

SERVICE REPAIR

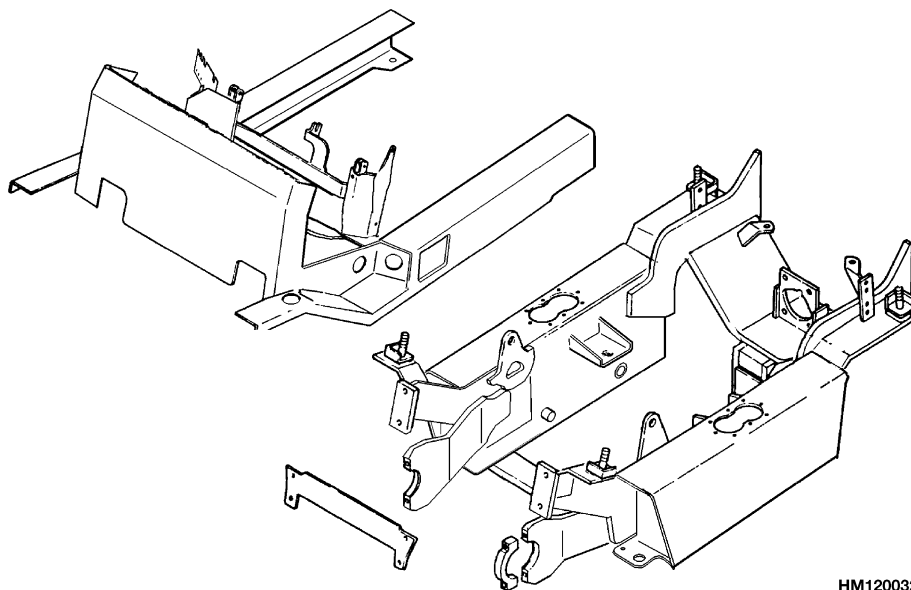
MANUAL

Hyster C010 (S25XM, S30XM, S35XM,
S40XMS) Forklift

HYSTER

FRAME

**H1.50-1.75XM (S/H25-35XM)
[C010, D001, D010, E001];
H2.00XMS (S/H40XMS)
[C010, D001, D010, E001]**



HM120032

HYSTER

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 condition that can cause immediate death or injury!



CAUTION

Indicates a condition that can cause property damage!

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This section is for the following models:

H1.50-1.75XM (S/H25-35XM) [C010, D001, D010, E001];
H2.00XMS (S/H40XMS) [C010, D001, D010, E001]

**"THE
QUALITY
KEEPERS"**

**HYSTER
APPROVED
PARTS**

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General

This section has the description of the frame and some connected parts. See Figure 1. Procedures for the removal and installation of the counterweight, hood, overhead guard, and engine (including the transmission) are under Counterweight Repair,

Hood and Side Covers Repair, Overhead Guard Repair, and Engine Repair. Checks for the operator restraint system, repair procedures for the tanks, and replacement procedures for the safety labels are also included.

Description

The frame is one weldment and includes the hydraulic tank and the fuel tank for gasoline or diesel fuel. (Diesel fuel is not used on the S25-35XM or S40XMS.)

There is a counterweight for each capacity of lift truck. The counterweights are similar, but are different weights. The muffler is fastened to the frame inside the counterweight.

An operator module is installed on the frame with rubber mounts. The overhead guard, steering controls, hydraulic control valve, instrument panel, and

the hood and seat are installed on the operator module.

The hood is connected to the operator module with hinges. Two torsion springs assist in raising the hood. A support rod holds the hood in the open position. The floor plates and side covers can be removed for access to the engine, transmission, and other components.

Operator Module Repair

REMOVE



WARNING

The lift truck must be put on blocks for some types of maintenance and repair. The removal of the following assemblies will cause large changes in the center of gravity: mast, drive axle, engine, transmission, and the counterweight. When the lift truck is put on blocks, put additional blocks in the following positions to maintain stability:

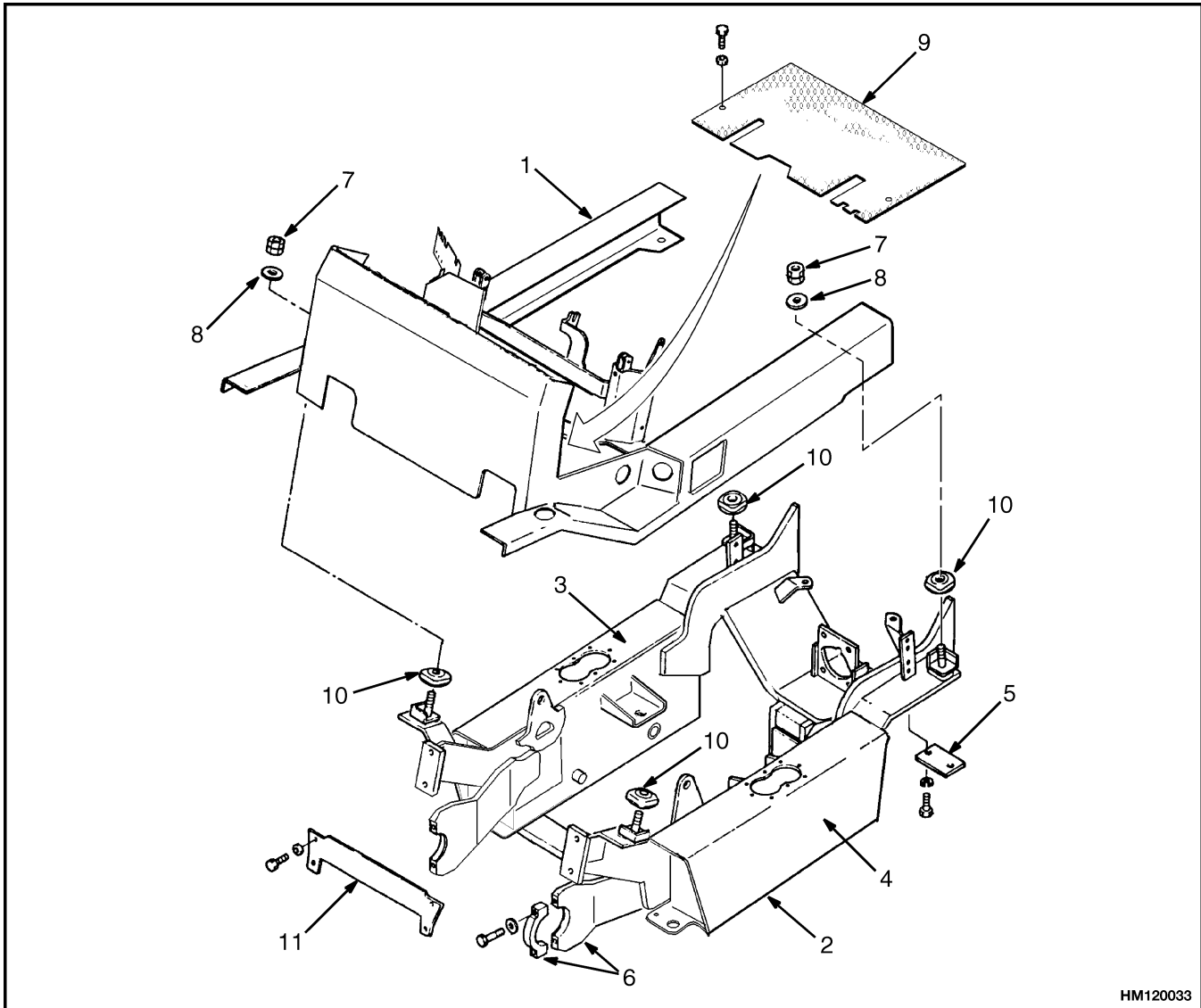
- **Before removing the mast and drive axle, put blocks under the counterweight so the lift truck cannot fall backward.**
- **Before removing the counterweight, put blocks under the mast assembly so the lift truck cannot fall forward.**

