

**TRUCK, DUMP, HEAVY, MC3 – MACK
LIGHT GRADE REPAIR**

This instruction is authorised for use by command of the Chief of Army. It provides direction, mandatory controls and procedures for the operation, maintenance and support of equipment. Personnel are to carry out any action required by this instruction in accordance with EMEI General A 001.

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GENERAL

INTRODUCTION

1. This EMEI contains the instructions for removing, repairing/replacing and installing minor components of the Truck, Dump, Heavy, MC3 – Mack. For further information on the basic truck, refer to the relevant EMEI's.

ASSOCIATED PUBLICATIONS

2. Reference may be necessary to the latest version of the following documents:
- a. Defence Road Transport Instructions (DRTI);
 - b. SCES 11659 – Truck, Dump, Heavy, MC3 – Mack;
 - c. SCES 11661 – Truck, Dump Winch, Heavy, MC3 – Mack;
 - d. [EMEI Vehicle A 291-1](#) – Tyres and Tubes – Care and Maintenance of B Vehicles;
 - e. [EMEI Vehicle A 291-5](#) – Tyres and Tubes – General Service B Vehicles Tyre Guide;
 - f. [EMEI Vehicle G 700](#) – Truck, Cargo, Heavy, MC3 – Mack – Data Summary;
 - g. [EMEI Vehicle G 730](#) – Truck, Dump, Heavy, MC3 – Mack – Data Summary;
 - h. [EMEI Vehicle G 732](#) – Truck, Dump, Heavy, MC3 – Mack – Technical Description;
 - i. [EMEI Vehicle G 734](#) – Truck, Dump, Heavy, MC3 – Mack – Medium and Heavy Grade Repair;
 - j. [EMEI Workshop E 410](#) – Occupational Health and Safety Instruction – Asbestos – General Instruction;
 - k. Repair Parts Scale 02165;
 - l. Defence Safety Manual (SAFETYMAN);
 - m. Material Safety Data Sheets (MSDS) – Product Information Sheets; and
 - n. [Technical Regulation of Army Material Manual \(TRAMM\)](#).

AUTHORISED PERSONNEL

3. Repairs are to be carried out by the following technical tradespersons:
- a. Vehicle Mechanic ECN 229-2,
 - b. Fitter Armament ECN 146-2,
 - c. Metalsmith ECN 235-2, and
 - d. civil equivalents qualified in accordance with the requirements of the TRAMM.

SAFETY PRECAUTIONS

WARNING

Before working on the hydraulic system, ensure that the system is not under pressure by lowering the dump body, disengaging the PTO and shutting down the engine.

Before working on the hydraulic system, ensure that the hydraulic fluid is sufficiently cool to avoid burns.

Before working on the air system ensure that the pressure is released by draining the brake system secondary reservoir.

Personnel working on this equipment are to adhere to all industrial safety standards, work practices and equipment operating and maintenance instructions relating to the equipment.

CAUTION

It is vitally important that dirt and other foreign matter is not allowed to enter the hydraulic system during repairs. Dirt, or fluid other than clean hydraulic fluid in the system will cause almost immediate failure. Plug or protect openings to prevent dirt entering the system. Use plastic plugs or covers only for this purpose. Do not use cloth or paper as plugs or covers.

DETAIL

GENERAL INSTRUCTIONS

4. Use only authorised replacement parts and components.
5. Replacement hardware, tubing, hose fittings etc. should be of equivalent size, type, length and strength to the original equipment.
6. All fittings are to have dry, clean threads unless otherwise specified. When specified, thread sealants are to be applied to dry, clean, oil free threads.
7. Replace any item that has stripped threads or damaged parts.

IDENTIFICATION NUMBERS

8. The locations of the identification numbers of major components are listed in Table 1.

Table 1 Identification Numbers Locations

Serial	Component	Location
1	Dump body	Left-hand side, lower rail, above fuel tank
2	Hoist	Main post, lower outer sleeve

COMPONENT REPLACEMENTS

9. Light Grade Repair includes the removal/replacement of the following components:
 - a. The hydraulic system including:
 - (1) the hydraulic hoses;
 - (2) the hydraulic pump;
 - (3) the Power Take-off (PTO) – hydraulic pump;

- (4) the PTO control valve;
 - (5) the PTO engagement selector;
 - (6) the load indicator gauge;
 - (7) the oil reservoir; and
 - (8) the hoist system fault finding.
- b. The air system including:
- (1) the PTO/hoist control valve,
 - (2) the PTO/hoist control box,
 - (3) the dump body lock,
 - (4) the tailgate lock control valve,
 - (5) the tailgate lock air chamber,
 - (6) the pressure protection valve, and
 - (7) the poppet valve.
- c. The dump body including:
- (1) the cab protector, and
 - (2) the tailgate assembly.

