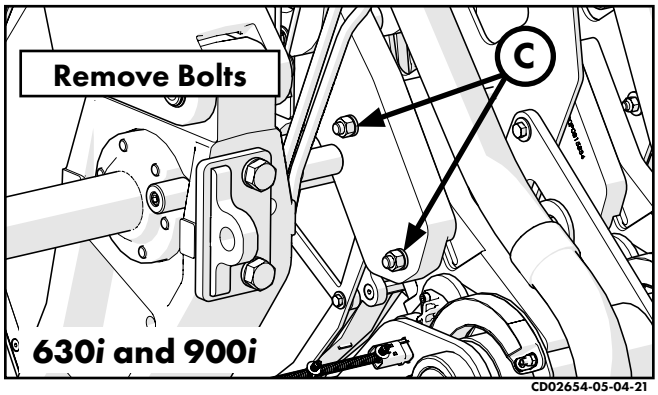
CD02599-05-04-21



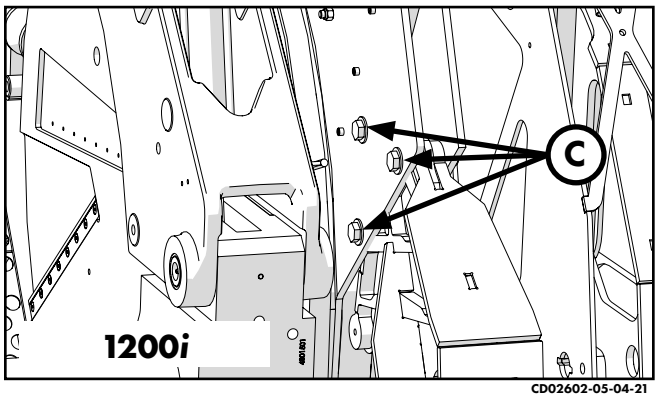
CD02601-05-04-21

Remove the slack from the lifting strap to support the facer once it is unbolted.

Remove the facer pivot arm mounting bolts (**C**).



CD02654-05-04-21



CD02602-05-04-21

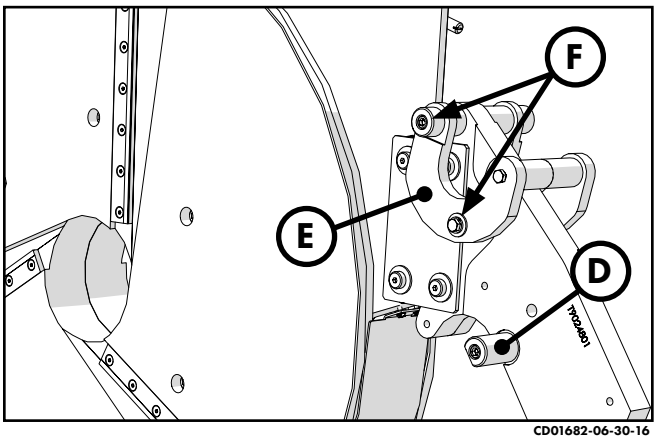
Slowly lift the facer out using an overhead lifting device.

IMPORTANT: Lifting the heater/facer in and out may cause the heater/facer to spin around, use the handle to assist with handling.

900*i* Facer Setup:

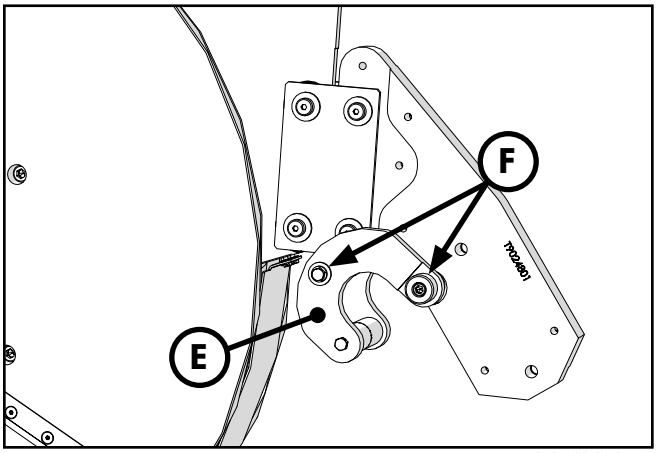
Remove the rest button (**D**).

Remove the facer guide rod bracket assembly (**E**) from the facer assembly by removing the mounting bolts (**F**).



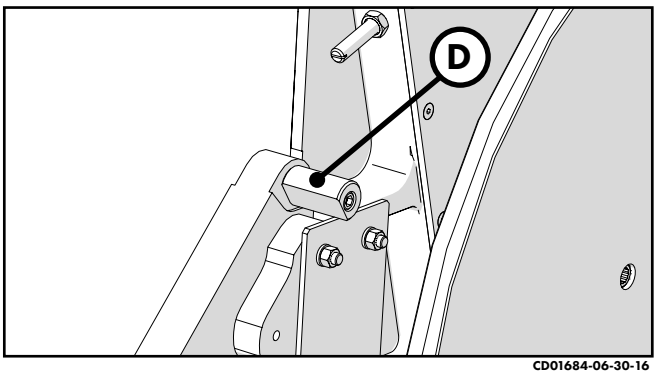
CD01682-06-30-16

Attach the facer guide rod bracket assembly (**E**) to the rear of the facer using the mounting bolts (**F**).



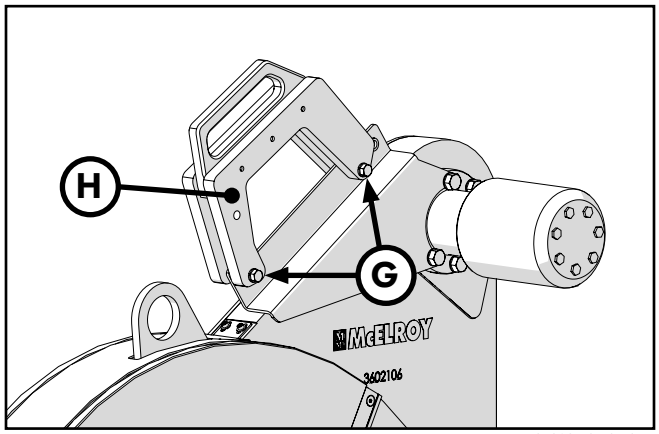
CD01683-06-01-16

Install the rest button (**D**) removed earlier to the location shown on the facer pivot arm.



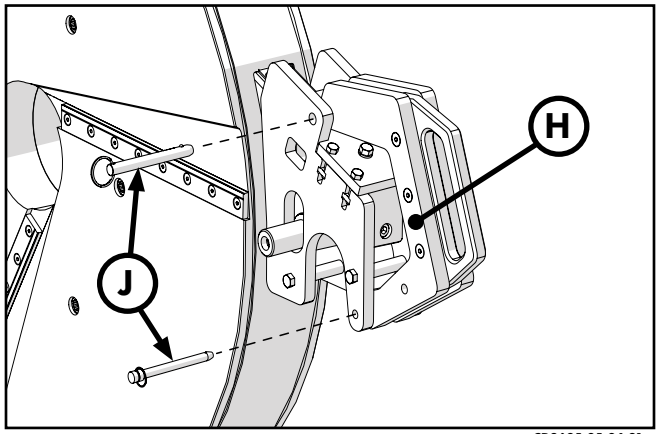
CD01684-06-30-16

Remove the two bolts (**G**) securing the facer latch (**H**) and remove. Replace the bolts in the bracket they are removed from.



CD2604-05-04-21

Remove the pins (**J**) on the facer and install the facer latch (**H**) using the pins.



CD2605-05-04-21

Attach the hydraulic extension hoses from the in-ditch extension kit to the facer motor and connect the other end to the vehicle.

When the facer is not being used, store the facer in the optional heater/facer stand.

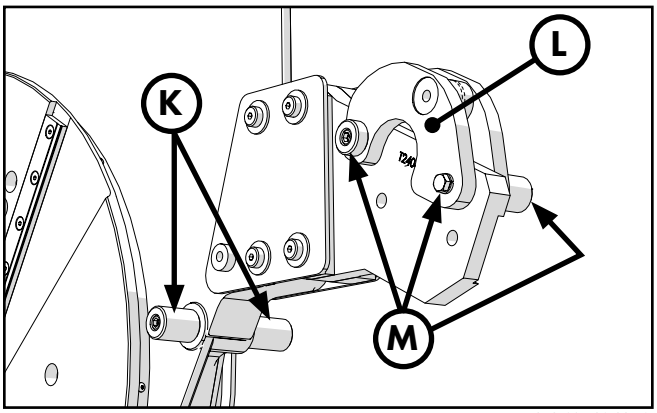
Perform the facer removal steps in reverse to re-install the facer onto the indexer pivot arm.

NOTICE: Remove the facer guide rod bracket assembly and re-install in the storage location before reinstalling on the indexer pivot arm.

630*i* Facer Setup:

Remove the rest buttons (**K**).

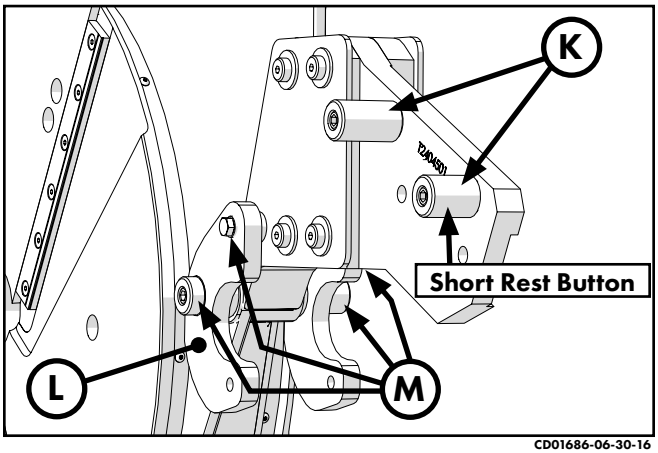
Remove the facer guide rod bracket assembly (**L**) from the facer assembly by removing the 4 mounting bolts (**M**).



CD01685-06-02-16

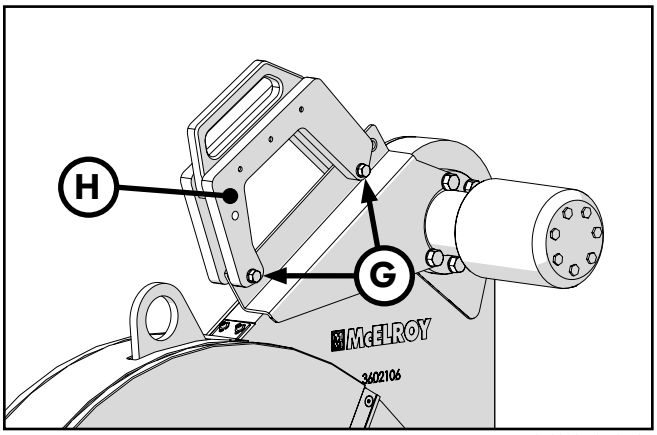
Attach the facer guide rod bracket assembly (**L**) to the rear of the facer using the mounting bolts (**M**).

Install the 4 rest buttons (**K**) removed earlier to the location shown on the facer pivot arm with the short rest button on the end of the pivot arm.



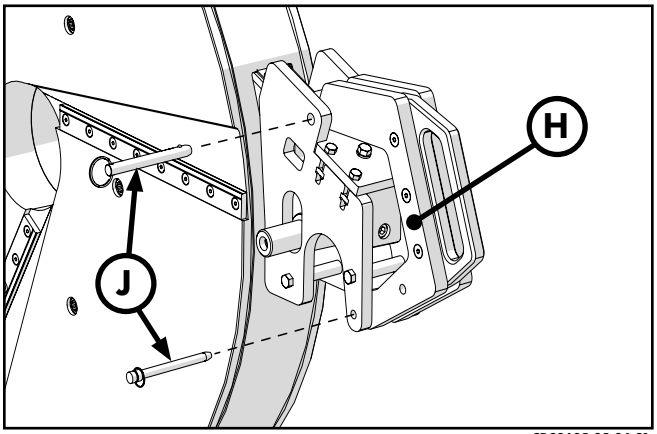
CD01686-06-30-16

Remove the two bolts (**G**) securing the facer latch (**H**) and remove. Replace the bolts in the bracket they are removed from.



CD02604-05-04-21

Remove the pins (**J**) on the facer and install the facer latch (**H**) using the pins.



CD02605-05-04-21

The bottom pin can be used to lock the latch around the guide rod to prevent the facer from rotating.

Attach the hydraulic extension hoses from the in-ditch extension kit to the facer motor and connect the other end to the vehicle.

When the facer is not being used, store the facer in the optional heater/facer stand.

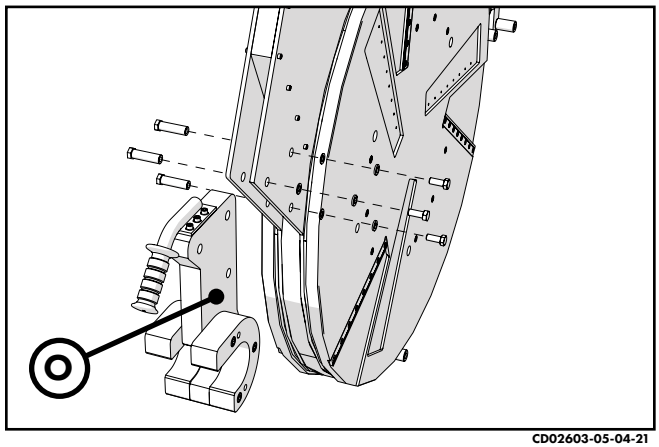
Perform the facer removal steps in reverse to re-install the facer onto the indexer pivot arm.

NOTICE: Remove the facer guide rod bracket assembly and re-install in the storage location before reinstalling on the indexer pivot arm.

1200*i* Facer Setup:

Remove the facer guide rod bracket assembly from the heater/facer stand assembly.

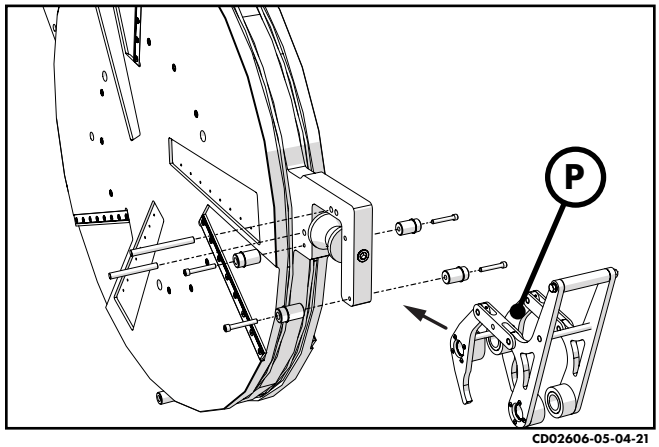
Attach the facer guide rod bracket assembly (**O**) to the rear of the facer using the hardware that secured the facer to the indexer pivot arm.



CD02603-05-04-21

The facer latch assembly and mounting hardware is stored in the heater/facer stand toolbox.

Install the facer latch assembly (**P**) to the front of the facer as shown.



CD02606-05-04-21

IMPORTANT: Lifting the heater/facer in and out may cause the heater/facer to spin around, use the handles to assist with handling.

Attach the hydraulic extension hoses from the in-ditch extension kit to the facer motor and connect the other end to the vehicle.

When the facer is not being used, store the facer in the heater/facer stand.

Store any extra hardware in the heater/facer stand toolbox.

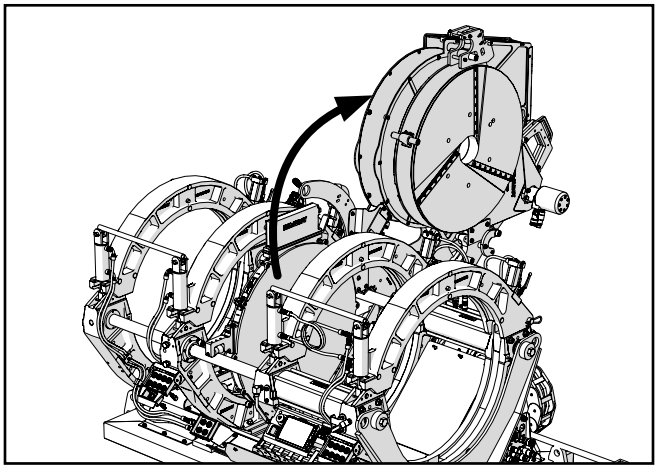
Perform the facer removal steps in reverse to re-install the facer onto the indexer pivot arm.

NOTICE: Remove the facer guide rod bracket assembly and facer latch assembly before reinstalling on the indexer pivot arm.

Heater Removal

630*i* and 900*i* Heater Removal

Start the machine, pivot the heater out and leave the heater bag frame out and pivot the heater back in.



CD02607-05-04-21

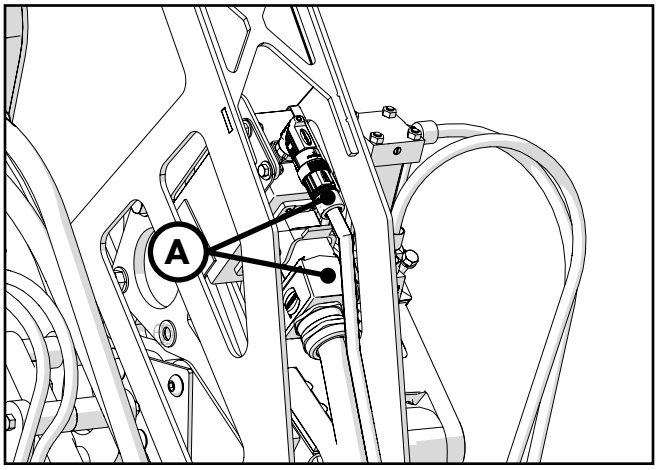
Turn machine off.

Verify the heater is turned off and cool.

⚠WARNING

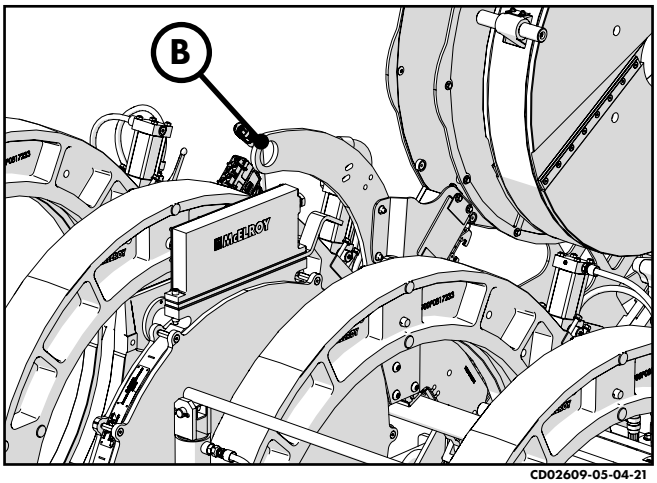
Ensure heater power is off before connecting or disconnecting heater power cables. Failure to do so may result in electrical shock.

Unplug the heater power and RTD cables at the heater receptacles (**A**).



CD02608-05-04-21

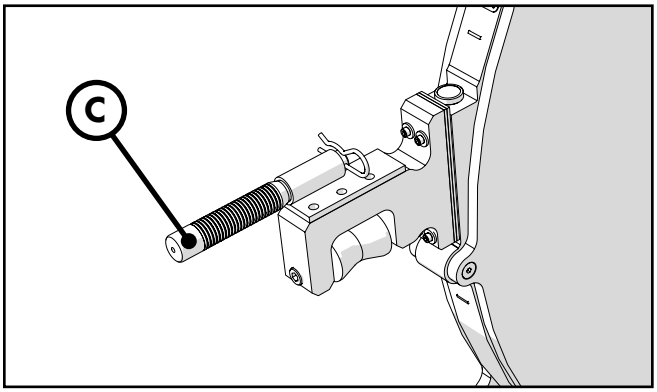
Attach a lifting strap of adequate load rating to the lifting arm attached to the heater (**B**).



CD02609-05-04-21

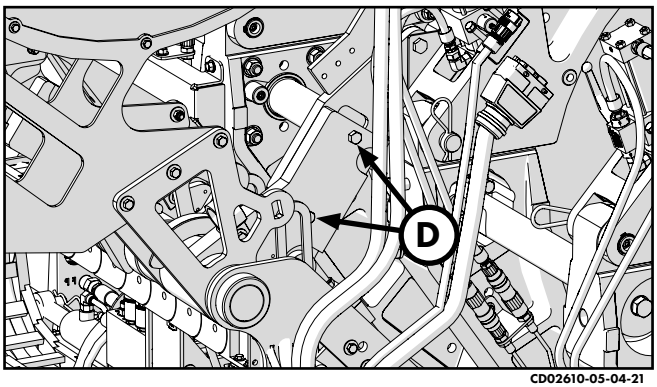
Remove the slack from the lifting strap to support the heater once it is unbolted.

Install the handle (**C**) from the outer fixed jaw into the receiver on the heater.



CD02626-05-04-21

Remove the heater mounting bolts (**D**).

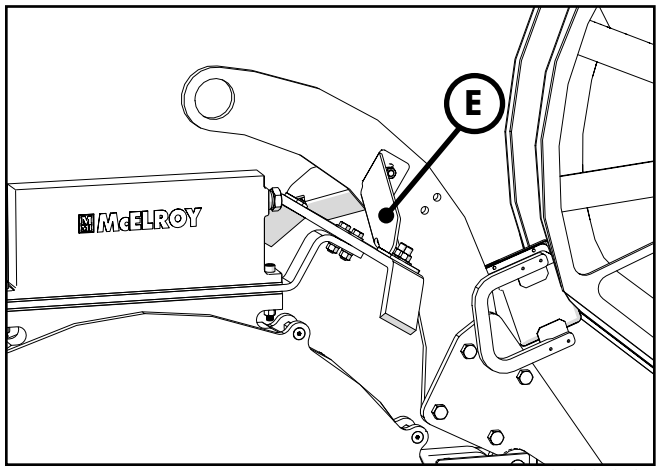


CD02610-05-04-21

Lift the heater clear of the machine.

The top loading heater must have a stripper bar installed so that the heater can be stripped off pipe ends quickly and efficiently during the fusion process. Stripper bar kits are available for both the 630*i* and 900*i* heaters.

Install the stripper bar onto heater as shown (**E**).



CD01691-05-04-21

⚠WARNING

Ensure heater power is off before connecting or disconnecting heater power cables. Failure to do so may result in electrical shock.

Attach heater power and RTD cables between the vehicle and heater using the extension kit.

⚠CAUTION

The heater is hot and will burn clothing and skin. Keep the heater protected from personnel when not in use and use care when handling heater and heating pipe.

IMPORTANT: Lifting the heater/facer in and out may cause the heater/facer to spin around, use the handle to assist with handling.

Store the heater in the optional heater/facer stand when the heater in not in use.

Perform the heater removal steps in reverse to re-install the heater onto the indexer pivot arm.

NOTICE: Remove the stripper bar before re-installing heater onto indexer pivot arm.

1200*i* Heater Removal

When operating the fusion machine in the 3-Jaw carriage assembly configuration, the heater must be removed from the indexer pivot arm.

To remove the heater:

Start the machine, pivot the heater out, unpin the heater bag frame, and pivot the heater in.

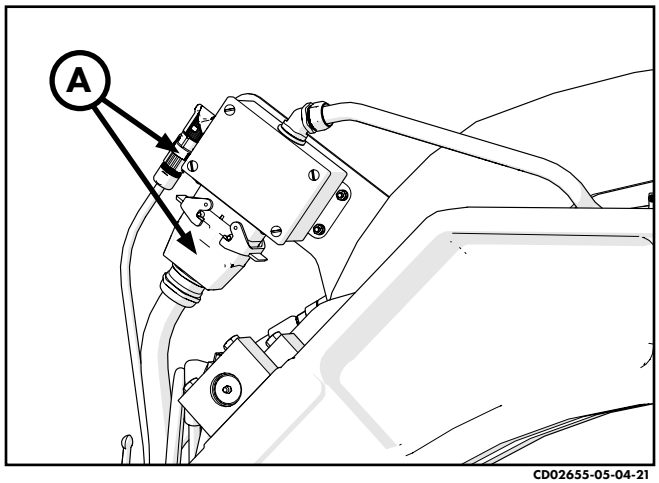
Turn machine off.

Verify the heater is turned off and cool.