The surface must be solid, even, and level when the lift truck is put on blocks. Make sure that any blocks used to support the lift truck are

solid, one-piece units. See the Operating Manual or the section Periodic Maintenance 8000 SRM 531.

1. Remove hood and side covers.
2. Remove three capscrews that hold hydraulic control valve to mounting bracket.
3. Remove steering housing and instrument cluster from cowl. Remove capscrews that hold parking brake lever to cowl.
4. Remove nuts at mounts for operator module.
5. Connect lifting device to overhead guard. Overhead guard and module weigh approximately 385 kg (850 lb). Lift operator module from frame. See Figure 1.

NOTE: The module is supported by two different types of rubber mounts. Mark the mounts for proper installation.



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|--------------------|------------------------|------------------|
| 1. OPERATOR MODULE | 5. STEERING AXLE MOUNT | 9. FLOOR PLATE |
| 2. FRAME | 6. DRIVE AXLE MOUNT | 10. RUBBER MOUNT |
| 3. HYDRAULIC TANK | 7. LOCK NUT ASSEMBLY | 11. PLATE |
| 4. FUEL TANK | 8. WASHER | |

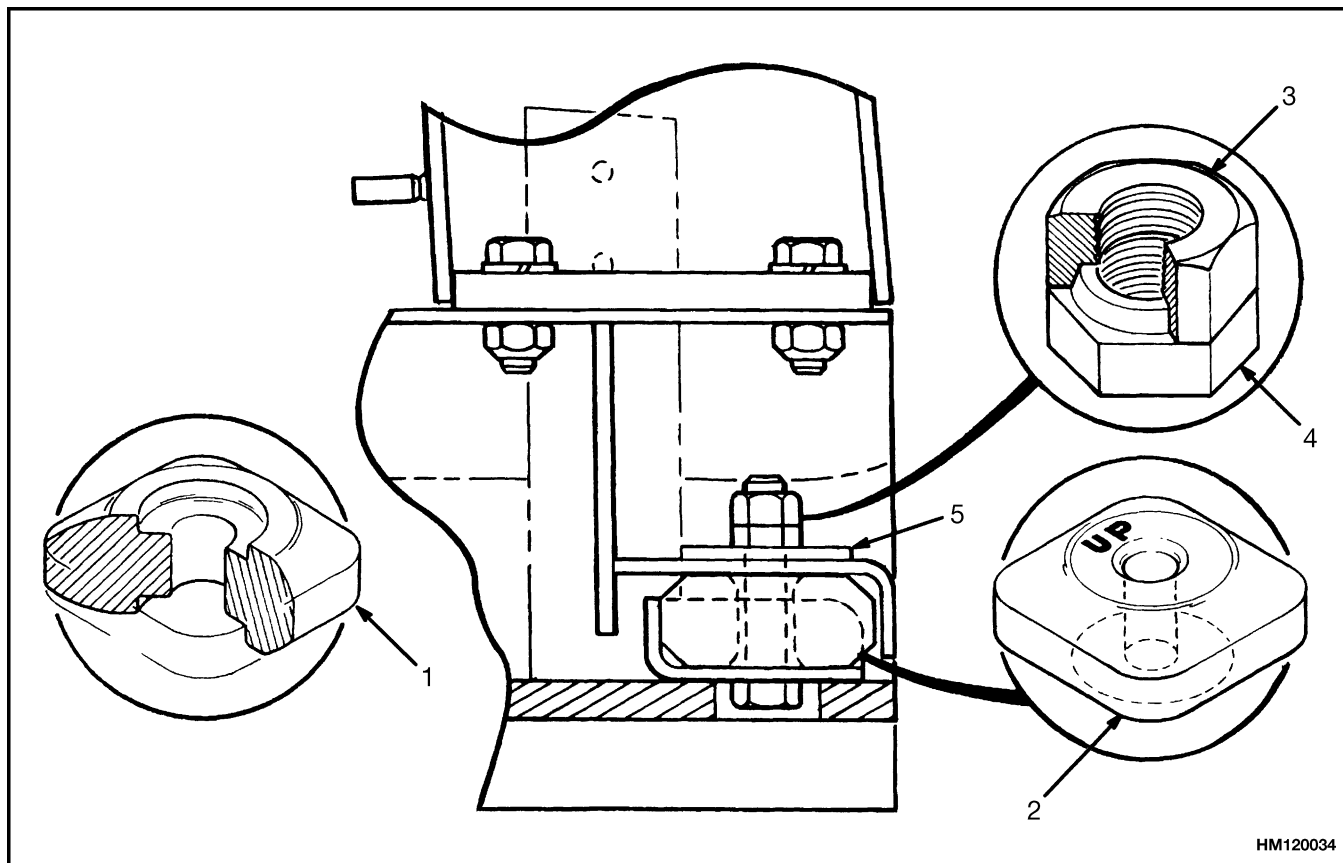
Figure 1. Frame and Operator Module

INSTALL

1. Make sure rubber mounts are properly installed in frame. See Figure 1. Three mounts with UP on one side are installed at left rear, left front, and right front positions of module. Make sure UP faces upward. See Figure 2. One mount that

does not have any marking is installed at right rear position of module.