HYDRAULIC SYSTEM

Hydraulic Hoses.

10. **Removal/Replacement.** Remove and replace the hydraulic hoses as follows:
- a. Disengage the PTO and shut down the engine. Release the pressure from the hydraulic system. Place a suitable receptacle under the hose to be replaced to catch any spillage.
 - b. Crack loose the hose connections to allow any residual fluid (which may still be under slight pressure) to drain off.
 - c. Disconnect the hose connections, remove any zip clamps or other clamping devices and remove the hose. Plug all openings with suitable plastic plugs to prevent dirt or other foreign material from entering the hydraulic system.
 - d. Clamp the ferrule in a vice (Figure 1) and screw the insert from the hose in an anticlockwise direction.

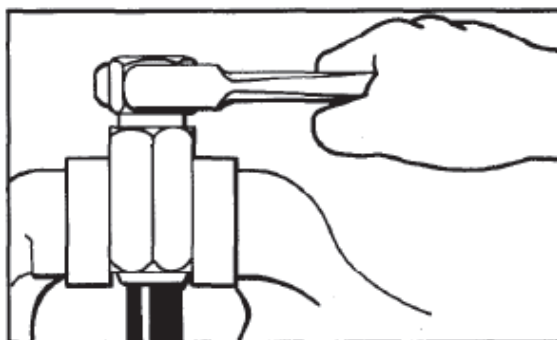


Figure 1 Removing the Coupling Insert

- e. With the ferrule clamped in the vice (Figure 2), remove the hose by turning it in a clockwise direction.

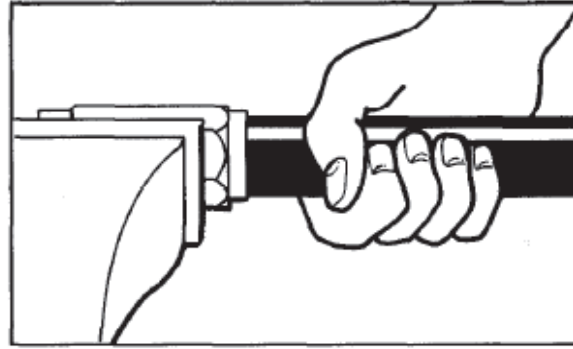


Figure 2 Removing Ferrule

- f. Repeat Paras 10.d and 10.e for the other end of the hose. Measure the length of the hose for replacement purposes, and then discard the hose.

NOTE

A grinder cutting disc will be required to obtain a clean cut through the hose without damaging the wire braid reinforcing.

- g. Refer to the relevant Repair Parts Scale for the correct replacement hose. Cut a length of hose to the measurement determined in Para 10.f above.
- h. Make a knife cut around the circumference of the hose (Figure 3) to the depth of the braid, at a distance from the end of the hose equal to the inside length of the ferrule.
- i. Make one lengthwise cut to the depth of the braid, from the circular cut to the end of the hose.
- j. Cleanly strip the cover down to the braid.

