SERVICE REPAIR

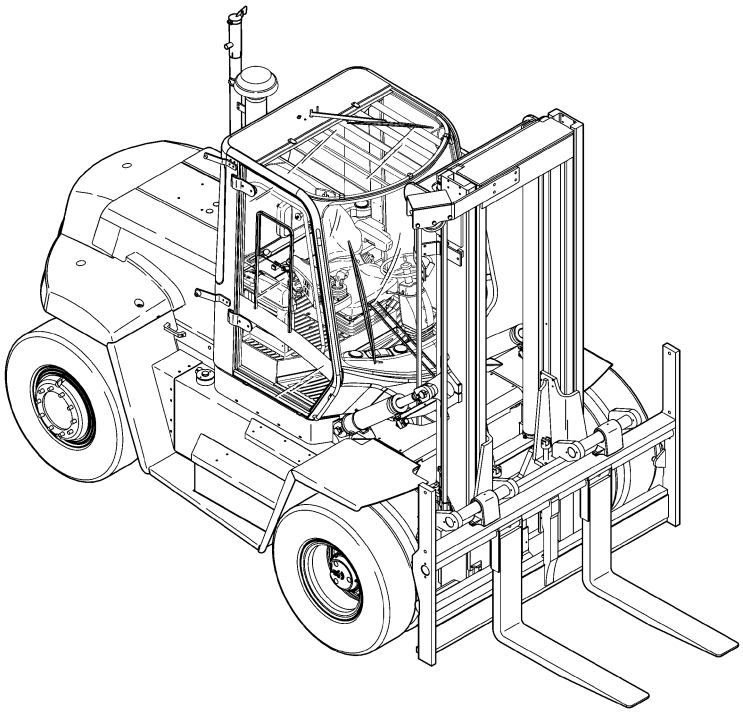
MANUAL

Hyster G019 (H300HD, H330HD, H360HD, H360HD-12EC) Forklift

HYSTER

FRAME

H8.00-12.00XM (H170-280HD) [H007];
H13.00-14.00XM (H300-330HD) [G019];
H16.00XM-6 (H360HD) [G019];
H10.00-12.00XM-12EC (H360HD-EC) [G019]



HYSTER

PART NO. 1665777

100 SRM 1349

SAFETY PRECAUTIONS
MAINTENANCE AND REPAIR

- When lifting parts or assemblies, make sure all slings, chains, or cables are correctly fastened, and that the load being lifted is balanced. Make sure the crane, cables, and chains have the capacity to support the weight of the load.
- Do not lift heavy parts by hand, use a lifting mechanism.
- Wear safety glasses.
- DISCONNECT THE BATTERY CONNECTOR before doing any maintenance or repair on electric lift trucks. Disconnect the battery ground cable on internal combustion lift trucks.
- Always use correct blocks to prevent the unit from rolling or falling. See HOW TO PUT THE LIFT TRUCK ON BLOCKS in the **Operating Manual** or the **Periodic Maintenance** section.
- Keep the unit clean and the working area clean and orderly.
- Use the correct tools for the job.
- Keep the tools clean and in good condition.
- Always use **HYSTER APPROVED** parts when making repairs. Replacement parts must meet or exceed the specifications of the original equipment manufacturer.
- Make sure all nuts, bolts, snap rings, and other fastening devices are removed before using force to remove parts.
- Always fasten a DO NOT OPERATE tag to the controls of the unit when making repairs, or if the unit needs repairs.
- Be sure to follow the **WARNING** and **CAUTION** notes in the instructions.
- Gasoline, Liquid Petroleum Gas (LPG), Compressed Natural Gas (CNG), and Diesel fuel are flammable. Be sure to follow the necessary safety precautions when handling these fuels and when working on these fuel systems.
- Batteries generate flammable gas when they are being charged. Keep fire and sparks away from the area. Make sure the area is well ventilated.

NOTE: The following symbols and words indicate safety information in this manual:

WARNING

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

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury and property damage.

On the lift truck, the WARNING symbol and word are on orange background. The CAUTION symbol and word are on yellow background.

TABLE OF CONTENTS

This section is for the following models:

H8.00-12.00XM (H170-280HD) [H007];
H13.00-14.00XM (H300-330HD) [G019];
H16.00XM-6 (H360HD) [G019];
H10.00-12.00XM-12EC (H360HD-EC) [G019]

"THE
QUALITY
KEEPERS"

HYSTER
APPROVED
PARTS

General

This section has the removal and installation instructions for major assemblies attached to the frame. The removal and installation procedures for some assemblies are described in the following service manuals:

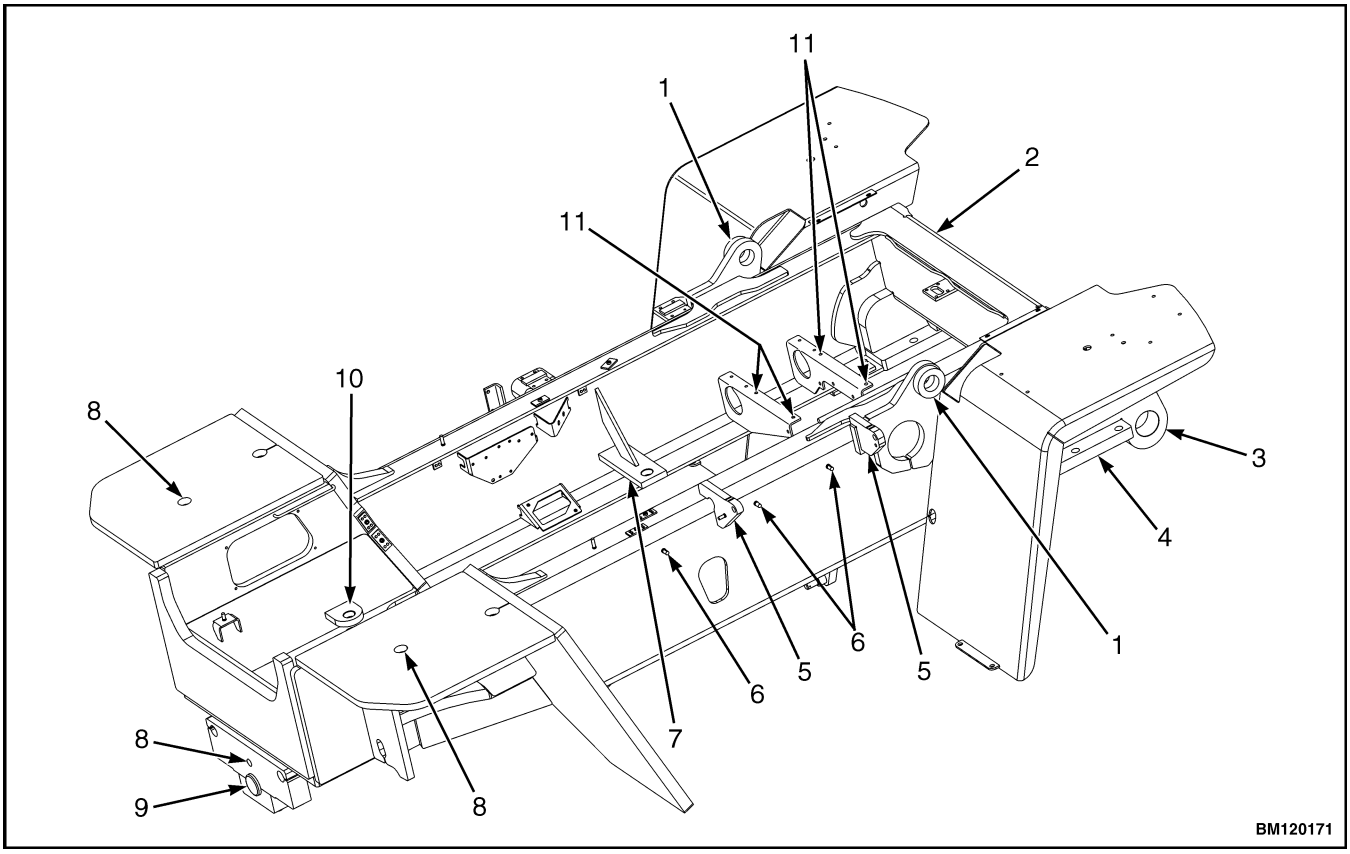
- **Operator's Cab** 100 SRM 1100
- **Multiple Aligned Cooling System** 700 SRM 1350
- **Planetary Drive Axle**, **(Wet System)** 1400 SRM 944
- **Planetary Drive Axle**, **(Dry System)** 1400 SRM 945
- **Steering System** 1600 SRM 1365
- **Hydraulic System** 1900 SRM 938
- **Masts and Carriages**, **Starting 2003** 4000 SRM 1062