2. Connect lifting device to overhead guard. Overhead guard and module weigh approximately 385 kg (850 lb). Lift operator module onto frame.



- | | |
|-------------------------------------|--------------------|
| 1. RIGHT REAR RUBBER MOUNT | 4. BOTTOM LOCK NUT |
| 2. LEFT REAR AND FRONT RUBBER MOUNT | 5. WASHER |
| 3. TOP LOCK NUT | |

Figure 2. Module Mounts

3. Install large flat washers and lock nuts. Use following procedure to tighten lock nuts:
 - a. Tighten bottom lock nut until it just touches flat washer. Do not compress rubber mount.
 - b. While holding bottom nut, tighten top nut to 36 N•m (27 lbf ft).
4. Install hydraulic control valve.
5. Install hood and side covers.
6. Install steering controls and parking brake lever.
7. Install floor plates.

Hood and Side Covers Repair

REMOVE

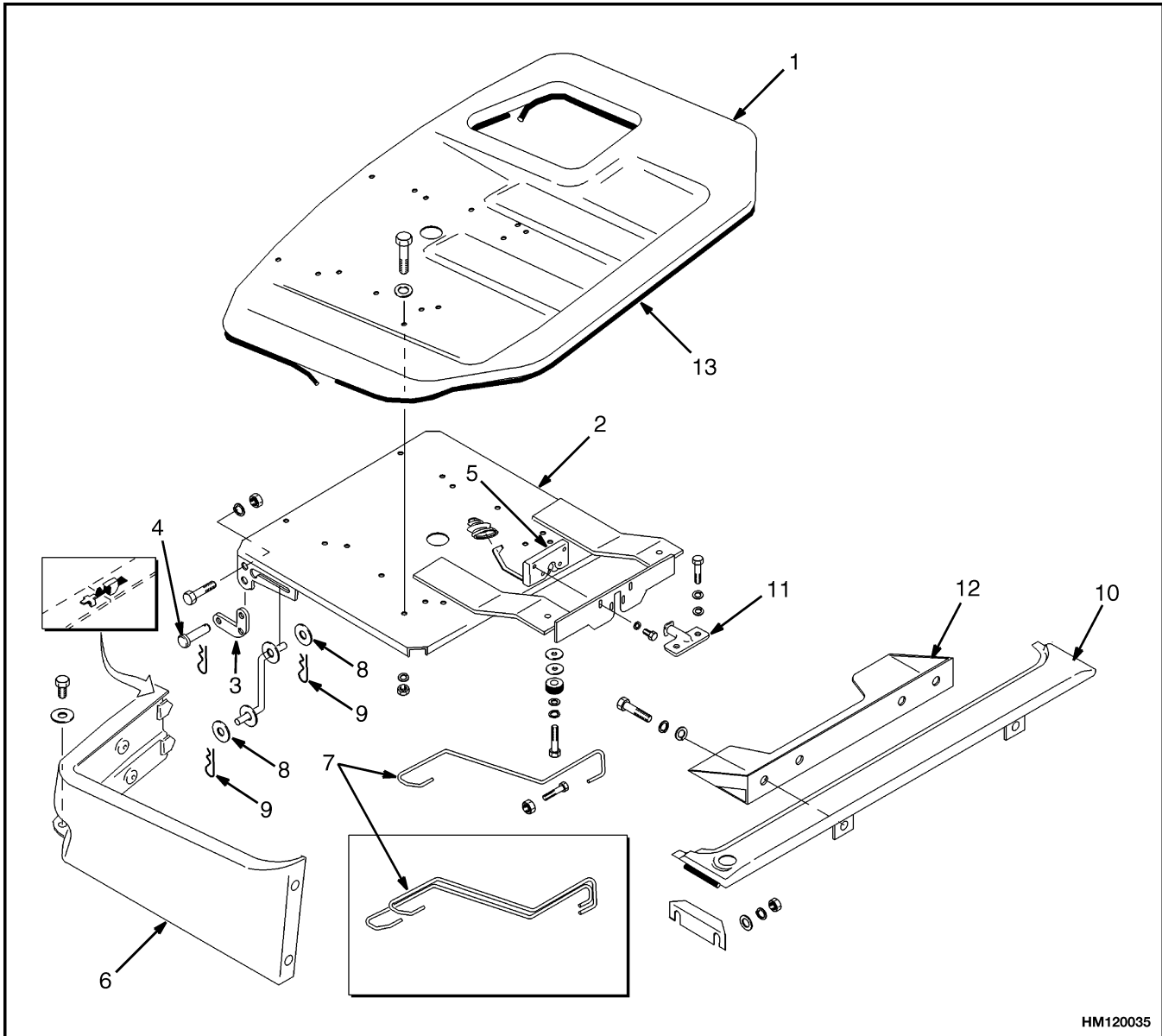
NOTE: The combined weight of the hood and seat is approximately 45 kg (100 lb). Have a helper or use a lifting device to remove the hood and seat.

1. Raise hood and hold hood so it does not fall. Disconnect torsion springs and support rod at hood. See Figure 3.

2. Remove rod end pins and pivot pins from hood hinges. Remove hood.

INSTALL

1. Install hood in position on lift truck. See Figure 3. Install pivot pins and rod end pins at hood hinges. Connect torsion springs and support rod to hood.



- | | | | |
|--------------|-------------------|-------------------|----------|
| 1. HOOD | 5. HOOD LATCH | 9. PIN | 13. SEAL |
| 2. SEAT PAN | 6. SIDE COVER | 10. COVER | |
| 3. HINGE | 7. TORSION SPRING | 11. LATCH STRIKER | |
| 4. PIVOT PIN | 8. WASHER | 12. BRACKET | |

Figure 3. Hood and Side Covers

**WARNING**

The hood, the hood latch, and the latch striker must be correctly adjusted for the operator restraint system to function correctly.

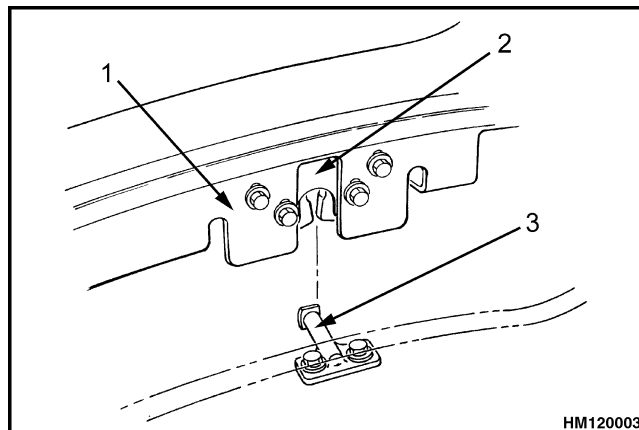
2. Adjust hood latch as follows:

- a. Install hood latch in lowest slot position on frame of hood. Tighten capscrews so hood latch can still move when hood is closed.
- b. Install latch striker. Check that latch striker is in center of jaws of hood latch when hood closes.
- c. Carefully close hood to fully closed position. Hood latch has two positions. Hood is fully closed after two clicks of latch.