⚠WARNING

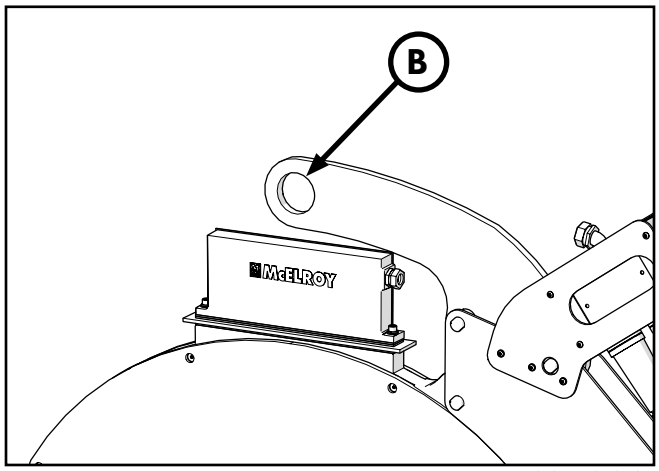
Ensure heater power is off before connecting or disconnecting heater power cables. Failure to do so may result in electrical shock.

Unplug the heater power and RTD cables at the heater receptacles (**A**).



CD02655-05-04-21

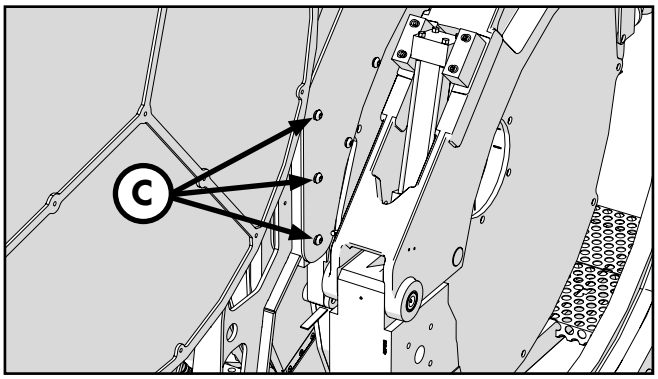
Attach a lifting strap of adequate load rating to the lifting arm attached to the heater (**B**).



CD01554-05-04-21

Remove the slack from the lifting strap to support the heater once it is unbolted.

Remove the heater mounting bolts (**C**).

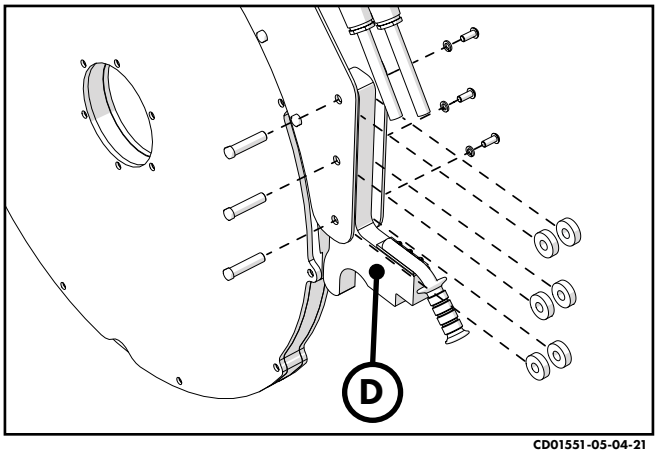


CD02611-05-04-21

Lift the heater clear of the machine.

Remove the heater guide rod bracket assembly from the heater/facer stand.

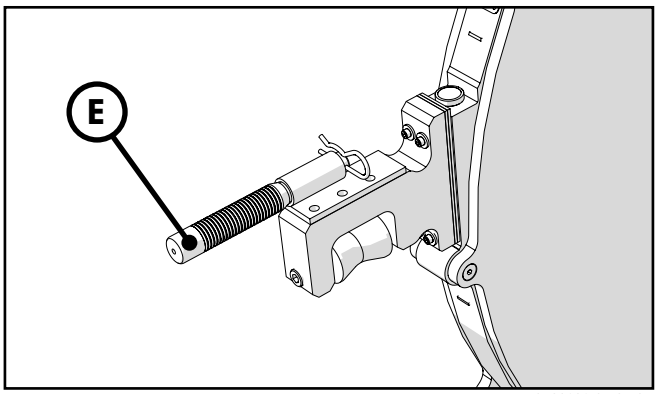
Install the heater guide rod bracket (**D**) assembly to the rear of the heater using the same hardware that secured the heater to the indexer pivot arm.



CD01551-05-04-21

The heater handle assembly and mounting hardware are stored in the heater/facer stand toolbox.

Install the handle (**E**) from the outer fixed jaw into the receiver on the heater.

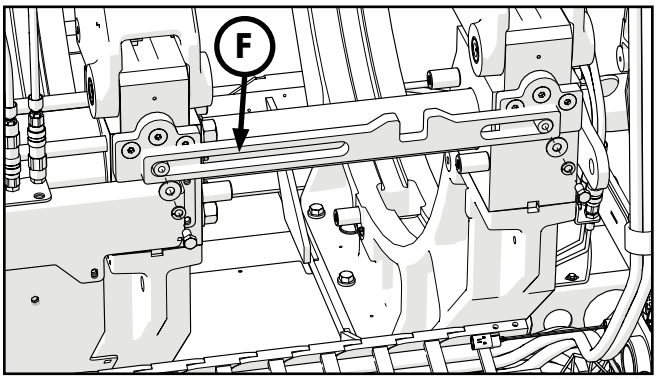


CD02626-05-04-21

The top loading heater must have a stripper bar installed so that the heater can be stripped off pipe ends quickly and efficiently during the fusion process.

Remove the stripper bar assembly and mounting hardware from storage location on heater/facer stand.

Install the stripper bar on the engine side of the carriage, between the 2 inner jaws, with the long slot (**F**) of the bar toward the movable jaws.



CD02656-05-04-21

⚠WARNING

Ensure heater power is off before connecting or disconnecting heater power cables. Failure to do so may result in electrical shock.

Attach heater power and RTD cables between the vehicle and heater using the extension kit.

⚠CAUTION

The heater is hot and will burn clothing and skin. Keep the heater protected from personnel when not in use and use care when handling heater and heating pipe.

IMPORTANT: Lifting the heater/facer in and out may cause the heater/facer to spin around, use the handles to assist with handling.

Store the heater in the heater/facer stand when the heater in not in use.

Store any extra hardware in the heater/facer stand toolbox.

Perform the heater removal steps in reverse to re-install the heater onto the indexer pivot arm.

NOTICE: Remove the stripper bar before re-installing heater onto indexer pivot arm.

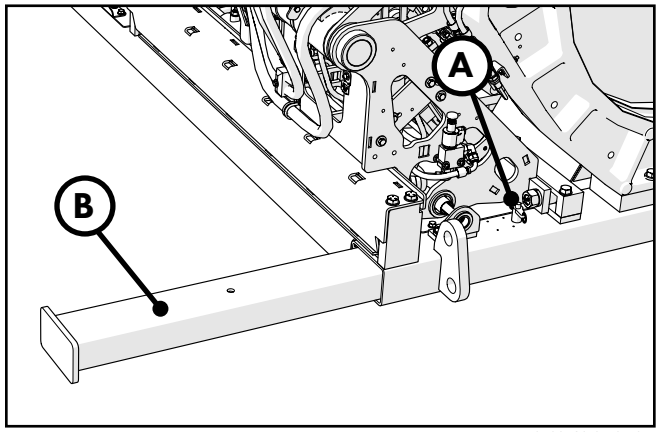
3-Jaw Carriage Removal

630*i* and 900*i* Carriage Removal

Remove all inserts from the jaws of the carriage.

NOTICE: If the 4-jaw carriage has been removed from the vehicle, the carriage skid outrigger must be extended to prevent the skid from tipping over and damaging the carriage.

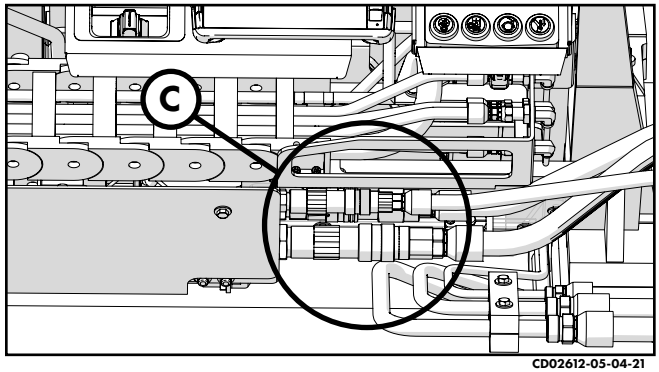
Extend the skid outrigger from the 4-jaw skid by pulling the detent pin (**A**) and sliding the outrigger out (**B**) and inserting the pin to lock the open position.



CD02592-05-04-21

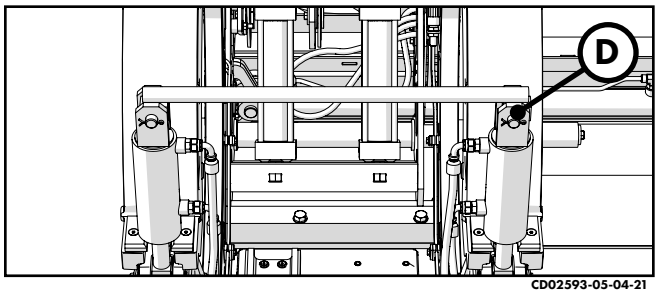
With the machine turned off and the heater bag frame pivoted out:

Disconnect hoses and cable between the 4-jaw carriage and the 3-jaw carriage assembly (**C**).



CD02612-05-04-21

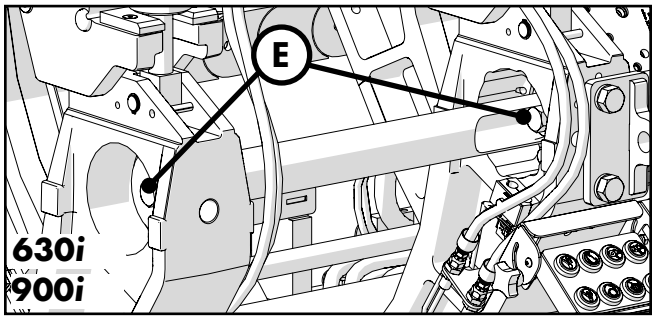
Disconnect the clamp handle on the inner fixed jaw (**D**).



CD02593-05-04-21

Loosen the bolts on the outer fixed jaw to aid in the removal of the fixed jaw braces.

Unbolt and remove both fixed jaw braces (**E**).

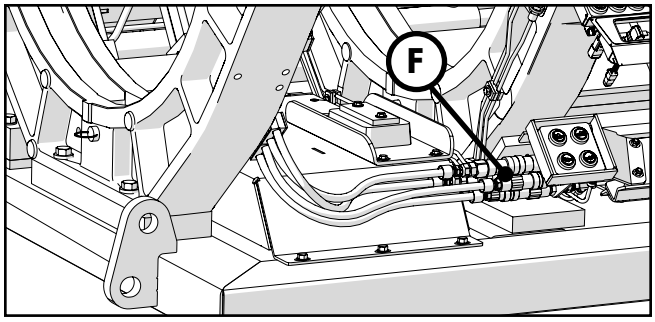


CD02597-05-04-21

Turn machine power off.

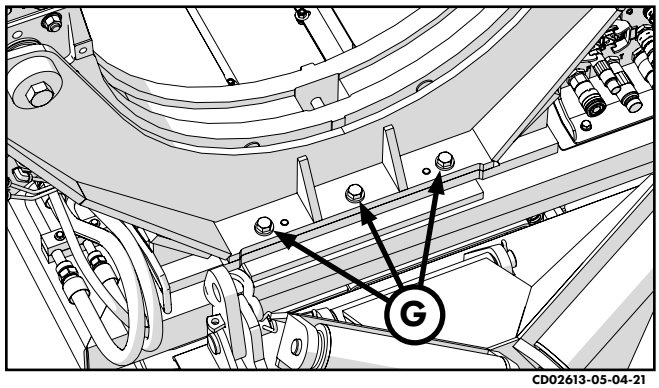
Open the **Machine Management** screen and touch the **Jaw Removal Mode** button. This will relieve pressure in the system to make it easier to disconnect hydraulic quick disconnects.

Remove the 4 hydraulic hoses (**F**) between the fixed jaws using the quick disconnects. Once the hoses are disconnected, exit Jaw Removal Mode on the tablet, start the engine or re-enable the hydraulics.



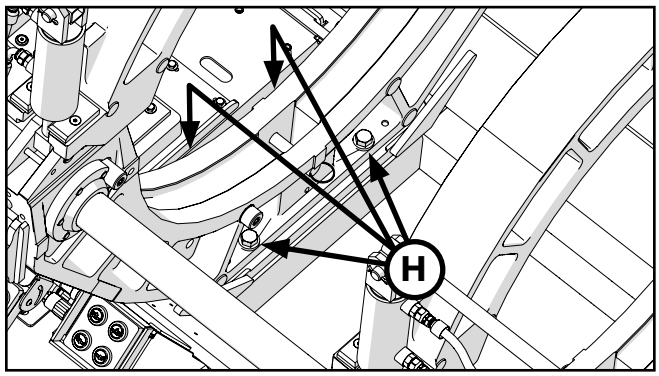
CD02594-05-04-21

Remove outer guide rod support mounting bolts (**G**).



CD02613-05-04-21

Remove inner fixed jaw mounting bolts (**H**).



CD02614-05-04-21

Refer to the Lifting 3-Jaw Carriage section of this manual for instructions for lifting the 3-jaw carriage.

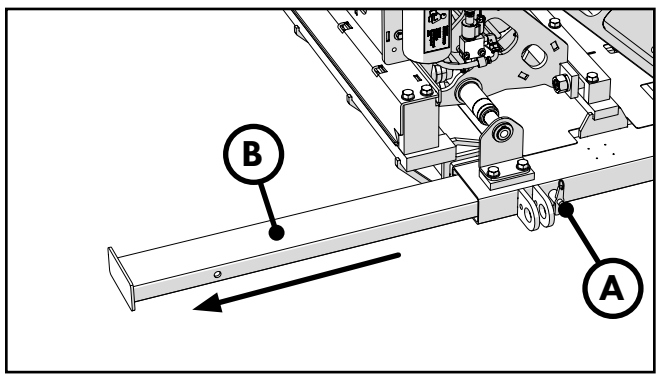
Perform the carriage removal steps in reverse to re-install the 3-jaw carriage onto the 4-jaw carriage assembly.

1200*i* Carriage Removal

Remove all inserts from the jaws of the carriage.

NOTICE: If the 4-jaw carriage has been removed from the vehicle, the carriage skid outrigger must be extended to prevent the skid from tipping over and damaging the carriage.

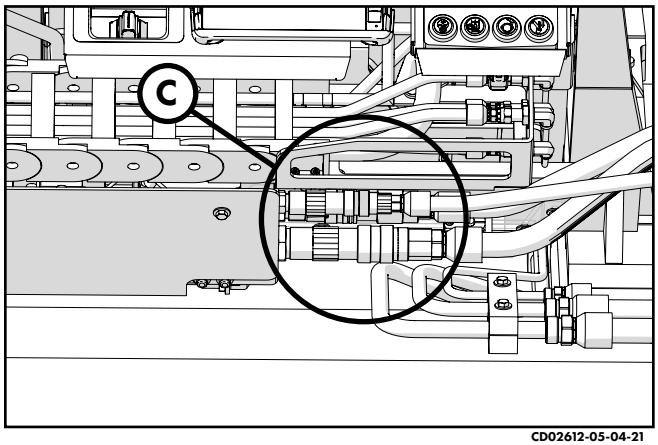
Extend the skid outrigger from the 4-jaw skid by pulling the detent pin (**A**) and sliding the outrigger out (**B**) and inserting the pin to lock the open position.



CD02657-05-04-21

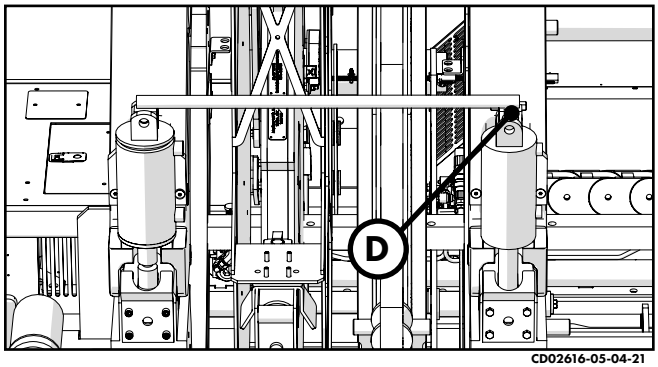
With the machine turned off and the heater bag frame pivoted out:

Disconnect hoses and cable between the 4-jaw carriage and the 3-jaw carriage assembly (**C**).



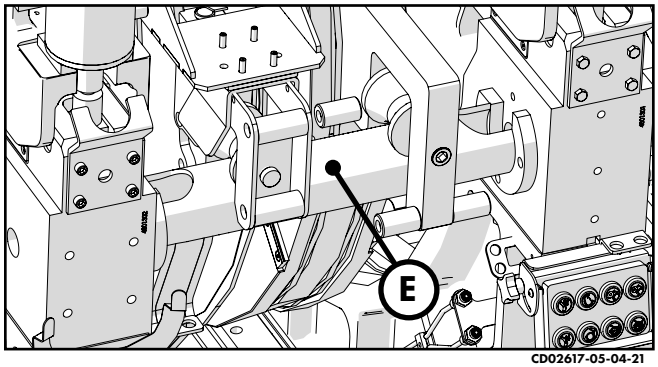
CD02612-05-04-21

Disconnect the clamp handle on the inner fixed jaw (**D**).



CD02616-05-04-21

Unbolt and remove both fixed jaw braces (**E**).

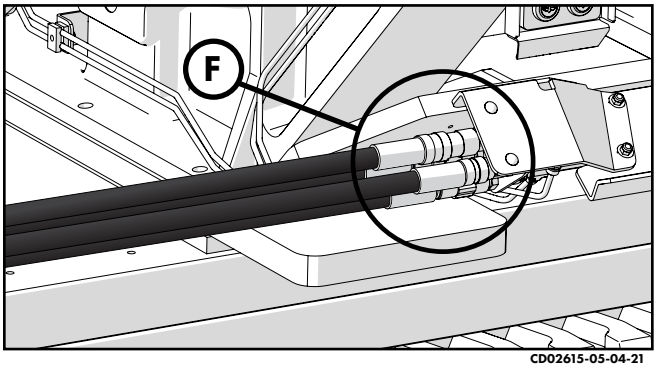


CD02617-05-04-21

Turn machine power off.

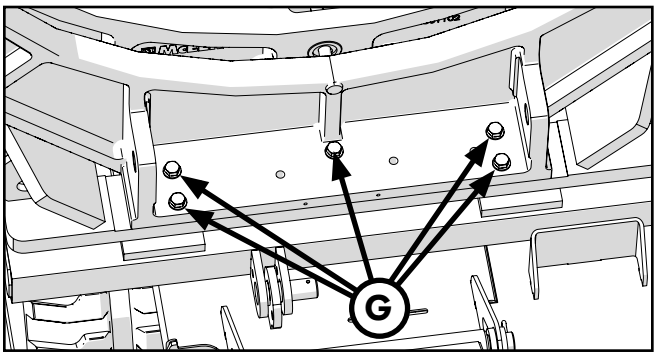
Open the **Machine Management** screen and touch the **Jaw Removal Mode** button. This will relieve pressure in the system to make it easier to disconnect hydraulic quick disconnects.

Remove the 4 hydraulic hoses (**F**) between the fixed jaws using the quick disconnects. Once the hoses are disconnected, exit Jaw Removal Mode on the tablet, start the engine or re-enable the hydraulics.



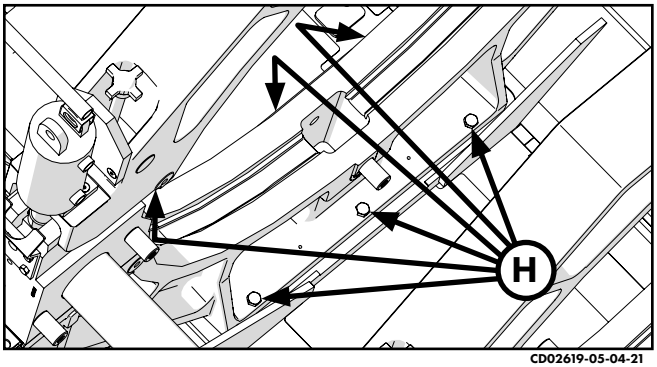
CD02615-05-04-21

Remove outer guide rod support mounting bolts (**G**).



CD02618-05-04-21

Remove inner fixed jaw mounting bolts (**H**).



CD02619-05-04-21

Refer to the Lifting 3-Jaw Carriage section of this manual for instructions for lifting the 3-jaw carriage.

Perform the carriage removal steps in reverse to re-install the 3-jaw carriage onto the 4-jaw carriage assembly.

Remove Upper Jaws

630*i* and 900*i* Upper Jaws Removal

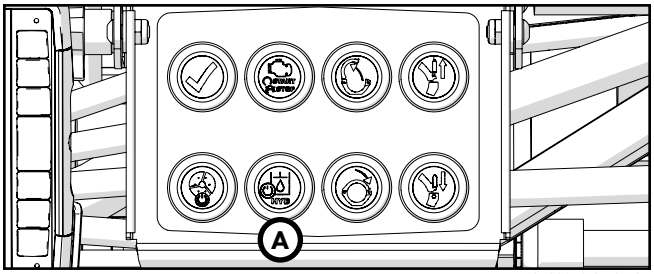
Attach a lifting strap to an inner upper jaw.

Close the shut off valves on both outer jaw pivot cylinders.

Open the jaw completely to access the pivot cylinder pin (**B**).

Remove any slack in the lifting strap.

Press the **Hydraulic Disable** button (**A**) to disable the hydrualic functions.



CD02646-05-04-21

Remove the pivot cylinder pin (**B**).

⚠CAUTION

Do not place fingers into the pivot pin hole at any time during pivot pin removal. Moderate to minor injury could occur.

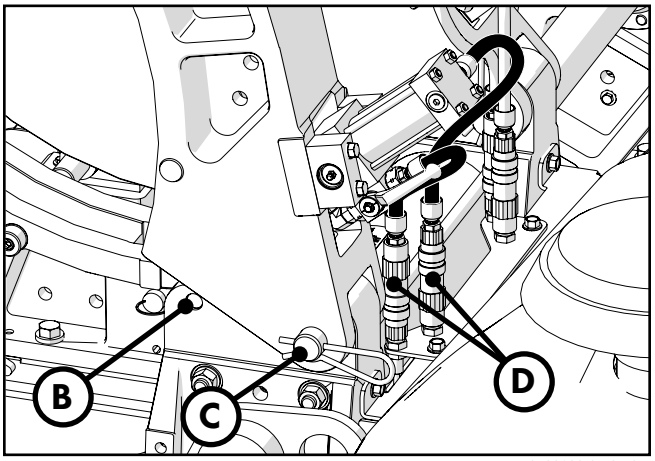
Press the **Hydraulic Disable** button (**A**) for 3 seconds to re-enable the hydraulic functions.

Retract the pivot cylinder by pressing the **Close Jaw** button for that set of jaws.

Turn off the machine.

Open the **Machine Management** screen and touch the **Jaw Removal Mode** button. This will relieve pressure in the system to make it easier to disconnect hydraulic quick disconnects.

Disconnect the pivot cylinder hoses at the quick disconnects (**D**). Once the hoses are disconnected, exit **Jaw Removal Mode** on the tablet, start the engine or re-enable the hydraulics.



CD02620-05-04-21

Using the lifting strap, lower the upper jaw.

Remove the jaw pivot pin (**C**)

Lift the upper jaw from the carriage.

Repeat to remove the other inner upper jaw.

Open the shut off valve on the outer upper jaws and repeat the previous steps to remove the outer upper jaws.

⚠WARNING

Unwanted movement of the machine could result in serious injury or damage to machine. Unwanted movement of the machine may take place if valves do not match machine state when the machine power is turned on.