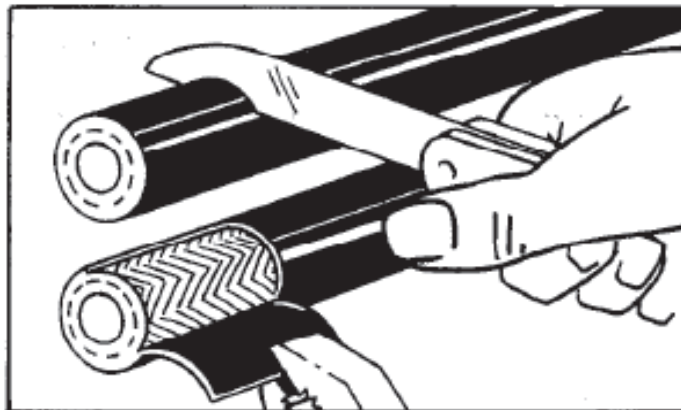


Figure 3 Cutting Hose Outer Cover

- k. Push the hose into the ferrule using semi-rotational movements in both clockwise and anticlockwise directions. The hose is fully home when the end of the hose is 0.8 mm to 1.2 mm (1/32 in. to 1/16 in.) from the inside shoulder.
- l. Liberally coat the insert and the inside of the hose with clean hydraulic fluid (OM-65), and then screw the insert all the way into the ferrule. Do not allow the hose to turn during this operation.
- m. Repeat Paras 10.h to 10.l for the other end of the hose.
- n. Remove the plugs and install the hose. Ensure that it is not twisted, and any bends are smooth and gradual. Fit zip clamps or any other clamping device which may have been removed, then operate the hydraulics to ensure that the hose is correctly fitted and free of leaks.
- o. Check the level of fluid in the oil reservoir. If necessary, top it up with clean OM-65.

Hydraulic Pump.

11. **Removal.** Remove the hydraulic pump as follows:
- Disengage the PTO and shut down the engine. Release the pressure from the hydraulic system.
 - Clean the pump and the hose connections, then allow them to dry.
 - Slacken the screw clamp on the supply hose. Remove and plug the hose and pump housing with suitable plastic plugs.
 - Remove the pressure hose and plug both the hose and the pump housing with suitable plastic plugs.
 - Remove the four nuts and washers from the pump adapter flange and remove the pump.
12. **Installation.** Install the hydraulic pump as follows:
- Clean the mounting faces on the pump and PTO. Position a new gasket on the PTO and install the pump. Install the retaining nuts and washers. Tighten the nuts to between 34 N.m and 38 N.m (25 lbf.ft to 28 lbf.ft).
 - Remove the plastic plugs and install the hoses. Securely tighten the pressure hose connection and the supply hose screw clamp.
 - Start the truck engine, engage the PTO and operate the dump body hoist to ensure that the pump functions correctly.
 - Check the pump and hoses for leaks.
 - Lower the dump body, disengage the PTO and shut down the engine. Rectify any faults as necessary.
 - Check the level of the fluid in the oil reservoir. If necessary, top it up with OM-65.

Power Take-off (PTO) – Hydraulic Pump



Both the PTO and adapter housings are very brittle and easily damaged unless handled carefully.

13. **Removal.** Remove the PTO and hydraulic pump as follows:
- Disengage the PTO and shut down the engine. Release the pressure from the hydraulic system.
 - Wash the area around the PTO and hydraulic pump and allow it to dry.
 - Remove the hydraulic hoses (Figure 4), and then seal the hoses and the ports in the hydraulic pump with plastic plugs.

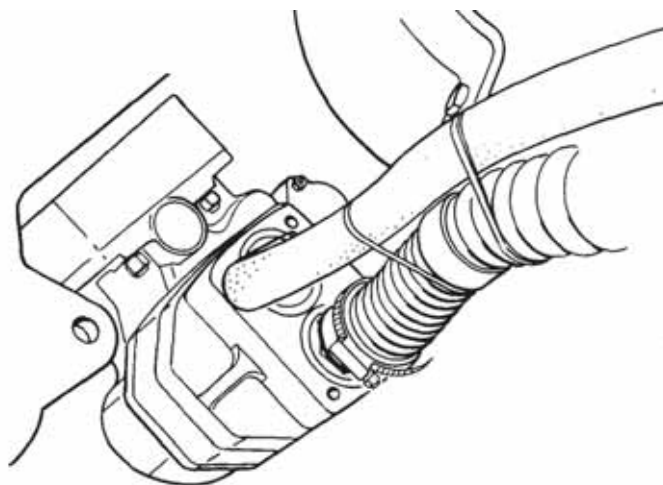


Figure 4 Hydraulic Pump Hoses

- d. Remove the air line from the PTO selector housing.
- e. Remove the six nuts and washers (Figure 5) securing the PTO and adapter to the transmission.
- f. Remove the PTO and pump assembly and the adapter housing from the transmission.
- g. Remove all traces of gasket residue from the mounting surfaces.

