MFL40-HM400-INSP/RSP-5

SPECIALTY HAULAGE SOLUTIONS FOR CONSTRUCTION AND MINING

SCHEDULED/SPECIAL INSPECTIONS & RECOMMENDED SUPPORT PARTS

MEGA CORP.®
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MANUAL USAGE

This technical manual only contains information required to support and service the MFL. See the appropriate Maintenance and Operators Manual for specific chassis system information and maintenance procedures. If your system is not covered in this manual please contact MEGA Corp. Product Support Group at:
US toll free: 1-800-345-8889
Direct: 1-505-345-2661 or visit our website at www.megacorpinc.com for more detailed contact information.

Descriptions of the hazards are reviewed in this section. All personnel working on or operating the machine must become familiarized with all the safety messages.

⚠ WARNING

Due to the nature of these processes, ensure that all safety information, warnings and instructions are read and understood before any operation or any maintenance procedures are performed. Some procedures take place with heavy components and at moderate heights, ensure proper safety procedures are maintained when performing these actions. Failure to use and maintain proper safety equipment and procedures will cause injury, death or damage to equipment.

WARNING, CAUTION AND NOTES

The following definitions are found throughout the manual and apply as follows:

⚠ WARNING

Operating procedures and techniques, which could result in personal injury and/or loss of life if not carefully followed.

CAUTION

Operating procedures and techniques, which could result in damage to equipment if not carefully followed.

NOTE

Operating procedures and techniques that are considered essential to emphasize.

USE OF SHALL, WILL, SHOULD AND MAY

Shall and **Will** – Used when application of a procedure is mandatory.

Should – Used when application of a procedure is recommended.

May - Used to indicate an acceptable or suggested means of accomplishment.

SECTION 1
Definitions and Abbreviations

SAFETY MESSAGES

There are several specific safety messages on this machine. The exact location of the hazards and description of the hazards are reviewed in this section. All personnel working on or operating the machine must become familiarized with all the safety messages.

Make sure that all of the safety messages are legible. Clean the safety messages or replace the safety messages if you cannot read the words. Replace the illustrations 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 messages. Loose adhesive will allow the safety messages to detach.

Replace any safety message that is damaged or missing. If a safety message is attached to a part that is replaced, install a new safety message on the replacement part.

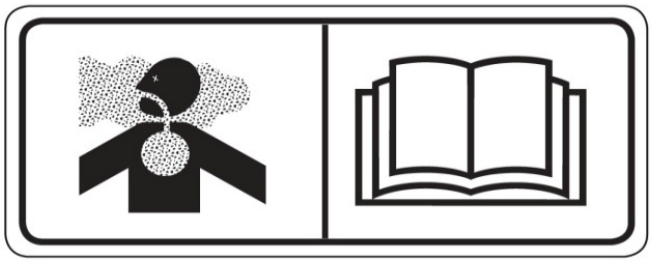
FLAMMABLE MATERIALS (1)

⚠ WARNING

Fuel Tank contains hazardous, flammable liquids and gas. Do not allow smoking, matches, open lights, fire, or sparks within 15 meters (50 feet) of the fuel tank. Failure to follow proper safety procedures will result in serious injury or death.

TOXIC GAS HAZARD (2)

This safety label is located on the side of the tank enclosure and at large access covers.

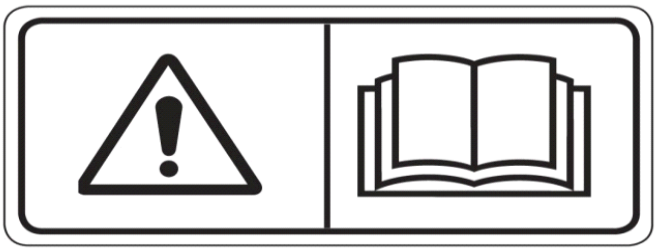


⚠ WARNING

Cutting or welding operation on the inside of the tank can cause the accumulation of toxic gases. Read and understand instructions and warnings in the Maintenance Manual. Failure to provide proper ventilation or breathing apparatus while conducting these operations may result in serious injury or death.

DO NOT OPERATE (3)

This safety label is located in the operator's cab and in the product-dispensing area at the rear of the unit.



⚠ WARNING

Do not operate the machine unless you have read and understand the instructions and warnings in the Operator and Maintenance Manual. Failure to follow instructions or heed the warnings could result in serious injury or death.

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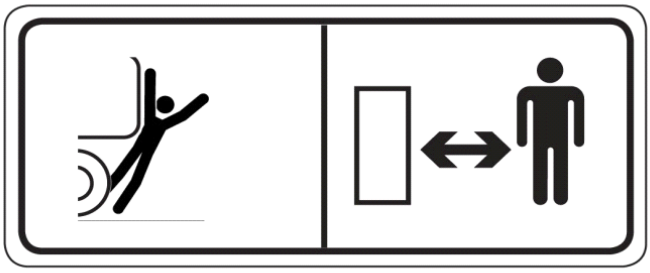
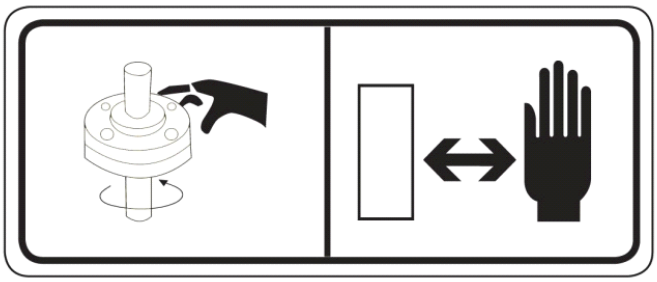
BACKING RUNOVER HAZARD (4)



⚠ WARNING

The vehicle is equipped with a back-up alarm. Alarm must sound when operating this vehicle in reverse. Failure to maintain a clear view in the direction of travel could result in serious injury or death.