Description

CAUTION

Do not initiate repairs to the frame without consulting a Hyster service representative or damage to the lift truck may occur.

The frame is a weldment with mounts for the major assemblies. See Figure 1. The mounts are designed to keep the attaching parts in position and transfer the normal forces acting on them.



1. TILT CYLINDER MOUNT
2. MAIN FRAME
3. MAST MOUNT
4. DRIVE AXLE MOUNT
5. SIDE TILTING CAB MOUNT
6. FUEL/HYDRAULIC TANK MOUNT
7. TRANSMISSION MOUNT
8. MAIN COUNTERWEIGHT MOUNT
9. STEER AXLE MOUNT
10. ENGINE MOUNT
11. MAIN CONTROL VALVE MOUNT

Figure 1. Frame

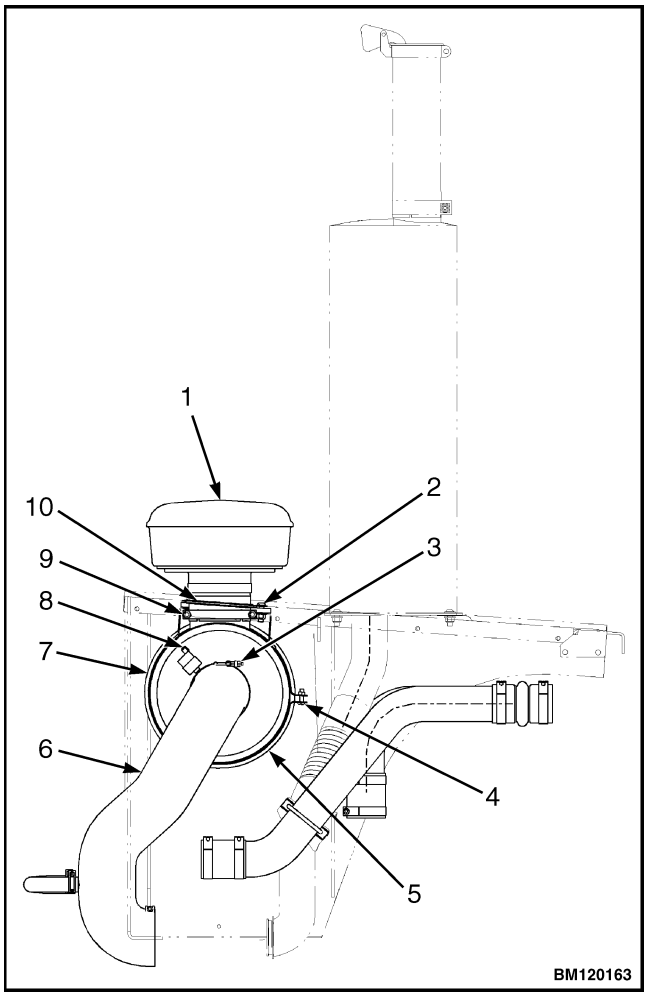
Air Cleaner

REMOVE

1. Open the left- and right-hand hood.
2. Loosen the air duct clamp. See Figure 2.
3. Close the left- or right-hand hood to access the precleaner.
4. Remove the precleaner, with the air duct attached, from the air cleaner.
5. Disconnect the connector from the restriction indicator by pressing the metal clip.
6. Remove the hose clamp from the air filter hose and remove the hose from the air cleaner.
7. Remove the bolts of the two mounting clamps.
8. Rotate the air cleaner until the air duct connection is clear from the center of the hood opening and remove the air cleaner to the right-hand side of the truck.
9. Remove the retaining hardware from the mounting clamps and remove the clamps and plate positioned under the hood.

INSTALL

1. Install the retaining hardware to the mounting clamps and install the clamps and plate positioned under the hood.
2. Position the air cleaner assembly at the mounting clamps and tighten the two clamp bolts.
3. Connect the air filter hose to the air cleaner assembly and tighten the hose clamp.
4. Connect the restriction indicator connector to the air cleaner assembly.
5. Close the left- or right-hand hood.
6. Install the precleaner, with the air duct attached, on the air cleaner and tighten the air duct clamp.
7. Close the hoods.



1. PRECLEANER
2. CAPSCREW
3. HOSE CLAMP
4. CLAMP BOLT
5. MOUNTING CLAMP
6. AIR FILTER HOSE
7. AIR CLEANER ASSEMBLY
8. RESTRICTION INDICATOR
9. AIR DUCT CLAMP
10. AIR DUCT