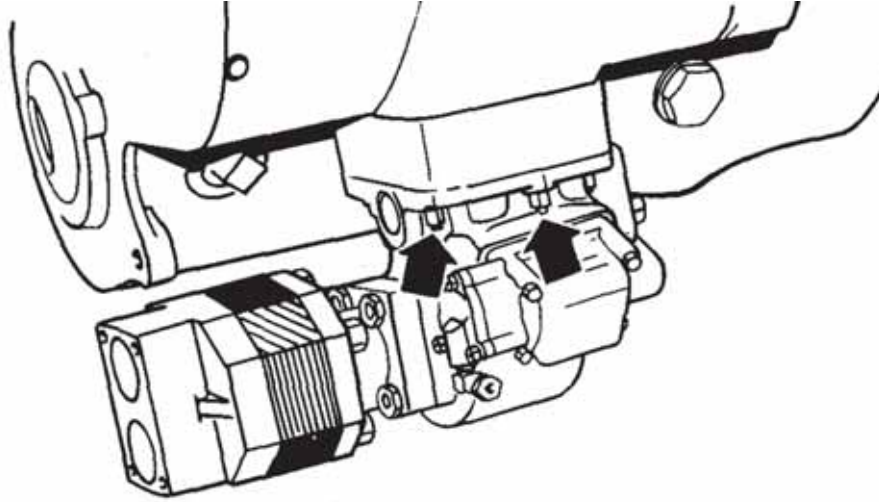


Figure 5 Location of Retaining Nuts

14. **Determining Backlash.** Determine the amount of backlash as follows:
- a. Insert a wooden wedge (Figure 6) between the transmission PTO drive gear and the transmission housing.

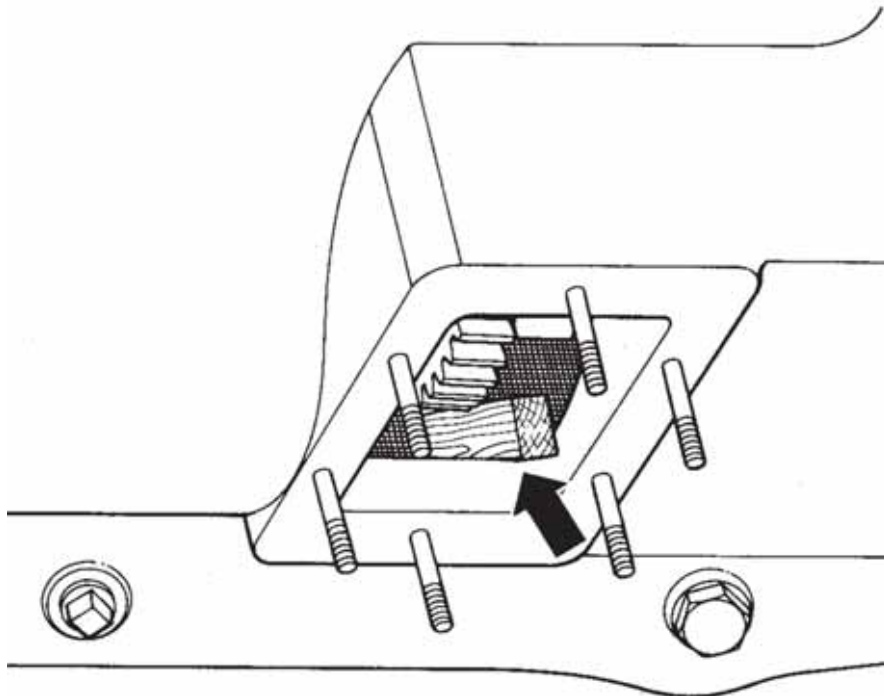


Figure 6 Wedge Location

- b. Install new gaskets and the adapter housing onto the transmission housing and secure in place with the top and bottom nuts only.
- c. Install a dial indicator onto the adapter housing (Figure 7) with the dial indicator plunger resting squarely on the adapter gear.

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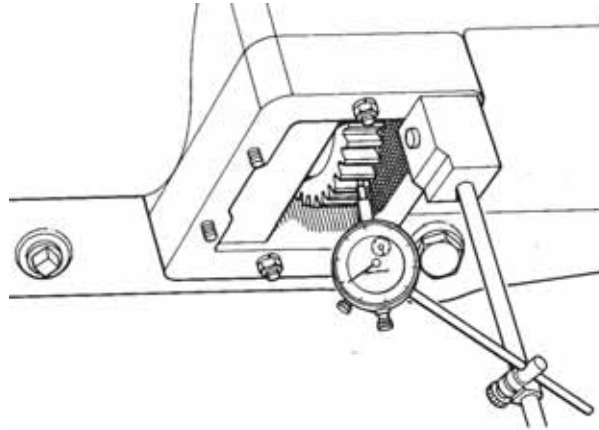