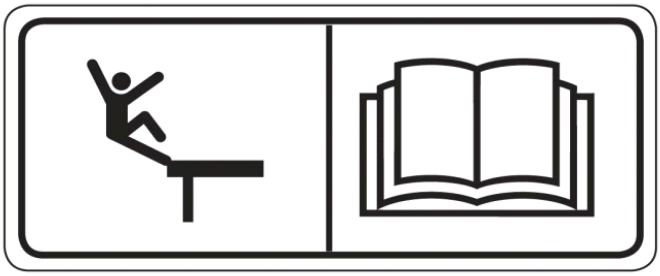
ROTATING SHAFT (6)



⚠ WARNING

Do not place your hand or tools in pump or reel housings while rotating and/or pressure is held within the motor supply hose. Refer to the Operator and Maintenance Manual for the procedures to operate and maintain the pump. Failure to follow proper procedures could result in serious injury.

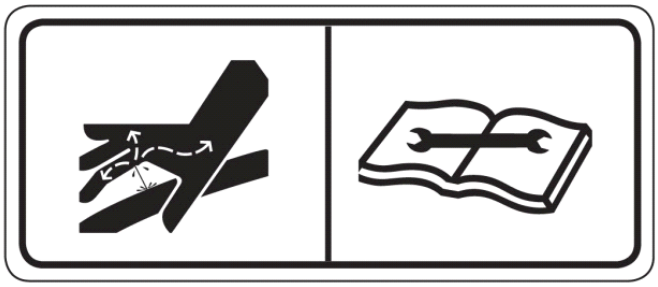
FALL HAZARD (5)



⚠ WARNING

Do not walk on the top of tank without fall arrest PPE. Serious injury or death could occur from a fall.

HIGH PRESSURE MOTOR (7)



⚠ WARNING

Hydraulic motor and supply lines contain oil under high pressure. Improper removal and repair procedures could cause severe injury. To remove or repair, instructions in the Maintenance Manual must be followed.

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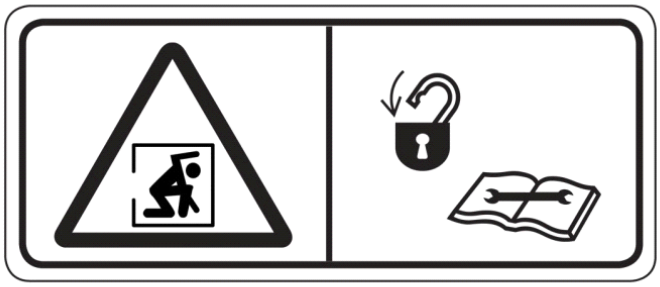
CONFINED SPACE (8)
This safety label is located near the fuel tank access covers and top vent cover.



⚠ WARNING

Do not enter confined spaces without following established site specific procedures. Failure to follow proper safety procedures will result in serious injury or death.

ABBREVIATIONS

AC – Alternating Current
cc – Cubic Centimeters
cSt – centistokes
CCW – Counter Clockwise
CW - Clockwise
fl. oz. – Fluid Ounce
FT - Feet
fl-lbs – Foot-pounds of torque
FPM – Feet Per Minute
GPM – Gallons Per Minute
IN/SQ FT – Inches per Square Feet
KM-H – Kilometers Per Hour
Kg – kilograms
Kpa - Kilopascals
l – liters
lpm – Liters per minute
LT – Left as viewed from the operator's position facing forward
m - meters
MPH – Miles Per Hour
MFL - Mega Fuel & Lube
Nm – Newton meters of torque
psi - pounds per square inch
psig - pounds per square inch gage
RPM – Revolutions Per Minute
RT – Right as viewed from the operator's position facing forward
SQ FT – Square Feet
VDC – Volts, Direct Current

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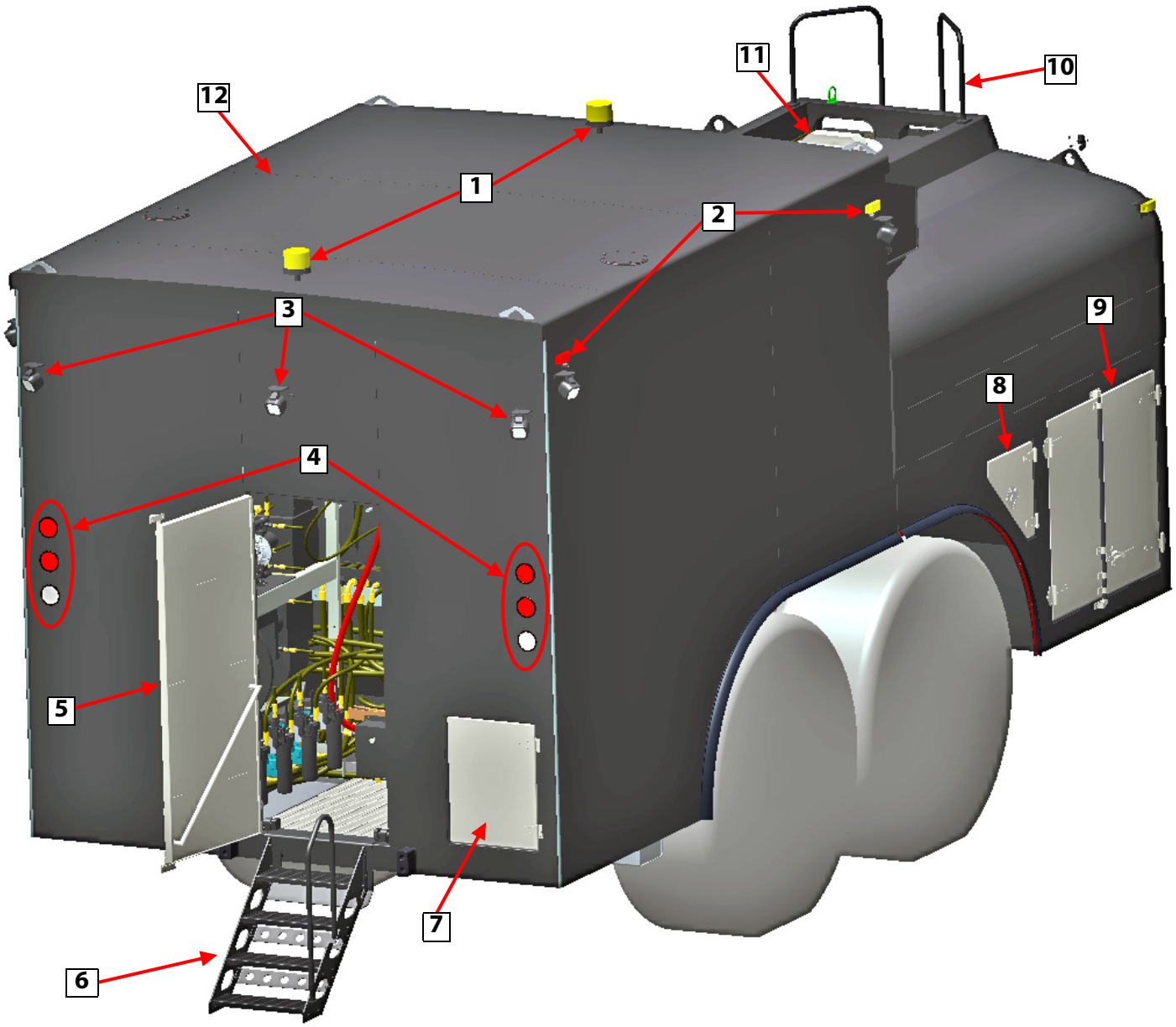
MFL40 GENERAL OVERVIEW (TYPICAL)