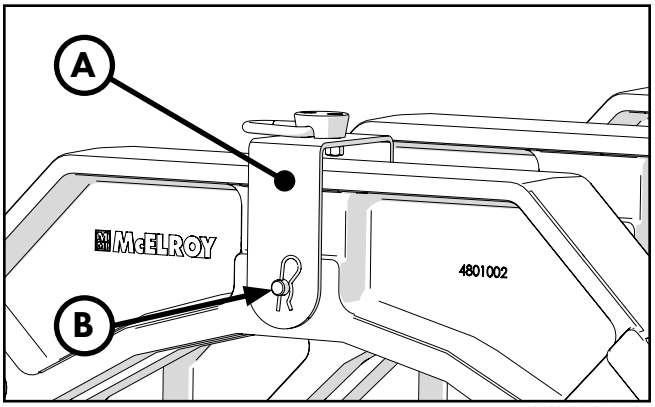
Reverse these steps to reattach the upper jaws.

1200*i* Upper Jaws Removal

The upper jaws of the carriage can be removed so it is easier to maneuver the carriage under pipe in a close quarters in-ditch situation. The upper jaw lifting bracket assembly (**A**), included in the top loading accessory kit, is required to remove the upper jaws.

⚠WARNING

The Upper Jaw Lifting Bracket Assembly should only be used to lift one upper jaw with all upper jaw inserts removed. Ensure retaining pins on both sides of the lifting pin (B) are securely in place prior to lifting the upper jaw.



CD02623-05-04-21

Turn engine on.

Unclamp and pivot out all clamping cylinders.

⚠CAUTION

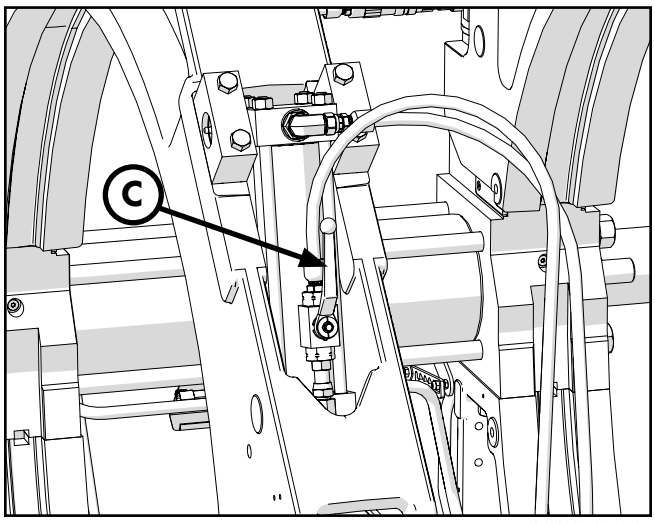
Always support the clamping cylinders by firmly grasping the clamping handle when clamping or unclamping the jaws. Clamping cylinders are heavy and could fall causing injury.

If applicable, open upper jaws and remove all upper jaw inserts.

Close all upper jaws

Press the **Hydraulic Disable** button (**A**) to disable the hydrualic functions.

Close the shut off valves on both outer jaw pivot cylinders (**C**).



CD02665-06-04-21

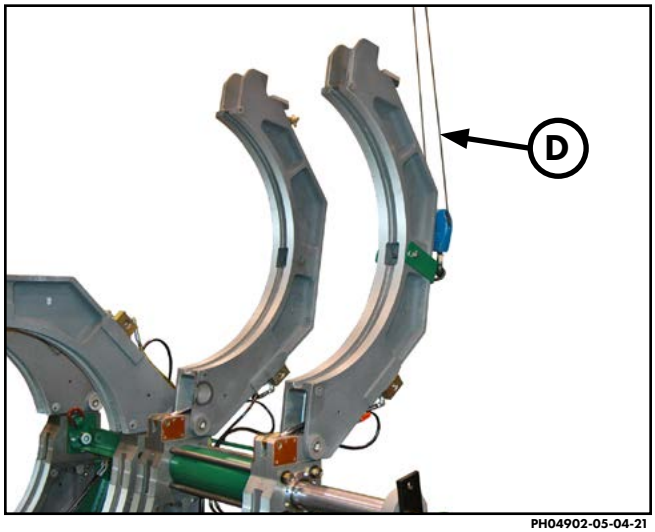
Attach the upper jaw lifting bracket assembly to the inner movable upper jaw.

Press the **Hydraulic Disable** button (**A**) for 3 seconds to re-enable the hydraulic functions.

Open the upper jaw that has the lifting bracket installed.

Press the **Hydraulic Disable** button (**A**) to disable the hydrualic functions.

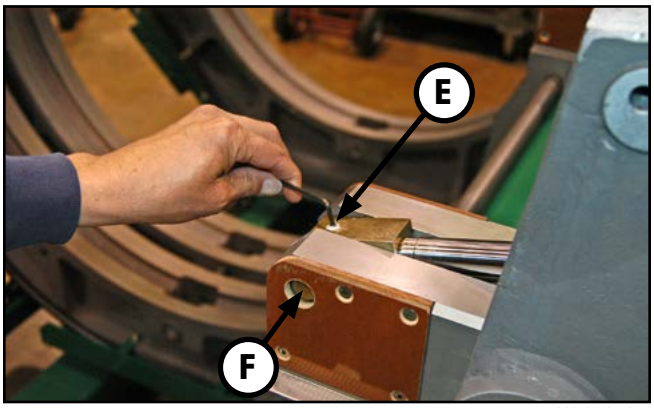
Attach lifting equipment to the lifting bracket ring, and remove slack in the lifting equipment line (**D**).



PH04902-05-04-21

Loosen the set screw on the jaw pivot cylinder pin that attaches to the lower jaw (**E**).

Drive out the pivot cylinder pin using the brass pin drift punch that's included with the Top Loading Accessory kit (**F**).



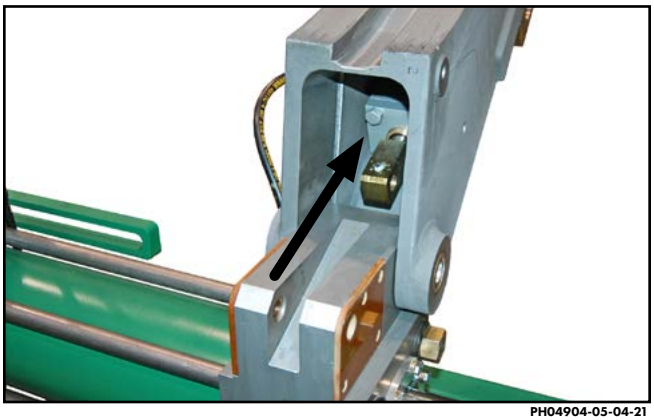
PH4903-05-04-21

⚠CAUTION

Do not place fingers into the pivot pin hole at any time during pivot pin removal.

Press the **Hydraulic Disable** button (**A**) for 3 seconds to re-enable the hydraulic functions.

Retract the opened jaw pivot cylinder rod by closing its jaw pivot valve lever.



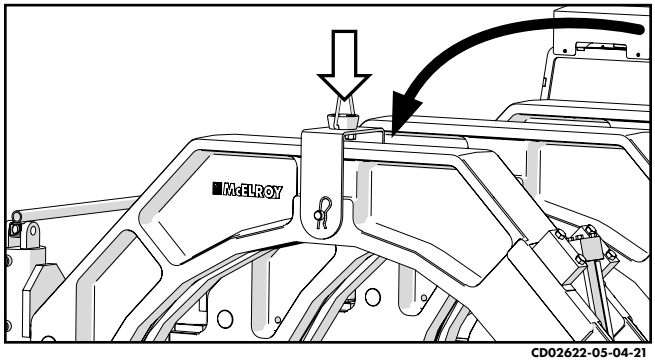
PH04904-05-04-21

Turn engine off.

Open the **Machine Management** screen and touch the **Jaw Removal Mode** button. This will relieve pressure in the system to make it easier to disconnect hydraulic quick disconnects.

Disconnect the two quick disconnects from the opened jaw pivot cylinder. Once the hoses are disconnected, exit **Jaw Removal Mode** on the tablet, start the engine or re-enable the hydraulics.

Use the lifting device to manually pivot the jaw to the closed position.

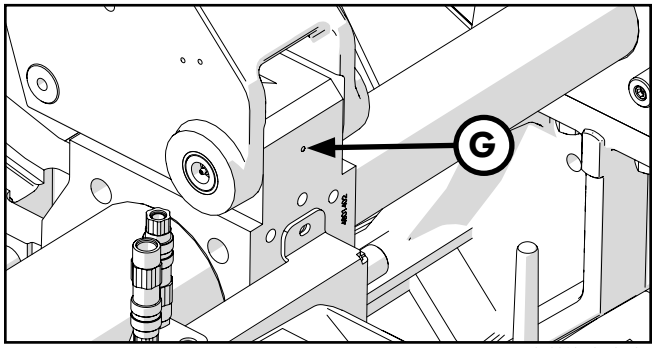


CD02622-05-04-21

⚠WARNING

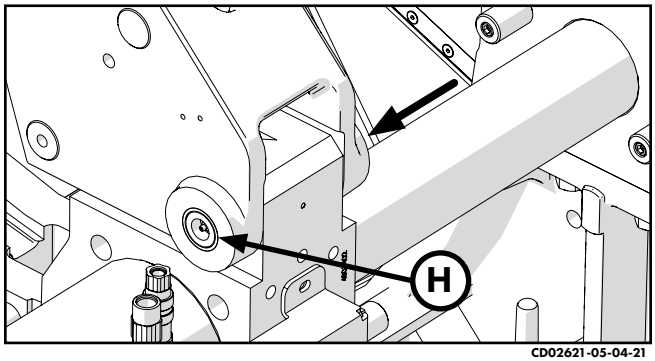
Ensure all personnel are clear of the lowering jaw.

Loosen the upper jaw pivot pin set screw on the back of the lower jaw (**G**).



CD02621-05-04-21

Remove the slack from the lifting equipment line, and keep hands away from the jaw when driving out the jaw pivot pin (**H**). Drive out the jaw pivot pin using the brass pin drift punch.



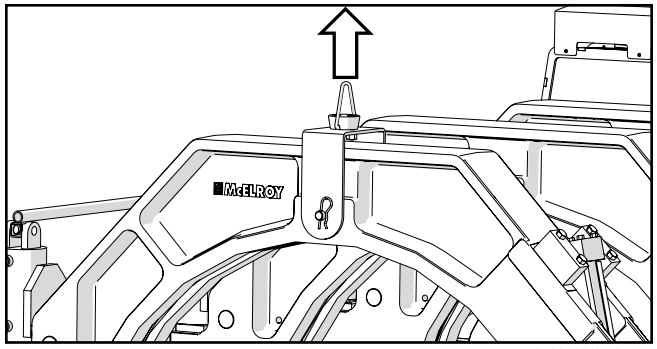
CD02621-05-04-21

NOTICE: Do not drive pin out on the grease zerk end. It will damge the grease zerk.

⚠CAUTION

Do not place fingers into the pivot pin hole at any time during pivot pin removal.

Once the jaw pivot pin is removed, the upper jaw can be lifted away from the carriage.



CD02622-05-04-21

Remove the lifting bracket from the inner movable upper jaw, repeat the previous steps to remove other upper jaws.

Open the shut-off valves on both outer jaw pivot cylinders.

Install carriage with all removed upper jaws around the pipe to be fused.

Reverse the upper jaw removal steps to re-install the upper jaws for fusing. Ensure all set screws are tightened and all hoses are connected. Ensure upper jaws with the HI/LO clamping adjustment are installed on the inner jaws. After fusing pipe, remove the upper jaws again, remove the carriage with all upper jaws removed from around the fused pipe, and re-install the upper jaws as mentioned above.

LIFTING AND TRANSPORT

Lifting Safety

Follow all applicable federal, state, local and industry specific regulations when lifting.

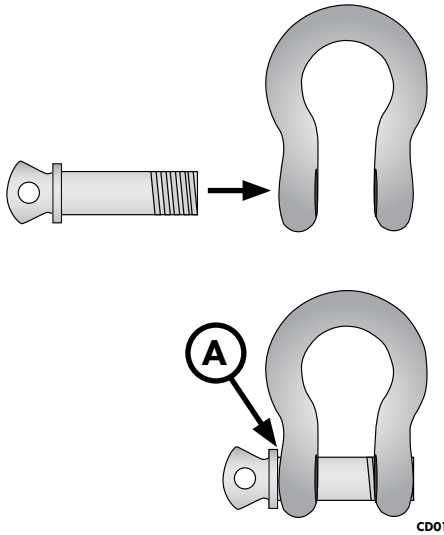
⚠WARNING

Safety warnings:

1. Do not exceed rated load or lift loads greater than the rated load of the lifting device.
2. Do not operate a damaged or malfunctioning lifting device.
3. Do not lift persons.
4. Do not lift a suspended load over persons.
5. Do not leave a suspended load unattended.
6. Do not remove or obscure warning labels.
7. Read and understand the lifting device operator's manual before use.
8. Stay clear of the suspended load.
9. Lift loads only as high as necessary.
10. Do not alter or modify the lifting device.
11. Employ generally accepted safe lifting practices.
12. Do not shock or impact load the lifting device.
13. Inspect all lifting pins for damage.

Lifting Device Shackles

The McElroy lifting device utilizes screw pin type anchor shackles for sling attachment points. When installing the shackle screw pin to attachment points, always ensure the screw pin bottoms out completely on its shoulder stop (**A**) before lifting.



CD01630-05-04-21

Lifting Entire Machine (630*i* and 900*i*)

Lifting device configuration shown is for lifting the entire machine including the carriage.

NOTICE: Never use this lifting device for any other purpose. You could damage the lifting device and machine.

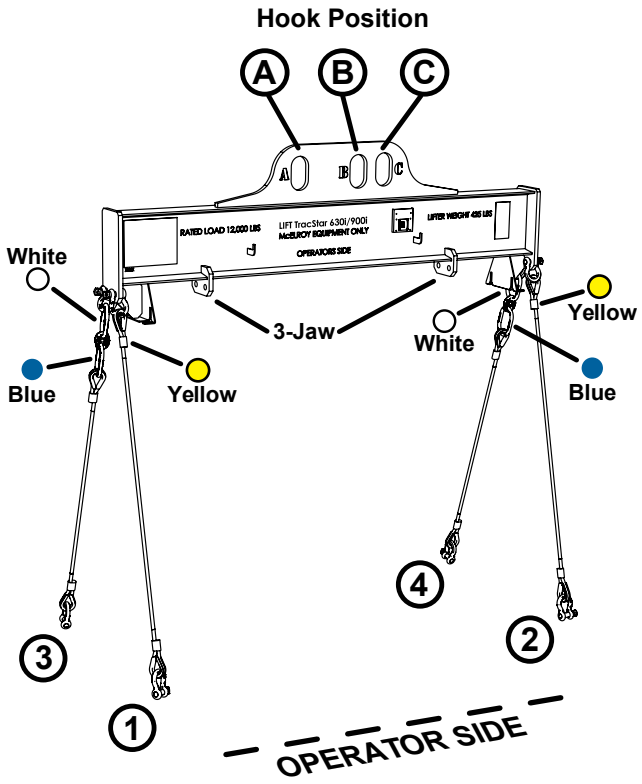
Ensure the heater and facer are in the stowage position between the two fixed jaws.

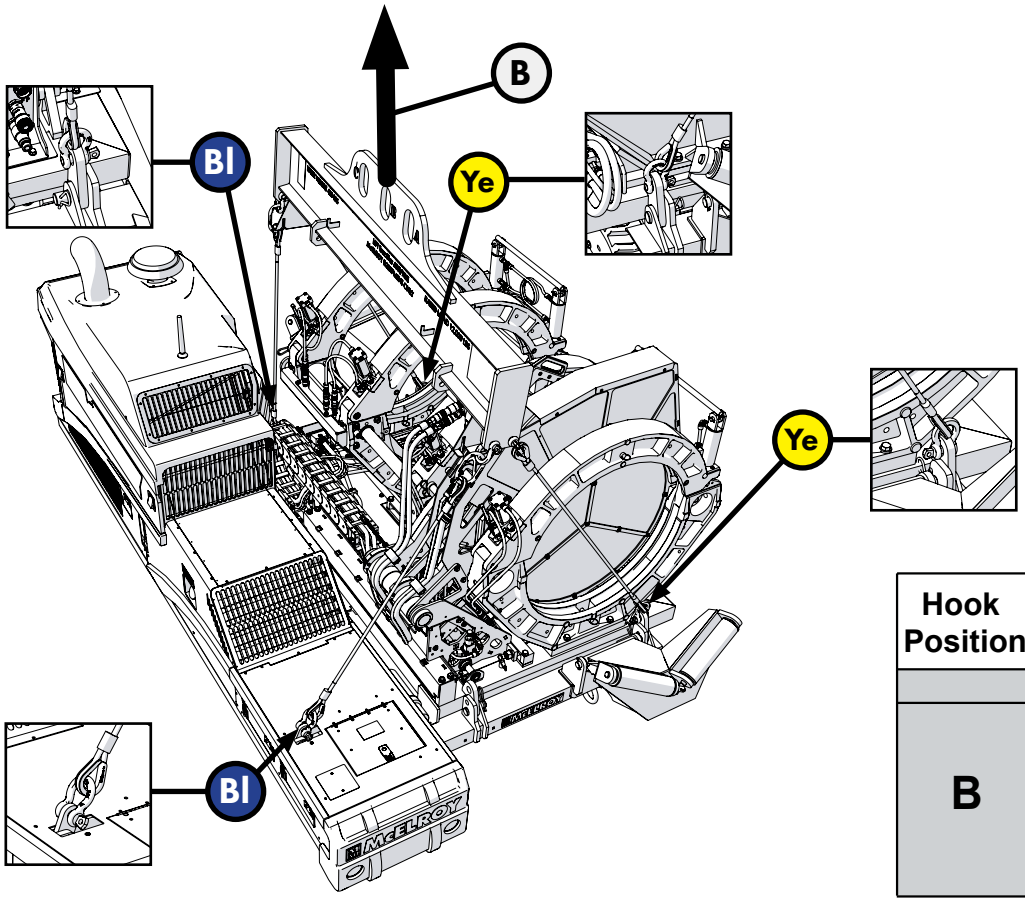
Attach the lifting equipment to the lifting device at hook position **B**.

Ensure cables **3** and **4** have the blue ring attached to the shackle on the lifting device. Refer to the chart at the bottom of the page for sling point configurations.

Connect all four slings to the lift points shown on this page.

Lift the entire machine.





Hook Position	Sling Points			
	1	2	3	4
B	Ye	Ye	Bl	Bl

CD02568-05-04-21

Lifting Vehicle (630*i* and 900*i*)

Lifting device configuration shown is for lifting the vehicle only without the carriage installed.

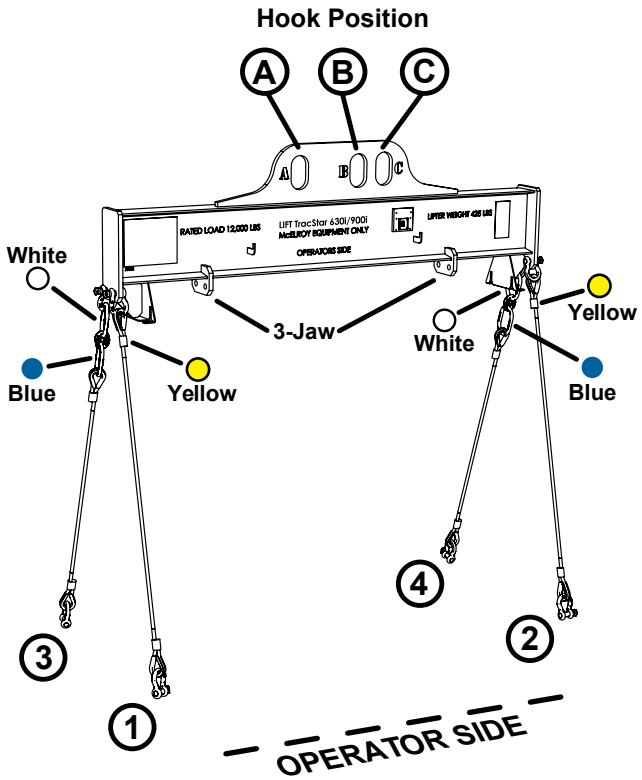
NOTICE: Never use this lifting device for any other purpose. You could damage the lifting device and machine.

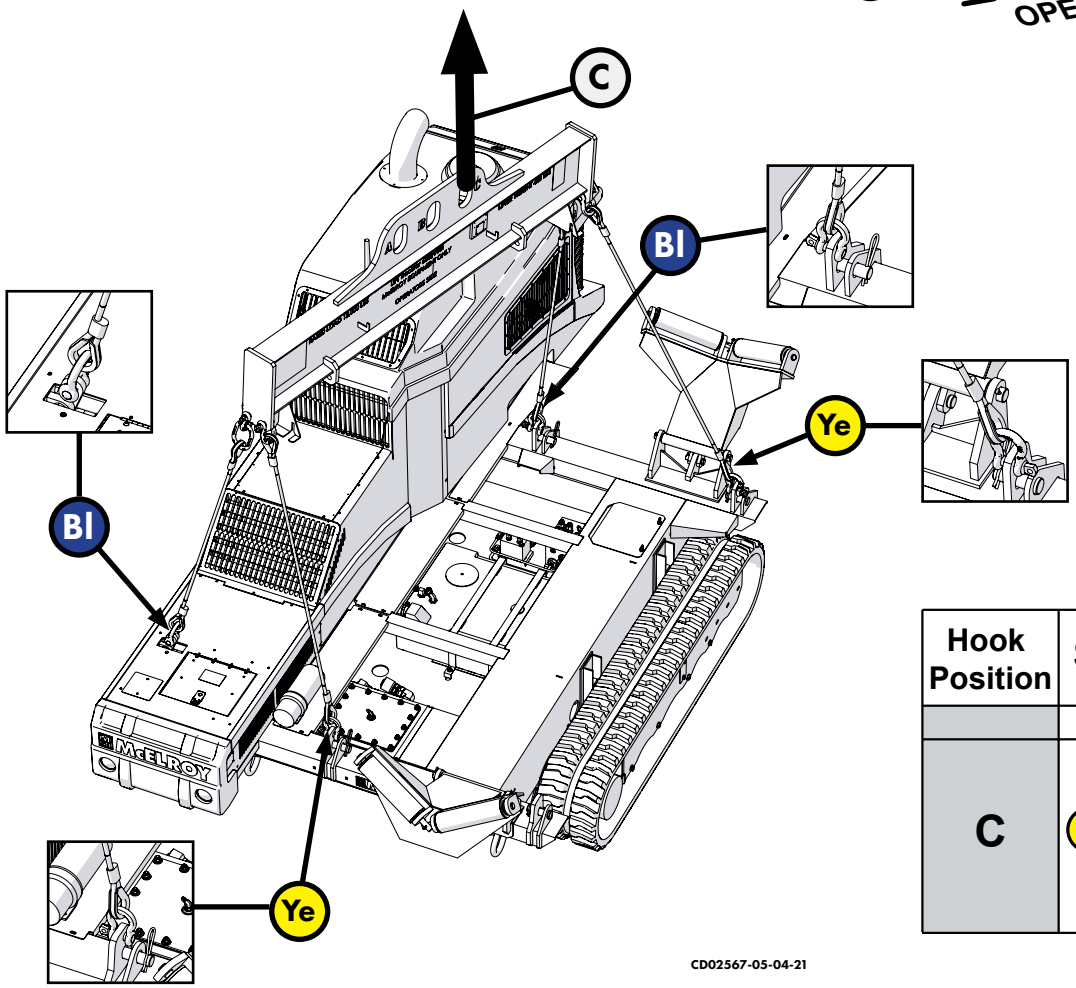
Attach the lifting equipment to the lifting device at hook position **C**.

Ensure cables **3** and **4** have the blue ring attached to the shackle on the lifting device. Refer to the chart at the bottom of the page for sling point configurations.

Connect all four slings to the lift points shown on this page.

Lift the vehicle.





Hook Position	Sling Points			
	1	2	3	4
C	Ye	Ye	Bl	Bl

CD02567-05-04-21

Lifting 4-Jaw Carriage (630*i* and 900*i*)

Refer to Special Operations section for instructions on disconnecting 4-jaw carriage from vehicle.

Lifting device configuration shown is for lifting the 4-jaw carriage.

NOTICE: Never use this lifting device for any other purpose. You could damage the lifting device and machine.