Figure 2. Air Cleaner

Exhaust System

REMOVE

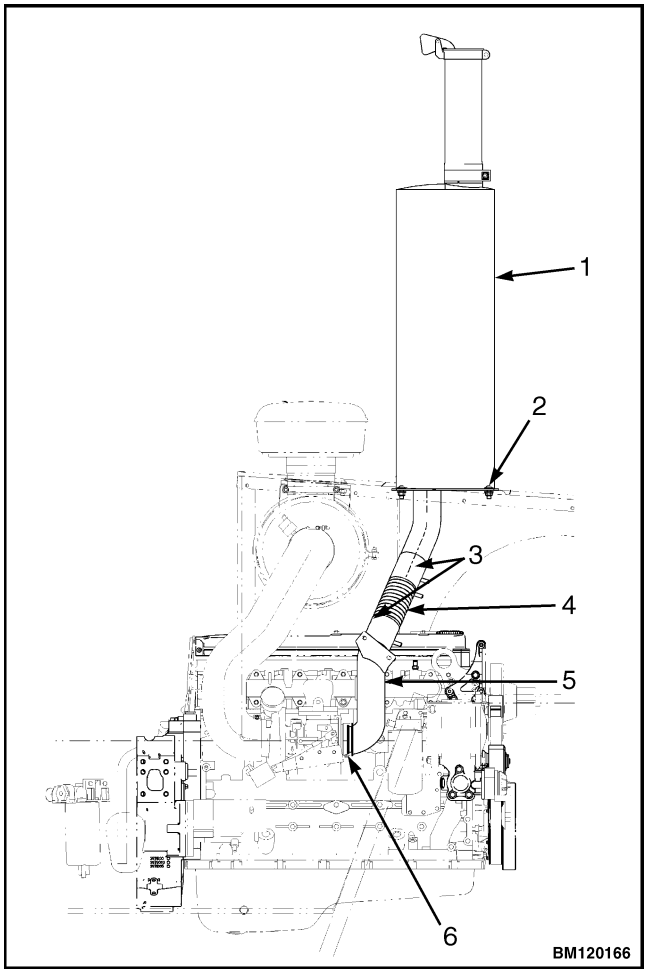
WARNING

Exhaust system must be at room temperature before starting disassembly or personal injury may occur.

1. Remove the two clamps from the flex tube. See Figure 3.
2. Remove the clamp that connects the turbo charge pipe to the exhaust pipe.
3. Remove the clamp that holds the exhaust pipe to the engine and remove the exhaust pipe and flex tube.
4. Affix a tool that will retain the nut when loosening a capscrew of the muffler. Remove the four capscrews and nuts.
5. Remove the muffler from the hood.

INSTALL

1. Position the muffler at the hood.
2. Install the four capscrews and nuts of the muffler.
3. Install the flex tube and two clamps to the muffler.
4. Install the exhaust pipe and exhaust pipe clamp to the engine.
5. Install the clamp that connects the turbo charge pipe to the exhaust pipe.
6. Tighten all clamps.



1. MUFFLER
2. CAPSCREWS
3. CLAMP
4. FLEX TUBE
5. EXHAUST PIPE
6. CLAMP

Figure 3. Exhaust System

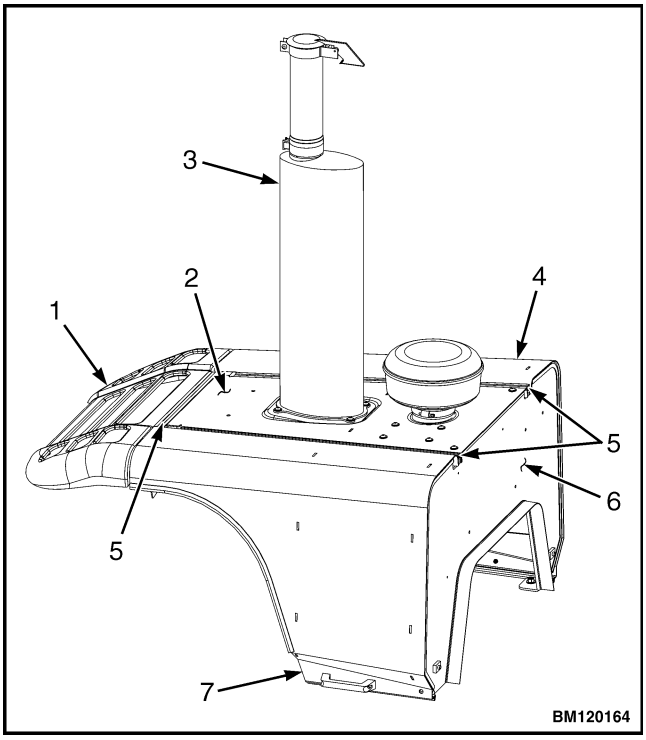
Hood Assembly

REMOVE

1. Tilt the mast completely forward.

2. Completely tilt (raise) the cab.

3. Open the rear cover. See Figure 4.



1. REAR COVER
2. HOOD FRAME
3. MUFFLER
4. LEFT-HAND HOOD
5. HINGE
6. FRONT HOOD COVER
7. RIGHT-HAND HOOD

Figure 4. Hood Assembly

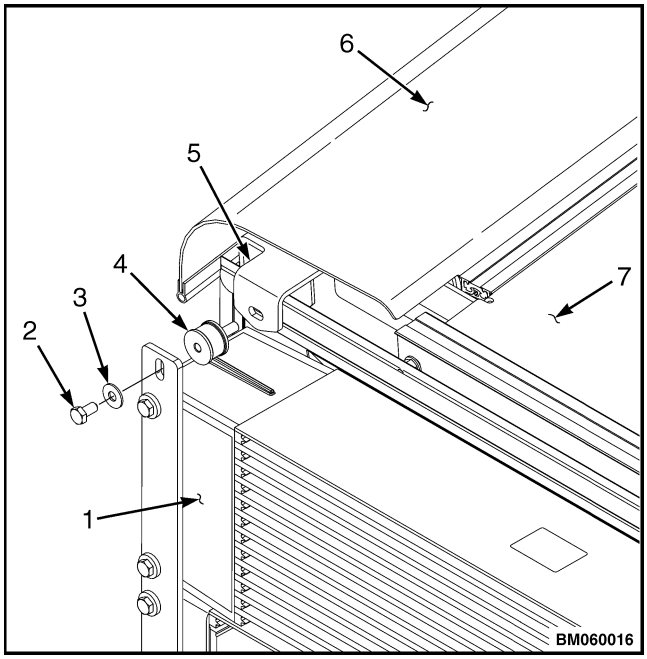
4. Remove the bolts from the two isolators on top of the radiator. See Figure 5.

5. Remove the four capscrews that hold the bracket of the hood assembly to the counterweight.

6. Disconnect the two gas springs from the rear cover at the counterweight.

7. Open the left- and right-hand hood.

8. Remove the exhaust pipe, flex tube, and U-bolt.



1. RADIATOR
2. BOLT
3. WASHER
4. ISOLATOR
5. BRACKET
6. LEFT-HAND HOOD
7. HOOD FRAME

Figure 5. Top Isolators

9. Remove the inlet suction tube.

10. Remove the two capscrews, washers, and nuts and remove the expansion tank located underneath the hood.

11. Place the expansion tank inside the engine compartment.

12. Remove all tie-wraps holding electrical cables to the hood covers or hood assembly.

NOTE: Step 13 is for LPG (Liquefied Petroleum Gas) engines only.

13. Remove the two hose clamps and crankcase breather hoses from the front hood cover and remove the crankcase breather.

14. Remove the two nuts that hold the front hood cover to the frame.

15. Attach a lifting device to the hood assembly.

⚠ CAUTION

Use caution when lifting the hood assembly to avoid damage to the rear of the operators cab.