1	Flashing Beacons
2	LED Clearance Lights
3	LED Scene Lighting
4	LED Stop, Tail, & Turn Lights
5	Modular Enclosure Door
6	Fold-In Ladder
7	Central Service Station Door
8	Storage Compartment
9	RT Forward Component Cabinet
10	Ladder and Hand Rails
11	Fuel Tank Manhole and Pressure Relief
12	Modular Enclosure Removable Roof

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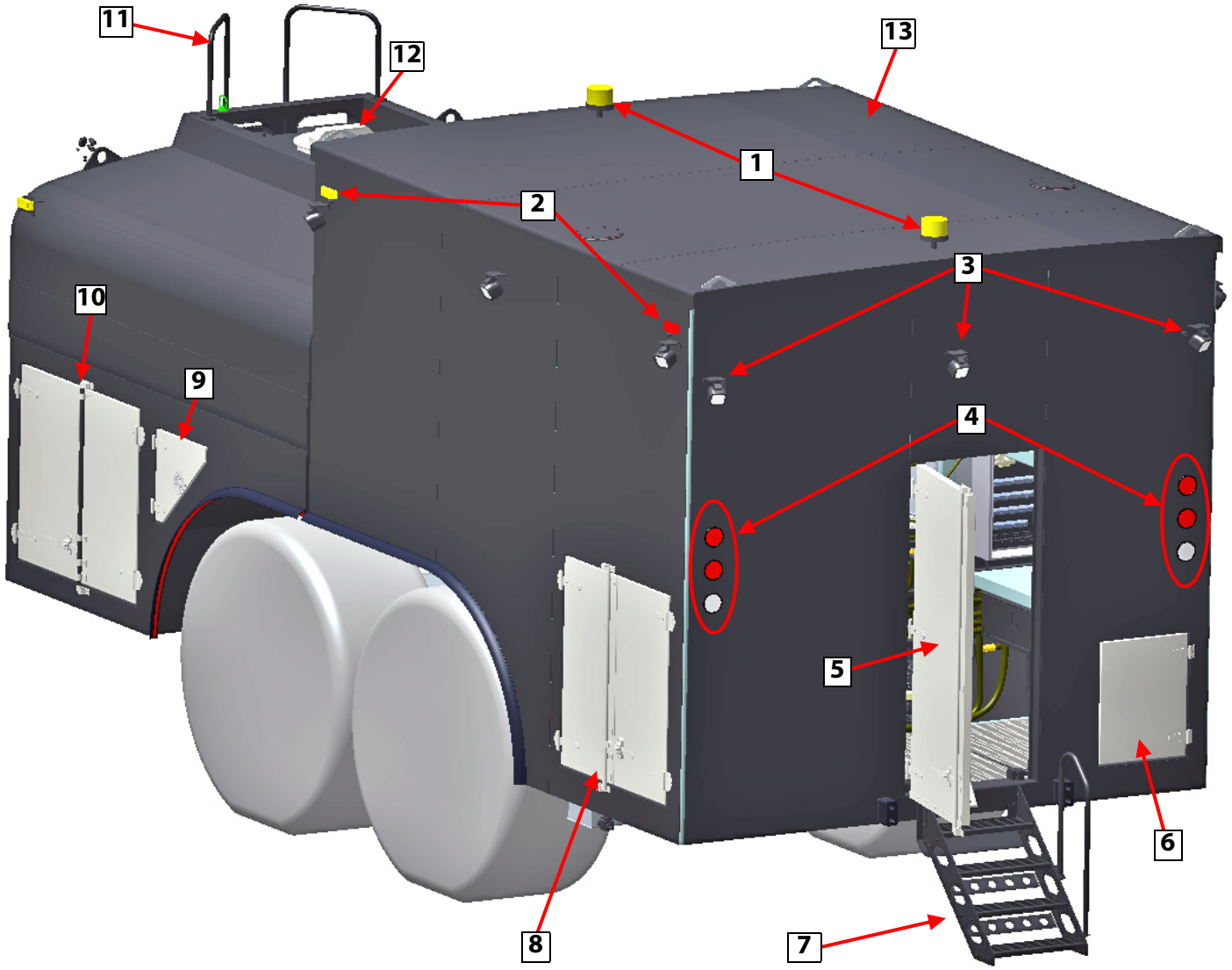