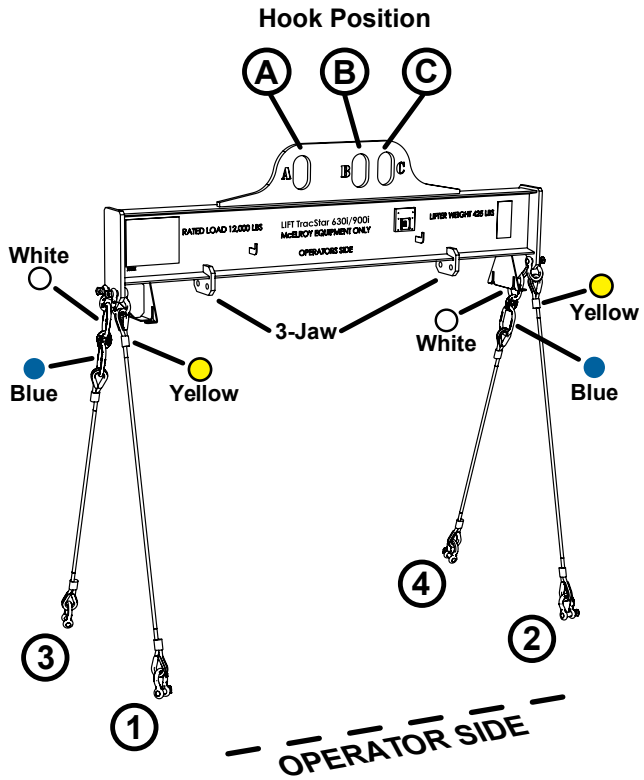
Ensure the heater and facer are in the stowage position between the two fixed jaws.

Attach the lifting equipment to the lifting device at hook position **A**.

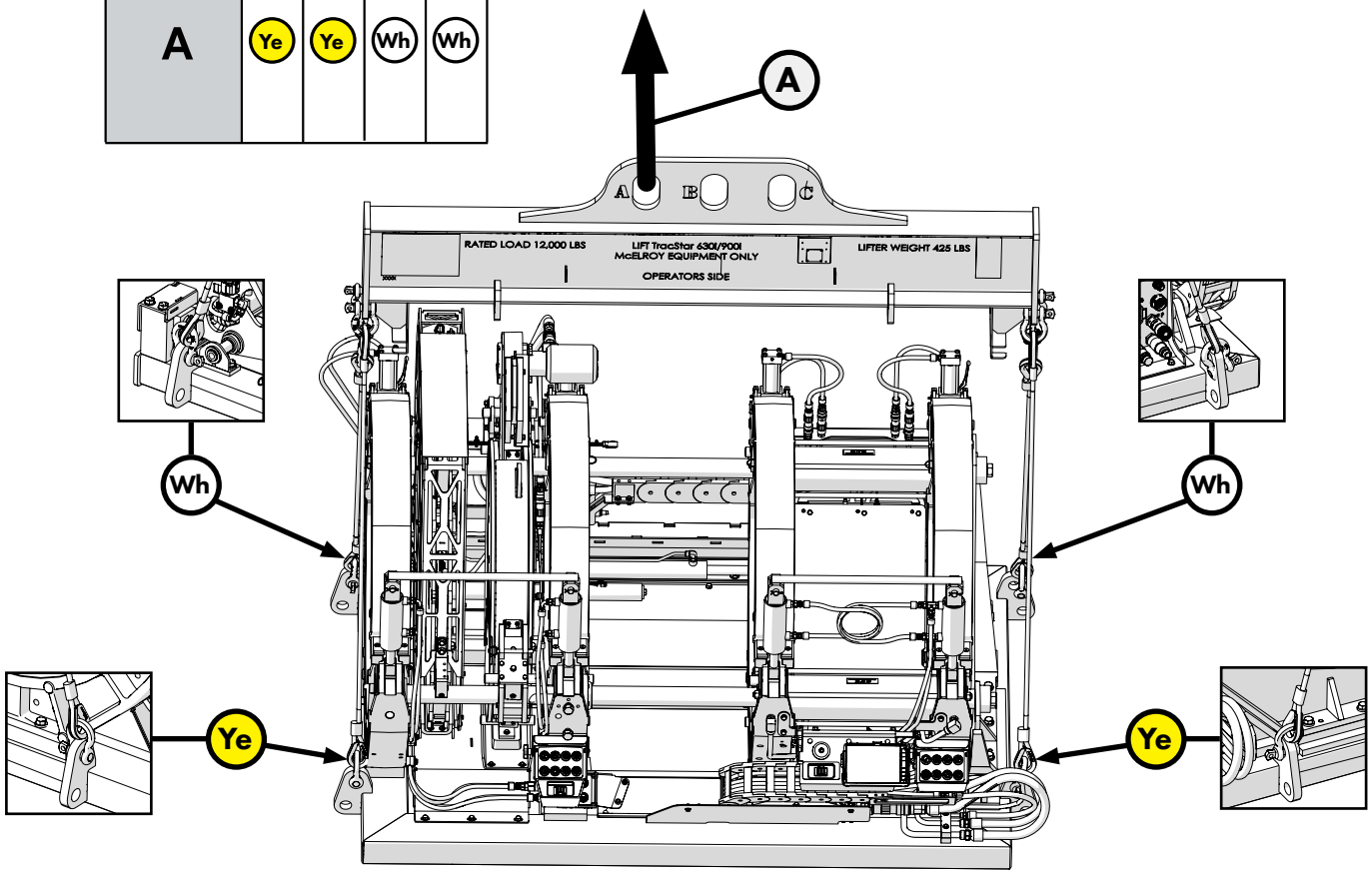
Ensure cables **3** and **4** have the white ring attached to the shackle on the lifting device. Refer to the chart at the bottom of the page for sling point configurations.

Connect all four slings to the lift points shown on this page.

Lift the 4-jaw carriage.



Hook Position	Sling Points			
	1	2	3	4
A	Ye	Ye	Wh	Wh



CD02577-05-04-21

Lifting 3-Jaw Carriage (630*i* and 900*i*)

Before disconnecting the 3-Jaw carriage, close the carriage approximately 1 - 2 inches from the fully open position to allow clearance for lifting shackles.

Refer to Special Operations section for instructions on disconnecting 3-jaw carriage from vehicle.

Lifting device configuration shown is for lifting the 3-jaw carriage.

NOTICE: Never use this lifting device bar for any other purpose. You could damage the lifting device and machine.

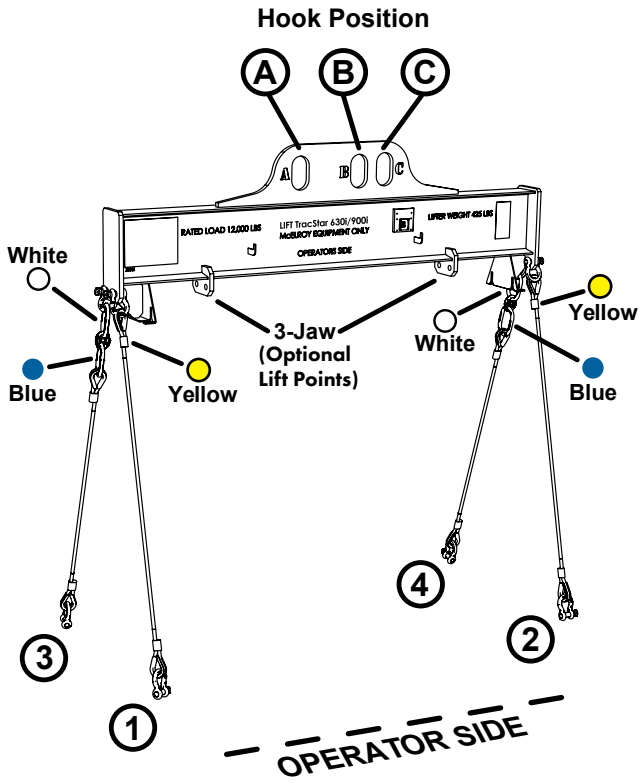
Attach the lifting equipment to the lifting device at hook position **B**.

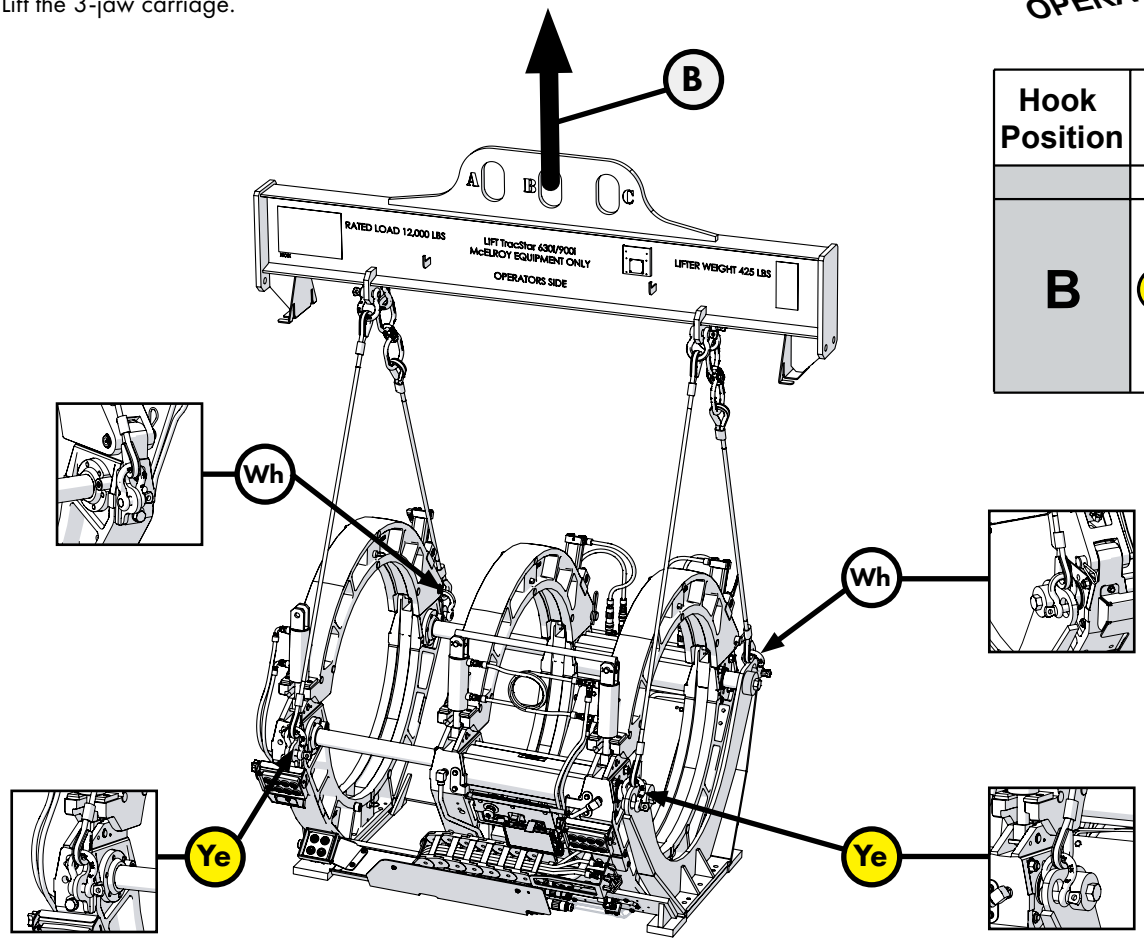
The upper sling points can remain on the outside attachment points on the lifting device. Optionally the upper sling points can be moved to the inner 3-jaw position.

Ensure cables **3** and **4** have the white ring attached to the shackle on the lifting device. Refer to the chart at the bottom of the page for sling point configurations.

Connect the sling to the lift points shown on this page.

Lift the 3-jaw carriage.





Hook Position	Sling Points			
	1	2	3	4
B	Ye	Ye	Wh	Wh

CD02582-05-04-21

Lifting Entire Machine (1200*i*)

Lifting device configuration shown is for lifting the entire machine including the carriage.

NOTICE: Never use this lifting device for any other purpose. You could damage the lifting device and machine.

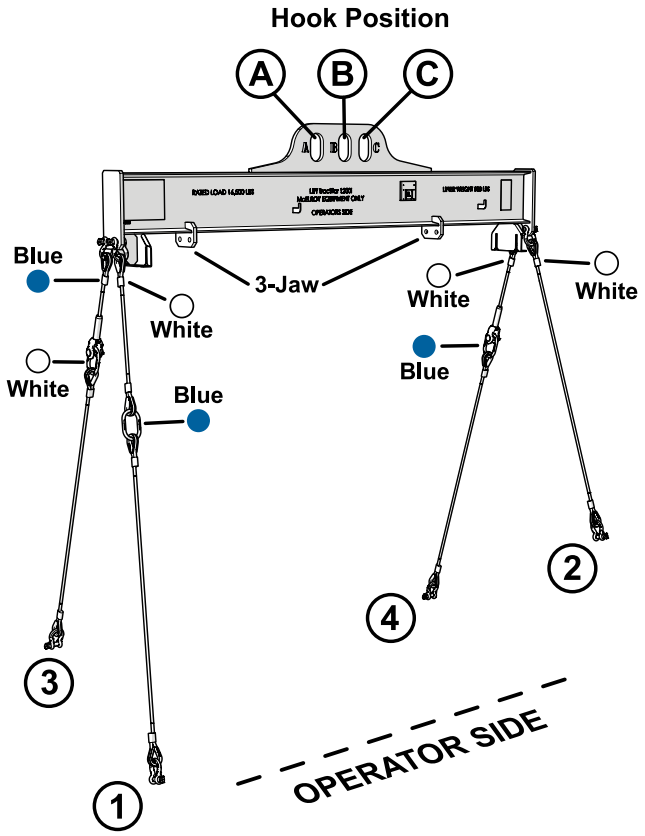
Ensure the heater and facer are in the stowage position between the two fixed jaws.

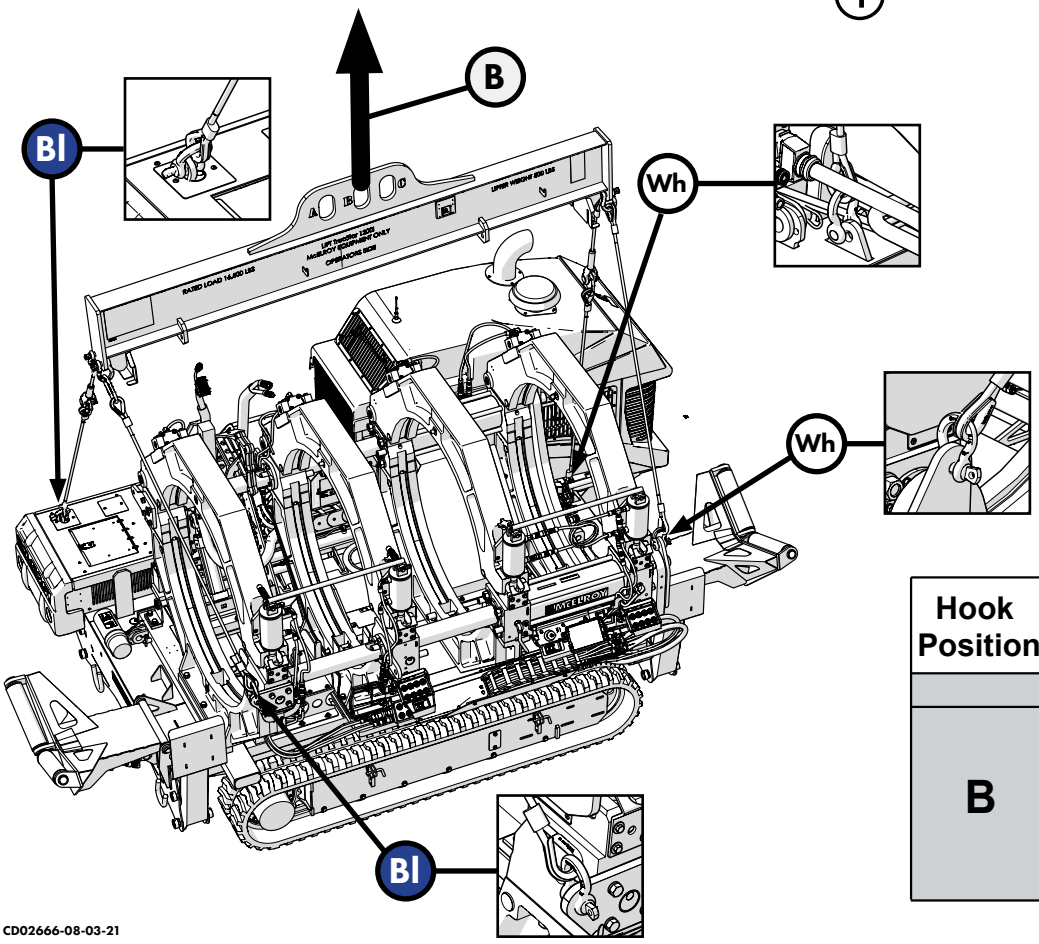
Attach the lifting equipment to the lifting device at hook position **B**.

Ensure cables **2** and **4** have the white ring attached to the shackle and **1** and **3** have the blue ring attached to the shackle on the lifting device. Refer to the chart at the bottom of the page for sling point configurations.

Connect all four slings to the lift points shown on this page.

Lift the entire machine.





CD02666-08-03-21

Hook Position	Sling Points			
	1	2	3	4
B	Bl	Wh	Bl	Wh

Lifting Vehicle (1200*i*)

Lifting device configuration shown is for lifting the vehicle only without the carriage installed.

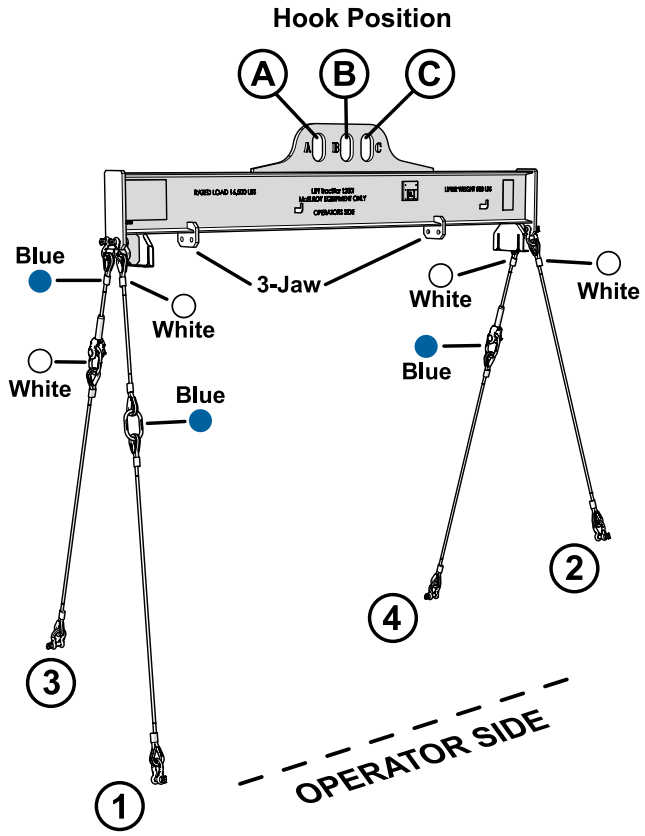
NOTICE: Never use this lifting device for any other purpose. You could damage the lifting device and machine.

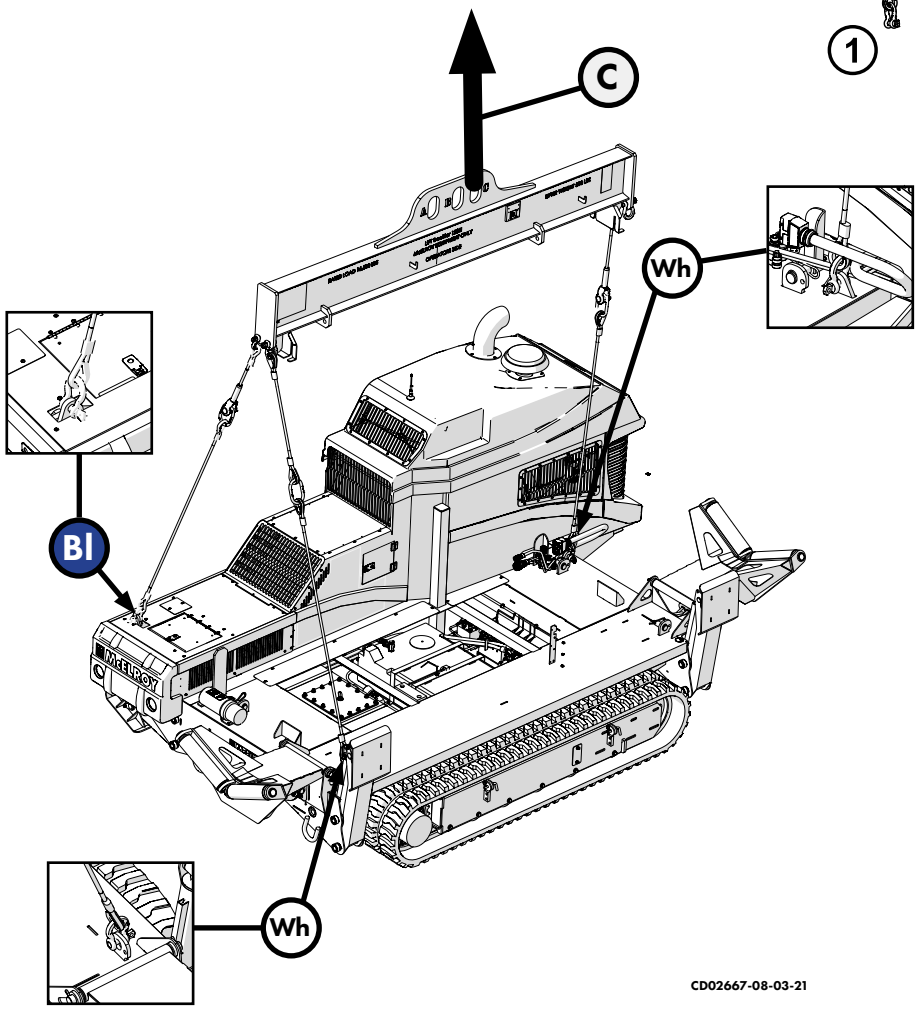
Attach the lifting equipment to the lifting device at hook position **C**.

Ensure cables **1** and **4** have the white ring attached to the shackle and **3** has the blue ring attached to the shackle on the lifting device. Refer to the chart at the bottom of the page for sling point configurations.

Connect the three slings to the lift points shown on this page.

Lift the vehicle.





CD02667-08-03-21

Hook Position	Sling Points			
	1	2	3	4
C	Wh	NOT USED	Bl	Wh

Lifting 4-Jaw Carriage (1200*i*)

Refer to Special Operations section for instructions on disconnecting 4-jaw carriage from vehicle.

Lifting device configuration shown is for lifting the 4-jaw carriage.

NOTICE: Never use this lifting device for any other purpose. You could damage the lifting device and machine.

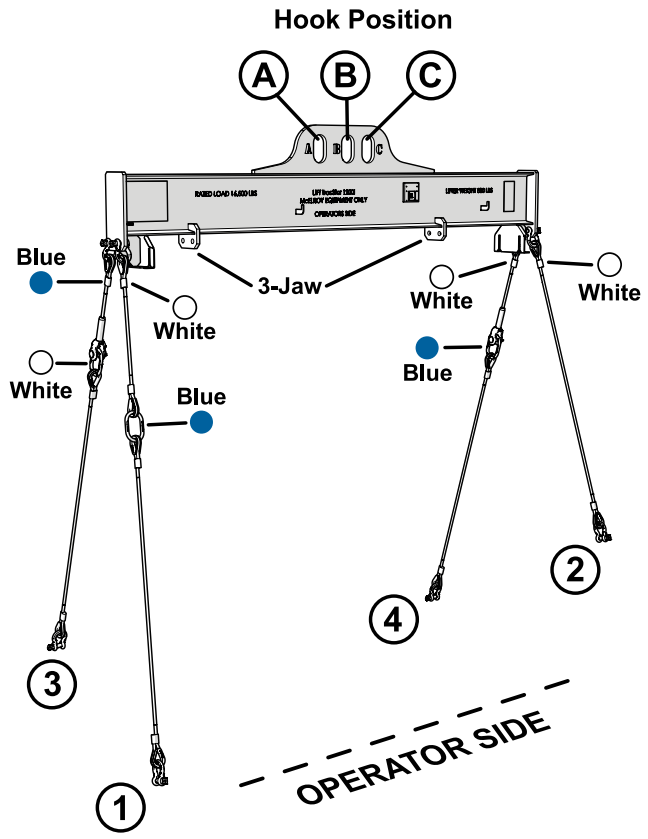
Ensure the heater and facer are in the stowage position between the two fixed jaws.