16. Lift the hood assembly from the frame and place it on the ground in a horizontal position by putting a support under the rear of the hood frame.

INSTALL

1. Attach a lifting device to the hood assembly.

⚠ CAUTION

Use caution when installing the hood assembly to avoid damage to the rear of the operators cab.

2. Position the hood assembly onto the frame.

3. Install the two nuts that hold the front hood cover to the frame.

NOTE: Step 4 is for LPG engines only.

4. Install the crankcase breather and breather hoses to the front hood cover with the two hose clamps.

5. Attach the electrical cables at the original locations to the hood assembly with tie-wraps.

6. Install the expansion tank under the hood with the two capscrews, washers, and nuts.

7. Install the inlet suction tube. See the section Air Cleaner, Install.

8. Install the exhaust pipe, flex tube, and U-bolt. See the section Exhaust System, Install.

9. Install the four capscrews that hold the hood assembly to the counterweight.

10. Install the two gas springs to the rear cover at the counterweight.

11. Attach the radiator to the bracket of the hood assembly. See Figure 5.

12. Close the left- and right- hand hood.

13. Completely lower the cab.

14. Start the engine and check for leaks.

Hydraulic Tank

The hydraulic tank is installed on the right side of the frame between the front fender and counterweight.

REMOVE

NOTE: The hydraulic tank removal and installation must be done with aid of an assistant.

1. Place the truck on a solid, level surface.

2. Lower the mast completely.

3. Shut down the engine.

4. Apply the parking brake.

5. Remove the four capscrews (3) and washers (4) holding the right-hand panel on top of the hydraulic tank and remove the right-hand panel. See Figure 6.

6. Remove the three capscrews (7) and washers (8) holding the right-hand extension plate and remove the extension plate. See Figure 6.

7. Remove the drain plug at the bottom of the hydraulic tank and drain the hydraulic oil into clean containers.

8. Put tags on the four return hoses and pipes at the top of the hydraulic tank for identification.

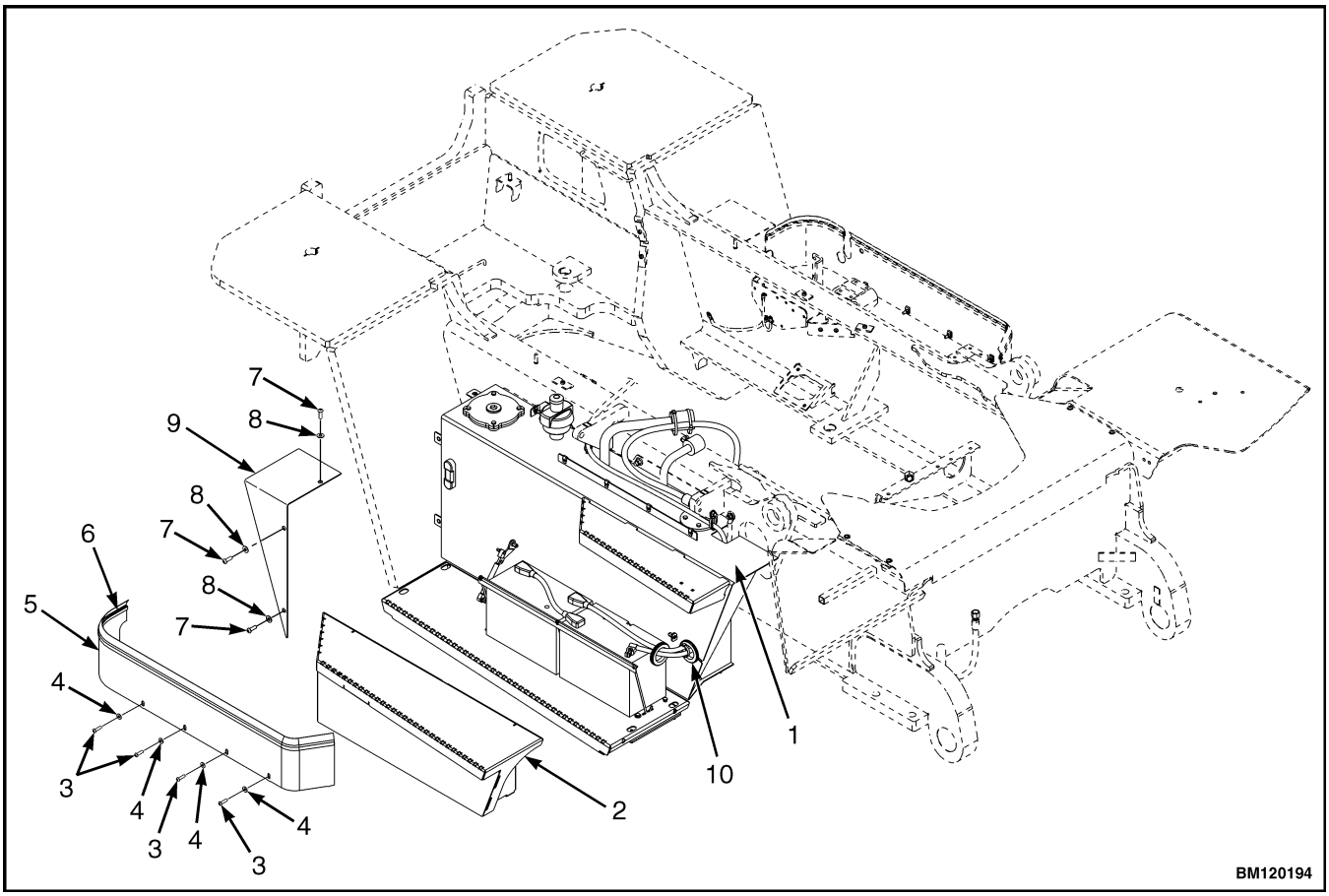
NOTE: Use a drain pan to collect the oil from the hydraulic hoses.

9. Disconnect the four return hoses from the two pipes at the top of the hydraulic tank. See Figure 7.

10. Put caps on the hoses and pipes.

11. Put tags on the two hoses and connections at the frame side of the hydraulic tank for identification.

12. Disconnect the two hoses from the two connections at the frame side of the hydraulic tank. See Figure 7.



1. HYDRAULIC TANK
2. BATTERY BOX
3. CAPSCREWS
4. WASHERS
5. RIGHT-HAND PANEL
6. SEAL
7. CAPSCREWS
8. WASHERS
9. RIGHT-HAND EXTENSION PLATE
10. BATTERY CABLE ACCESS

Figure 6. Hydraulic Tank

13. Put caps on the hoses and connections on the hydraulic tank.

CAUTION

Disconnect the negative (ground) cable first or lift truck damage may occur.