Figure 7 Checking PTO Adapter to Transmission Backlash

- d. Rock the adapter gear back and forth by hand and check the backlash reading. Add or subtract gaskets between the adapter and transmission to obtain a backlash figure of 0.250 mm to 0.375 mm (0.010 in to 0.015 in).
- e. Remove the nuts from the adapter and remove the adapter from the transmission. Retain the gaskets.
- f. Remove the wooden wedge from the transmission.
- g. Position new gaskets and the adapter on the PTO and secure the adapter to the PTO with two suitably sized bolts and nuts.
- h. Install a dial indicator on the adapter housing (Figure 8) with the dial indicator plunger resting squarely on the adapter gear.
- i. Slide the idler gear against the spring pressure to mesh the idler gear with the adapter gear. Hold the gear in this position and lock it to prevent it from turning, then rock the adapter gear back and forth by hand and check the backlash reading. Add or subtract gaskets between the adapter and PTO to obtain a backlash figure of 0.250 mm to 0.375 mm (0.010 in to 0.015 in).

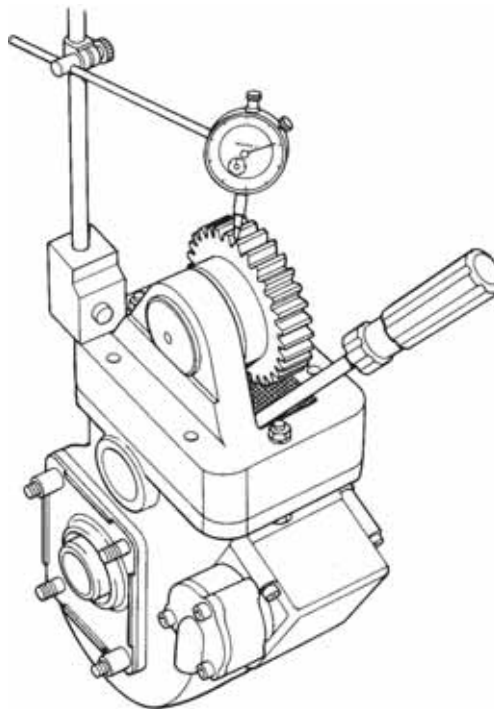


Figure 8 Checking Adapter to PTO Backlash

- j. Remove the nuts and bolts and separate the adapter housing and PTO. Retain the gaskets.

- 15. Installation.** Install the PTO and hydraulic pump assembly as follows:
- a. Position the gaskets (previously determined when setting the adapter-to-transmission backlash) and the adapter onto the transmission.
 - b. Position the gaskets (previously determined when setting the adapter-to-PTO backlash) onto the adapter, then install the PTO.
 - c. Apply thread sealant to the studs then install the spring washers and nuts. Tighten the nuts to between 34 N.m and 38 N.m (25 lbf.ft to 28 lbf.ft).
 - d. Fit the hydraulic pump and gasket to the PTO. Apply thread sealant to the studs then install the lock washers and nuts. Tighten the nuts to between 34 N.m and 38 N.m (25 lbf.ft to 28 lbf.ft).
 - e. Remove the plastic plugs from the pump and hoses, fit the hoses and tighten the screw clamp and the connector securely. Reconnect the air line to the selector housing and tighten it securely.
 - f. Start the truck engine and engage the PTO. Check for leaks at the gaskets, the hydraulic hoses and the air hose, rectify if necessary.
 - g. Check that the PTO is operating correctly and not making any whining or rattling noise. If the PTO whines or rattles, repeat the backlash adjustment detailed in Para 14.
 - h. Disengage the PTO and shut down the engine.
 - i. Check the oil level in the transmission. If necessary, top it up with OEP-220.
 - j. Check the fluid level in the oil reservoir. If necessary, top it up with OM-65.

Power Take-off Control Valve

- 16. Removal.** Remove the PTO control valve as follows:
- a. Drain the air from the air brake reservoirs.
 - b. From under the centre console, disconnect the air lines from the control valve.
 - c. Remove the two retaining screws and the instruction plate from the fascia side of the console and remove the valve.
- 17. Installation.** Install the PTO control valve as follows:
- a. Position the valve in the console then install the instruction plate and retaining screws.
 - b. Tighten the screws securely.
 - c. Reconnect the air lines and tighten the connections securely.
 - d. Start the engine and allow the air pressure in the brake system to build up then check for air leaks at the valve. Rectify as necessary.
 - e. Shut down the engine.