Attach the lifting equipment to the lifting device at hook position **A**.

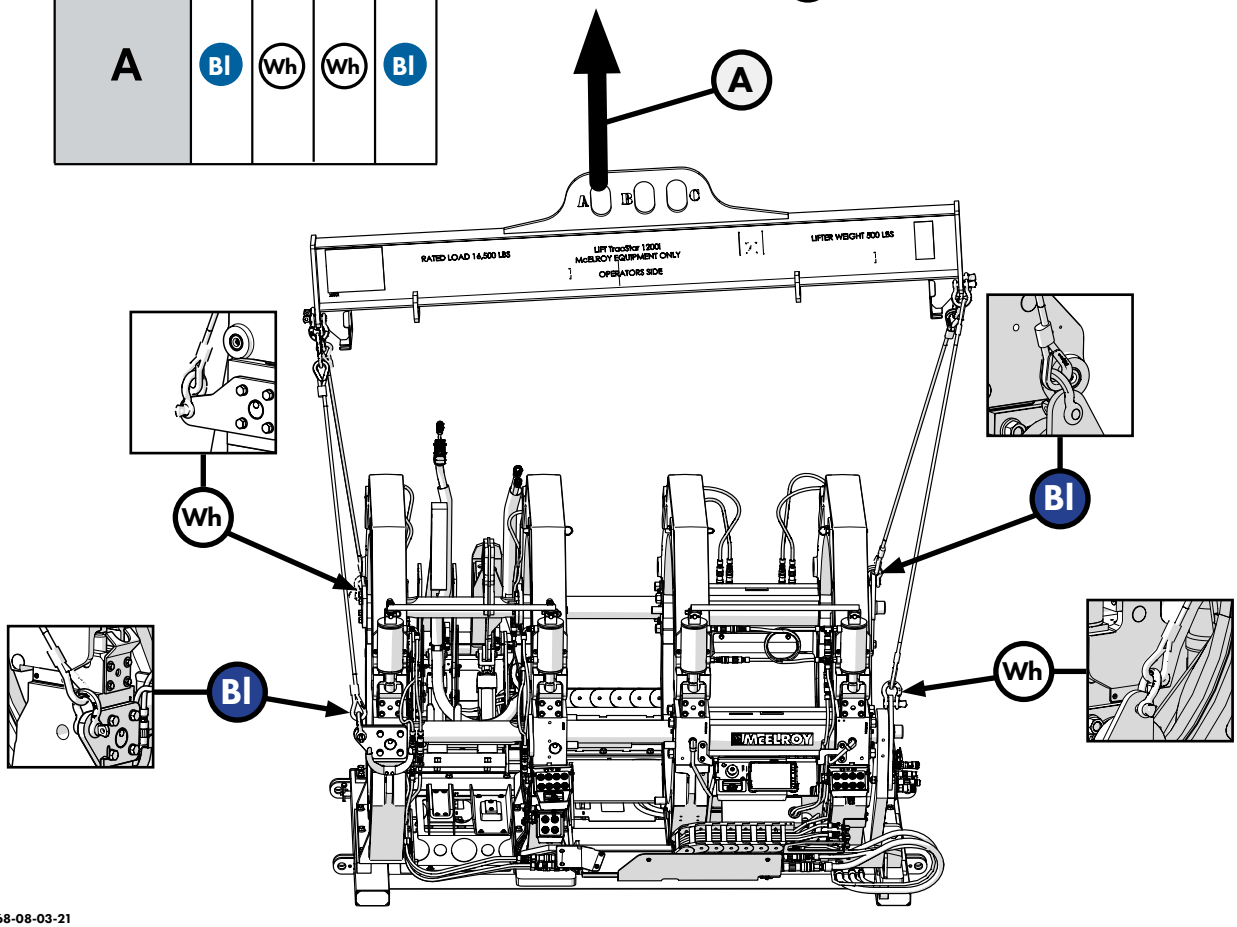
Ensure cables **2** and **3** have the white ring attached to the shackle and **1** and **4** have the blue ring attached to the shackle on the lifting device. Refer to the chart at the bottom of the page for sling point configurations.

Connect all four slings to the lift points shown on this page.

Lift the 4-jaw carriage.



Hook Position	Sling Points			
	1	2	3	4
A	Bl	Wh	Wh	Bl



CD02668-08-03-21

Lifting 3-Jaw Carriage (1200*i*)

Before disconnecting the 3-Jaw carriage, close the carriage approximately 1 - 2 inches from the fully open position to allow clearance for lifting shackles.

Refer to Special Operations section for instructions on disconnecting 3-jaw carriage from vehicle.

Lifting device configuration shown is for lifting the 3-jaw carriage.

NOTICE: Never use this lifting device bar for any other purpose. You could damage the lifting device and machine.

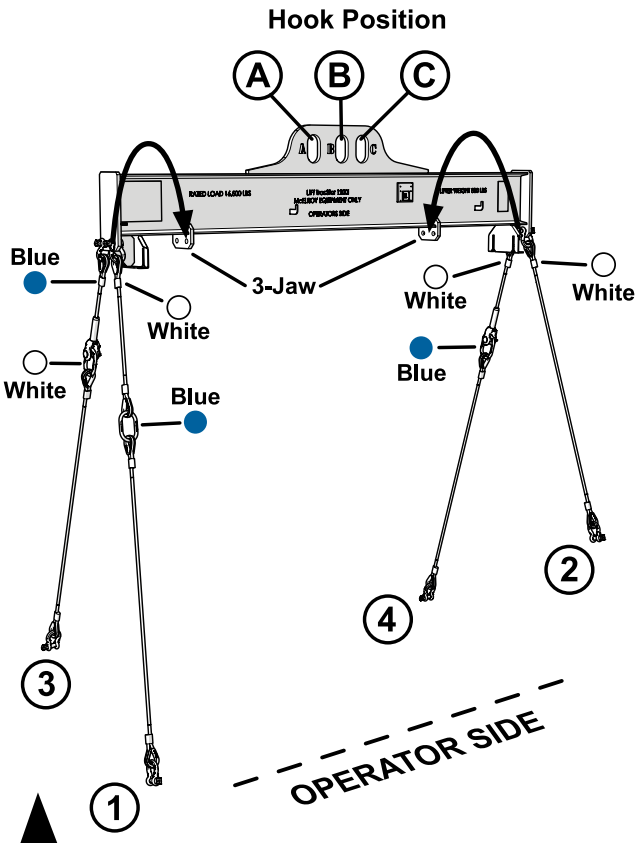
Attach the lifting equipment to the lifting device at hook position **B**.

Move all upper sling points to the inner 3-jaw position.

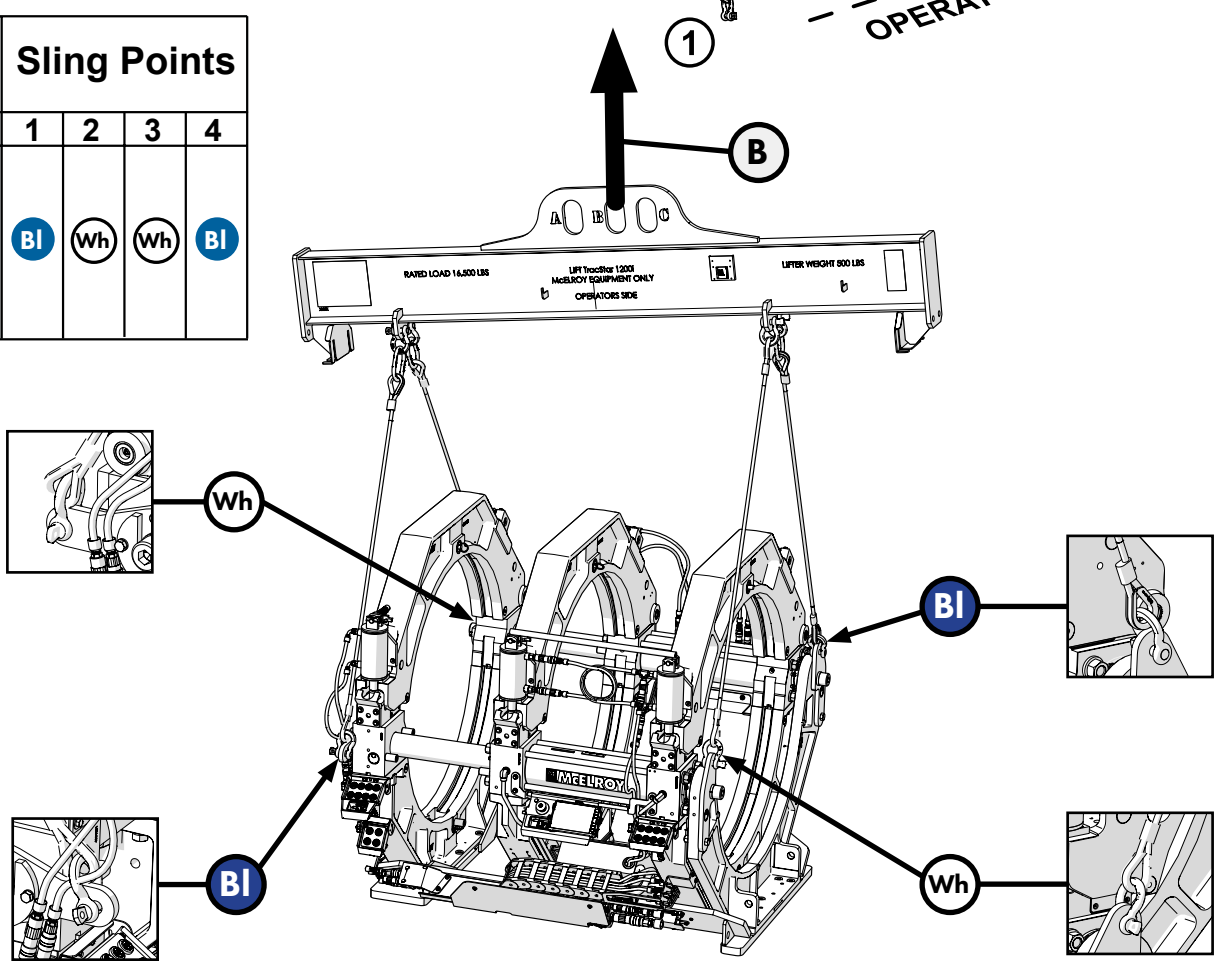
Ensure cables **2** and **3** have the white ring attached to the shackle and **1** and **4** have the blue ring attached to the shackle on the lifting device. Refer to the chart at the bottom of the page for sling point configurations.

Connect the sling to the lift points shown on this page.

Lift the 3-jaw carriage.



Hook Position	Sling Points			
	1	2	3	4
B + 3-Jaw	Bl	Wh	Wh	Bl



CD02669-08-03-21

Securing Indexer for Transport

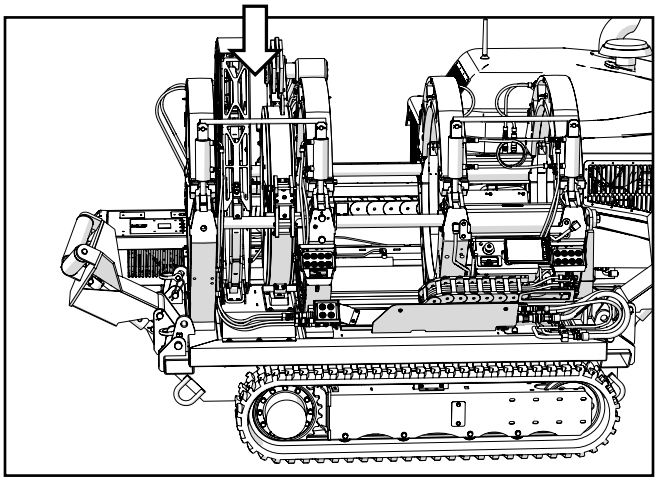
Secure the indexer prior to transport to safeguard against machine damage.

To properly secure the indexer into the stowage position:

With the heater, heater bag frame, and facer pivoted out, move the heater/facer indexer all the way to the left.

Pivot facer, heater and heater bag frame into the carriage between the two fixed jaws. The heater and facer will rest on the supports built into the carriage.

Secure the heater and facer down with a ratchet strap to help prevent movement during transport.



CD02624-05-04-21

Securing for Reduced Width (1200*i*)

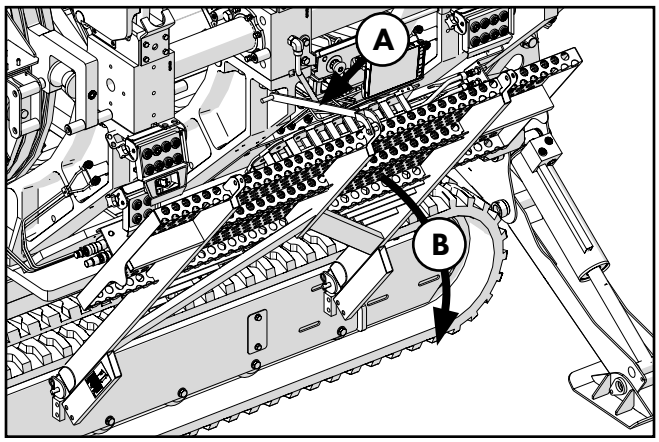
IMPORTANT: The TracStar® 1200*i* may require special width permits for transport.

Remove the 4-jaw carriage. Refer to the Special Operations section of this manual for instructions on Removing the 4-Jaw Carriage.

Remove the operator platform from the vehicle:

Support the platform and unpin the platform link (**A**) from the carriage

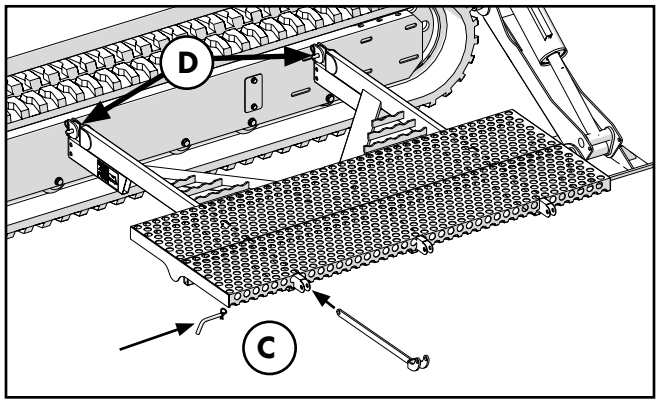
Lower the platform (**B**) down to the horizontal position.



CD02661-06-04-21

Remove the platform to carriage link (**C**) and store and pin the link in the end of the platform.

Unpin the platform (**D**) from the track assembly and remove.

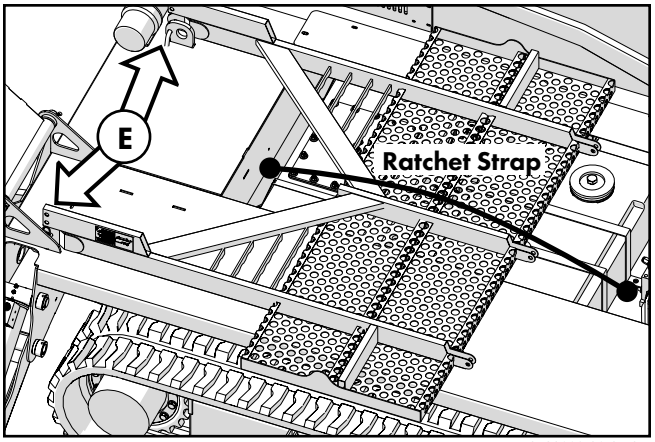


CD02662-06-04-21

Place the platform with tread side down on the vehicle deck. Orient the platform on the vehicle as shown.

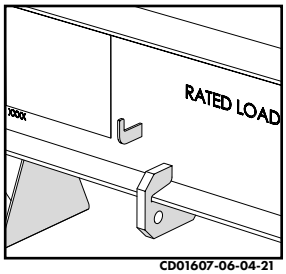
Pin the platform (**E**) to the deck using the two platform mounting pins. Use the small holes of the carriage attach points to secure the platform.

Use a ratchet strap to secure the platform to the vehicle.

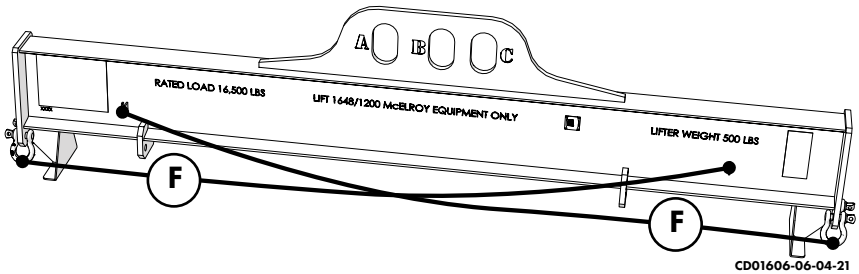


CD02663-06-04-21

Attach the ends of the cables (**F**) over the hooks on the inside of the lifting device. Each cable connects to the hook on the opposite end of the lifting device.



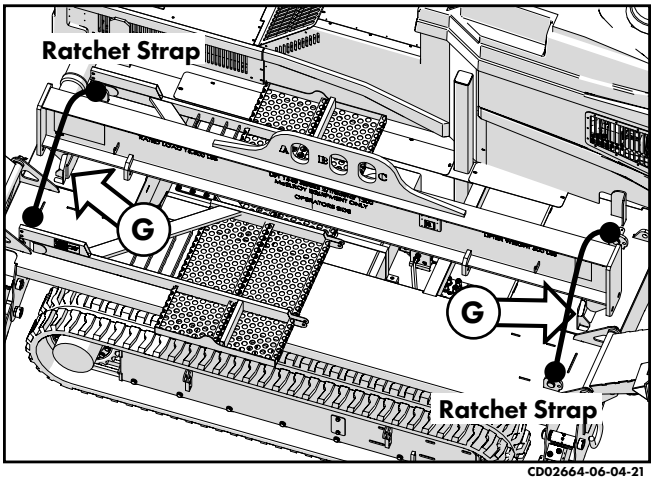
CD01607-06-04-21



CD01606-06-04-21

Using lifting equipment, lower the lifting device to the deck ensuring the ends of the spreader bar rest inside the storage brackets (**G**) of the deck. Attach ratchet straps across the lifting device connecting the ends to the large hole of the carriage attach points on the deck.

The vehicle and carriage can now be loaded separately onto the transport vehicle.

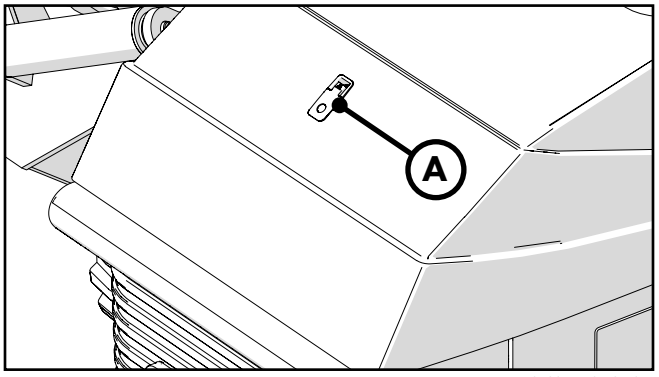


CD02664-06-04-21

COWLINGS

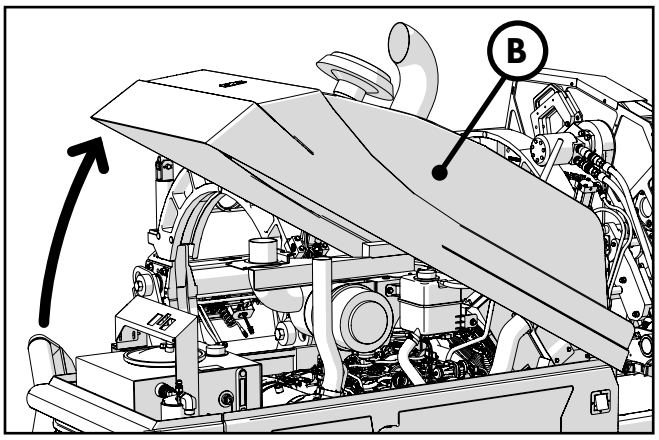
Opening Dome

1) Flip up and turn the latch (**A**) 90° to unlatch the dome.



CD02554-05-04-21

2) Open the dome (**B**) from the movable end of the machine. The dome is attached to gas springs that will assist in opening.



CD02555-05-04-21

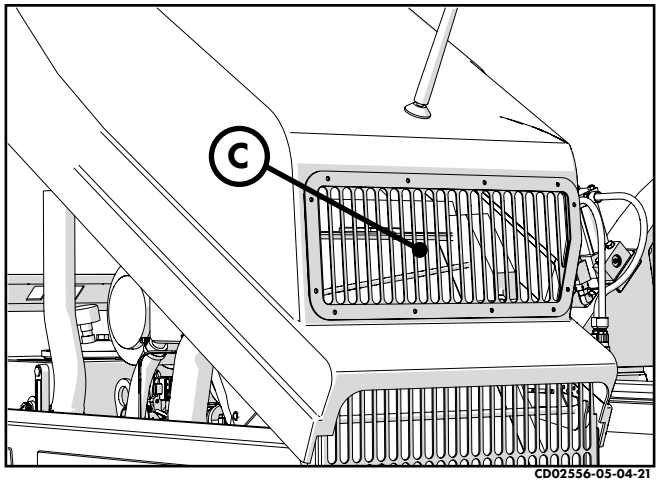
Removing Dome

Removing the dome is a two person operation and should not be done alone.

⚠CAUTION

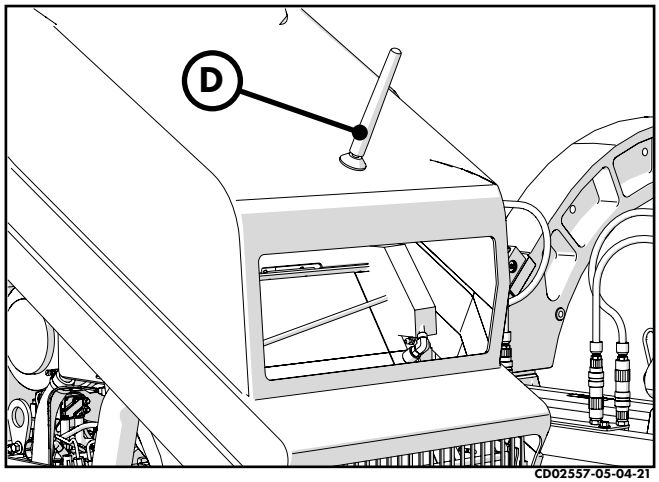
The machine components are heavy. Using one person to lift some machine components may result in an injury. Use two people to lift those machine components.

1) Remove the grill (**C**) of the dome.



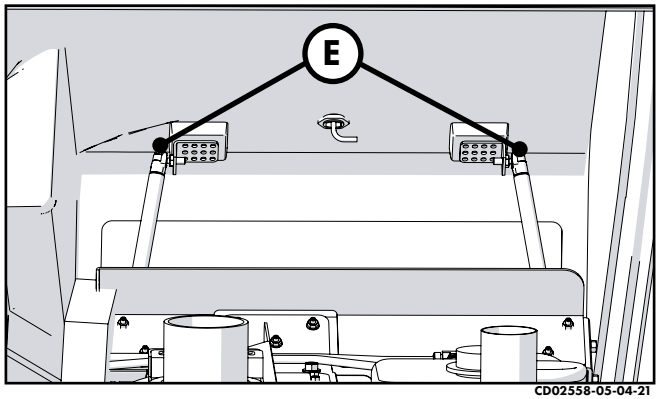
CD02556-05-04-21

2) Through the opening where the grill was, disconnect the cable to the antenna (**D**)



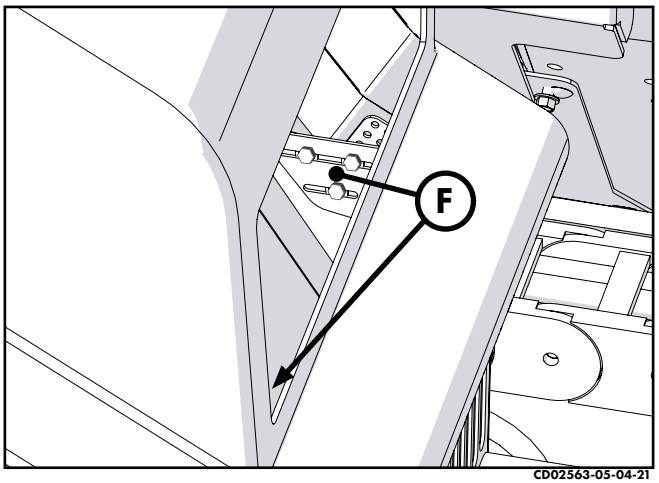
CD02557-05-04-21

3) Have one person support the dome in the up position while the other person disconnects the upper portion of the gas springs (**E**) from the dome.