14. Disconnect the negative (ground) and positive (power) cables from the batteries.

15. Remove the batteries from the battery box.

16. Remove the battery cables from the access hole of the hydraulic tank. See Figure 6.

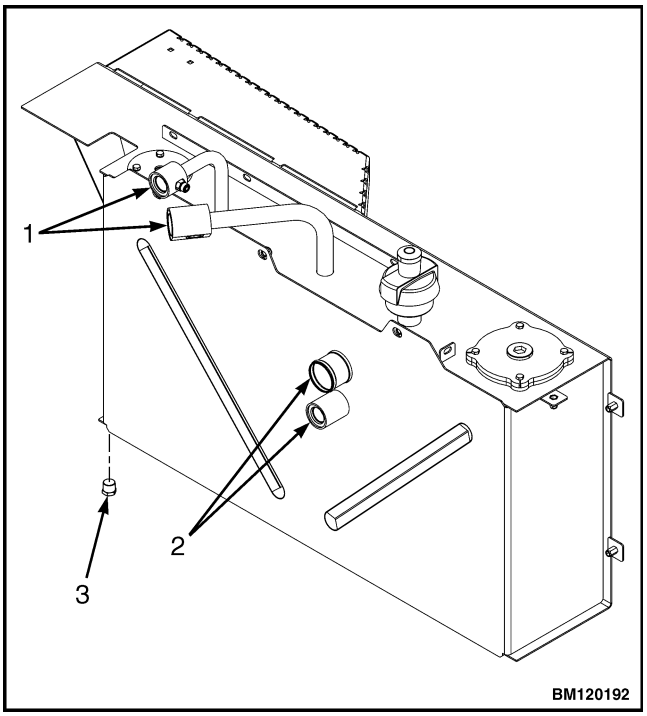
17. Remove the capscrews that hold the right running board to the counterweight, front fender, and hydraulic tank and remove the running board.

18. Remove the anchor that secures the cab tilt shaft.

NOTE: When moving the front cab tilt shaft, maintain the position of the shims between the cab and frame tilt brackets.

19. Use a short rounded 19 mm (0.75 in.) shaft and hammer it into the front tilt bracket of the cab.

20. Push the cab tilt shaft further rearwards until the shaft slightly protrudes out of the rear bracket.



1. RETURN PIPE
2. HOSE CONNECTION
3. DRAIN PLUG

Figure 7. Hydraulic Tank Connection and Fittings

WARNING

Make sure the hydraulic tank is supported with a hydraulic jack, hand pallet lift, or a lift truck.

21. Support the hydraulic tank with blocks of at least 50 mm (2.0 in.) thick to cover the height of the bracket at the bottom of the hydraulic tank.

22. Remove the three nuts and washers that hold the hydraulic tank to the frame.

CAUTION

DO NOT to damage the studs during removal of the hydraulic tank from the frame.

23. Lift the hydraulic tank from the studs and move the hydraulic tank away from the frame.

INSPECT

WARNING

Do not use tools that can make sparks, heat, or static electricity. The vapors in the tank can cause an explosion.

Make a visual inspection of all sides of the tank. Inspect the welds for cracks and leakage. Check for wet areas, accumulation of dirt, and loose or missing paint caused by leakage. Areas of the tank that are not easily seen can be checked with an inspection mirror and a light that is approved for locations with flammable vapors.

CLEAN

Tank can be cleaned with or without steam. If steam is available use a hose with a minimum diameter of 19 mm (0.75 in.). Control the pressure of the steam by a valve installed at the nozzle of the hose. If a metal nozzle is used, it must be made of a material that does not make sparks. Make an electrical connection between the nozzle and the tank. Connect a ground wire to the tank to prevent static electricity.

1. Remove all the parts from the tank. Install the drain plug.

WARNING

When cleaning the tank, do not use solutions that make dangerous gases at normal temperatures or when heated. Wear eye and face protection. Protect the body from burns. If the tank is cleaned inside a building, make sure there is enough ventilation.

CAUTION

Disposal of lubricants, fluids, and chemicals must meet local environmental regulations.

2. Fill the tank with a cleaning solution. Proceed as follows:
- If steam is available, fill the tank 1/4 full with a solution of water and sodium bicarbonate or sodium carbonate. Mix 0.5 kg (1 lb) per 4 liter (1 gal).
- If the tank cannot be cleaned with steam, mix a solution of water and trisodium phosphate or cleaning compound with an alkaline base. Follow the instructions given by the manufacturer.

WARNING

Compressed air can move particles so that they cause injury to the user or to other personnel. Make sure that the path of the compressed air is away from all personnel. Wear protective goggles or a face shield to prevent injury to the eyes.

3. Mix the solution in the tank using air pressure. Make sure all the surfaces on the inside of the tank are flushed with the solution.
4. Drain the tank.
5. If steam is available, put steam into the tank until the tank does not have odors and the metal is hot. Steam vapors must come from all the openings.
6. Flush the inside of the tank with boiling water. Make sure all the loose material and cleaning compound is removed from the inside of the tank.
7. Make an inspection of the inside of the tank. If it is not clean, repeat Step 5 and Step 6 and make another inspection. When making inspections, use a light that is approved for locations with flammable vapors.
8. Check the tank for flammable vapors. Put plugs in all the openings in the tank. Wait 15 minutes, then remove the inlet and outlet plugs. Test a sample of the vapor with a special indicator for gas vapors. If the amount of flammable vapors is above the lower flammable limit, repeat the cleaning procedures.

ADDITIONAL PREPARATIONS FOR REPAIR

If nitrogen gas or carbon dioxide gas is available, prepare the cleaned tank for welding using these gases. See the manual *Safe Practices for Welding and Cutting Containers That Have Held Combustibles* by the American Welding Society, F4.1-1999.

If these gases are not available, fill the tank with water to just below the point where the work will be done. Make sure the space above the level of the water has a vent.

REPAIR

Small Leaks

Use the following procedure to repair small leaks:

1. Use steam to clean the area around the leak. Remove all paint and dirt around the leak.
2. Apply Loctite® 290 to the leak. Follow the instructions of the manufacturer.

Large Leaks

WARNING

Special procedures must be followed when large leaks or other repairs need welding or cutting. All work must be done by authorized personnel.

CAUTION

Welding on the truck may cause damage to the engine, transmission, and/or hydraulic electronic control units if proper precautions are not taken. Disconnect the negative battery terminal from the battery. Disconnect all ECM's. If welding must be done in a close proximity of an ECM, that ECM must be removed. When welding to the chassis, attach the ground cable as close the weld as possible.

1. Use the procedure described under Clean to prepare the tank for repairs.
2. Contact your dealer for **Hyster** lift trucks for welding instructions.
3. Use acceptable welding practices to repair the tank. See the American National Standard *Safety in Welding and Cutting*, AWS Z 49.1 - 1999.

Preparations for use After Repair

1. Add more water to the tank so that the water goes above the point of where the work was done. Check to see if there are any leaks coming from tank.
2. If there are no leaks coming from the tank, remove all the water from the tank.

INSTALL

NOTE: When installing the hydraulic system oil filter, it is important to grease the O-ring before installation.

1. Place the hydraulic tank on lifting equipment and support with blocks of at least 50 mm (2.00 in.) thick to cover the height of the bracket at the bottom of the hydraulic tank.
2. Raise and place the hydraulic tank in front of the right side of the frame in the correct height position.

CAUTION

DO NOT to damage the studs during installation of the hydraulic tank to the frame.

