



MMP4-CUMMINS-B3.3T-OPS-1

SPECIALTY HAULAGE SOLUTIONS FOR CONSTRUCTION AND MINING

Operators Manual



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3 Apr 2014

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Definitions and Abbreviations

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MANUAL USAGE

This technical manual only contains information required to safely operate the MMP4 powered by a B3.3T Cummins diesel engine. See the QSB3.3 CM2150 and B3.3 Operation and Maintenance Manual for specific engine system information and maintenance procedures. If your system is not covered in this manual please contact MEGA Corp. Product Support at: 1-800-345-8889 or visit our web site at www.megacorpinc.com for more detailed 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

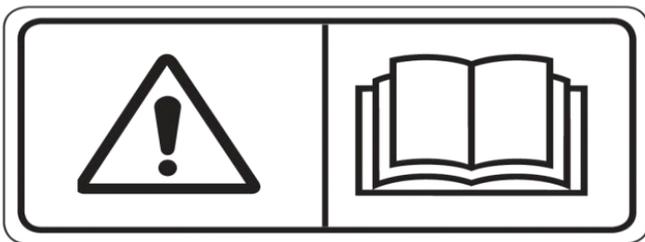
SAFETY MESSAGES

There are several specific safety messages in this section that are applicable to the MMP4. These hazards are reviewed in this section. All personnel working on or operating the machine must become familiarized with all the safety messages.

(Applicable to safety labels on machine) 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.

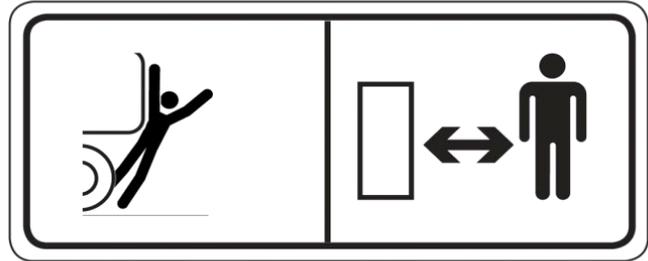
DO NOT OPERATE (1)



WARNING

Do not open this control box unless you 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.

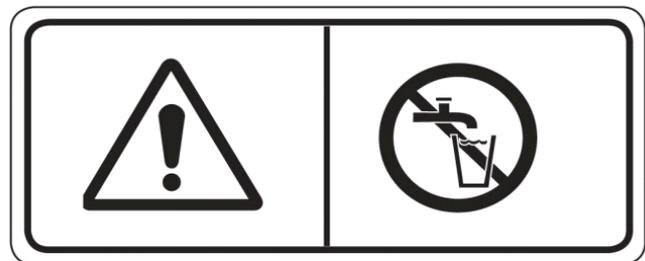
BACKING RUNOVER HAZARD (2)



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.

NON-POTABLE (3)



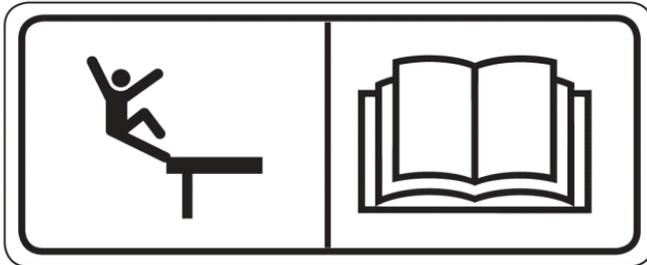
WARNING

Water held within the MMP4 is not potable. Do not use the MMP4 for transport of water intended for human or animal consumption, as serious injury or death may result.

SECTION 1

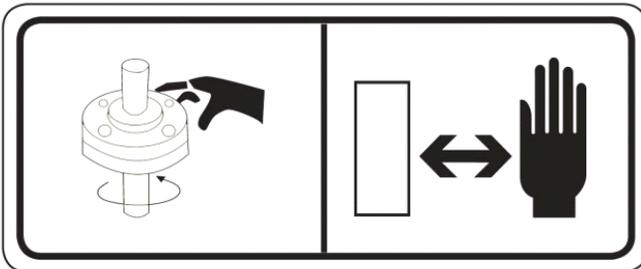
Definitions and Abbreviations

FALL HAZARD (4)

**⚠ WARNING**

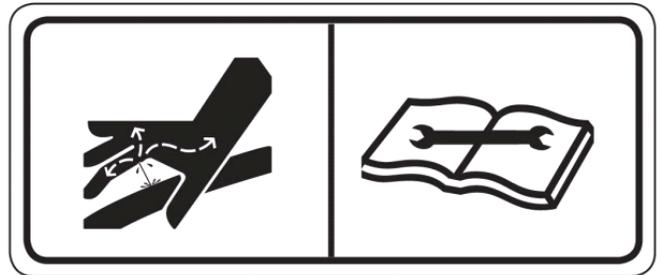
Do not walk on the top of tank without fall arrest PPE. Serious injury or death could occur from a fall.

ROTATING SHAFT (5)

**⚠ WARNING**

Do not place your hand or tools within pump bell while pump is rotating and/or pressure 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.