CD02558-05-04-21

4) Loosen the 3 bolts (**F**) on the pivot locking plates on both sides of the interior of the dome. Slide the plates away from the engine to free the dome pivot rod.



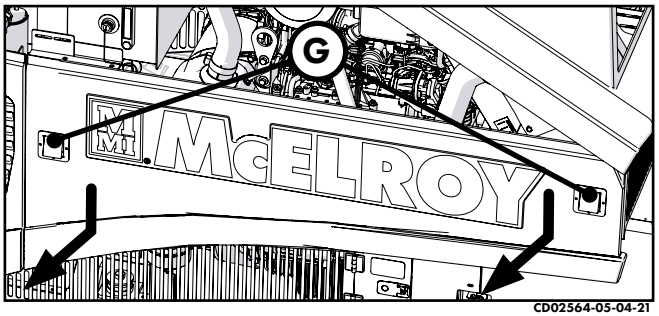
CD02563-05-04-21

5) Using one person on each end of the dome, lift the dome up and away from the machine.

IMPORTANT: To install the dome back on the machine, follow these steps in reverse.

Removing Outboard Side Panel

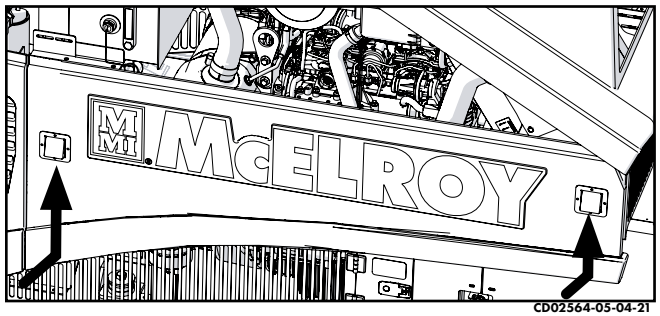
1) Grab both handles (**G**) and pull them out to unlatch the panel. Pull the panel down with the handles out and away from the machine.



CD02564-05-04-21

Installing Outboard Side Panel

1) Grab the panel at the bottom and place the panel inside the slots on the machine and lift the panel up until the pins on both sides lock into place.

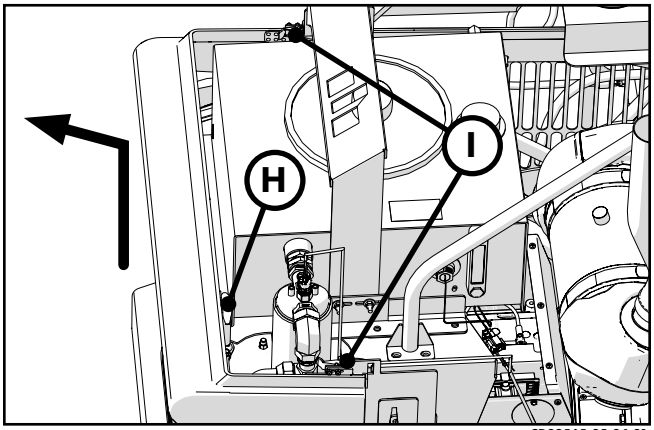


CD02564-05-04-21

Removing Grill Panel

1) Pull up on the handle (**H**) to unlatch. Unlatch the two side latches **(I)**. Lift the grill panel up until it clears the bottom brackets and then pull it away from the machine.

IMPORTANT: Follow this step in reverse to install the grill panel on the machine.

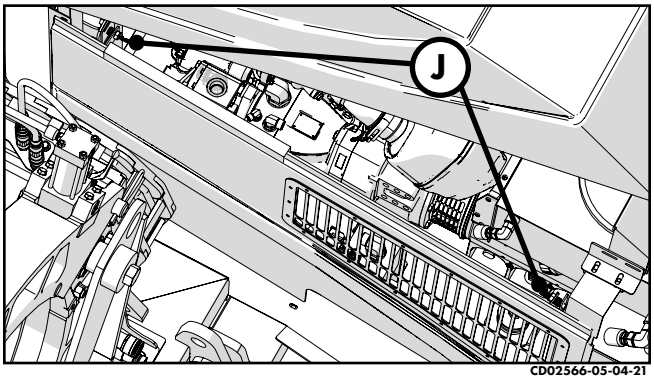


CD02565-05-04-21

Removing Inboard Side Panel

1) Pull the two locking pins (**J**) to release the side panel. Lift the panel up and away from the machine.

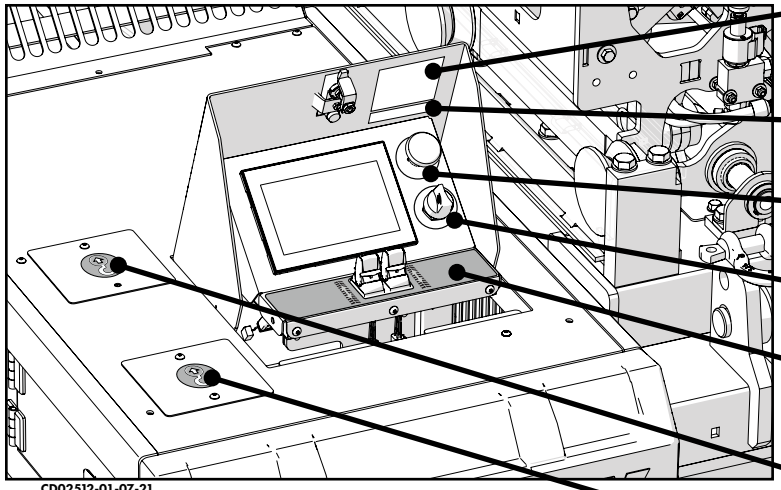
IMPORTANT: Follow this step in reverse to install the inboard side panel on the machine.



CD02566-05-04-21

LABELS AND MARKINGS

Labels and Markings



CD02512-01-07-21

PROP 65 DIESEL EXHAUST WARNING LABEL

Part Number - 8163362

PROP 65 BATTERY WARNING LABEL

Part Number - 8163361

EMERGENCY STOP LABEL

Part Number - 08P0874736

KEYSWITCH LABEL

Part Number - 8163361

iSERIES TRACSTAR® VEHICLE CONTROLS LABEL

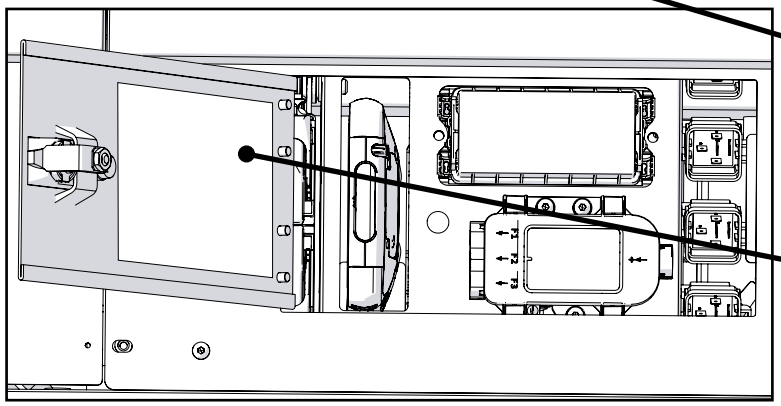
Part Number - 08P0874791

BLUE LIFT POINT LABEL (For 630*i* and 900*i*)

Part Number - MJQ00366

BLUE LIFT POINT LABEL (For 1200*i*)

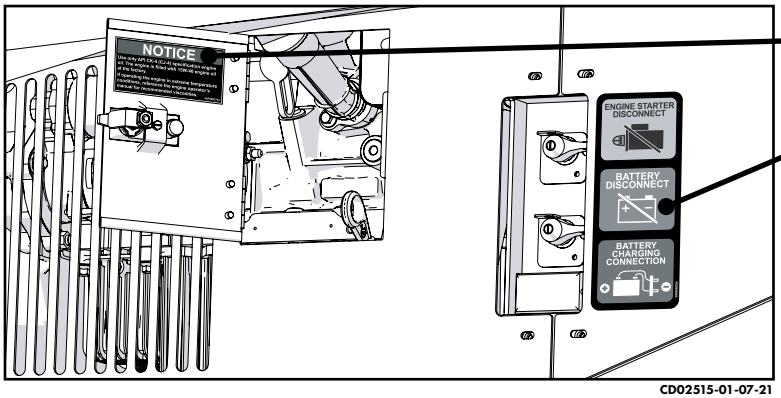
Part Number - MJQ00366



CD02514-01-07-21

FUSE AND RELAY DOOR LABEL

Part Number - 08P0874507



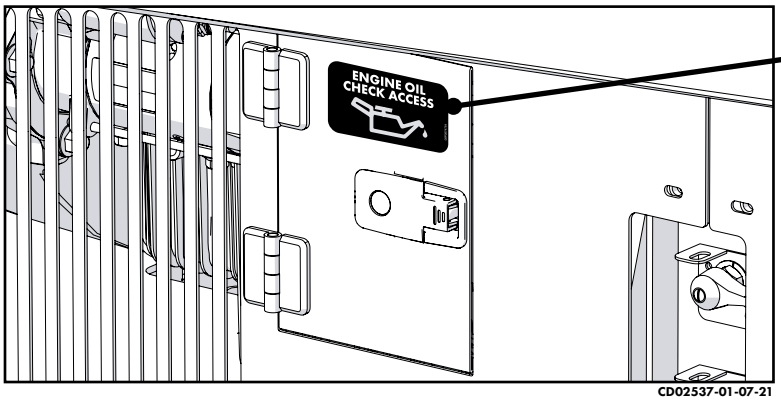
CD02515-01-07-21

ENGINE OIL RECOMMENDATION LABEL

Part Number - 08P0883763

iSERIES ELECTRICAL SWITCH LABEL

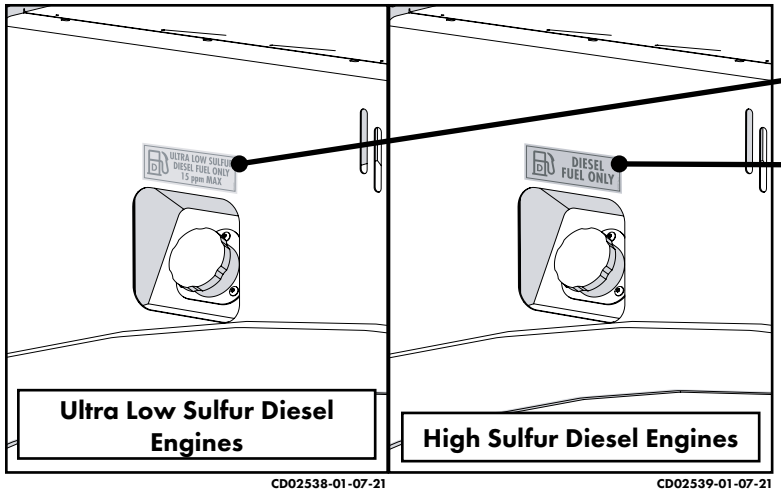
Part Number - 08P058364



CD02537-01-07-21

ENGINE OIL CHECK ACCESS LABEL

Part Number - 08P0874754



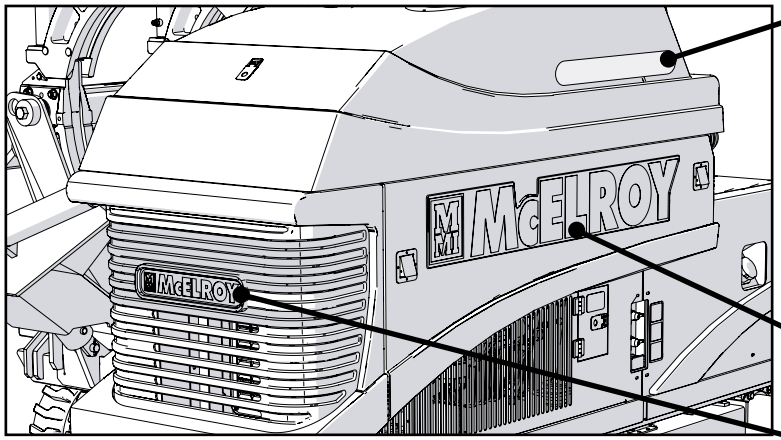
CD02538-01-07-21 CD02539-01-07-21

UL SULFUR DIESEL FUEL ONLY LBL

Part Number - 8163226

DIESEL FUEL ONLY LABEL

Part Number - T5022901



CD02541-01-07-21

TRACSTAR DOMED LABEL

630*i* Part Number - 08P0874786

900*i* Part Number - 08P0874787

1200*i* Part Number - 08P0874789

TRACSTAR 630*i*

TRACSTAR 900*i*

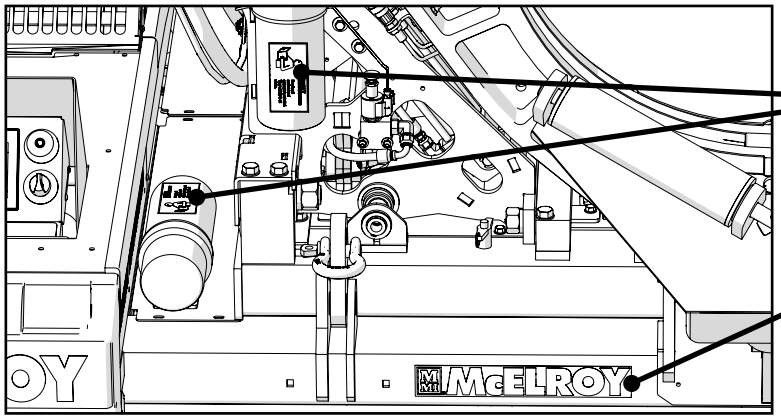
TRACSTAR 1200*i*

ISRS TRACSTAR MCELROY BRND LBL

Part Number - 08P0874783

ISERIES GRILL MCELROY BRND LBL

Part Number - 08P0874757



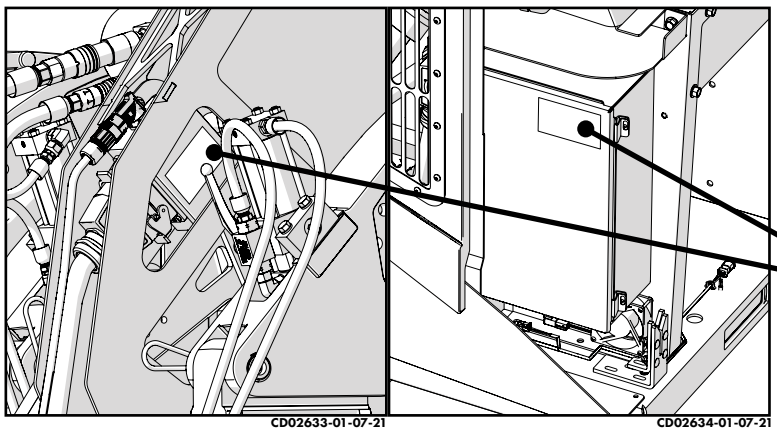
CD02632-01-07-21

SAFETY INSTR MANUAL LABEL

Part Number - 816342

LARGE MCELROY BRANDING LABEL

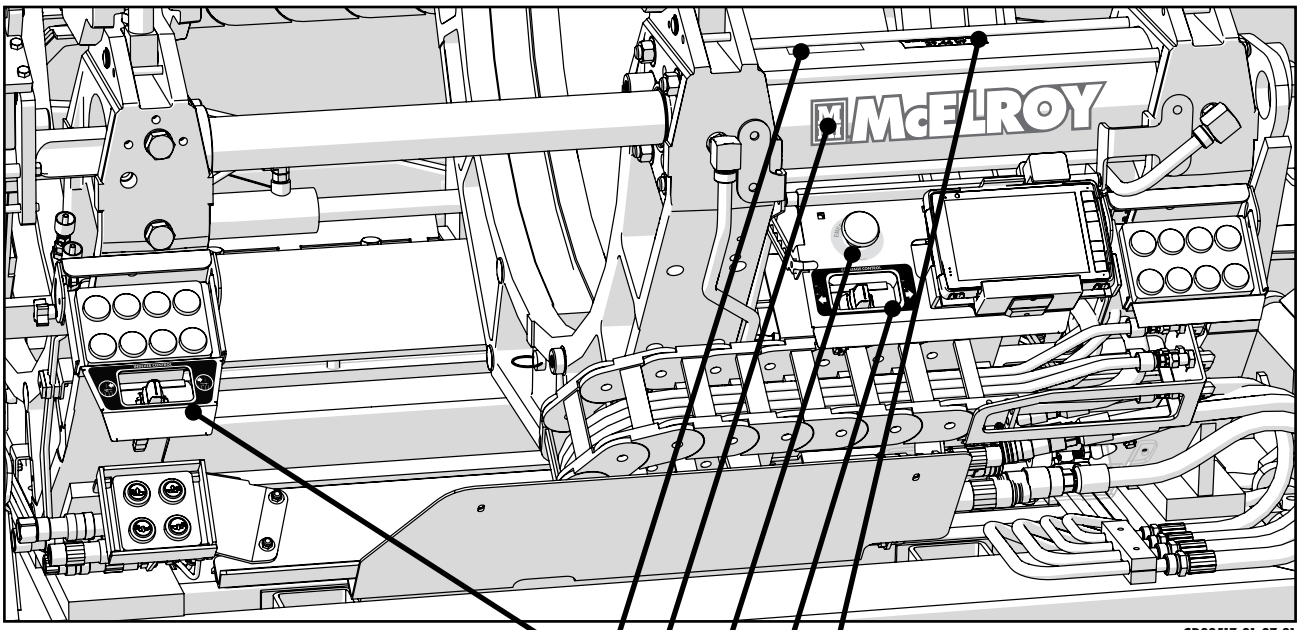
Part Number - 8163120



CD02633-01-07-21 CD02634-01-07-21

HIGH VOLTAGE LABEL

Part Number - 829201



CD02517-01-07-21

INDEXER CONTROL LABEL
Part Number - 08P0874773

PROP 65 BATTERY WARNING LABEL
Part Number - 8163361

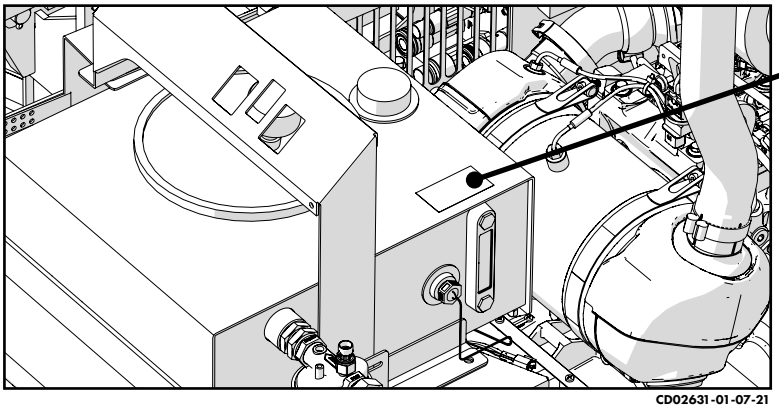
LARGE MCELROY BRANDING LABEL
Part Number - 8163120

EMERGENCY STOP LABEL
Part Number - 08P0874736

CARRIAGE CONTROL LABEL
Part Number - 08P0874742

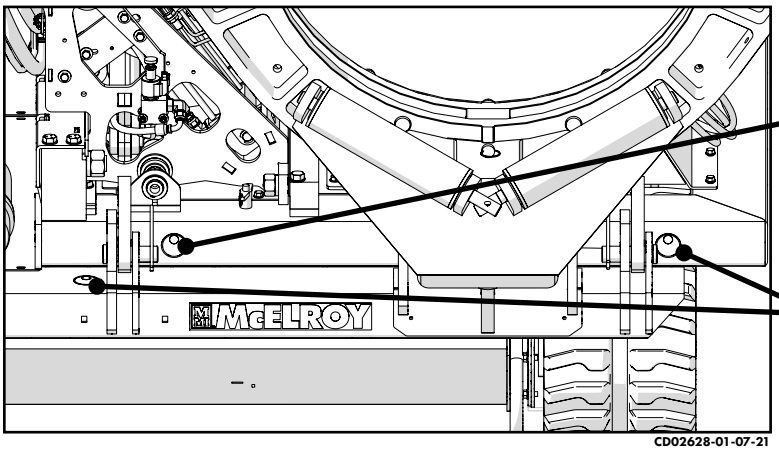
TOTAL EFFECTIVE PISTON AREA LBL

630*i*/900*i* Medium Force (15.32 in²)	**Part Number - 816346**
630*i*/900*i* High Force (29.44 in²)	**Part Number - 816314**
1200*i* Medium Force (14.14 in²)	**Part Number - 816370**
1200*i* High Force (31.42 in²)	**Part Number - 816347**



CD02631-01-07-21

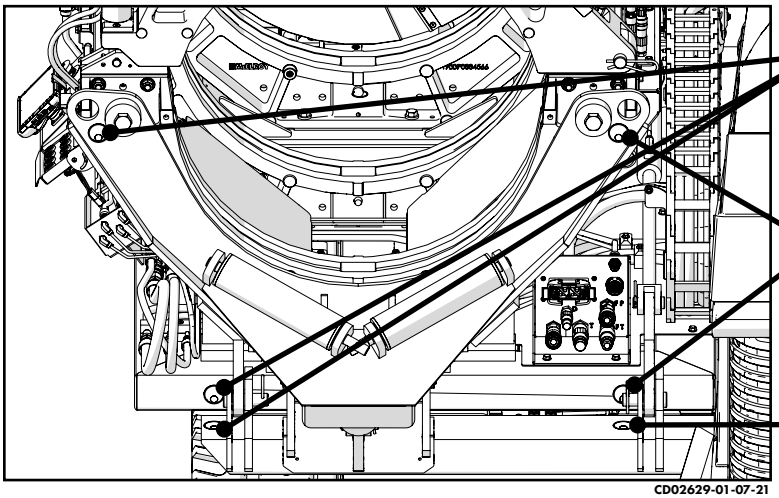
HYDRAULIC FLUID ONLY LABEL
Part Number - 8163106



CD02628-01-07-21

WHT, BLK HOOK LIFT POINT LABEL
(For 630*i* and 900*i*)
Part Number - MJQ00380

YLW, BLK HOOK LIFT POINT LABEL
(For 630*i* and 900*i*)
Part Number - MJQ00379



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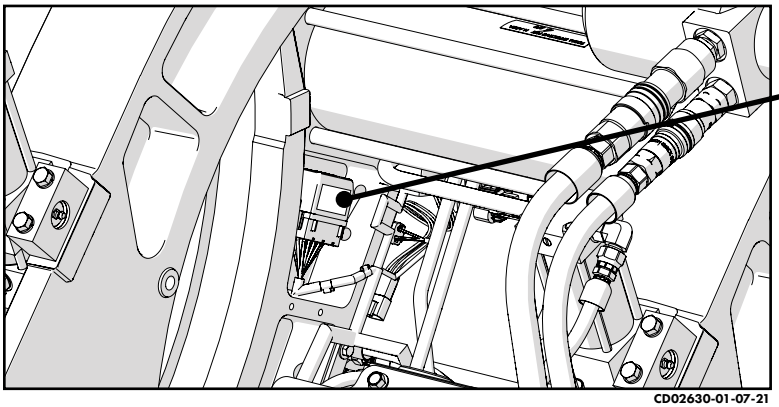
YLW, BLK HOOK LIFT POINT LABEL
(For 630*i* and 900*i*)
Part Number - MJQ00379

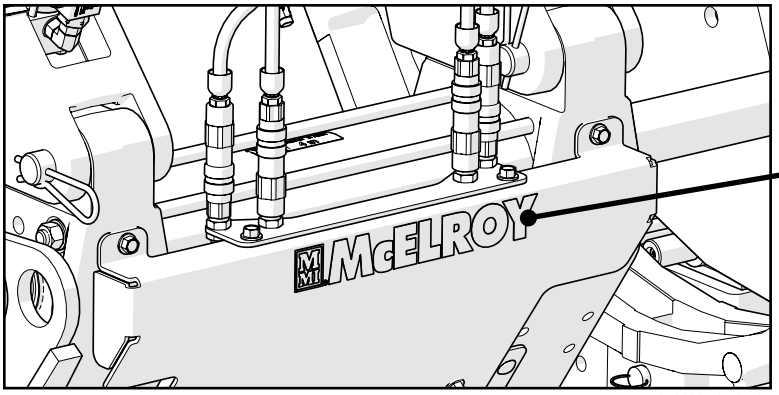
WHT, BLK HOOK LIFT POINT LABEL
(For 630*i* and 900*i*)
Part Number - MJQ00380

BLUE LIFT POINT LABEL
(For 630*i* and 900*i*)
Part Number - MJQ00366



CD02630-01-07-21

SMALL RELAY FUSE BLOCK LABEL
Part Number - 08P0844086



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MEDIUM MCELROY BRANDING LABEL
Part Number - 8163119

MAINTENANCE

Maintenance Task Schedule

Task	As Needed	Daily	Weekly	50 Service Hours	500 Service Hours	1000 Service Hours	2000 Service Hours	Yearly	3000 Service Hours	4000 Service Hours	4500 Service Hours	Every 2 Years	6000 Service Hours
Clean Machine	●												
Inspect Facer Blades	●												
Changing Heater Plates/ Adapters	●												
Replace Battery and Cables	●												
Replace Engine Air Cleaner Element	●												
Check/Adjust Track Tension	●												
Bleed Air from Carriage Cylinders	●												
Adjust Hydraulic Cylinder Cushion	●												
Adjust System Pressure	●												
Clean Engine	●												
Grease		●											
Check Hydraulic Fluid		●											
Check Machine Operation		●											
Inspect Heater Plates		●											
Check Engine Coolant Level		●											
Check Engine Oil Level		●											
Inspect Engine Air Cleaner Service Indicator		●											
Drain Fuel System Primary Filter/Water Separator		●											
Check Fasteners Are Tight			●										
Inspect Wiring and Cables			●										

Engine Maintenance Task - Refer to engine operator's manual for maintenance instructions

Task	As Needed	Daily	Weekly	50 Service Hours	500 Service Hours	1000 Service Hours	2000 Service Hours	Yearly	3000 Service Hours	4000 Service Hours	4500 Service Hours	Every 2 years	6000 Service Hours
Inspect Hydraulic Components and Hoses			●										
Inspect/Replace Engine Hoses and Clamps			●										
Change Hydraulic Fluid and Filter					●								
Change Engine Oil and Filter					●								
Replace Fuel System Primary Filter (Water Separator) Element					●			●					
Replace Fuel System Secondary Filter					●			●					
Replace Engine Air Cleaner					●			●					
Check/Change Track Gearbox Oil						●		●					
Inspect Aftercooler Core							●						
Inspect Alternator							●						
Inspect Engine Mounts							●						
Inspect Starter Motor							●						
Change Coolant *									●			●	
Clean/Test Aftercooler Core										●			
Inspect Turbo Charger											●		

* *Depending on the type of coolant used the service interval will be different. Refer to the intervals on the Engine Coolant screen for the proper service interval based on the type of coolant used. ASTM D2610 is the type of coolant used on the machine as shipped from the factory.*

Engine Maintenance Task - Refer to engine operator's manual for maintenance instructions

Preventative Maintenance

To insure optimum performance, the machine must be kept clean and well maintained.