1	Flashing Beacons
2	LED Clearance Lights
3	LED Scene Lighting
4	LED Stop, Tail, & Turn Lights
5	Modular Enclosure Door
6	Central Service Station Door
7	Fold-In Ladder
8	Hose Reel Dispensing Compartment
9	Storage Compartment
10	LT Forward Component Cabinet
11	Ladder and Hand Rails
12	Fuel Tank Manhole and Pressure Relief
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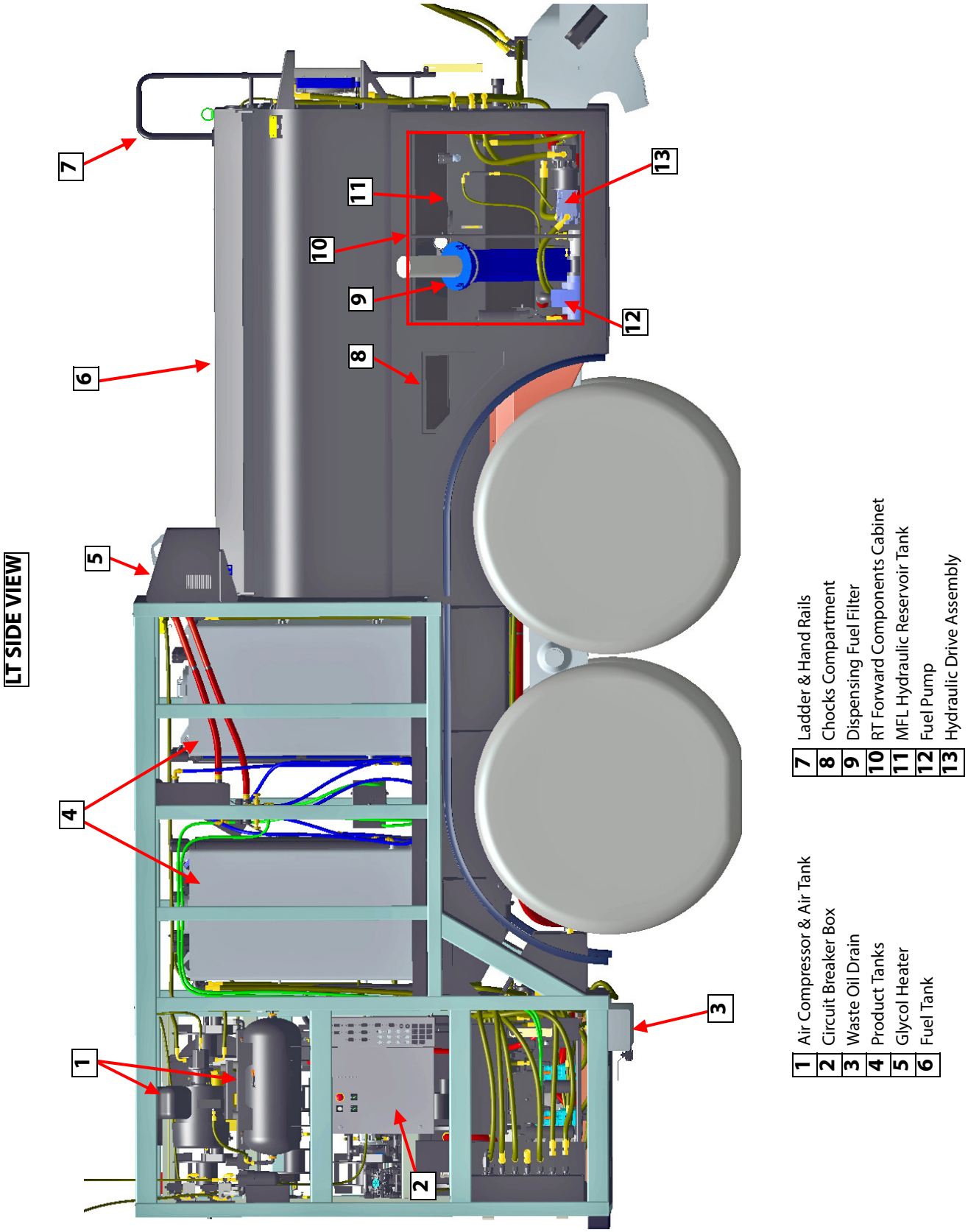

1	Air Compressor & Air Tank
2	Circuit Breaker Box
3	Waste Oil Drain
4	Product Tanks
5	Glycol Heater
6	Fuel Tank

7	Ladder & Hand Rails
8	Chocks Compartment
9	Dispensing Fuel Filter
10	RT Forward Components Cabinet
11	MFL Hydraulic Reservoir Tank
12	Fuel Pump
13	Hydraulic Drive Assembly