HIGH PRESSURE MOTOR (6)

**⚠ 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.

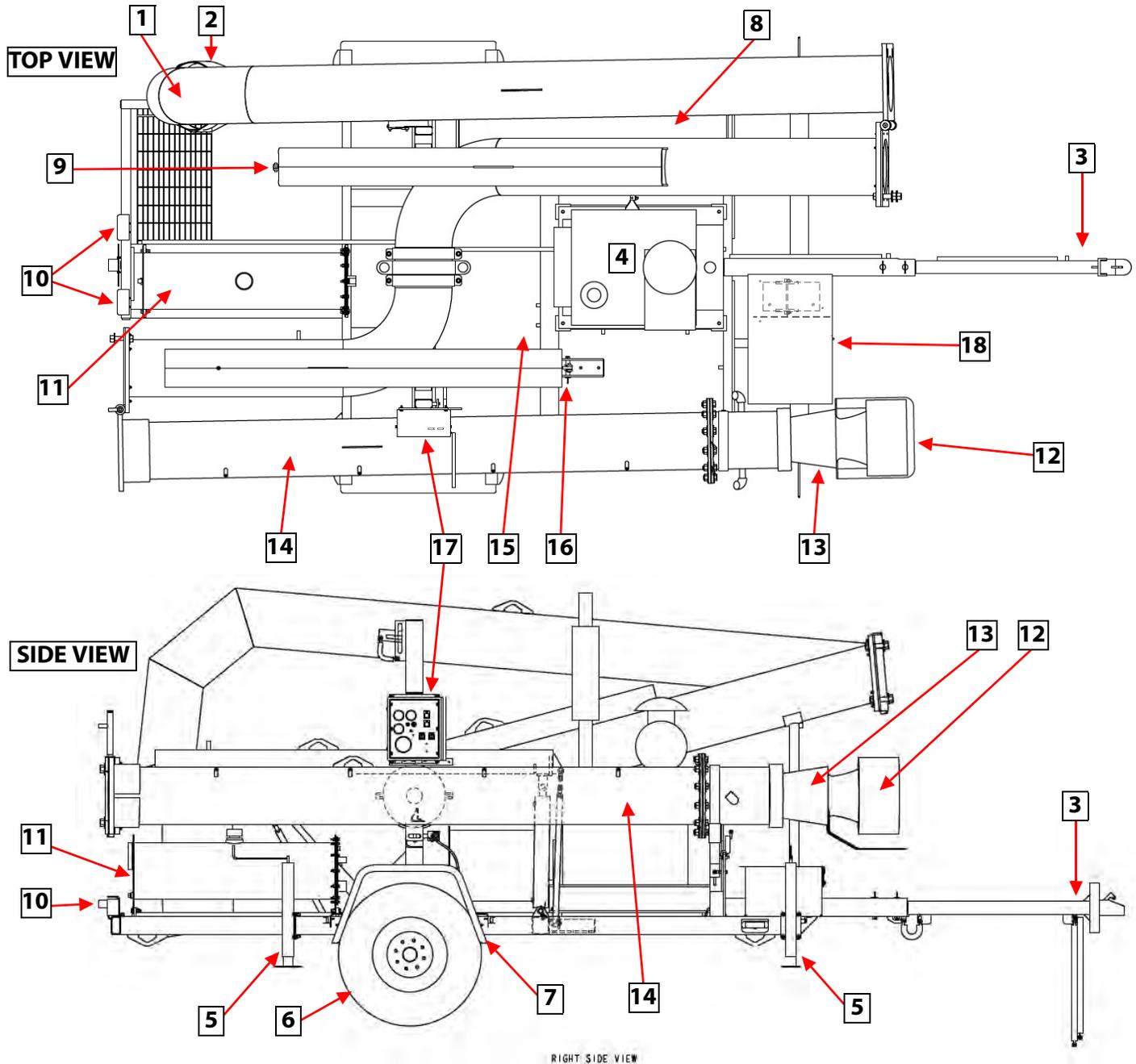
ABBREVIATIONS

cc - Cubic Centimeters
 CCW - Counter Clockwise
 CW - Clockwise
 fl. oz. - Fluid Ounce
 FT - Feet
 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
 MMP - MEGA Mobile Pump
 Nm - Newton meters of torque
 psi - pounds per square inch
 RPM - Revolutions Per Minute
 RT - Right as viewed from the operator's position facing forward
 SQ FT - Square Feet
 VDC - Volts, Direct Current

SECTION 1

Definitions and Abbreviations

MMP4 GENERAL OVERVIEW (TYPICAL)



RIGHT SIDE VIEW

- | | |
|--|--|
| <ul style="list-style-type: none"> 1 DISCHARGE BOOM 2 VACUUM BREAK 3 TOW HITCH 4 CUMMINS B3.3T DIESEL ENGINE 5 LANDING GEAR (QTY 3) 6 TIRE AND RIM ASSEMBLY 7 FENDER 8 50 GAL. DIESEL FUEL TANK 9 DISCHARGE BOOM LIFT CYLINDER | <ul style="list-style-type: none"> 10 TAIL LIGHTS 11 HYDRAULIC OIL TANK 12 INLET DEBRIS SCREEN AND SAFETY CHAIN 13 AXIAL WATER PUMP 14 INLET BOOM 15 HYDRAULIC CONTROL VALVE 16 INLET BOOM CYLINDER 17 ENGINE CONTROL BOX 18 BATTERY BOX |
|--|--|

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MMP4 DESCRIPTION AND USAGE



The MMP4 is designed to be towed behind a typical ¾ ton or 1 ton capacity pickup truck. The MMP4 can be transported over the road to just about any water holding pond area used for filling water distribution equipment. The MMP4 can be set up, made ready for operation, and reconfigured for transport by 1 person using simple hand tools.

The MMP4's primary usage is to lift water from a water holding pond and discharge the water into the fill port on water haulage equipment. The MMP4 is equipped with a Diesel engine with an integrated hydraulic pump and oil cooler, 50 gallon (190 liter) diesel fuel tank, 32 gallon (87 liter) hydraulic oil reservoir, 3 circuit hydraulic control valve, DOT rated lighting, 6,000 pound (2,725 kg) capacity axle and tire combination, 3 point stabilizing jacking system, hydraulically operated inlet and discharge booms, 12 inch axial hydraulic drive water pump and a folding hitch assembly. The MMP4 is capable of lifting water approximately 25 feet (7.6 meters) with a discharge port approximately 17 feet (5.2 meters) above ground level.

MMP4 FRAME

The MMP4 frame is the backbone of the unit, manufactured using rectangular tubing. Attached to the frame is the 6,000 lb (2,725 kg) capacity axle assembly, boom supporting structures, hydraulic and fuel tanks, engine assembly (including a battery and tool storage box), a fold-away hitch assembly, rear walk way, fenders, and DOT-rated lighting.