With reasonable care, this machine will give years of service. Therefore, it is important that a regular schedule of preventive maintenance be kept.

Store machine inside, out of the weather, whenever possible.

Clean Machine

1) Clean the machine with soap and water as needed.

Do not pressure wash.

Engine Maintenance Tasks

All engine maintenance tasks are in the engine's operation and maintenance manual. Perform the appropriate engine maintenance task based on the correct interval in the maintenance task schedule. Engine maintenance tasks are indicated on the maintenance schedule with a gray background. Complete a engine maintenance task using the instructions in the engine's operation and maintenance manual.

To access operation and maintenance as well as service manuals, download the Perkins® My Engine app from your device's app store.

Check Machine Operation

1) Drive the machine and check for proper track operation.

2) Operate the vehicle touchscreen to ensure the display is working properly.

3) Operate all the carriage functions to check for proper operation. Open and close jaws. Clamp and unclamp jaws. Move indexer and pivot the heater and facer in and out. Open and close the fusion carriage.

IMPORTANT: Some operations may not function due to collision detection preventing the operation from damaging the machine.

4) Turn on the facer power and check the facer for proper operation.

5) While the machine is running, check the heater to ensure it is heating up.

If any of the operations do not function properly, troubleshoot the issue and repair the operation.

Inspect Facer Blades

Blades bolt directly to the blade holder and should be inspected for damage and sharpness.

1) Dull or chipped blades must be replaced.

NOTICE: Never extend the blade beyond the inner or outer circumference of the facer.

Changing Heater Plates

⚠CAUTION

The heater is hot and will burn clothing and skin. Keep the heater protected from personnel when not in use and use care when handling heater and heating pipe.

The heater body of this assembly is not coated. Coated heater plates/adapters are available for all fusion applications.

Heater plates are installed with stainless steel cap screws. Always use high temperature anti-seize compound on mounting screw threads for easier removal later.

Care should be taken to assure that the heater plates are seated on the heater body and that there is no foreign matter trapped between these surfaces.

IMPORTANT: Do not over-tighten the bolts.

The surface of the heater plates are coated with an anti-stick coating.

NOTICE: Only install heater plates when the heater is cool.

Grease

Keep moving parts well lubricated daily with a high quality grease, such as Mobil® XHP 462 grease.

- Jaw pivot pins
- Cam followers
- Indexer rollers
- Hydraulic cylinder pivot pins
- Facer

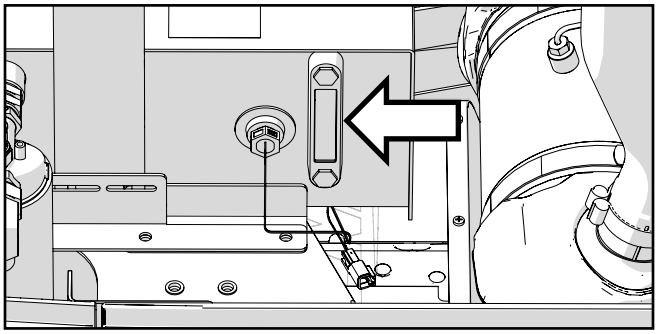
Check Hydraulic Fluid

The hydraulic fluid level should be checked daily.

If hydraulic fluid is not visible in the sight gauge, fluid must be added.

Fill in between the 60°C and 80°C temperature mark of the sight gauge when the fluid is cool to allow for fluid volume expansion.

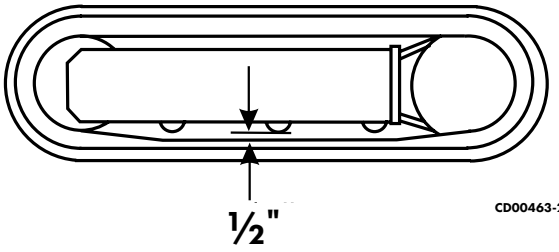
Refer to the "Hydraulic Fluids" section of this manual for hydraulic fluid recommendations.



CD02546-2-1-21

Check Track Tension

1) Park the machine on a flat solid surface.
2) Use the lifting device to raise machine off the ground.
3) Place adequate supports under the bottom frame after lifting.
4) Measure the deflection between the bottom center roller and the inside surface of the rubber track on both tracks. Track tension is normal when this distance is about 1/2". If the deflection is more or less than this, the tension needs to be adjusted.



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Adjusting Track Tension

⚠CAUTION

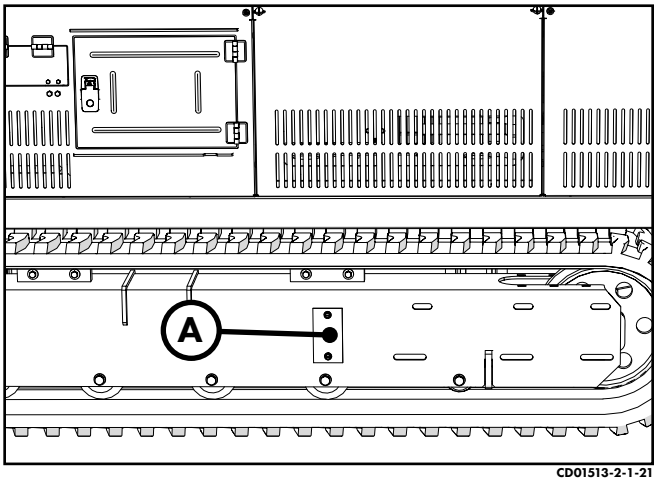
The grease in the track tension cylinder is pressurized. If the grease valve is loosened too far, the valve and grease can be expelled at high pressure and cause injury. Injury could also result if the grease zerk is loosened. Never loosen the grease zerk.

Remove screws and cover **(A)** to access the track tension grease valve and zerk.

To tighten the track, connect a grease gun to the zerk **(B)** and add grease to the system. When the track stretches to the correct tension, stop adding grease. Clean off any excess grease.

To reduce track tension or to loosen and remove track, relieve pressure in the track tension cylinder by turning the hex shaped valve **(C)** counterclockwise until grease begins to come out. When correct track tension is obtained, turn valve clockwise and tighten it. Clean off any expelled grease.

Replace access cover and tighten down screws.



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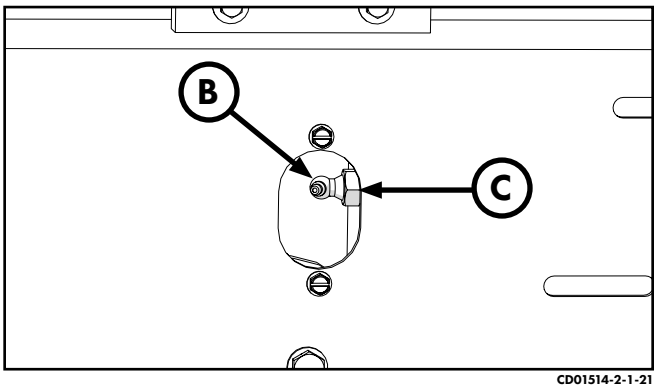


CD01514-2-1-21

Inspect Heater Plates

Inspect the surface of the heater plates when the plates are cool. Inspect the plates for damage or deterioration of the coating on the surface.

Replace damaged plates.

Inspect Wiring and Cables

Inspect wiring and cables for fraying, damaged connectors, missing insulation, cuts or other damage to wiring and cables.

Replace any damaged wiring and cables.

Inspect Hydraulic Components and Hoses

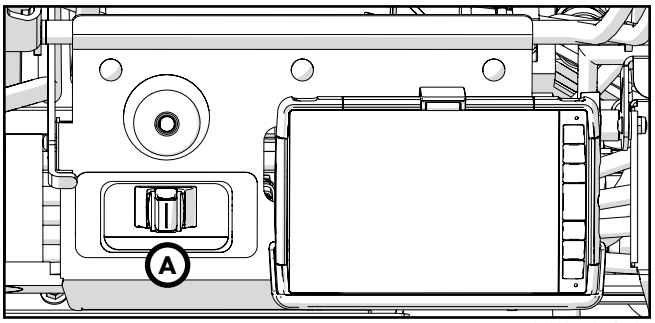
Inspect hydraulic components and hoses for leaks or any damage. Replace or repair any damaged or leaking hydraulic components and hoses.

⚠WARNING

Escaping fluid under pressure can penetrate the skin causing serious injury. Keep hands and body away from pinholes which eject fluid under pressure. Use a piece of cardboard or paper to search for leaks. If any fluid is injected into the skin, it must be immediately removed by a doctor familiar with this type of injury.

Bleeding Air From Carriage Cylinders

With the machine on level ground, cycle the carriage open and close 10 times using the carriage control lever (**A**).



CD02647-05-04-21

Adjust Hydraulic Cylinder Cushion

Jaw pivot, heater, and facer hydraulic cylinders are equipped with cushions which slows the motion of the cylinder near the end of the stroke. There is a phillips head adjustment screw (**A**) near either end of the cylinder to adjust these cushions. The rod end adjustment controls cylinder opening cushion. The base end adjustment controls cylinder closing cushion.

Jaw Pivot Cylinders (1200*i*)

To adjust the rod end cushion, open the jaws completely. Turn off the machine. The rod end adjustment will be visible through the open jaw. Turn the phillips head adjustment screw (**A**) to make adjustment to cushion. Turning the screw clockwise will increase the cushion and counterclockwise will decrease the cushion.

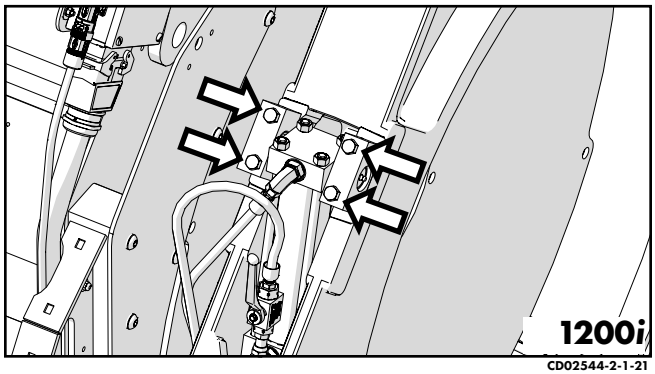
To access base end cushion adjustment, close jaws and turn off the machine. Remove the 4 bolts that attach the cylinder to the jaw. Lean the cylinder back to reach the phillips head adjustment screw (**A**) and make a fine adjustment. Turning the screw clockwise will increase the cushion and counterclockwise will decrease the cushion. Reattach the cylinder and check the cushion to see if it is correct.

Heater and Facer Pivot Cylinders

To adjust the rod end and base end cushion, pivot the heater and facer out completely. Turn off the machine. Both adjustments will be accessible.

Turn the phillips head adjustment screw (**A**) to make adjustment to cushion.

Turning the screw clockwise will increase the cushion and counterclockwise will decrease the cushion.



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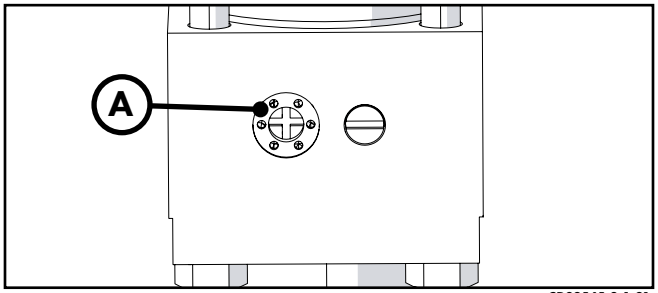


CD02545-2-1-21

Adjusting System Pressure

⚠CAUTION

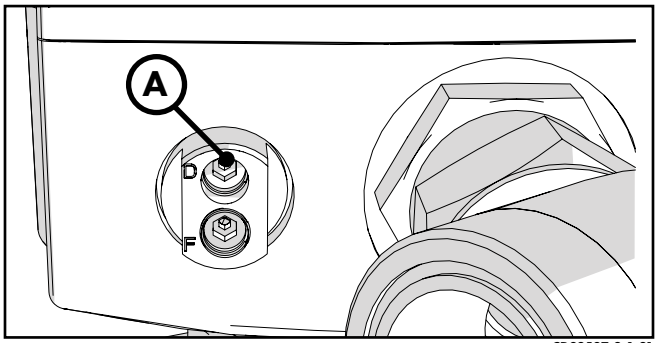
Do not touch belts and rotating parts while the engine is running. Failure to do so could result in injury.

⚠CAUTION

Engine component surfaces can be hot. Use caution when working around hot surfaces.

Open the dome. Remove the inboard side panel. Refer to Removing Inboard Side Panel in the Cowling section of this manual.

Locate the hydraulic pump pressure compensator adjustment (**A**) which is labeled "D".



CD02587-2-1-21

Start the engine.

Have another person at the vehicle display to read the system pressure as it is adjusted.

To adjust the system pressure, loosen the outer nut using the adjustment tool.

The adjustment tool part number is **T48P0878104** (Pump Conpensator Adjustment Key).

Use hex key to turn the pressure compensator clockwise to increase the pressure, or counter-clockwise to decrease the pressure.

The system pressure should be set to 3250 psi.

Use the hex key to hold the position of the pressure compensator while using the adjustment tool to tighten the outer nut.

Verify the system pressure is 3250 psi.

Check Fasteners Are Tight

Check all nuts, bolts, and snap rings to make certain they are secure and in place.

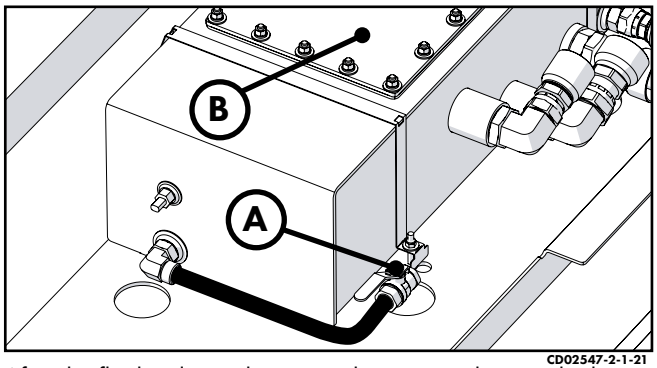
Change Hydraulic Fluid and Filters

Ensure the machine is off.

The hydraulic fluid and filters should be replaced approximately every 500 hours of operation or when the vehicle display indicates. Fluid should also be changed as extreme weather conditions dictate.

Disconnect the carriage before draining the unit. Couple the hoses on the vehicle together.

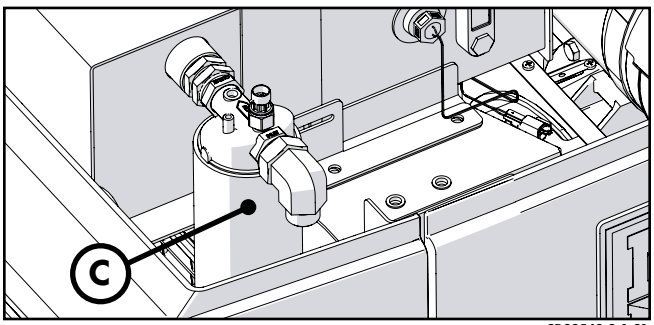
To drain the hydraulic fluid, remove the plug on the end of the drain ball valve (**A**). An extension hose can be connected to the ball valve so the tanks can be drained away from the machine. Feed the drain hose through the hole in vehicle tub and open the ball valve and drain into a drain pan. After the fluid is drained, close the ball valve and re-install the plug on the ball valve.



CD02547-2-1-21

After the fluid is drained, remove the access plate on the lower tank (**B**) and replace the magnetic suction filters.

Remove and replace the filters (**C**), one on the upper tank and the two filters near the engine radiator.



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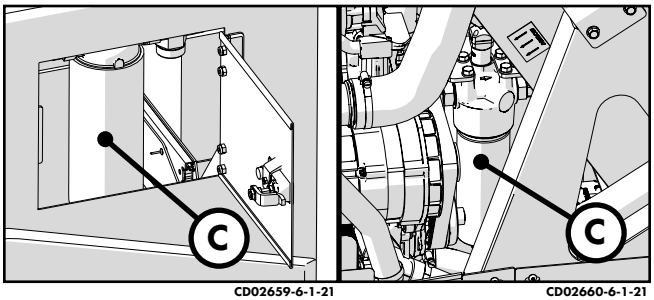


CD02659-6-1-21 CD02660-6-1-21

Refer to the "Hydraulic Fluids" section of this manual for hydraulic fluid recommendations.

After replacing fluid, circulate fluid 5 minutes to remove all air before reconnecting carriage.

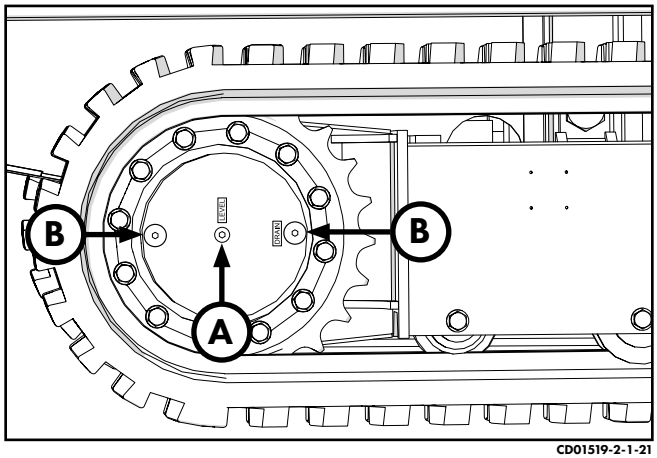
Checking Track Gearbox Oil

Check the oil level in both track gearboxes periodically.

To check the oil level, Remove the center level plug (**A**) and check that the oil level is up to the plug hole. If oil needs to be added, fill through one of the holes (**B**) that is above the center plug until the oil level reaches the center plug hole.

Use SAE-30-CD oil to fill the gearbox.

Replace the plugs and tighten.



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Replacing Track Gearbox Oil

Replace the oil after the first 200 hours of operation. Subsequent oil changes should be scheduled at least once a year or every 1000 hours.

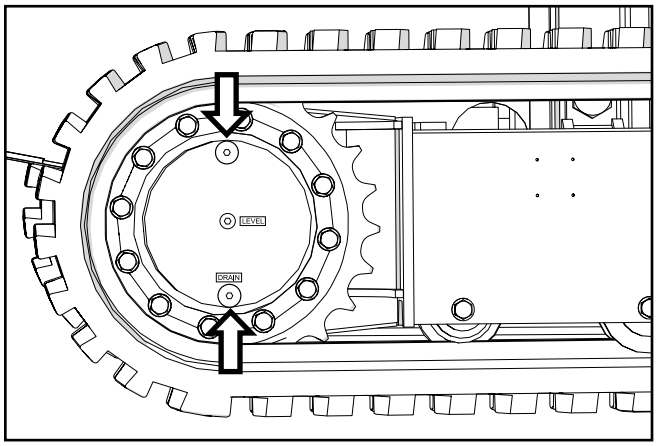
To replace the oil, stop the gearbox with the fill/drain aligned vertically.

Remove all three plugs and drain out all oil. Once the oil is drained, replace the bottom drain plug.

Fill the gearbox through the top plug until the oil level is to the center plug.

Use SAE-30-CD oil to fill the gearbox.

Replace the plugs and tighten.



CD01518-2-1-21

Clean Heater Surfaces

⚠ CAUTION

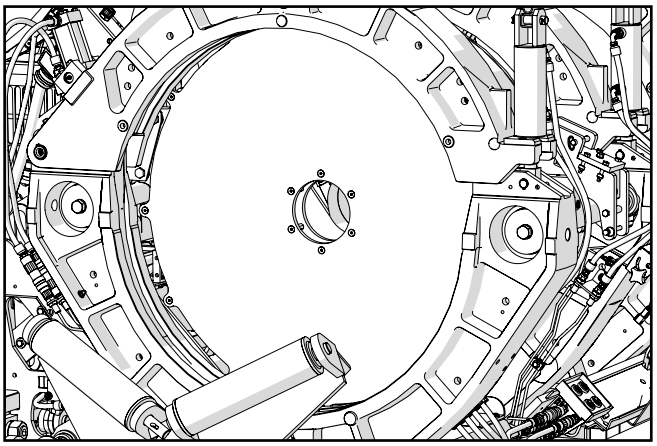
The heater is hot and will burn clothing and skin. Keep the heater protected from personnel when not in use and use care when handling heater and heating pipe.

The butt fusion heater plate faces must be kept clean and free of any plastic build up or contamination. Plastic build up is best removed when the heater surfaces are at fusion temperature using a clean dry non-synthetic cloth. Synthetic cloths may melt to the heater surfaces under fusion temperature.

The surface of the butt fusion heater plates are coated with an anti-stick coating.

Before each fusion joint the heater surfaces must be wiped with a dry clean non-synthetic cloth.

NOTICE: Do not use any abrasive materials to clean heater surfaces. Use only a clean non-synthetic cloth that won't damage heater surfaces.



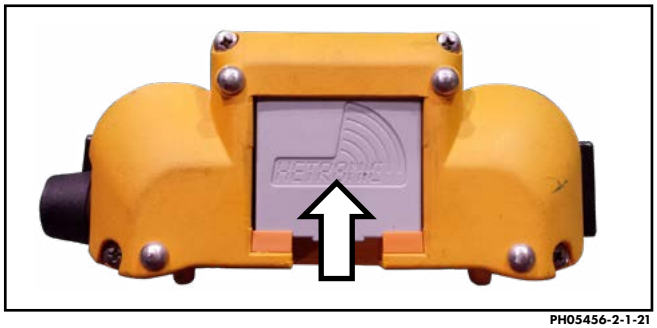
CD02588-2-1-21

Radio Remote Batteries

To replace the battery in the remote:

Rotate the remote to the bottom.