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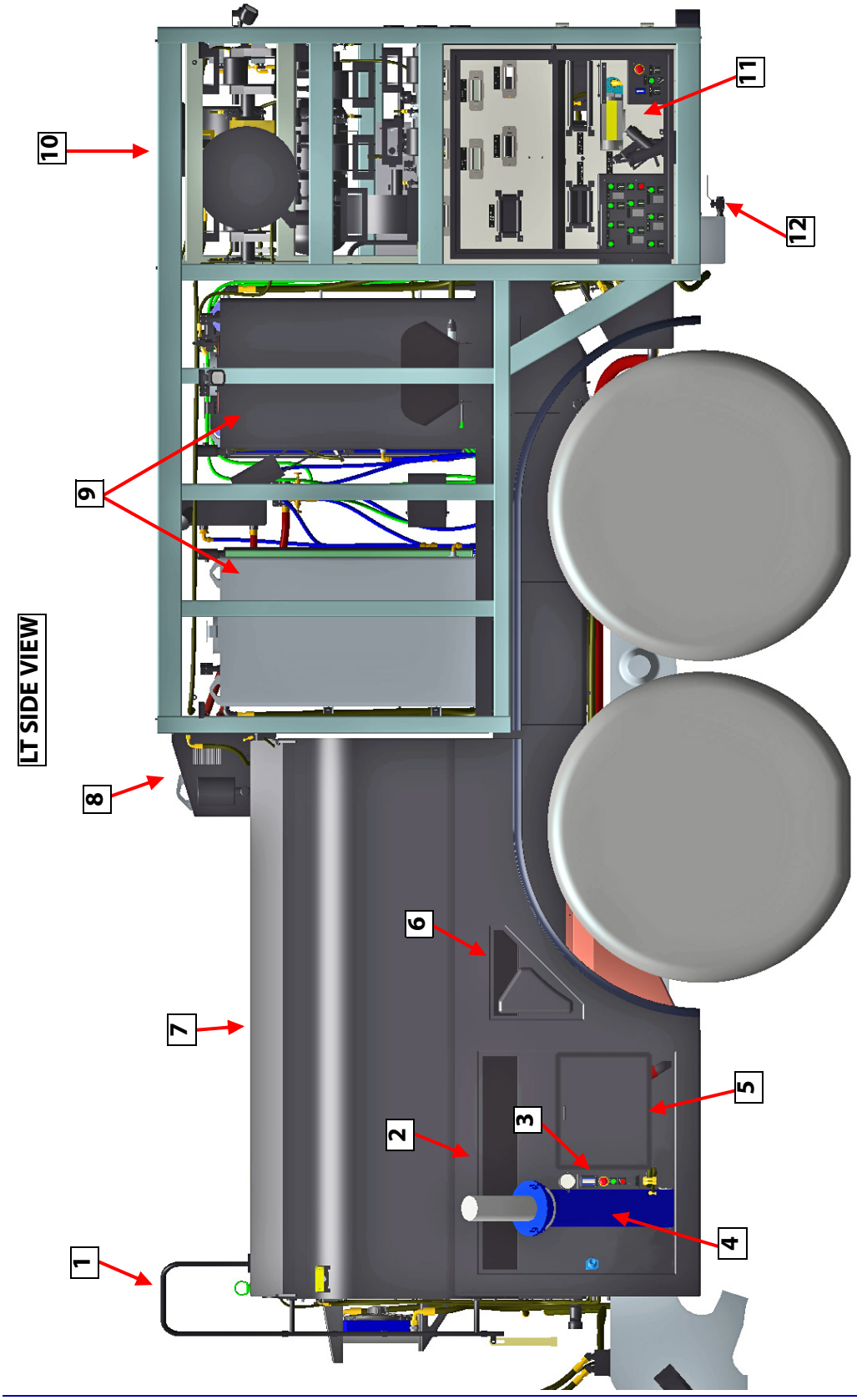

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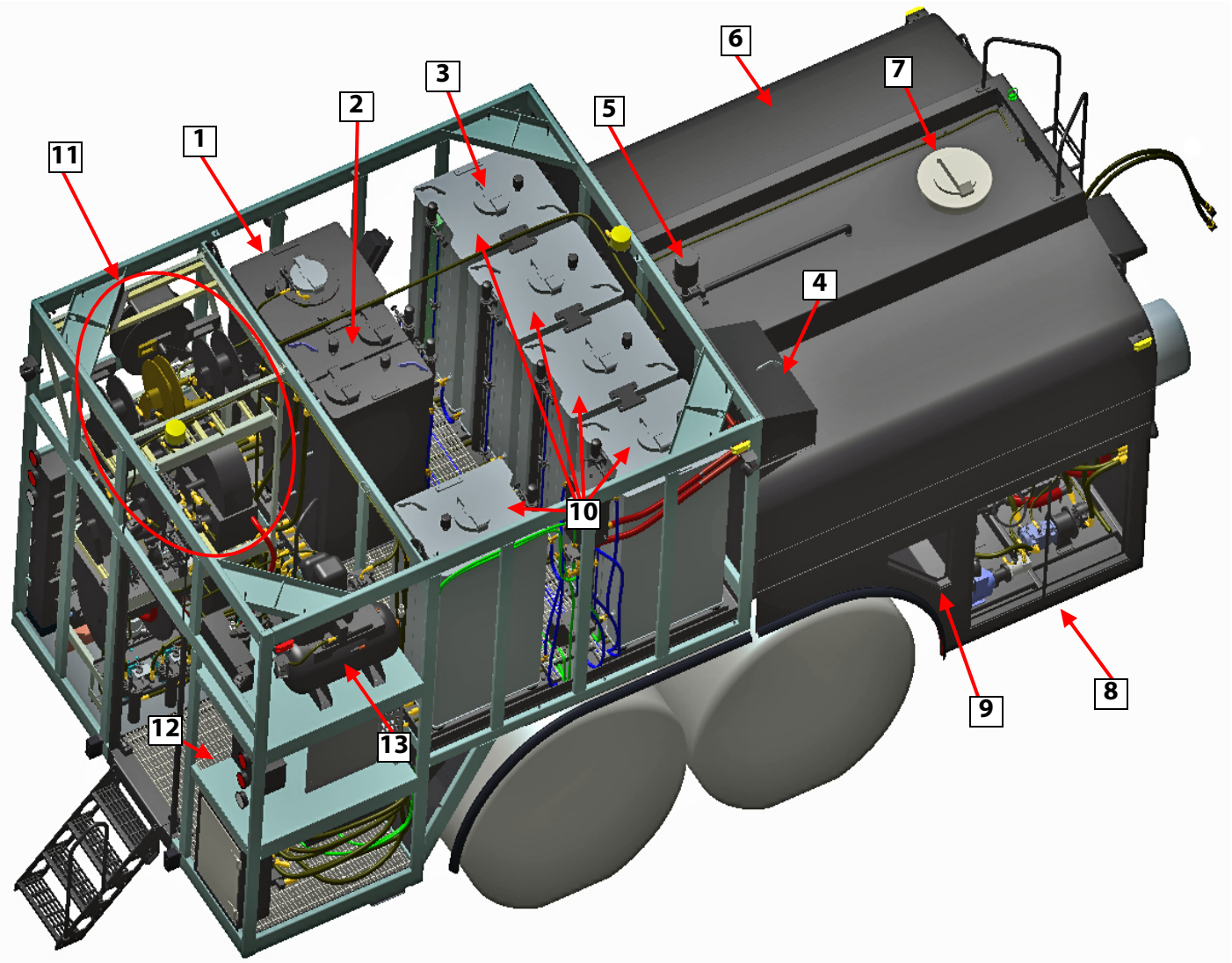
OVERHEAD VIEW