HYDRAULICS



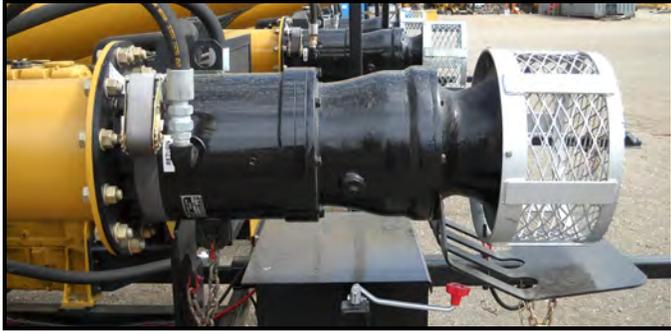
The hydraulic system of the MMP4 consists of an engine mounted hydraulic pump, 35 gallon (135 liter) hydraulic oil tank equipped with an inlet screen, return oil filter, external shut off valve, oil level sight glass and a breather equipped filler cap. The balance of the hydraulic system is designed with:

- 10 micron rated return oil filter
- Electrically controlled 3 spool hydraulic control valve with pressure regulation capability
- Hydraulic oil cooler equipped with a bypass valve to protect against hydraulic shock when the oil is cold
- Hydraulically driven submersible 12 inch axial water pump
- Hydraulic cylinders to lift and lower the inlet and discharge booms

SECTION 2

System Description

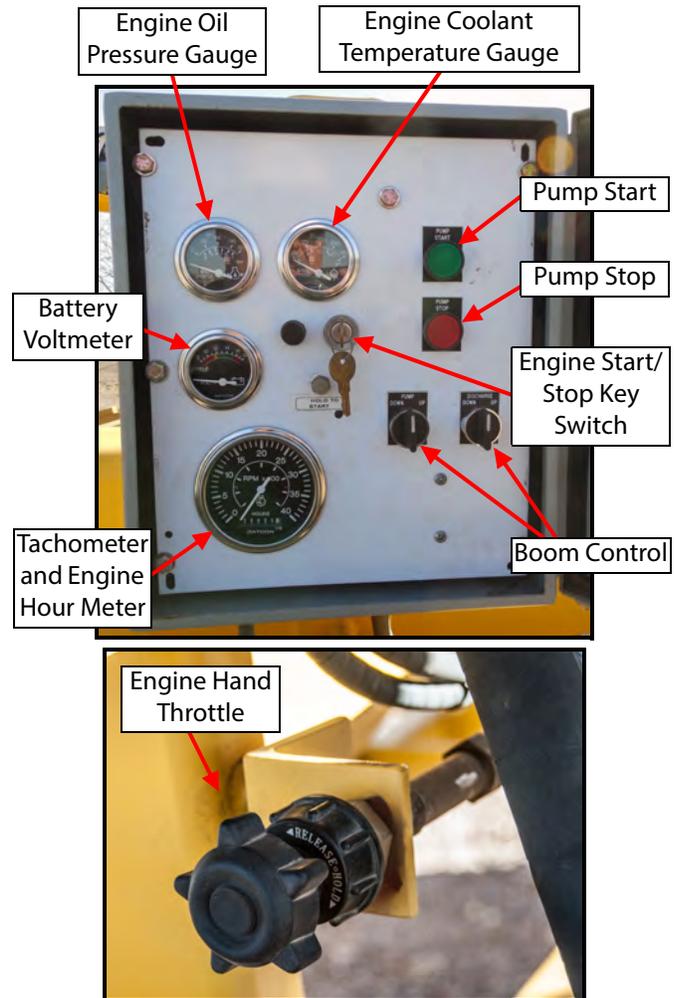
AXIAL WATER PUMP



The 12 inch axial, hydraulic drive water pump used on the MMP4 is mounted to a flange mounted on the inlet boom extension. The pump includes a heavy debris inlet screen to prevent any large pieces of debris from entering the pump and the water tanker to prevent possible damage to the spray systems and water pumps. Mounted to the water pump below the inlet screen is a protector plate; this plate is intended prevent the water pump inlet screen from setting directly on the bottom of the pond and picking up unwanted debris, dirt, or partially restricting the intake of the water pump and damaging pond liner.

When submerged in the holding pond, the inlet of the water pump must be 2.5 feet (0.76 meters) below the surface of the pond at all times while pumping water. The water pump hydraulic drive motor is connected to the hydraulic control valves by 2 hydraulic hoses; this routes hydraulic oil to the water pump drive motor when the control valve is activated, and then returns oil back to the hydraulic control valve and to the 10 micron rated hydraulic oil filter. The water pump discharge volume is proportional to the engine rpm (e.g; the higher the engine rpm, the larger the volume of water the pump will discharge). The water pump contains 2 oil reservoirs to lubricate the shaft bearings and seal.

ENGINE CONTROL BOX



The engine control box controls and monitors the main engine functions as well as the water pump engagement and disengagement. It is equipped with:

- Oil pressure gauge to monitor the engine oil pressure.
- Engine coolant temperature to monitor the engine coolant temperature.
- Tachometer to monitor the engine RPMs or speed.
- Battery voltage meter to monitor the battery voltage.
- Battery voltage meter to indicate the state of charge and electrical operation of system.
- Engine hour meter to indicate engine operational hours.
- Pump engagement/disengagement buttons
- Hand throttle to adjust the engine operating RPMs.

SECTION 2

System Description

HYDRAULIC OIL COOLER



The hydraulic oil cooler is attached to the front of the engine radiator. The engine cooling fan draws cool air through the oil cooler lowering the oil temperature. The oil cooler is in the return to tank hydraulic circuit. Built into the oil cooler is a bypass valve that allows oil to bypass the cooler if the return oil pressures are too great (e.g; when the hydraulic oil is cold). The oil cooler and engine coolant radiator are protected by a steel mesh guard to prevent damage to the cooler and radiator.