3. Careful place the hydraulic tank over the studs without damaging the studs.
4. Install the three washers and nuts that hold the top of the hydraulic tank to the frame.
5. Remove the lifting device.

NOTE: While pushing the cab tilt shaft to the front of the truck, keep the shims in their position between the cab and cab tilt system.

6. Push the cab tilt shaft towards the front of the truck and guide the shaft into the front bracket.
7. Install the anchor that secures the cab tilt shaft.
8. Inspect the right running board grommets. Replace if damaged.
9. Put the right running board in place and install the capscrews that hold the running board to the counterweight, front fender, and hydraulic tank.
10. Install the right-hand extension plate using the three capscrews and washer. See Figure 6.
11. Feed the battery cables through the access hole of the hydraulic tank. See Figure 6.
12. Install the batteries into the battery box.

CAUTION

Connect the positive (power) cable first or lift truck damage may occur.

13. Connect the positive (power) and negative (ground) cables to the batteries.
14. Connect the two hoses to the two connections at the frame side of the hydraulic tank.
15. Connect the four return hoses to the two pipes at the top of the hydraulic tank. Torque the large fittings to 88 to 98 N•m (65 to 72 lbf ft).
16. Make sure the drain plug is installed at the bottom of the hydraulic tank.
17. Use a filtration system when refilling the hydraulic tank to the correct level with the oil specified in the maintenance table. See the section **Periodic Maintenance** 8000 SRM 1347.
18. Start the engine and operate the hydraulic system.
19. Make sure all functions work correctly.

WARNING

Do not try to locate hydraulic leaks by putting hands on pressurized hydraulic components. Hydraulic oil can be injected into the body and cause personal injury.

20. Check for leaks.
21. Bleed the system.
22. If necessary, fill the hydraulic tank to the correct level after bleeding the system.
23. Position the right-hand panel on top of the hydraulic tank and install the four washers and capscrews.

Fuel Tank

The fuel tank is installed on the left side of the frame between the front fender and counterweight.

The LPG version has a cover instead of a fuel tank. This cover can be replaced in a similar way.

REMOVE

1. Place the truck on a solid, level surface.
2. Lower the mast completely.
3. Shut down the engine.
4. Apply the parking brake.
5. Completely tilt (Raise) the cab.
6. Remove the connector from the pushbutton switch at the left-hand panel.
7. Remove the four capscrews and washers holding the left-hand panel and remove the panel.
8. Remove the left-hand extension plate between the fuel tank and counterweight.

WARNING

When removing the fuel tank, do not use tools that can make sparks, heat, or static electricity. The vapors in the tank can cause an explosion and personal injury may occur.

9. Put a drain pan under the fuel tank.
10. Remove the drain plug to drain the fuel from the tank. See Figure 8.

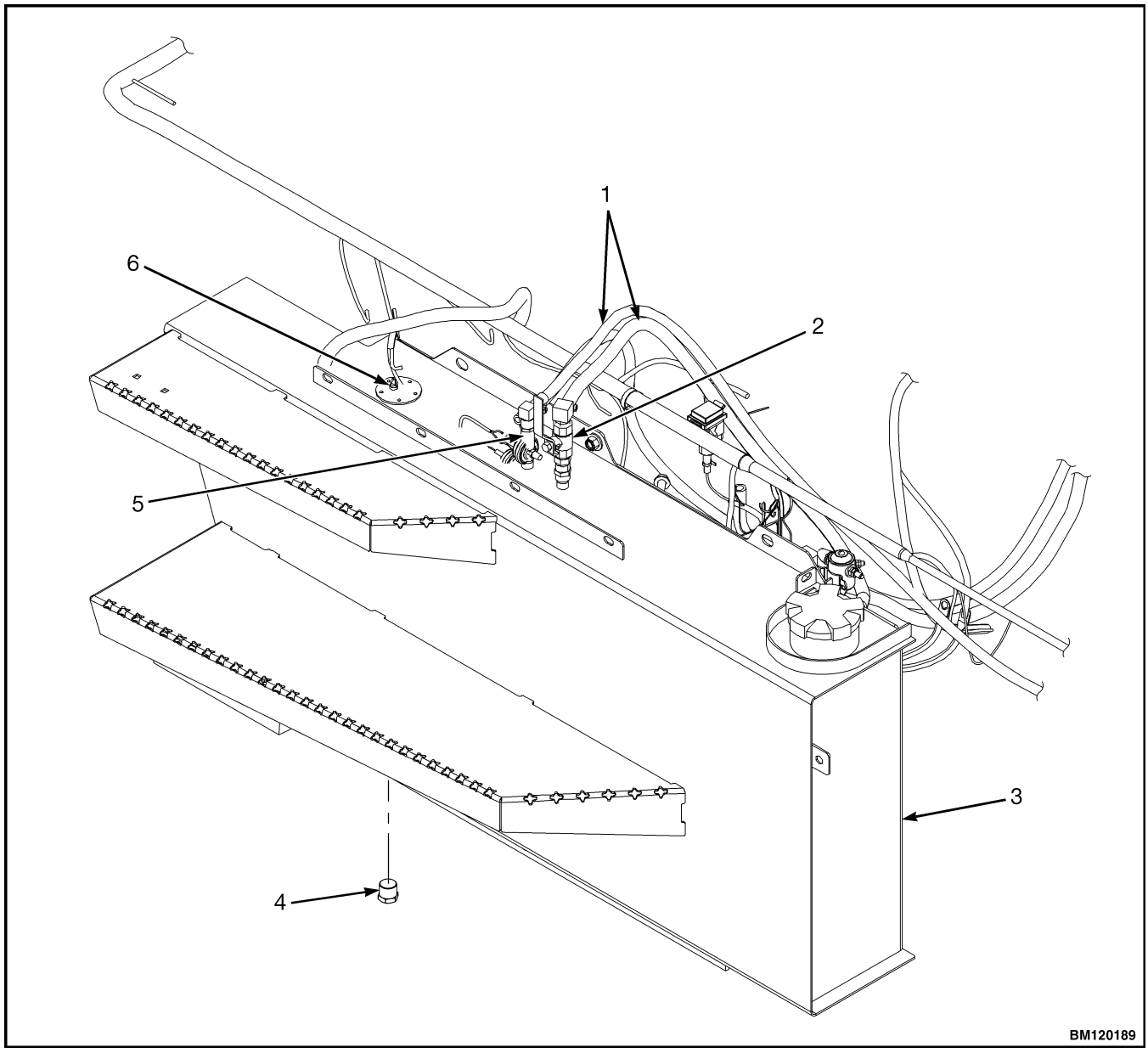
WARNING

If fuel is drained, put the fuel in a can or barrel that has a protected seal cap.

11. Disconnect the fuel sender connector at the top of the fuel tank. See Figure 8.
12. Put tags on the check valve and shutoff valve fuel hoses and fittings for identification.