1	Grease Tank
2	New Coolant Tank
3	Product Tank Access Cover
4	Glycol Heater
5	Desiccant Vent & Filter
6	Diesel Fuel Tank
7	Manhole Access
8	RT Forward Component Cabinet
9	Storage Compartment
10	Removable Product Tanks
11	Hose Reel/Filter/Pump Racks
12	Workbench & Storage Drawer
13	Compressor & Air Tank

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SECTION 2
Scheduled Maintenance Inspections

Contents

DESCRIPTION

This section establishes scheduled maintenance inspections of the installed MFL at the designated frequencies. Performing these inspections will identify potential system discrepancies and allow preventative maintenance to be performed before a component or system is rendered totally inoperative.

Users may consider increasing the frequency of scheduled inspections for severe duty applications and harsh environmental conditions.

		FREQUENCY				
STEP	MFL STRUCTURE	250 HRS (BI-WEEKLY)	500 HRS (MONTHLY)	1,000 HRS (QUARTERLY)	2,500 HRS (SEMI-ANNUALLY)	5,000 HRS (ANNUALLY)
1	Visually inspect tank exterior for damage and evidence of leaks. Repair as required.	X				
2	Check all lights (turn signal, brake, strobe, back-up, parking, clearance, and work) for proper operation. Replace lights as required.	X				
3	Check body pad and guides for cracks, security and damage. Repair or replace as required.				X	
4	Check filler port for security and damage. Repair as required. Inspect the desiccant vent and the breather filter for clogging.	X				
5	Hose Reel Cabinet, Storage Cabinets, doors, and hardware for security and damage. Check door seals for wear and tearing. Replace if required.		X			
6	**(If Equipped)** Oil Cooler, hosing, and cabling for damage and security.		X			
7	Check upper and lower decks for obvious leaks. All harnesses and hosing for damage, security, and leaks.		X			
8	Inspect the tank and visual sight gauges for damage, security of mounting, and leaks. Check hosing, fittings, electrical harnesses, access covers, and breather filters for any damage and leaks.		X			
9	The drive line support bearing on the underside of the MFL frame must be manually greased.			X		

SECTION 2
Scheduled Maintenance Inspections

		FREQUENCY				
STEP	**CONTROL SYSTEM**	**250 HRS (BI-WEEKLY)**	**500 HRS (MONTHLY)**	**1,000 HRS (QUARTERLY)**	**2,500 HRS (SEMI-ANNUALLY)**	**5,000 HRS (ANNUALLY)**
1	Check all electrical cables for security and damage.	X				
2	Disconnect, clean and coat Deutsch connector junctions with Dielectric grease					X
3	Check all hydraulic solenoids and hosing for security and leaks.	X				
4	Check all operator control functions for proper operation. Repair and replace control components as required.		X			
5	Check hose reels for security, mounting, and leaks.	X				
6	Unreel the entire length of hoses, pressurize hoses and check hoses for security, wear, and leaks.			X		
7	For the spring rewind hose reels, lubricate the air motor with a few drops of a detergent SAE #10 automotive oil directed into one of the air motor ports every 3-4 months for normal operation. Lubricate more frequently if hose reel is used in severe conditions or used with high frequency.			X		
8	Unreel grounding wire and check for condition & security.			X		
9	Inspect the cab control box, mounting, and electrical harness for damage and security.		X			
10	Inspect all compartment lighting and controls for damage and security.		X			

		FREQUENCY				
STEP	**FUEL NOZZLES**	**250 HRS (BI-WEEKLY)**	**500 HRS (MONTHLY)**	**1,000 HRS (QUARTERLY)**	**2,500 HRS (SEMI-ANNUALLY)**	**5,000 HRS (ANNUALLY)**
1	Inspect the nozzle spouts for wear, deformation, and leakage. Check for broken trigger springs. Replace as required.	X				
2	Verify that the splash-fill nozzle has a minimum flow rate of 5 GPM. Verify that the Wiggins fast-fill nozzle has a minimum flow rate of 25 GPM. Perform shut-off test.			X		
3	Verify that the nozzle spout retaining screws are present and tight. Tighten if necessary.	X				
4	Lubricate the nozzle with a few drops of oil where the main valve stem extends through the nozzle body. **Do not use grease**.		X			
5	Check vapor reservoir to ensure that its quantity is not above the sight gauge level. If so, drain as required.		X			