SECTION 2
System Description

SECTION 3 System Setup

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MMP4 LOCATION

1. Locate a suitable set up location based on the type of equipment being used at the job site, as well as access and traffic flow to the MMP4 fill site.

⚠ WARNING

Failure to observe and follow the recommendations below may result in damage to the MMP4, the water holding pond, serious personal injury or death.

- a. Ensure MMP4 water pump intake is at least 2.5 feet (0.76 meters) below the surface of the pond.
- b. Ensure the MMP4 is located on a firm, level footing and water flow spillage will not erode the pad that the MMP4 is set up on.
- c. Ensure there is enough safe access to the control panel for the operator to prevent accidental slips and falls.
- d. Ensure that the pond's liner (If applicable) is not loose or damaged.
- e. If the pond does not have a liner ensure the MMP4 water pump is not submerged in the silt or mud at the bottom.

CONFIGURING MMP4 FOR NORMAL OPERATION

When the MMP4 is placed in the desirable position for usage:

1. Chock wheels to prevent unwanted movement of MMP4.
2. Lower the two front landing gear to the ground by lowering the inner leg. The inner leg can be lowered by removing the safety pin and allowing the insert to lower to the ground. Locate the next available adjusting hole in the leg and reinsert the locking pin, ensure the pin has the safety lock in place and properly installed before placing weight on the leg.

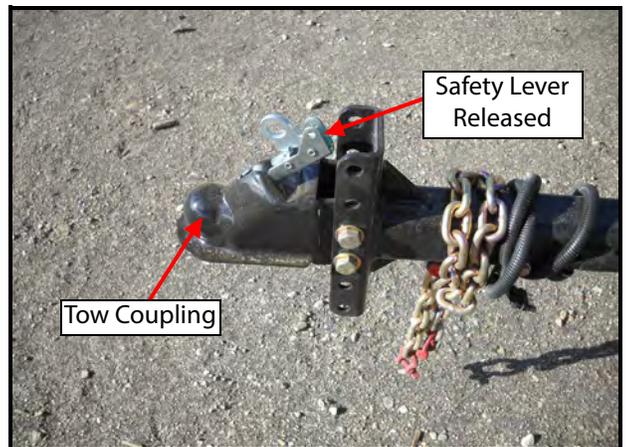
3. Lower the landing gear by moving the crank on top of the leg in a clockwise direction, alternating between the 2 forward landing gears.



⚠ WARNING

Ensure the MMP4 is properly secured and the wheels are chocked to prevent the MMP4 from moving when uncoupled to the tow vehicle. Failure to ensure MMP4 will not move when uncoupled from tow vehicle can result in serious personal injury or death.

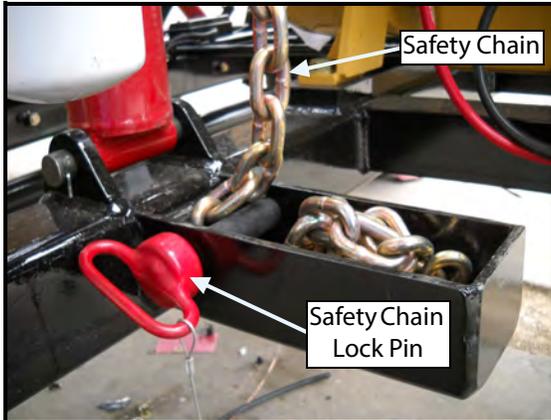
4. Uncouple the hitch from the tow vehicle by lifting up the safety lever on the tow coupling.



5. Alternately raise the MMP4s two (2) forward landing gears until the tow coupling clears the tow vehicle ball hitch.
6. Remove the safety chains, disconnect the MMP4 light cable and move tow vehicle to a safe area away from the MMP4 set up.

SECTION 3 System Setup

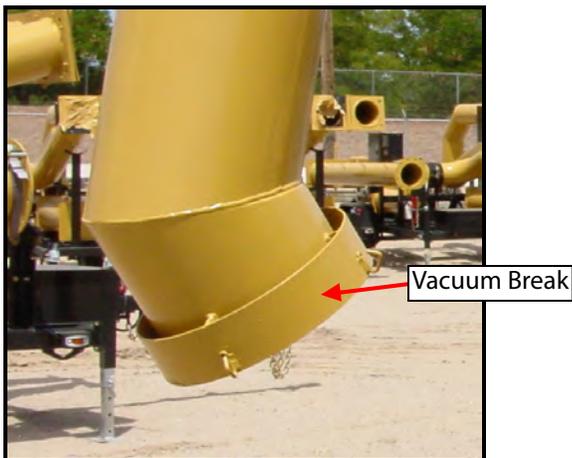
- Lower rear landing gear to ground and level MMP4, ensure the unit is stable and secure.
- Ensure the MMP4 is level before deploying the booms.
- Check safety chain locking pins to ensure they are tight and locked in place.



⚠ WARNING

Ensure safety chains are taught, lock pins are placed to retain safety chain and the tethered cotter pin is securely inserted into the hole at the end of the lock pin. Failure to ensure the booms are secured using the safety chains and ensuring the safety chains are positioned correctly and the pin is completely seated may result in the boom swinging out of position or falling causing serious personal injury or death.

- Locate and tie a guide rope (Tag Line) to the discharge boom vacuum break.



- Remove the center travel lock bolt and safety chain from the center upright on the frame.



- Remove the forward travel lock bolt near the discharge boom hinge.



- Locate 2 flange retaining bolts (typically placed inside of the battery box), locate 2 wrenches to tighten the flange bolts.

SECTION 3 System Setup

- Using the rope, swing the discharge boom to align the flanges.
- Insert 2 flange bolts in the holes of the flange, install nuts to the bolts.



- Tighten the flange retaining bolts until the flanges are parallel and secure.