Push the battery away from the tabs holding the battery and lift the battery out of the remote.



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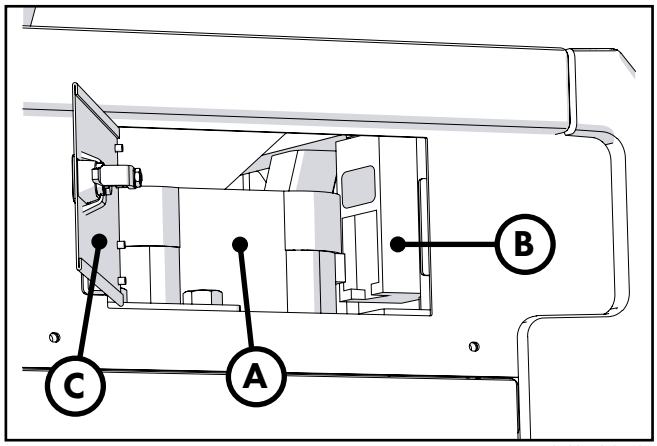
The remote storage (**A**) and battery charger (**B**) are behind the vehicle remote storage door (**C**)



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Use the battery charger to recharge the battery that is not being used.

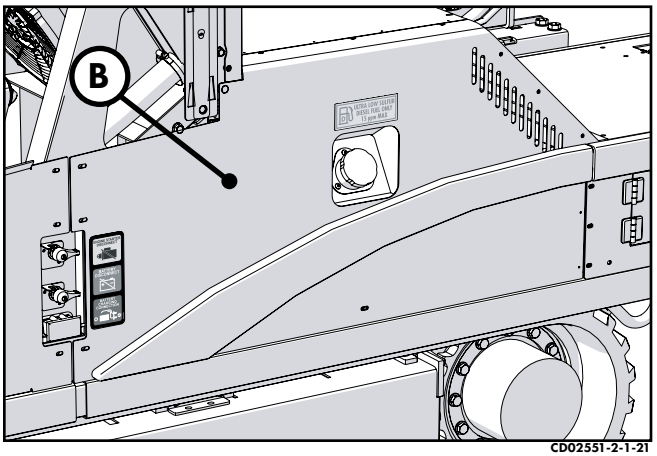
Replace a drained battery with a fully charged battery and place the drained battery in the battery charger.

Battery Replacement and Charging

Disconnect battery power by turning the battery disconnect switch (**A**).

Remove the outboard side panel cowling. Refer to "Removing Outboard Side Panel" for instructions on removing cowlings from the machine.

Remove the outboard middle metal panel (**B**) by removing the 13 screws and pulling the panel out slightly and slide it toward the engine end of the machine.



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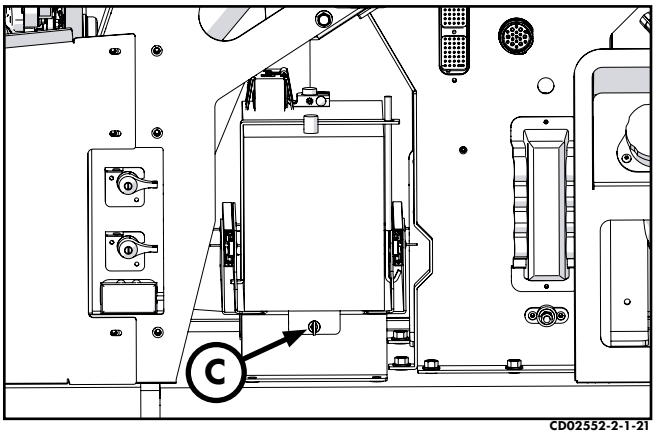
Loosen the lock (**C**) to allow the battery tray to pull out from the machine.



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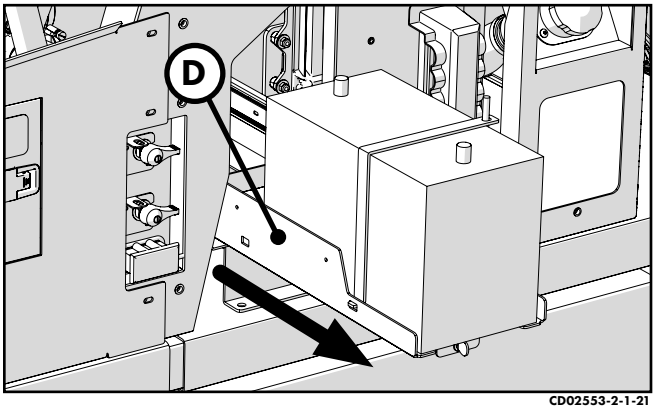

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Disconnect the battery by removing the negative (black) cable first and then slide the battery tray (**D**) out enough to then remove the positive (red) cable. Slide the battery tray out completely.

To remove the battery, remove battery holder and lift the battery out of the tray.

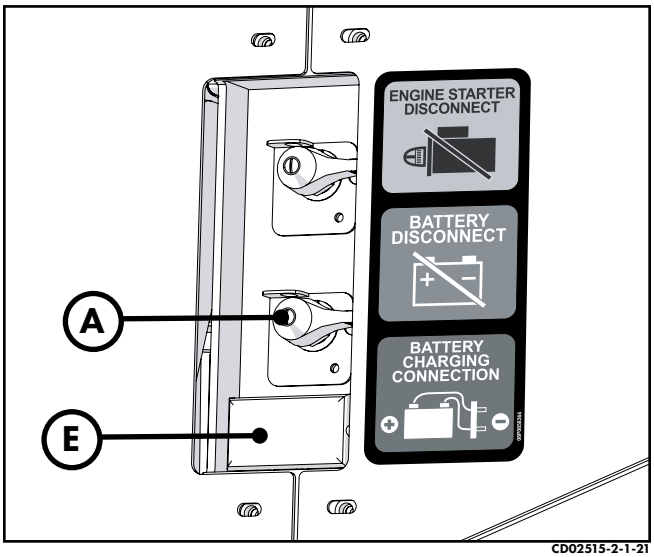
Replace the battery with one that meets all of the requirements listed below.

- Minimum capacity-cold soak at 0 F° (-18 C°) or above
- Engine only-cold cranking amperes: 850 (CCA)
- Engine only-reserve capacity: 135 min (RC)

Battery Charging Connection

The battery can be charged through a remote battery connector (**E**) mounted on the engine side of the machine. Ensure the connector has its dust cover on when not in use.

The plug type for the charging connection is an Anderson Power Products SB175 connector.



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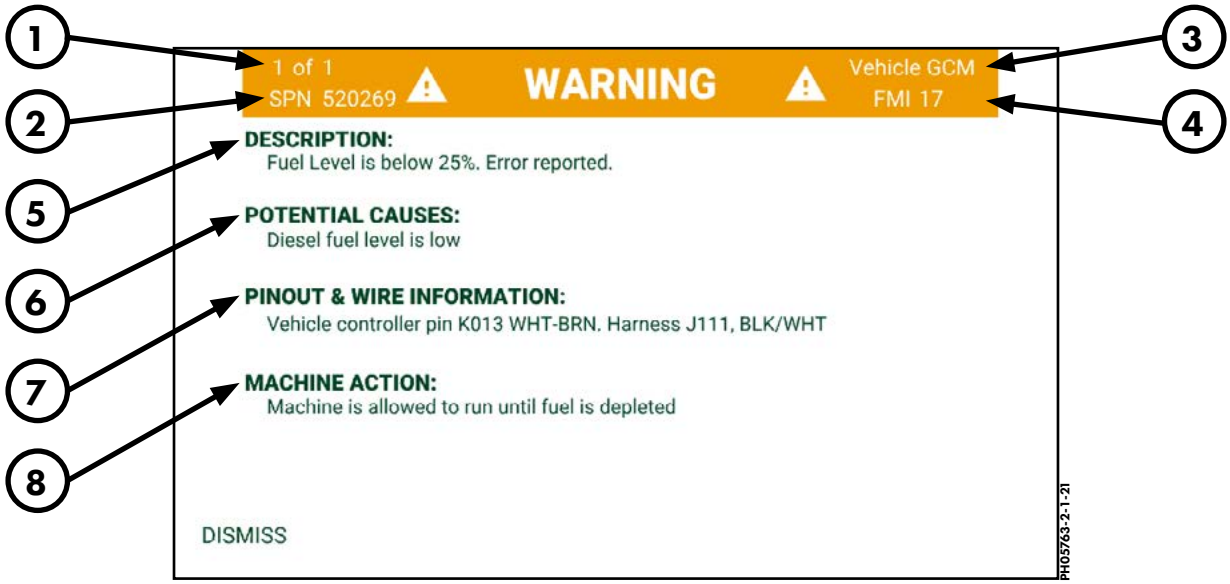
Faults



1) **Fault Views**:

   Viewing faults out of total amount of faults.

2) **SPN (Suspect Parameter Number):**

   Identification number for a particular fault.

3) **Fault Location:**

   Device or location where the fault has occurred.

4) **FMI (Failure Mode Indicator):**

   Severity level given to a fault. Severity level range is (0 to 31), 0 is the most severe and 31 is the least severe.

5) **Fault Description:**

   Description of the active fault.

6) **Symptoms/Causes:**

   Description of possible causes or symptoms of the active fault.

7) **Problem Location/Pinout:**

   Description of the location or electrical pinout where the active fault is located.

8) **Machine Action:**

   Description of the corrective information pertaining to the active fault.

Hydraulic Fluids

The use of proper hydraulic fluid is mandatory to achieve maximum performance and machine life. Use a clean, high quality, anti-wear hydraulic fluid with a viscosity index (VI) of 135 minimum. It should have a maximum viscosity of 500 cSt (2000 SSU) at startup (ambient temperature) and a minimum viscosity of 13 cSt (65 SSU) at the maximum fluid temperature (generally 80°F above ambient). Using hydraulic fluids that do not meet these criteria may cause poor operation and/or damage to the hydraulic components.

The following table specifies the fluid temperature at various viscosities. Temperature rise of the hydraulic fluid can vary from 30°F to about 80° F over the ambient temperature depending on the pressure setting, age of the pump, wind, etc. Mobil Univis N46 hydraulic fluid is installed at our factory. The advantage of this fluid is a wider temperature range, however, this fluid should not be used for continuous operation below 24°F.

Hydraulic Fluids Characteristics

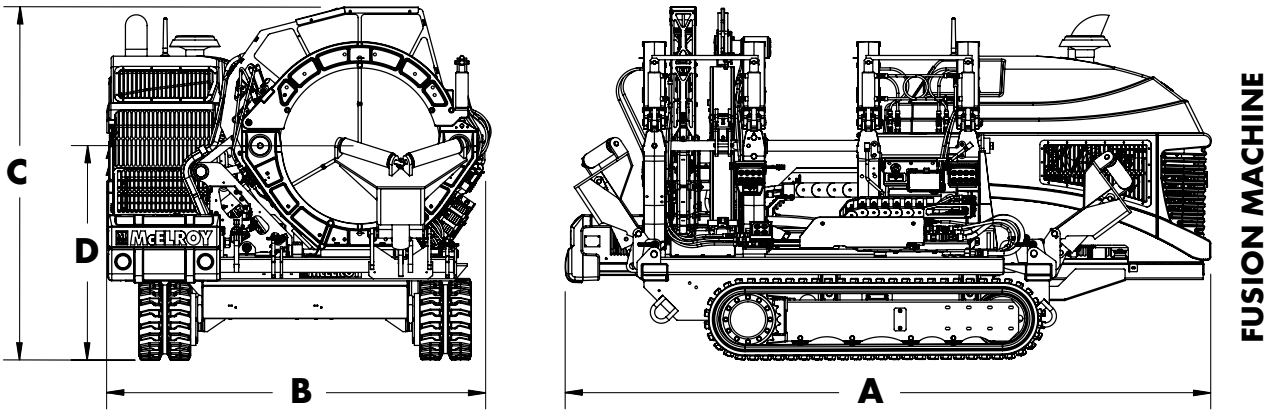
Manufacturer	Fluid Name	cSt 100F	cSt 210F	V.I.	-20F	-10F	0F	10F	30F	50F	70F	90F	110F	130F	150F	Range °F	Range °C
Mobil	DTE 10 Excel 15	15.8	4.1	168	**********	**********	**********	**********	**********	**********	**********	**********	*			-16 - 113	-27 - 45
	DTE 10 Excel 32	32.7	6.6	164				**********	**********	**********	**********	**********	**********	**********	*	12 - 154	-11 - 68
	DTE 10 Excel 46	45.6	8.5	164				**********	**********	**********	**********	**********	**********	**********	**********	23-173	-5 - 78
	DTE 10 Excel 68	68.4	11.2	156					**********	**********	**********	**********	**********	**********	**********	37-196	3 - 91
	Univis N-32	34.9	6.9	164				**********	**********	**********	**********	**********	**********	**********		12-150	-11 - 66
	Univis N-46	46	8.5	163				**********	**********	**********	**********	**********	**********	**********	**********	24-166	-4 - 74
	Univis N-68	73.8	12.1	160					**********	**********	**********	**********	**********	**********	**********	39-193	4 - 89

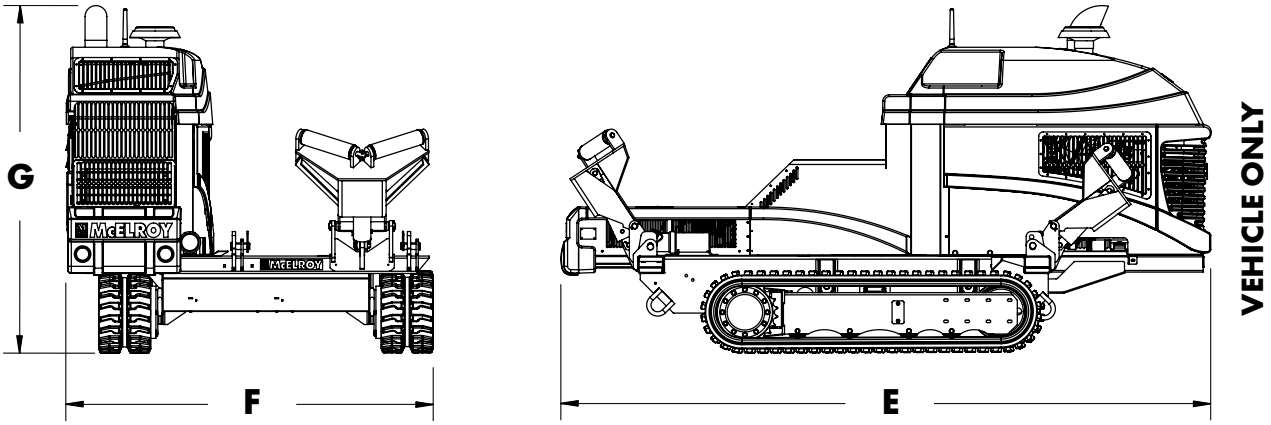
NOTE: This chart is based on pump manufacturer recommendations of 13 to 500 cSt.

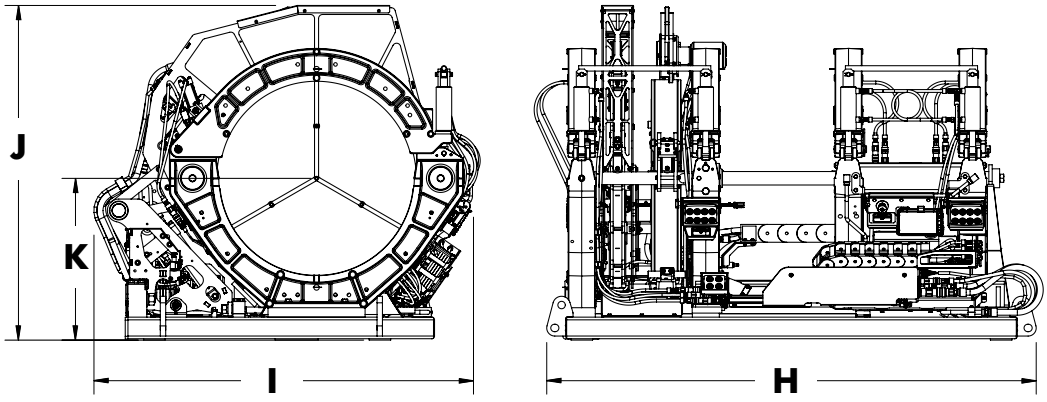
NOTE: Temperatures shown are fluid temperatures. – NOT ambient temperatures.

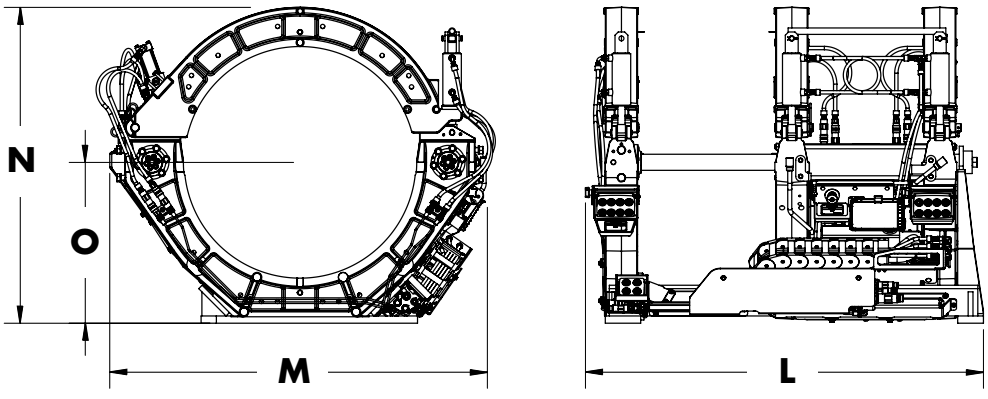
SPECIFICATIONS

TracStar® 630*i*, 900*i* and 1200*i* Specifications









	Part Numbers		AT24P0817487 (630*i*)	AT900P0807623 (900*i*)	AT48P0808167 (1200*i*)
CARRIAGE	**Capabilities**		**8" IPS - 24" OD** (225mm - 630mm)	**12" IPS - 36" OD** (340mm - 900mm)	**16" OD - 48" OD** (450mm - 1200mm)
	Cylinder Force Type - HF, MF		**HF, MF**	**HF, MF**	**HF, MF**
	Medium Force Total Effective Piston Area Maximum Force		**TEPA**: 15.32 sq in (98.8 sq cm), **Max Force:** 45,960 lbs. (20,847 kg)	**TEPA**: 15.32 sq in (98.8 sq cm), **Max Force:** 45,960 lbs. (20,847 kg)	**TEPA**: 14.14 sq in (91.2 sq cm), **Max Force:** 42,420 lbs. (19,241 kg)
	High Force Total Effective Piston Area Maximum Force		**TEPA**: 29.44 sq in (189.9 sq cm), **Max Force:** 88,320 lbs. (40,061 kg)	**TEPA**: 29.44 sq in (189.9 sq cm), **Max Force:** 88,320 lbs. (40,061 kg)	**TEPA**: 31.42 sq in (202.7 sq cm), **Max Force:** 94,260 lbs. (42,755 kg)
WEIGHT	**Machine Weight**		**9,700 lbs.** (4,400 kg)	**10,400 lbs.** (4,718 kg)	**14,850 lbs.** (6,736 kg)
	Shipping Weight (lbs.),(Kg)		**10,125 lbs.** (4,593 kg)	**10,825 lbs.** (4,911 kg)	**15,400 lbs.** (6,985 kg)
	3 Jaw Carriage Weight (lbs.),(Kg)		**1,400 lbs.** (635 kg)	**1,700 lbs.** (772 kg)	**3,500 lbs.** (1,588 kg)
	4 Jaw Carriage Weight (lbs.),(Kg)		**3,600 lbs.** (1,633 kg)	**4,300 lbs.** (1,951 kg)	**7,350 lbs.** (3,334 kg)
	Vehicle Weight		**6,100 lbs.** (2,767 kg)	**6,100 lbs.** (2,767 kg)	**7,500 lbs.** (3,402 kg)
DIMENSIONS	**Machine Length**	**A**	**150"** (3,810 mm)	**150"** (3,810 mm)	**157"** (3,988 mm)
	Machine Width	**B**	**95"** (2,413 mm)	**98.4"** (2,499 mm)	**145"** (3,683 mm)
	Machine Height	**C**	**80"** (2,032 mm)	**85"** (2,159 mm)	**101"** (2,566 mm)
	Machine Centerline Height	**D**	**46.5"** (1,181 mm)	**52.5"** (1,326 mm)	**61"** (1,550 mm)
	Vehicle Length	**E**	**150"** (3,810 mm)	**150"** (3,810 mm)	**157"** (3,988 mm)
	Vehicle Width	**F**	**85"** (2,159 mm)	**85"** (2,159 mm)	**90"** (2,286 mm)
	Vehicle Height	**G**	**80"** (2,032 mm)	**80"** (2,032 mm)	**81"** (2,058 mm)
	4 Jaw Carriage Length	**H**	**91"** (2,311 mm)	**91"** (2,311 mm)	**107"** (2,718 mm)
	4 Jaw Carriage Width	**I**	**68"** (1,727 mm)	**71"** (1,803 mm)	**86"** (2,185 mm)
	4 Jaw Carriage Height	**J**	**51"** (1,295 mm)	**63"** (1,600 mm)	**78"** (1,982 mm)
	4 Jaw Carriage Centerline Height	**K**	**24"** (610 mm)	**30"** (762 mm)	**38"** (966 mm)
	3 Jaw Carriage Length	**L**	**62"** (1,575 mm)	**62"** (1,575 mm)	**69"** (1,753 mm)
	3 Jaw Carriage Width	**M**	**51"** (1,295 mm)	**60"** (1,524 mm)	**75"** (1,905 mm)
	3 Jaw Carriage Height	**N**	**41"** (1,041 mm)	**50"** (1,270 mm)	**66"** (1,677 mm)
	3 Jaw Carriage Centerline Height	**O**	**19"** (483 mm)	**25"** (635 mm)	**34"** (864 mm)
	Shipping Length (min)		**150"** (3,810 mm)	**150"** (3,810 mm)	**157"** (3,988 mm)
	Shipping Width (min)		**95"** (2,413 mm)	**98.4"** (2,499 mm)	**110"** (2,794 mm)
	Shipping Height (min)		**80"** (2,032 mm)	**85"** (2,159 mm)	**101"** (2,566 mm)
ENGINE	**Engine Horse Power**		**74 hp**	**74 hp**	**74 hp**
	Engine Fuel Tank Capacity		**23 gallons** (87 liters)	**23 gallons** (87 liters)	**23 gallons** (87 liters)
	Engine Fuel Type		**Diesel**	**Diesel**	**Diesel**
	Engine Operational Fuel Tank Capacity		**18 hours**	**18 hours**	**12 hours**
	Engine Starting System		**Electric**	**Electric**	**Electric**

HYDRAULIC	**Fusion Pressure**	**3,000 psi** (207 bar)	**3,000 psi** (207 bar)	**3,000 psi** (207 bar)
	Hydraulic System Pressure	**3,250 psi** (224 bar)	**3,250 psi** (224 bar)	**3,250 psi** (224 bar)
	Hydraulic Reservoir Capacity	**23 gallons** (87 liters)	**23 gallons** (87 liters)	**23 gallons** (87 liters)
	Facer Power	**Hydraulic**	**Hydraulic**	**Hydraulic**
MOBILITY	**Mobility Transportation**	**Self-propelled**	**Self-propelled**	**Self-propelled**
	Mobility Type	**Rubber crawler tracks**	**Rubber crawler tracks**	**Rubber crawler tracks**
	Mobility Vehicle Speed	**1.5 mph (2.4 kph)**	**1.5 mph (2.4 kph)**	**1.4 mph (2.3 kph)**
ELECTRICAL	**Electrical Input**	**None, self-contained**	**None, self-contained**	**None, self-contained**
	Heater Power	**10,950 W**	**20,461 W**	**35,000 W**
	Heater Frequency	**50/60 Hz**	**50/60 Hz**	**50/60 Hz**
SOUND LEVELS	**Operator Location at Carriage**	**84 dB(A)**	**84 dB(A)**	**84 dB(A)**
	Operator Location at Vehicle Console	**85 dB(A)**	**85 dB(A)**	**85 dB(A)**

NOTES

Notes

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