SECTION 2
Scheduled Maintenance Inspections

		FREQUENCY				
STEP	FUEL METER	250 HRS (BI-WEEKLY)	500 HRS (MONTHLY)	1,000 HRS (QUARTERLY)	2,500 HRS (SEMI-ANNUALLY)	5,000 HRS (ANNUALLY)
1	Remove and thoroughly flush the fuel meter with a compatible liquid. To flush the meter, remove the drain plug on the front and rear covers and flush the product from the front and rear covers. Re-fill the meter immediately with a compatible liquid or oil misting.				X	
2	Ensure that all fasteners and bolts are torqued to the appropriate torque. Inspect all fasteners to ensure that they are not bent, rusted, or have pulled threads.		X			

		FREQUENCY				
STEP	FUEL PUMPS AND FILTERS	250 HRS (BI-WEEKLY)	500 HRS (MONTHLY)	1,000 HRS (QUARTERLY)	2,500 HRS (SEMI-ANNUALLY)	5,000 HRS (ANNUALLY)
1	Lubricate the ball bearings and the hydraulic motor couplings (if equipped) every three months at minimum as follows: A. Remove the grease relief fittings from the bearing covers or hydraulic motor adapter B. Apply grease with a hand gun until grease begins to escape from the grease relief fitting port C. Replace the grease relief fittings. **DO NOT** over-grease pump bearings. Over-greasing will cause seal failure, and under-greasing will cause bearing failure. Do not use auto lubrication.			X		
2	Inspect and clean pump strainers to avoid pump starvation.		X			
3	Disassemble the pump as detailed in the MFT Maintenance Manual. Clean pump shaft thoroughly and inspect for nicks and burrs. Inspect all components for damage and wear. Replace as required.					X
4	Inspect fuel on-loading and dispensing filter gauges while flowing fuel. If the gauges read greater than 22 PSI, replace the filters.	X				

SECTION 2
Scheduled Maintenance Inspections

		FREQUENCY				
STEP	**PRODUCT DISPENSING GUNS**	**250 HRS (BI-WEEKLY)**	**500 HRS (MONTHLY)**	**1,000 HRS (QUARTERLY)**	**2,500 HRS (SEMI-ANNUALLY)**	**5,000 HRS (ANNUALLY)**
1	Check for damage, security, and leaks. Ensure that the hose "stop ball" is positioned properly and is secured.		**X**			
2	**(Electrical Digital Nozzles)** Replace battery.					**X**

		FREQUENCY				
STEP	**PRODUCT DISPENSING PUMPS AND FILTERS**	**250 HRS (BI-WEEKLY)**	**500 HRS (MONTHLY)**	**1,000 HRS (QUARTERLY)**	**2,500 HRS (SEMI-ANNUALLY)**	**5,000 HRS (ANNUALLY)**
1	Inspect drive and pump assemblies for damage, security, and leaks. Inspect hose connections and couplings for security and leaks.		**X**			
2	Check the filler assemblies and the solenoid banks for damage, security, and leaks. Inspect all harnesses for obvious damage and chaffing.	**X**				
3	Inspect the diaphragm pump for damage, security, and leaks		**X**			

		FREQUENCY				
STEP	**CENTRAL SERVICE STATION**	**250 HRS (BI-WEEKLY)**	**500 HRS (MONTHLY)**	**1,000 HRS (QUARTERLY)**	**2,500 HRS (SEMI-ANNUALLY)**	**5,000 HRS (ANNUALLY)**
1	Inspect all ball valve and couplings for damage, security, and leaks.		**X**			
2	Check level gauges, indicator lights, and compartment lights for damage and security.		**X**			

SECTION 2
Scheduled Maintenance Inspections

		FREQUENCY				
STEP	AIR COMPRESSOR	BI-WEEKLY (250 HRS)	MONTHLY (500 HRS)	QUARTERLY (1000 HRS)	SEMI-ANNUAL (2500 HRS)	ANNUALLY (5000 HRS)
1	Check oil level. Oil level must be at the top of the red circle of sight-glass. The minimum oil level is at the lower part of the red circle.	X				
2	Drain condensate from air receiver or pulsation damper.	X				
2	Test the safety valve using the procedures outlined in the MFL Maintenance Manual.			X		
3	Inspect air filter for damage and dirt. Clean the filter chamber and cover with a clean damp cloth. Replace yearly or as required.			X		
4	Change blow-off silencer, if equipped. Change oil.		X			
5	Replace check valve or unloader. Replace valve discs.					X

		FREQUENCY				
STEP	HEATING SYSTEM	BI-WEEKLY (250 HRS)	MONTHLY (500 HRS)	QUARTERLY (1000 HRS)	SEMI-ANNUAL (2500 HRS)	ANNUALLY (5000 HRS)
1	Check exterior heating packages and hosing for damage, security, and leaks.		X			
2	Remove the heating unit cover. Inspect all components, wiring, and hosing for damage, security, and chaffing.			X		
3	Replace heating package fuel filter.			X		
4	Inspect product tank heating loops and associated hosing for damage and leaks.		X			
5	Inspect glycol expansion tank for damage, security, leaks, and servicing. Ensure system is purged of air.		X			
6	Inspect compartment heat exchangers and heating elements for security and leaks. Check thermostats for damage and security.		X			

SECTION 2
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SECTION 3
Recommended Support Parts

Contents

DESCRIPTION

This section contains a listing of recommended support parts that should be available in the supply warehouse. The tables are categorized by specific sub-system of the MFL. Ensure MFL serial numbers and actual component part numbers are checked before ordering any parts. Once parts are issued from warehouse stock ensure depleted quantities are replenished to keep the recommended support parts package at 100%.

Several support parts are designated as a "**Quick Change Component**" (**QCC**) and should be used to minimize repair time of an operational MFL. Broken assemblies can be repaired by maintenance repair facilities and later returned to the supply warehouse as a serviceable part.