- Remove the guide rope tag line from the discharge boom.

- Install the fabric discharge sock to the vacuum break by slipping the retaining hooks through the grommets in the sock. The sock can be removed and stored in the battery box when MMP4 is ready for travel.



- To fold hitch away, remove the 2 shear pins and the safety clips.



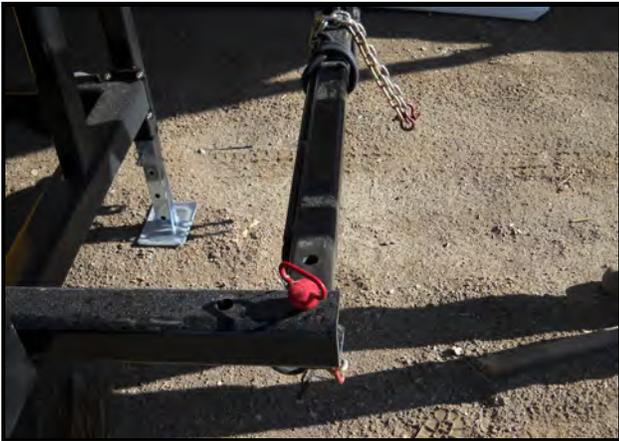
- Pull hitch straight out of frame tube until the rear hole of the insert lines up with the forward hole in the frame, insert 1 shear pin.



SECTION 3

System Setup

21. Rotate hitch CCW about 90° to position it out of the path of water haulers to be filled by the MMP4.



22. Insert the second shear pin into the empty hole on the frame assembly and install both safety pins.



23. Ensure the safety chain on the inlet boom cylinder is tight, the shear pin is fully seated and the safety pin is in place.

24. Remove the retaining bolt from the travel lock on the inlet boom.



25. Remove the safety strap and the safety chain from the water pump.



26. Locate and secure the 2 flange bolt assemblies.

27. Stand behind water pump and guide the inlet boom to full extension.

WARNING

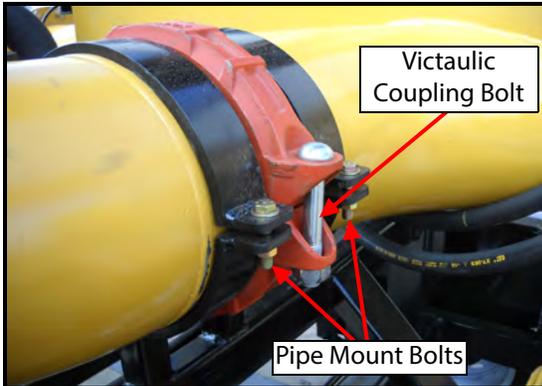
Use caution when extending the inlet boom. Never stand in front of the water pump when extending boom. Standing in front of the inlet boom when extending may cause the operator to lose their balance and be impacted by the boom when it swings this can cause serious personal injury or death.



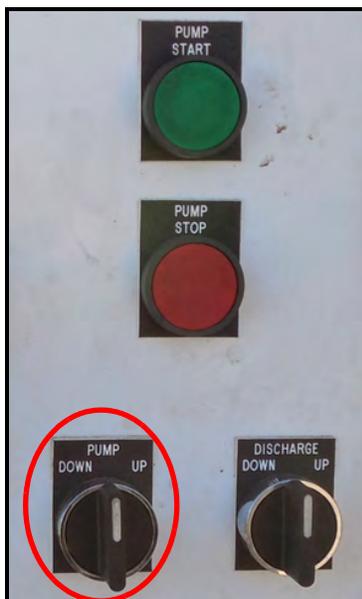
SECTION 3

System Setup

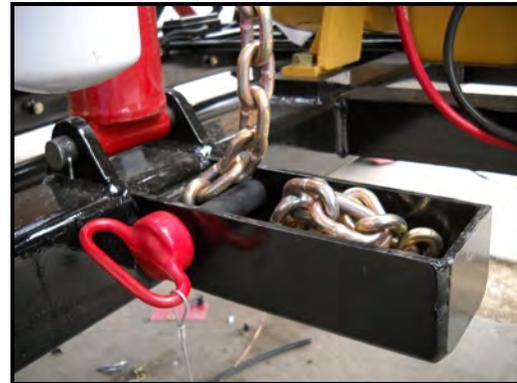
- 28. When the inlet boom is fully extended insert and secure the 2 flange bolt assemblies.
- 29. Tighten the bolts until the flanges are parallel.
- 30. Loosen the Victaulic coupling 1 to 2 turns and loosen the pipe mounts to allow the booms to pivot.



- 31. Check hydraulic oil level, adjust as required.
- 32. Start engine, allow the engine to idle for a couple of minutes to stabilize the engine oil pressure and to begin to warm the hydraulic oil.
- 33. Operate the PUMP switch to the UP position until the hydraulic cylinder is fully retracted and the safety chain is slack. It may be necessary to increase the engine idle speed with the hand throttle to move the pump boom up.



- 34. Place the PUMP switch in the NEUTRAL position and remove the safety chain shear pin.



- 35. Slowly operate switch for PUMP in DOWN position.
- 36. Lower pump and Intake until the inlet of the water pump is at least 2.5 feet (0.76 meters) below the surface of the water, ensure the water pump is at least 18 inches (0.5 meters) above the bottom of the pond and not in contact with the pond liner.
- 37. Install the safety chain shear pin and keeper to avoid misplacing the pin while the MMP4 is in operation.
- 38. Move the switch for the DISCHARGE to the UP position.



- 39. When the discharge boom has reached the full UP angle, move the lever to the NEUTRAL position.

SECTION 3

System Setup

40. Secure the discharge boom safety chain.



41. Ensure the safety chain is tight, the safety chain shear pin is fully seated and the safety keeper pin is installed.

⚠ WARNING

Ensure the safety chains are tensioned properly and shear pins and keepers are installed. Failure to ensure the safety chains are installed and secured properly may result in serious personal injury or death if the boom falls.