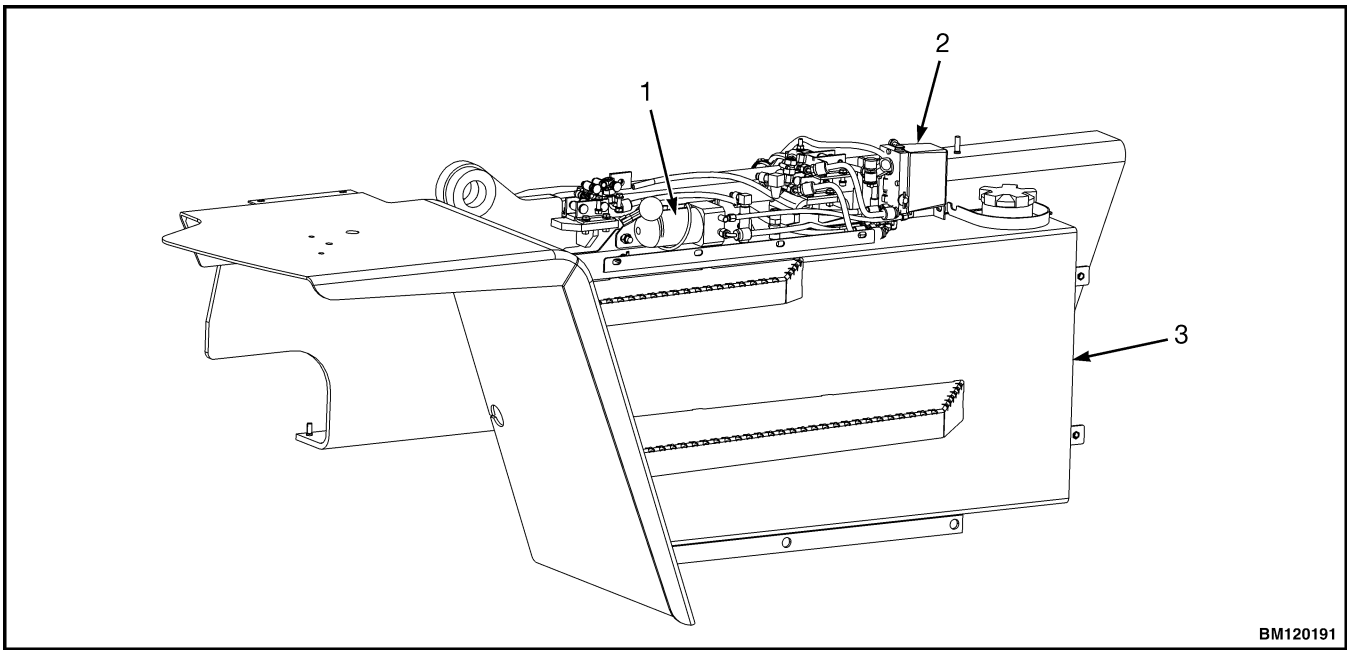
NOTE: Use a drain pan to catch the fuel in the fuel hoses.

13. Disconnect the two fuel hoses from the check valve and shutoff valve at the top of the fuel tank. See Figure 8.
14. Put caps on the fuel hoses and fittings.
15. Remove the check valve and shut off valve at the top of the fuel tank. See Figure 8.
16. Put caps on the fittings at the top of the fuel tank.
17. Loosen the fuel hose clamp located on top of the frame.
18. Turn the ends of the hoses parallel with the frame.
19. Remove the hose clamp for the cab tilt hoses.
20. Remove the retaining hardware of the left- and right-hand latch located on the frame.
21. Remove the two capscrews, and washers at the back of the hand pump. See Figure 9.



1. FUEL HOSE
2. FUEL SHUTOFF VALVE
3. FUEL TANK
4. DRAIN PLUG
5. CHECK VALVE
6. FUEL SENDER CONNECTOR

Figure 8. Fuel Tank



1. ELECTRICAL TILT PUMP 2. HAND PUMP 3. FUEL TANK

Figure 9. Fuel Tank, Hand Pump, and Electric Lift Pump

22. Remove the capscrews holding the left running board to the counterweight, front fender, and fuel tank and remove the running board.

WARNING

Make sure that the lifting device has the rated capacity of 100 kg (2205 lb)to lift the fuel tank.

NOTE: Removal of the fuel tank can be done with a lifting device, hydraulic jack, hand pallet jack, or lift truck.

NOTE: Follow step Step 23 and Step 24 when a lifting device is used.

NOTE: Follow Step 25 when a hydraulic jack, hand pallet jack, or lift truck is used.

NOTE: When lifting, keep the fuel tank in the horizontal position.

23. Attach a lifting device to the fuel tank. Attach lifting eyes at the locations shown in Figure 10.

24. Create slight tension on the chains.

25. Support the fuel tank with blocks of at least 50 mm (2.0 in.) thick to cover the height of the bracket on the bottom of the fuel tank.

CAUTION

DO NOT to damage the studs during removal of the fuel tank from the frame.

26. Remove the two nuts and washers that hold the top of the fuel tank and the electrical tilt pump bracket to the frame.