NOTE: On later models, hinge is not a serviceable part. It is welded onto seat pan.

- d. Push hood down until it just touches rubber bumpers. Make sure latch striker is still in center of hood latch. Open hood and tighten capscrews for latch.

- e. Check operation of hood latch. See Figure 4. Have operator sit in seat. Make sure hood is fully closed (two clicks). Also check that hood touches rubber bumpers. If necessary, repeat Step d.



1. HOOD FRAME
2. HOOD LATCH
3. LATCH STRIKER

Figure 4. Hood Latch Check

Overhead Guard Repair

REMOVE AND INSTALL

**WARNING**

Do not operate the lift truck without the overhead guard correctly fastened to the lift truck.

Changes that are made by welding, or by drilling holes that are too big or in the wrong location, can reduce the strength of the overhead guard. See the instructions for Changes to the Overhead Guard in the section Periodic Maintenance 8000 SRM 531.

1. Connect crane or lifting device to overhead guard for removal or installation.

2. Disconnect air intake at overhead guard leg. Disconnect any wires between frame and overhead guard. When overhead guard is lifted from frame, make sure electric wires are moved through holes in frame so they are not damaged.
3. Remove two bolts at each front corner and two bolts and lock nuts at each rear corner of overhead guard. During installation, tighten bolts to 65 N•m (48 lbf ft).

NOTE: The air inlet for the gasoline/LPG air filter is installed in the left-hand leg of the overhead guard. The air inlet for the diesel air filter is installed in the right-hand leg of the overhead guard. Make sure the grille is installed with the louvers pointed downward.

Counterweight Repair



WARNING

The counterweight is heavy. Make sure the eye-bolt and lifting devices have enough capacity to lift the weight. The approximate weights of the counterweight castings are shown in Table 1.

Do not operate the lift truck if the capscrews for the counterweight are not installed. When the capscrews are removed, the counterweight can fall from the lift truck.

Table 1. Weight of Counterweights

Model	kg	lb
H25XM	668 to 682	1473 to 1504
S25XM	634 to 646	1398 to 1424
H1.50XM (H30XM)	824 to 840	1817 to 1852
S30XM	807 to 823	1779 to 1814
H1.75XM (H35XM)	997 to 1017	2198 to 2242
S35XM	990 to 1010	2183 to 2227
H2.00XMS (H40XMS)	1167 to 1191	2573 to 2626
S40XMS	1179 to 1203	2599 to 2652

The counterweight is held in position on the frame by two hooks that are part of the frame. Two M24 × 3 capscrews hold the counterweight to the lower part of the frame.

REMOVE



WARNING

LPG can cause an explosion. Do not cause sparks or permit flammable material near the LPG system. LPG fuel systems can be disconnected indoors only if the lift truck is at least 8 m (26 ft) from any open flame, motor vehicles, electrical equipment, or ignition source.

Close the shutoff valve on the LPG tank before any part of the engine fuel system is disconnected. Run the engine until the fuel in the system is used and the engine stops.

If the engine will not run, close the shutoff valve on the LPG tank. Loosen the fitting on the supply hose from the LPG tank where it enters the filter unit. Permit the pressure in the fuel system to decrease slowly. Fuel leaving the fitting is cold. Use a cloth to protect your hands from the cold fitting.

NOTE: LPG tanks can be removed and replaced indoors only if the lift truck is at least 8 m (26 ft) from any flame or ignition source.

1. If lift truck has LPG fuel system, remove LPG tank and bracket so that counterweight can be removed. Use following procedure to remove LPG tank:
 - a. Move lift truck to area where tanks are changed.
 - b. Turn shutoff valve clockwise until valve is completely closed.
 - c. Run engine until it stops, then turn ignition switch to **OFF** position.

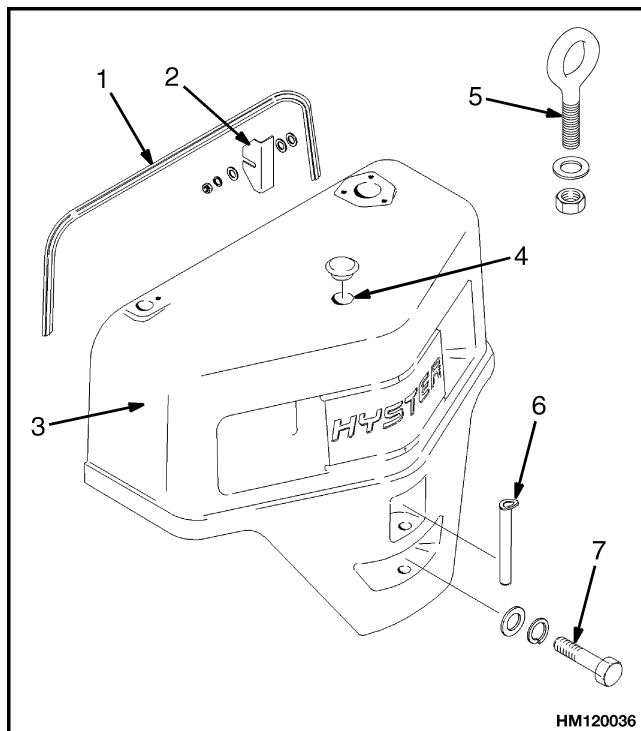


WARNING

Fuel leaving the fitting is cold. Use a cloth to protect your hands from the cold fitting.

If engine will not run, close shutoff valve on LPG tank. Loosen fitting on supply hose from LPG tank where it enters filter unit. Allow pressure in fuel system to decrease slowly.

- d. Disconnect quick-disconnect fitting.
 - e. Release LPG tank latch and remove tank from bracket.
2. If overhead exhaust is installed, remove it as shown in Figure 7 and Figure 8.
 3. Install lifting eye in lifting hole of counterweight. See Figure 5. Connect crane to lifting eye and raise crane until it holds some weight of counterweight. Remove capscrew that holds counterweight to frame. Use crane to lift counterweight from lift truck. Put counterweight on floor so it is stable and will not fall over.