A. STRUCTURE AND LIGHTS

PART DESCRIPTION	PART NO.	QTY
1. Exterior Work Lights	305305	2
2. Light, Interior, LED Auxiliary, 750 Lumens	307532	2
3. Light, LED Clearance, Red (Small)	306116	2
4. Light, LED Clearance, Yellow (Small)	306117	2
5. Light, LED Brake/Tail, Red	305049	1
6. Pigtail, LED Brake/Tail Light	305377	1
7. Grommet, LED Brake/Tail Light	305376	1
8. Beacon, Amber	307296	1
9. Grounding Reel ****QCC**	306828	1

B. PRODUCT TANKS

PART DESCRIPTION	PART NO.	QTY
1. Switch, Product Level, AVX6	307250	1
2. Sight Glass, Product Level	307247	1
3. Breather, Product Tank	307269	6
4. Rubber Cushion, Product Tank	049420-01	4
5. Vent-fill, 10 inch, CST ****QCC**	307270	
6. Manhole, 20 inch, Vented ****QCC**	306833	
7. Rubber Gasket, Grease Tank	049420-03	1
8. Rubber Cushion, Grease Tank	049420-01	4
9. Gasket, Cover Plate, Grease Pump	049423	1
10. Pressure Differential Gauge	307505	1
11. Tank Lever Float		1

SECTION 3
Recommended Support Parts

C. Control System Parts Group

PART DESCRIPTION	PART NO.	QTY
1. Fuel Level Indicator (Large)	303821	1
2. Fuel Level Indicator (Small)	305967	1
3. Fuel Level Sensor **(if equipped)**	303822	1
4. Button, Push, Green (On/Off)	307369	3
5. Switch, Reel **(if equipped)**		3
6. Dial, 2 Position (Lights, Flow Selector)	307374	2
7. Dial, 3 Position	307372	2
8. Switch, Mushroom, Emergency Shut-Off	307373	1
9. Pressure Sensor (air, product dispensing, & fuel system)		1
10. Solenoid Driver Card	305078	1
11. Power Contactor, 60 A, 24 VDC	307367	1
12. Alarm, Enunciator	305574	1
13. Emergency Shut Off Valve, Fuel ****QCC**	304513	1
14. Gasket, Inlet, Emergency Shut Off Valve	306744	2
15. Jet Sensor, Fuel Level, 3/4 inch NPT **(if equipped)**	306853	1
16. Shut-off Valve		1

D. Air Compressor Parts Group

PART DESCRIPTION	PART NO.	QTY
1. Regulator, Air	306822	1
2. Motor, Hydraulic Air Compressor ****QCC**	306823	1
3. Adapter, Hydraulic Air Compressor	306854	1
4. Solenoid PVEH, 24 VDC, Deutsch	307115	1
5. Pressure Sensor (air, product dispensing, & fuel system)		1

E. Hose Reel Systems

PART DESCRIPTION	PART NO.	QTY
1. Hose Reel, Fuel, 1.5 inch, Complete Assembly ****QCC**	307255	1
2. Hose Reel, Fuel, 1 inch, Complete Assembly ****QCC**	307256	1
3. Hose Reel, Waste, 1 inch, Complete Assembly ****QCC**	307257	1
4. Hose Reel, Oil, 1/2 inch ****QCC**	307258	1
5. Hose Reel (Manual Hydraulic Valve)	306765	1
6. Complete 1 inch Fuel Hose w/Ends	049703-1	1
7. Complete 1.5 inch Fuel Hose w/Ends	049704-1	1
8. Nozzle, Fuel, 1.5 inch NPT ****QCC**	301067	1
9. Roller, Long, 1.5 - 2"	307291	1
10. Roller, Short, 1.5 - 2"	307292	1
11. Roller, Round, 2.5" Hose	307644	1
12. Receiver, On-load	307620	1
13. Nozzle, Fuel, 1" Splash Fill ****QCC**	306907	1
14. Swivel, Fuel, 1 inch, Splash Fill Nozzle	306937	1
15. Pressure Reducing Valve PRV12-10 ****QCC**	307106	

SECTION 3
Recommended Support Parts

E. HOSE REEL SYSTEMS		
16. Valve SV10-34-05	307228	
17. Coil R16-24D-20W-DE	307229	
18. Valve SV10-24-02	307230	

F. PRODUCT DISPENSING SYSTEM		
PART DESCRIPTION	**PART NO.**	**QTY**
1. Jet Sensor, Fuel Level, 3/4 inch NPT **(if equipped)**	306853	1
2. Shut-off Valve		1
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

G. HYDRAULIC SYSTEM PARTS GROUP		
PART DESCRIPTION	**PART NO.**	**QTY**
1. Rubber Gasket, Access Cover, Hydraulic Oil Reservoir	049228-08	1
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

H. FUEL PUMP SYSTEM		
PART DESCRIPTION	**PART NO.**	**QTY**
1. Drive Motor, Fuel Pump	307118	1
2. Pump, Fuel, 125 GPM	306824	1
3. Coupling, Hydraulic Motor, (Fuel Pump)	306825	2
4. Inlet Screen/Strainer, Fuel Pump	307462	2
5. Gasket, Fuel Pump Strainer	307461	2
6. Safety Valve, Fuel	304513	1
7. Valve, 3-way	307430	1

SECTION 3
Recommended Support Parts

I. FUEL FILTRATION SYSTEM		
PART DESCRIPTION	**PART NO.**	**QTY**
1. Filter, 30 Micron	307429	24
2. Filter, 10 Micron **(if equipped)**	307244	8
3. Desiccant Vacuum Filter	307463	8
4.		
5.		

If your system is not covered in this manual or are having difficulties locating the necessary components please contact MEGA Corp. Product Support Group at:
US Toll Free: 1-800-345-8889 or
Direct: 1-505-345-2661 or visit our website at www.megacorpinc.com for more detailed contact information.

SECTION 3
Recommended Support Parts