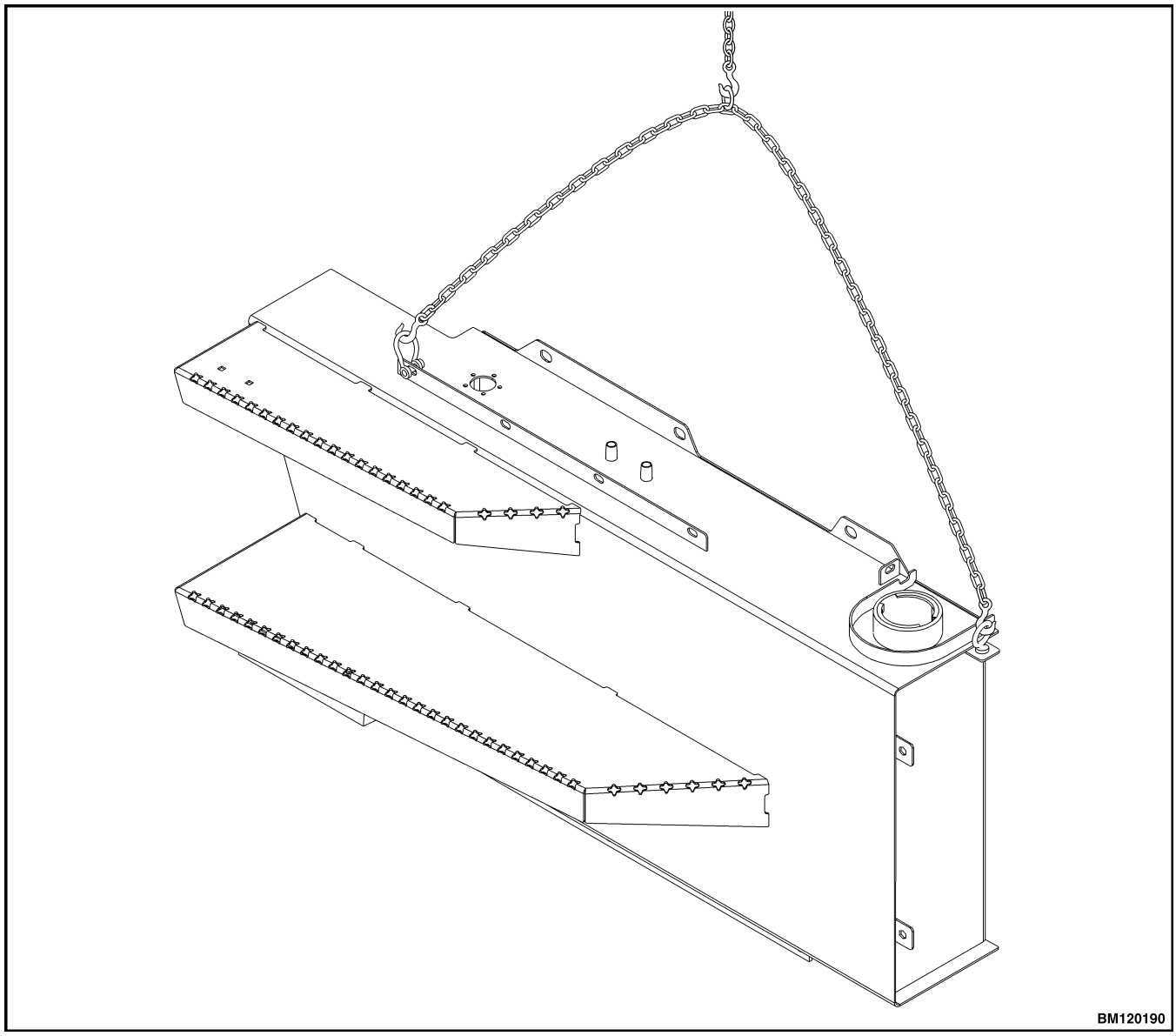


Figure 10. Lifting Points

27. Remove the electrical tilt pump and bracket from the frame.

28. Place the electrical tilt pump, hand pump, left and right latch inside the frame to avoid damage to the hoses during the removal of the fuel tank.

29. Remove the remaining nut that holds the fuel tank to the frame.

30. Lift the fuel tank from the studs and move the fuel tank away from the frame.

REPAIR

WARNING

Do not use tools that can make sparks, heat, or static electricity. The vapors in the tank can cause an explosion.

Repair the fuel tank as described in the section Hydraulic Tank.

INSTALL

NOTE: Follow Step 1 when a lifting device is used.

NOTE: Follow Step 2 when a hydraulic jack, hand pallet jack, or lift truck will be used.

NOTE: When lifting, keep the fuel tank in a horizontal position.

1. Attach a lifting device with lifting straps and lifting eyes to the fuel tank.
2. Place the fuel tank on lifting equipment and support with blocks of at least 50 mm (2.00 in.) thick to cover the height of the bracket at the bottom of the fuel tank.
3. Raise and place the fuel tank in front of the left side of the frame.

CAUTION

DO NOT to damage the studs during installation of the fuel tank.

4. Place the fuel tank over the studs of the frame.
5. Install the washer and nut, located behind the hand pump, that hold the top of the fuel tank to the frame.
6. Position the hand pump, electrical tilt pump, left and right latch at the frame and route the hoses correctly.
7. Install the two washers and nuts that hold the top of the fuel tank and the electrical tilt pump bracket to the frame.
8. Install the hand pump with the two washers and capscrews located behind the hand pump.
9. Install the left and right latch, located at the frame, with the capscrews, spring washers, washers, and nuts.
10. Install the hose clamps located on top of the frame.
11. Inspect the left running board grommets. Replace if damaged.
12. Put the left running board in place and install the capscrews that hold the running board to the counterweight, front fender, and fuel tank.
13. Install the left hand extension plate between the fuel tank and counterweight using the three washers and capscrews.
14. Install the drain plug at the bottom of the fuel tank.
15. Install the check valve and shutoff valve at the top of the fuel tank.
16. Connect the two fuel hoses to the check valve and shut off valve at the top of the fuel tank.
17. Connect the connector to the electrical tilt pump.
18. Connect the connector of the fuel sender to the top of the fuel tank.
19. Position the left-hand panel on top of the fuel tank and install the four capscrews and washers.
20. Connect the connector, located at the left-hand panel, to the push button switch.
21. Fill the fuel tank to the correct level with fuel specified in the section **Periodic Maintenance** 8000 SRM 1347.

CAUTION

Connect the positive (power) cable first or lift truck damage may occur.

22. Connect the positive (power) and negative (ground) cable to the batteries.
23. Completely lower the cab.
24. Start the engine.
25. Check for leaks.

Engine

REMOVE

WARNING

Engine must be at room temperature before starting disassembly or personal injury may occur.

CAUTION

Repairs to air conditioning that require discharging and/or refilling of the refrigeration fluid must be performed only by a trained and certified air conditioning specialist.

1. Place the truck on a solid, level surface.
2. Lower the mast completely.
3. Shut down the engine.
4. Apply the parking brake.
5. Completely tilt (Raise) the cab.

CAUTION

Disconnect the negative (ground) cable first or damage to the lift truck may occur.

6. Disconnect the negative (ground) and positive (power) cables from the batteries.
7. Remove the hood. See the section Hood Assembly, Remove.
8. Disconnect the electrical cable from the air conditioner compressor.

NOTE: Removing the compressor for the air conditioner with the hoses attached prevents the need to have a certified specialist suction and refill the air conditioning system.

NOTE: DO NOT remove the refrigerant hoses.

9. Remove the air conditioner compressor from the mounting bracket located on the engine.
10. Attach the air conditioner compressor with the hoses to the cab. Make sure the hoses are free from the engine/transmission during removal.
11. Put tags on the two heater hoses for identification.
12. Disconnect the two heater hoses located under the operators compartment at the engine side.
13. Put caps on the two heater hoses.

WARNING

DO NOT remove the pressure cap from the expansion bottle when the engine is hot. When the pressure cap is removed, the pressure is released from the system. If the system is hot, the steam and boiling coolant can cause burns.

CAUTION

Disposal of lubricants and fluids must meet local environmental regulations.

14. Let coolant cool to room temperature.
15. Use a drain pan to catch the coolant.
16. Remove the pressure cap from the expansion tank.
17. Remove the radiator return hose from the engine to drain the coolant.

NOTE: Use a drain pan to drain the transmission oil from the transmission.

18. Remove the drain plug at the bottom of the transmission and put the transmission oil in a clean barrel.
19. Install the drain plug at the bottom of the transmission.

NOTE: Step 20 through Step 25 is for diesel engines only.

20. Close the fuel shutoff valve at the top of the fuel tank.
21. Put tags on the fuel hoses and fittings for identification.

NOTE: Use a drain pan to catch the fuel in the fuel hoses.

22. Disconnect the fuel hose at the diesel fuel filter.
23. Disconnect the fuel hose at the check valve.
24. Put caps on the fuel hoses and fittings.
25. Attach the fuel hoses to the engine.