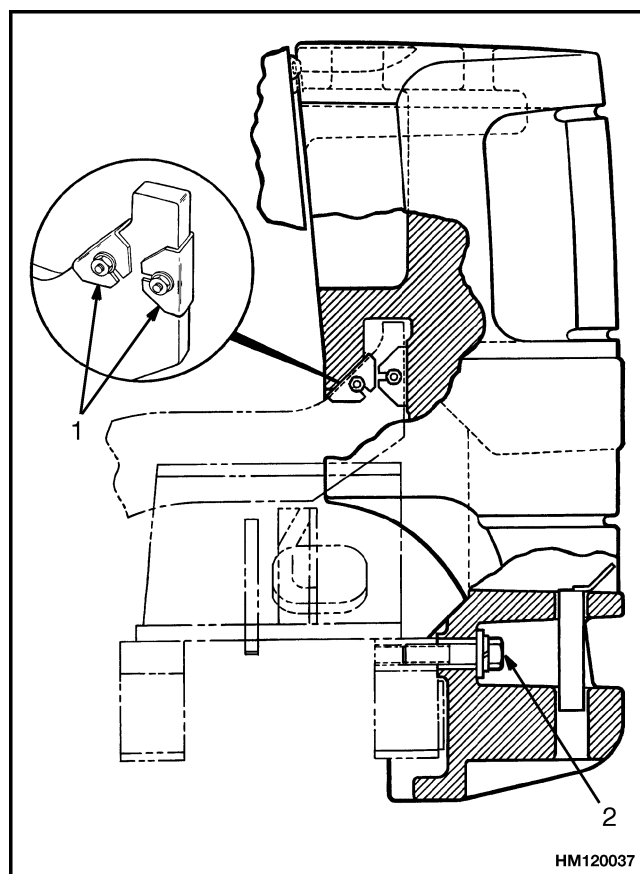
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|---------------------|-------------|
| 1. SEAL | 5. EYEBOLT |
| 2. SPACER | 6. TOW PIN |
| 3. COUNTERWEIGHT | 7. CAPSCREW |
| 4. HOLE FOR EYEBOLT | |

Figure 5. Counterweight

INSTALL

1. Install spacers on mounts. See Figure 6. When counterweight is installed, make sure hooks on frame fully engage counterweight so it is aligned with frame. Use spacers to obtain gap of 7.5 to 10.5 mm (0.30 to 0.41 in.) between counterweight and overhead guard leg. Tighten M24 × 3 cap-screws to 555 N•m (409 lbf ft).
2. If lift truck has LPG fuel system, install bracket for LPG tank. Use following procedure to install LPG tank:
 - a. Before LPG tank is installed on lift truck, make sure tank has fuel in it. Check operation of fuel gauge. Look at fuel gauge and move tank. If gauge needle does not move, new tank must be installed.

- b. Put tank in tank bracket. Make sure tank is aligned with alignment pin.
 - c. Close latch.
 - d. Connect quick-disconnect fitting to shutoff valve on tank. Use your hand to tighten fitting. Do not open shutoff valve until quick-disconnect fitting is completely tightened. Turn shutoff valve counterclockwise to open valve.
 - e. Inspect fuel system for leaks when shutoff valve is open. Strong odor or frost on surface of tank, valves, or fittings indicates leakage.
3. If lift truck has overhead exhaust, install it as shown in Figure 7 and Figure 8.



- | | |
|-----------|-------------|
| 1. SPACER | 2. CAPSCREW |
|-----------|-------------|

Figure 6. Counterweight Installation

Exhaust System Repair

The muffler is installed inside the cavity of the counterweight. A short exhaust pipe sends the exhaust gases out of the lift truck through the grille in the counterweight.

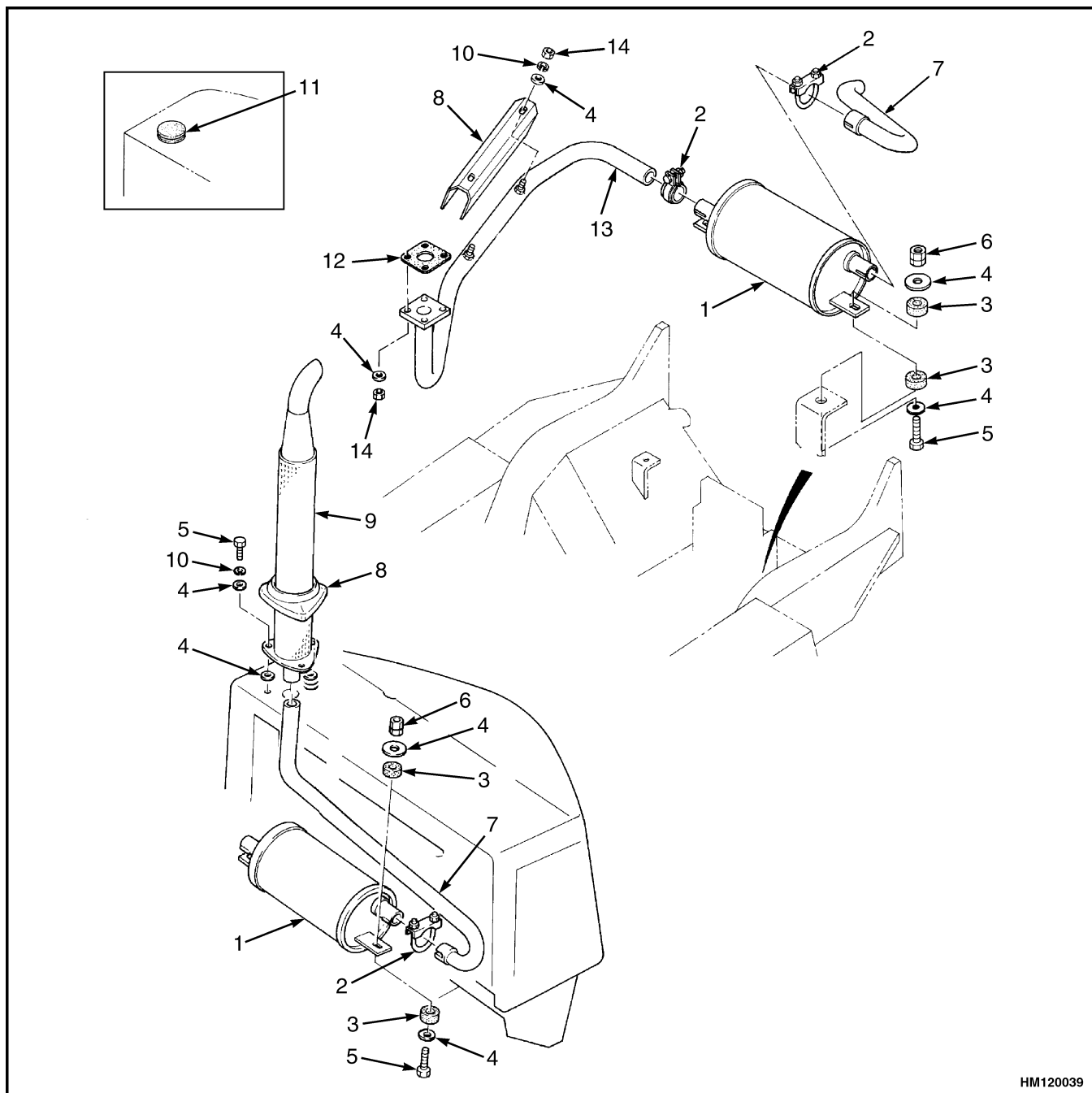
The lift truck may have an overhead exhaust system. The exhaust pipe is fastened to the top of the counterweight.