42. Tighten the Victaulic coupling bolts and pipe mounting bolts that were previously loosened for tube movement.
43. Return the engine to LOW idle.
44. Shut off engine.
45. Stow and secure the travel lock bolts and hardware in the battery box tool compartment.
46. Secure engine control box.

SECTION 4 Normal Operations

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BEFORE OPERATIONS

These procedures are used to perform a walk-around inspection of the MEGA mobile water pump before use or beginning of the shift. This inspection is in addition to and does not replace the engine manufacturer's inspection requirements.

1. Chocks – As Required
2. Landing Gear – Secure and Stable
3. Engine Control Switches – SET OFF
4. Boom Safety Chains – SECURED AND PROPERLY ADJUSTED
5. Hydraulic Oil Tank – CHECKED AND SECURED
6. Hydraulic Oil Level - SERVICED
7. Hydraulic Oil Quality – CLEAR
8. Hydraulic Hoses and Fittings – SECURED AND NO LEAKS PRESENT
9. Hydraulic Pump – CHECKED AND SECURED
10. Victaulic Coupling and Boom Mounts – CHECKED AND SECURED
11. Boom Hydraulic Cylinders – CHECKED FOR SECURITY AND LEAKS
12. Boom Flanges – CHECKED AND SECURED
13. Discharge Sock – CHECKED AND SECURED
14. Diesel Fuel Tank – PROPER LEVEL, SHUT OFF VALVES OPEN, CHECKED AND SECURED
15. Fold Away Hitch – CHECKED AND SECURED
16. Hydraulic Oil Cooler – CHECKED AND SECURED

17. Diesel Engine – CHECKED AND SERVICED In Accordance With QSB3.3 CM2150 and B3.3 Operation / Maintenance Manual and SECURED
18. Battery and Battery Box – CHECKED AND SECURED
19. Engine Control Box – CHECKED AND SECURED
20. Hand Throttle Control – CHECKED AND SECURED
21. Hydraulic Control Valve – CHECKED, SECURED and NO LEAKS PRESENT
22. Boom Positions – POSITIONS CHECKED and SECURED
23. Water Pump – CHECKED, SECURED and NO LEAKS PRESENT
24. Water Equipment Loading Access – CLEAR, EASILY ACCESSIBLE and FREE FROM OBSTRUCTIONS

NORMAL OPERATIONS

Use these procedures to safely operate the MMP4 when loading a water tanker.

1. Move water tanker into position with the fill port directly under the discharge boom fill sock.



SECTION 4

Normal Operations

2. Secure vehicle.

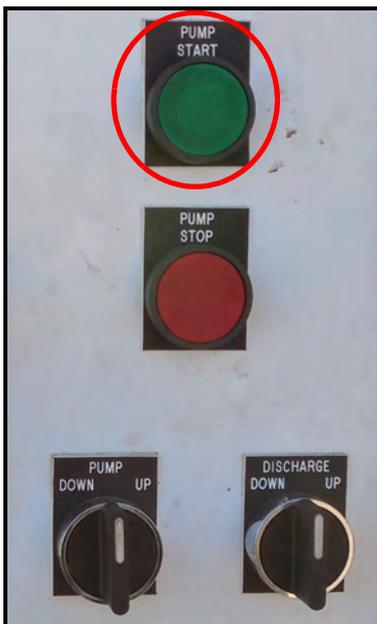
WARNING

Ensure vehicle is safe and secured before exiting cab, [e.g; Transmission in NEUTRAL, Park brake ON, Engine OFF, Chock Blocks (if required)]. Failure to ensure vehicle is safe to exit when dismounting cab may result in personal injury or death.

3. Check engine according to the QSB3.3 CM2150 and B3.3 Operation and Maintenance Manual for pre-operation checks.
4. Ensure the unit is safe to operate.
5. Hydraulic Control Valve switches - OFF
6. Start engine.
7. Run engine at LOW IDLE to stabilize oil pressures and temperatures.
8. Depress GREEN PUMP START button – PUMP ON

CAUTION

Engaging/disengaging the water pump above LOW IDLE may result in water pump component damage and reduced service life.



9. Slowly increase the engine idle speed until the desired water flow is reached.

NOTE

The MMP4 hand throttle can be operated 2 ways: (1) by depressing the release button in the center of the hand throttle knob, pulling the knob out until the desired engine rpm is reached, and releasing the button, or (2) by rotating the hand throttle knob counter clockwise until the desired engine rpm is reached. If the hand throttle fails to stay at the set rpm, adjust the locking collar until the hand throttle remains at the set position.



10. Observe the water filling the tank, when the tanker is filled to the desired level, return the MMP4 to LOW idle by depressing the release button on the hand throttle and pushing the knob IN until the engine is at low idle.
11. Depress the RED PUMP STOP button to stop the water flow and water pump.
12. Using the hand throttle lower the engine RPM to LOW IDLE, allow the turbo charger to cool down.
13. Shut the engine OFF.
14. Move the water tanker away from the MMP4.

AFTER OPERATIONS

These procedures are used to perform a walk-around inspection after using the MEGA Mobile Pump. This inspection is in addition to and does not replace the engine manufacturer's inspection requirements.

1. Intake and Discharge Boom Position – AS REQUIRED
2. Diesel Engine – CHECKED AND SECURED

SECTION 4

Normal Operations

3. Hydraulic System – CHECKED, SERVICED, AND NO LEAKS PRESENT
4. MMP4 Frame – CHECKED AND SECURED
5. MMP4 Set Up Location – SECURED AND STABLE
6. Engine Control Box – CHECKED AND SECURED
9. Lift and preload the discharge cylinder and release the safety chain.

WARNING

Ensure that the discharge boom hydraulic cylinder is preloaded in the full RAISE position before removing the safety chain shear pins. Failure to ensure the cylinder is preloaded may result in the boom falling causing serious personal injury or death.