Muffler, Replace

The counterweight must be removed to replace the muffler. When replacing parts of the exhaust system,

see Figure 7, Figure 8, or Figure 9. When connecting the exhaust pipe to the engine, do the following:

- On units with gasoline or LPG engine, tighten exhaust pipe nuts to 16 to 23 N•m (12 to 17 lbf ft).
- On units with diesel engine, tighten exhaust pipe nuts to 32 to 47 N•m (24 to 35 lbf ft).
- On units with overhead exhaust, tighten capscrews that hold vertical pipe to counterweight to 15 to 18 N•m (11 to 13 lbf ft). Install cover.

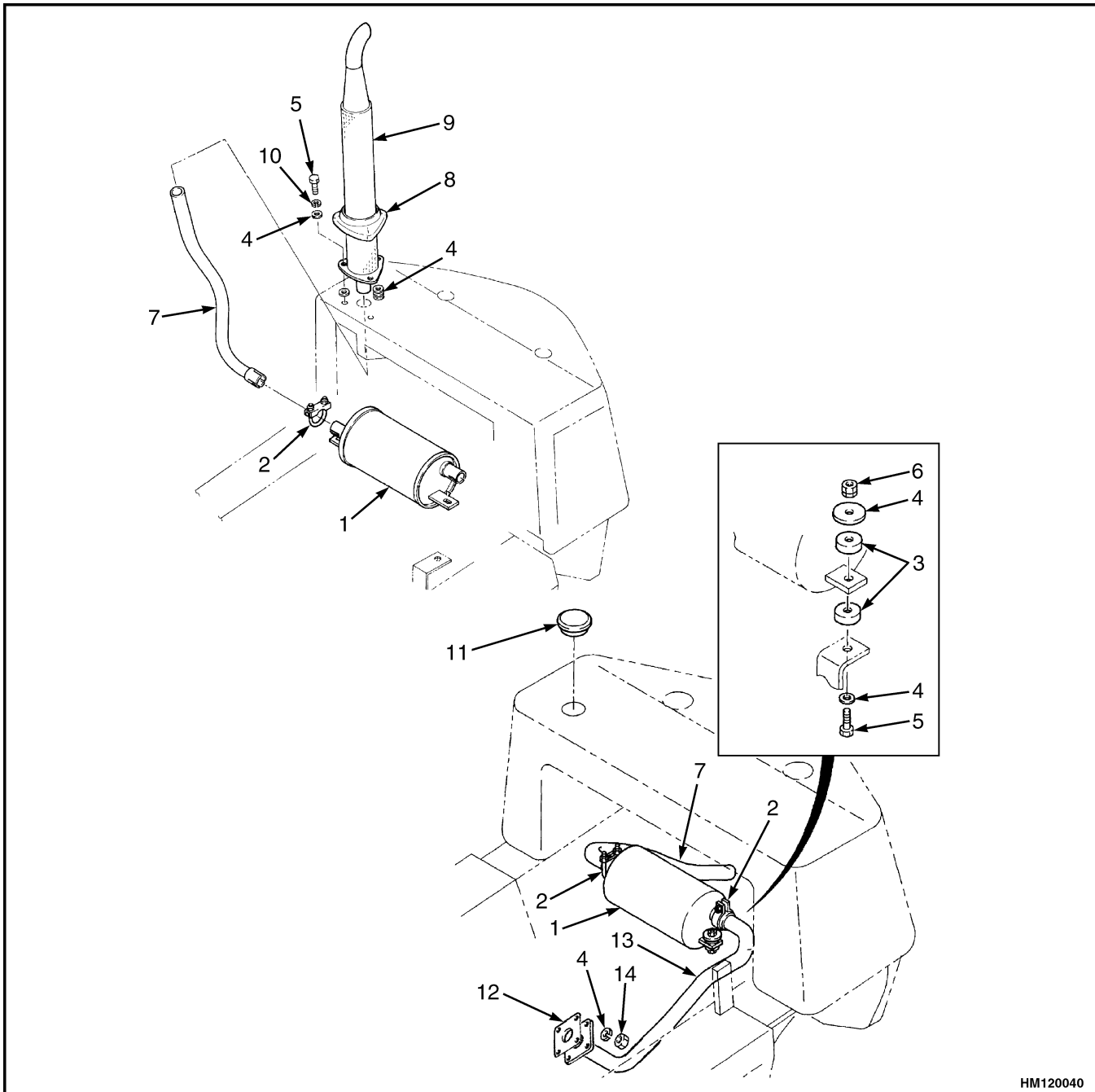


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1. MUFFLER
2. CLAMP
3. RUBBER CUSHION
4. WASHER
5. CAPSCREW
6. LOCK NUT ASSEMBLY
7. TAILPIPE

8. COVER
9. VERTICAL PIPE
10. LOCKWASHER
11. RUBBER CAP
12. GASKET
13. EXHAUST PIPE
14. NUT

Figure 7. Gas and LPG Exhaust System

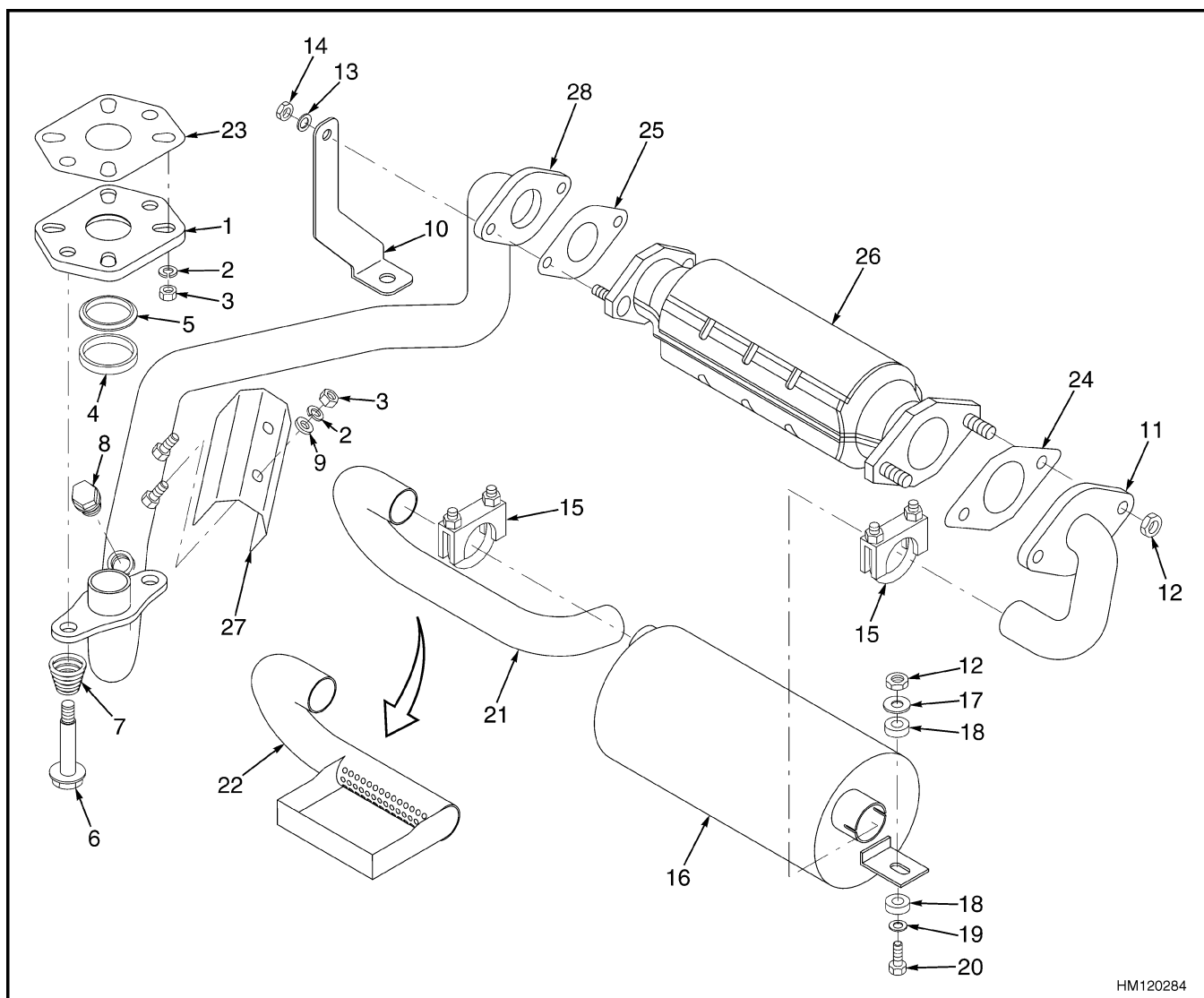


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NOTE: S25-35XM AND S40XMS USE COUNTERWEIGHT EXHAUST ONLY.

- | | |
|----------------------|------------------|
| 1. MUFFLER | 8. COVER |
| 2. CLAMP | 9. VERTICAL PIPE |
| 3. RUBBER CUSHION | 10. LOCKWASHER |
| 4. WASHER | 11. RUBBER CAP |
| 5. CAPSCREW | 12. GASKET |
| 6. LOCK NUT ASSEMBLY | 13. EXHAUST PIPE |
| 7. TAILPIPE | 14. NUT |

Figure 8. Diesel Exhaust System



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|------------------------------|-------------------|-------------------------|
| 1. ADAPTER | 10. BRACKET | 20. CAPSCREW |
| 2. LOCKWASHER | 11. EXHAUST PIPE | 21. TAILPIPE |
| 3. NUT | 12. NUT | 22. TAILPIPE (LPS) |
| 4. SPACER | 13. WASHER | 23. GASKET |
| 5. SEAL | 14. NUT | 24. GASKET |
| 6. CAPSCREW | 15. CLAMP | 25. GASKET |
| 7. SPRING | 16. MUFFLER | 26. CATALYTIC CONVERTER |
| 8. PLUG (RAW GAS CHECK PORT) | 17. RUBBER WASHER | 27. COVER |
| 9. WASHER | 18. CUSHION | 28. EXHAUST PIPE |
| | 19. WASHER | |

Figure 9. Low-Emissions Exhaust System (LPG)

Radiator and Cooling System Repair

REMOVE



WARNING

DO NOT remove the radiator cap while it is hot. Hot coolant and steam can cause burns. Make sure the label is on the radiator cap. See Figure 10.

1. Open drain valve and drain coolant from radiator. Remove bottom radiator hose and drain coolant from engine. See Figure 10 or Figure 11.

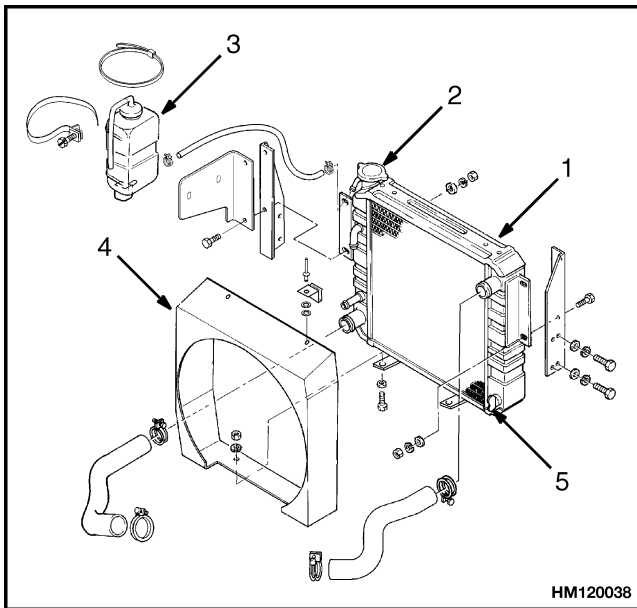
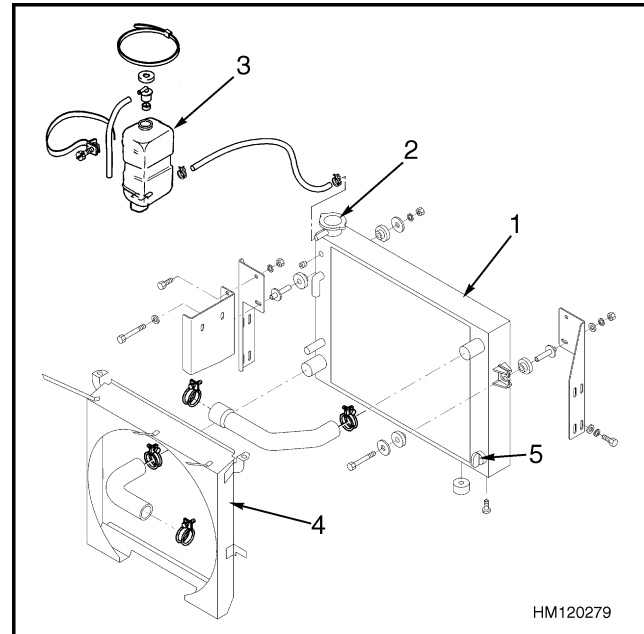