RECONFIGURING FOR TRANSPORT

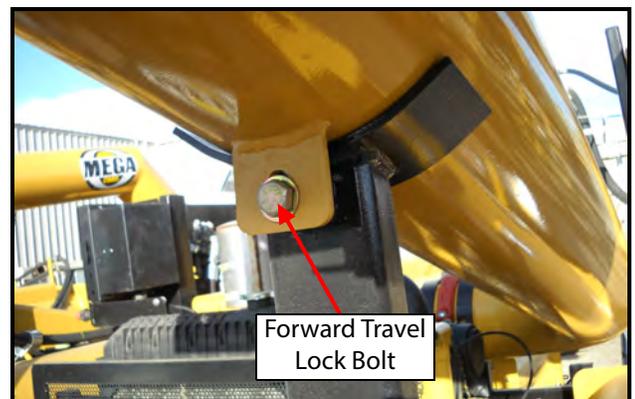
These procedures are used to configure the MMP4 prior to transporting the unit.

1. Perform all before-operation checks.
2. Acquire the tools used for assembly.
3. Ensure unit is safe for operation.
4. Loosen the Victaulic coupling 1 to 2 turns and loosen the pipe mounts to allow the booms to pivot.
5. Start and run the engine at LOW IDLE.
6. Slowly operate switch for intake boom in UP position until the intake hydraulic cylinder is preloaded in the full RAISE position.
7. Remove and secure intake boom flange bolts.
8. Install and secure intake boom and water pump travel straps, safety chains, and bolts.

WARNING

Ensure that the intake boom hydraulic cylinder is preloaded in the full RAISE position before removing the safety chain shear pins. Failure to ensure the cylinder is preloaded may result in the boom falling causing serious personal injury or death.

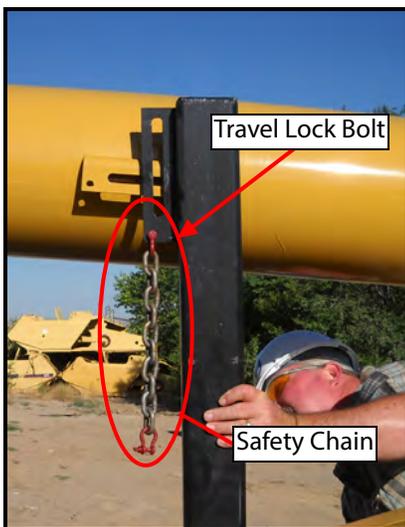
10. Lower the discharge boom.
11. Remove the fabric discharge sock and store in the battery box.
12. Tie the guide rope (Tag Line) to the discharge boom vacuum break.
13. Remove the discharge boom flange bolts.
14. Install the forward travel lock bolt near the discharge boom hinge.



SECTION 4

Normal Operations

15. Install and secure the center travel lock bolts and safety chain.



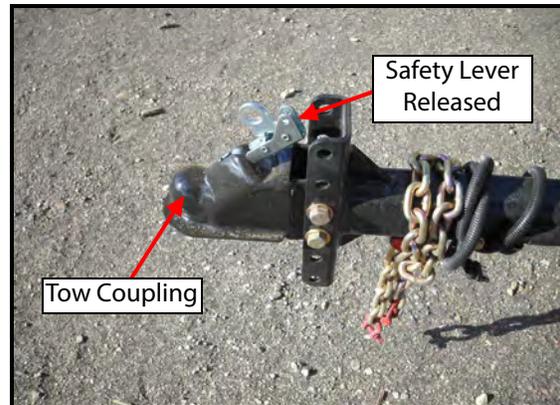
16. Turn engine OFF.
17. Remove the guide rope from the discharge boom.
18. Tighten the Victaulic coupling bolts and pipe mounting bolts that were previously loosened for tube movement.
19. Move tow hitch to TRAVEL position and secure.

CAUTION

Ensure all travel lock bolts, safety chains, shear pins, and shear pin safety pins are secured and installed properly before transporting the MMP4. Failure to ensure all safety equipment and procedures are installed and followed may result in damage to the MMP4 or tow vehicle.

20. Diesel Fuel Petcocks – OFF

21. Raise the rear landing gear to the full RAISED position. Adjust coupling to match the height of the tow vehicle hitch ball by alternating between the 2 forward landing gears.
22. Couple and secure the tow vehicle to MMP4 Ball Coupling.



23. Raise the two front landing gear to the full RAISED position.
24. Secure inner tube in the full RAISED position by reinserting the locking pin; ensure the pin has the safety lock in place and is properly installed before transporting the MMP4.



25. Connect trailer light cord.
26. Check that all MMP4 lights are operational.
27. Inflate tires to 80 psi (550 kpa).
28. Torque lug nuts to 80-90 ft/lbs (110 – 125 Nm).
29. Ball Coupling Lock – CHECKED AND SECURED

SECTION 5

Appendix: Operator's Checklist

MMP4-CUMMINS-B3.3T-OPS(CL)-1

3 Apr 2014



MMP4 OPERATOR'S CHECKLIST

SECTION 5

Appendix: Operator's Checklist

MMP4-CUMMINS-B3.3T-OPS(CL)-1
3 Apr 2014

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SECTION 5**Appendix: Operator's Checklist****MMP4-CUMMINS-B3.3T-OPS(CL)-1****3 Apr 2014****BEFORE OPERATIONS**

These procedures are used to perform a walk-around inspection of the MEGA mobile water pump before use or beginning of the shift. This inspection is in addition to and does not replace the engine manufacturer's inspection requirements.

1. Chocks – As Required
2. Landing Gear – Secure and Stable
3. Engine Control Switches – SET OFF
4. Boom Safety Chains – SECURED AND PROPERLY ADJUSTED
5. Hydraulic Oil Tank – CHECKED AND SECURED
6. Hydraulic Oil Level - SERVICED
7. Hydraulic Oil Quality – CLEAR
8. Hydraulic Hoses and Fittings – SECURED AND NO LEAKS PRESENT
9. Hydraulic Pump – CHECKED AND SECURED
10. Hydraulic Coupling and Boom Mounts – CHECKED AND SECURED

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11. Boom Hydraulic Cylinders – CHECKED FOR SECURITY AND LEAKS
12. Boom Flanges – CHECKED AND SECURED
13. Discharge Sock – CHECKED AND SECURED
14. Diesel Fuel Tank – PROPER LEVEL, SHUT OFF VALVES OPEN, CHECKED AND SECURED
15. Fold Away Hitch – CHECKED AND SECURED
16. Hydraulic Oil Cooler – CHECKED AND SECURED
17. Diesel Engine – CHECKED, SERVICED, & SECURED in accordance with QSB3.3 CM2150 and B3.3 Operation and Maintenance Manual
18. Battery and Battery Box – CHECKED AND SECURED
19. Engine Control Box – CHECKED AND SECURED
20. Hand Throttle Control – CHECKED AND SECURED
21. Hydraulic Control Valve – CHECKED, SECURED AND NO LEAKS PRESENT

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22. Boom Positions – POSITIONS CHECKED AND SECURED
23. Water Pump – CHECKED, SECURED AND NO LEAKS PRESENT
24. Water Equipment Loading Access – CLEAR, EASILY ACCESSIBLE AND FREE FROM OBSTRUCTIONS

OPERATIONS

Use these procedures to safely operate the MMP4 when loading a water tanker.

1. Enter water filling area.
2. Position water tanker fill port directly under discharge sock.
3. Secure vehicle.

 **WARNING**

Ensure vehicle is safe and secured before exiting cab, [e.g; Transmission in NEUTRAL, Park brake ON, Engine OFF, Chock Blocks (if required)]. Failure to ensure vehicle is safe to exit when dismounting cab may result in personal injury or death.

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4. Exit vehicle
 5. Hydraulic Control Valve switches - OFF
 6. Start Engine – ON/RUN
 7. Engine RPM – LOW IDLE
 8. Depress GREEN PUMP START button – PUMP ON
- CAUTION**
- Engaging/disengaging the water pump above LOW IDLE may result in water pump component damage and reduced service life.
9. Slowly increase engine RPM using hand throttle until desired fill rate is achieved.
 10. Observe water level in water tanker being filled, when desired water level is reached, reduce engine RPM to LOW IDLE using hand throttle.
 11. Depress RED PUMP STOP Button – PUMP OFF
 12. Engine - OFF
 13. Mount vehicle operators compartment.
 14. Exit filling area.

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These procedures are used to perform a walk-around inspection after using the MEGA Mobile Pump. This inspection is in addition to and does not replace the engine manufacturer's inspection requirements.

1. Intake & Discharge Boom Positions – AS REQUIRED
2. Diesel Engine – CHECKED AND SECURED
3. Hydraulic System – CHECKED, SERVICED AND NO LEAKS PRESENT
4. MMP4 Frame – CHECKED AND SECURED
5. MMP4 Location and Set Up – SECURED AND STABLE
6. Engine Control Box – CHECKED AND SECURED

RECONFIGURING FOR TRANSPORT

These procedures are used to reconfigure the MMP4 prior to transporting the unit.

1. Perform all before-operation checks.
2. Acquire the tools used for assembly.

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3. Ensure unit is safe for operation.
4. Loosen the Victaulic coupling 1 to 2 turns.
Loosen the pipe mounts to allow booms to pivot.
5. Start and run the engine at LOW IDLE.
6. Slowly operate switch for intake boom in UP position until the intake hydraulic cylinder is preloaded in the full RAISE position.
7. Remove and secure intake boom flange bolts.
8. Install and secure intake boom and water pump travel straps, safety chains, and bolts.

WARNING

Ensure that the intake boom hydraulic cylinder is preloaded in the full RAISE position before removing the safety chain shear pins. Failure to ensure the cylinder is preloaded may result in the boom falling causing serious personal injury or death.

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9. Lift and preload the discharge cylinder and release the safety chain.

 **WARNING**

Ensure that the discharge boom hydraulic cylinder is preloaded in the full RAISE position before removing the safety chain shear pins. Failure to ensure the cylinder is preloaded may result in the boom falling causing serious personal injury or death.

10. Lower the discharge boom.
11. Remove the fabric discharge sock and store in the battery box.
12. Tie the guide rope (Tag Line) to the discharge boom vacuum break.
13. Remove the discharge boom flange bolts.
14. Install the forward travel lock bolt near the discharge boom hinge.
15. Install and secure the center travel lock bolts and safety chain.
16. Turn engine OFF.

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17. Remove the guide rope from the discharge boom.
18. Tighten the Victaulic coupling bolts and pipe mounting bolts that were previously loosened for tube movement.
19. Move tow hitch to TRAVEL position and secure.

CAUTION

Ensure all travel lock bolts, safety chains, shear pins, and shear pin safety pins are secured and installed properly before transporting the MMP4. Failure to ensure all safety equipment and procedures are installed and followed may result in damage to the MMP4 or tow vehicle.

20. Diesel Fuel Petcocks – OFF
21. Raise the rear landing gear to the full RAISED position. Adjust coupling to match the height of the tow vehicle hitch ball by alternating between the 2 forward landing gears.
22. Couple and secure the tow vehicle to MMP4 Ball Coupling.

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23. Raise the two front landing gear to the full RAISED position.
24. Secure inner tube in the full RAISED position by reinserting the locking pin; ensure the pin has the safety lock in place and is properly installed before transporting the MMP4.
25. Connect trailer light cord.
26. Check that all MMP4 lights are operational.
27. Inflate tires to 80 psi (550 kpa).
28. Torque lug nuts to 80-90 ft/lbs (110 – 125 Nm).
29. Ball Coupling Lock – CHECKED AND SECURED

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