Figure 10. Cooling System (Earlier Models)

Legend for Figure 10

- | | |
|--------------------------------|----------------|
| 1. RADIATOR | 4. SHROUD |
| 2. RADIATOR CAP | 5. DRAIN VALVE |
| 3. AUXILIARY COOLANT RESERVOIR | |
2. Remove capscrews that fasten fan to hub. Remove capscrews that hold fan shroud to radiator. Remove both fan and fan shroud.

3. Disconnect top coolant hose at radiator. Disconnect lines to oil cooler in side of radiator. Put caps on open lines and ports. Remove capscrews that hold radiator to frame. Remove radiator.



- | | |
|--------------------------------|----------------|
| 1. RADIATOR | 4. SHROUD |
| 2. RADIATOR CAP | 5. DRAIN VALVE |
| 3. AUXILIARY COOLANT RESERVOIR | |

Figure 11. Cooling System (Later Models)

INSTALL

1. Install radiator. Install fan and fan shroud in position on radiator. Install capscrews that hold fan shroud. Install capscrews that fasten fan to hub.
2. Connect upper coolant hoses at radiator. Connect lines for transmission oil to oil cooler in radiator.

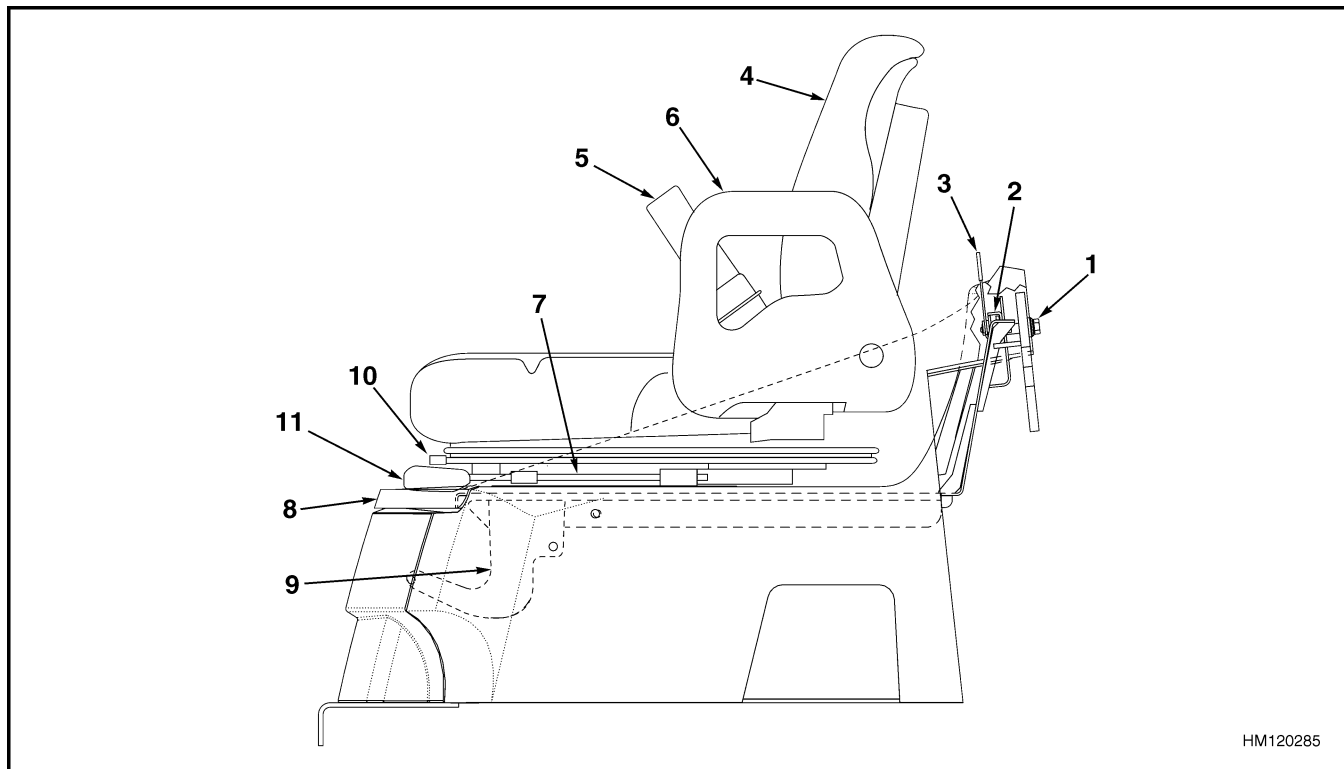
Operator Restraint System Repair

The seat belt, hip restraint, seat and mount, hood, and latch are all part of the operator restraint system. Each item must be checked to make sure it is fastened correctly, functions correctly, and is in good condition.

The end of the seat belt must fasten correctly in the latch. Make sure the seat belt pulls from the retractor assembly and retracts smoothly. The seat

belt must be in good condition. A seat belt that is damaged or worn will not give protection when it is needed. If the seat belt cannot be pulled from the retractor assembly, replace the seat belt assembly.

Adjust the hood, the hood latch, and the latch striker when any of the parts of the operator restraint system are installed or replaced. See Hood and Side Covers Repair for the adjustment procedures.



- 1. LATCH STRIKER
- 2. HOOD LATCH
- 3. LATCH LEVER
- 4. SEAT

- 5. SEAT BELT LATCH
- 6. HIP RESTRAINT
- 7. SEAT RAIL
- 8. HOOD

- 9. HINGE
- 10. SUPPORT ROD
- 11. COVER

Figure 12. Hood and Seat Check