Power Take-off Engagement Selector

- 18. Removal.** Remove the PTO engagement selector as follows:
- a. Clean the selector housing and the area around the housing.
 - b. Disconnect the air line from the elbow on the selector housing.
 - c. Remove the four socket head bolts retaining the selector housing to the PTO and remove the selector housing and gasket from the PTO.
 - d. Clean any gasket residue from the mounting surfaces of the PTO and the selector housing.
- 19. Installation.** Install the PTO engagement selector as follows:
- a. Position a new gasket and the selector housing on the PTO ensuring that the selector fork is aligned with the gear. Install the retaining bolts. Tighten the bolts to between 34 N.m to 38 N.m (25 lbf.ft to 28 lbf.ft).
 - b. Reconnect the air line and tighten the connection securely.

- c. Start the engine and engage the PTO.
- d. Check for air leaks at the air line connection and rectify as necessary.
- e. Disengage the PTO and shut down the engine.

Load Indicator Gauge

20. Removal. Remove the load indicator gauge (Figure 9) as follows:

- a. Disengage the PTO and shut down the engine. Release the pressure from the hydraulic system.
- b. Clean the hydraulic hose connection on the outside of the cab rear wall. Disconnect and plug the hose with a suitable plastic plug.
- c. Remove the male elbow and rubber grommet. Discard the grommet.
- d. Remove the two screws securing the gauge mounting bracket to the rear wall and remove the gauge assembly.
- e. Remove the three screws and nuts from the gauge and remove the mounting bracket.
- f. Remove the elbow complete with the grommet, female socket and reducing bush from the gauge.
- g. Remove the female socket and the reducing bush from the female elbow, then remove and discard the rubber grommet.

21. Installation. Install the load indicator gauge as follows:

- a. Apply thread sealing tape onto the externally threaded ends of each elbow and reducing bush.
- b. Install a new grommet together with the female socket and the reducing bush onto the gauge male/female elbow, then install the elbow assembly onto the new gauge. Tighten the connections securely whilst aligning correctly to accept further fittings on the opposite side of cab wall.
- c. Position the gauge on the mounting bracket, then install the retaining screws and nuts and tighten them securely.
- d. Position the gauge on the cab wall and secure it in place with the two screws.

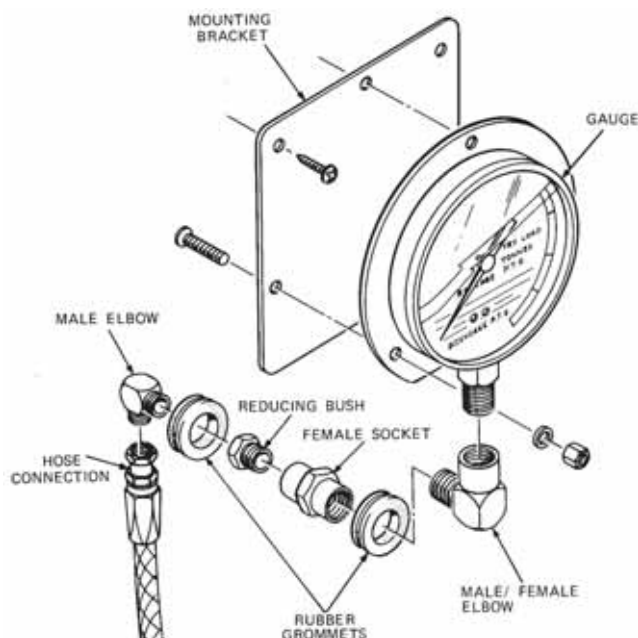


Figure 9 Load Indicator Gauge and Fittings

- e. Install a new grommet and male elbow into the reducing bush on the outside of the cab rear wall and tighten it securely.
- f. Remove the plastic plug from the hydraulic hose and reconnect the hose to the elbow. Tighten the connection securely.

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- g. Start the engine, engage the PTO and operate the dump controls. Check for leaks at the hose connections and check that the gauge is operating correctly.
- h. Lower the dump body, disengage the PTO and shut down the engine. Rectify any faults as necessary.
- i. Check the level of fluid in the oil reservoir. If necessary, top it up with OM-65.

Oil Reservoir

22. **Removal.** Remove the oil reservoir as follows (Figure 10):

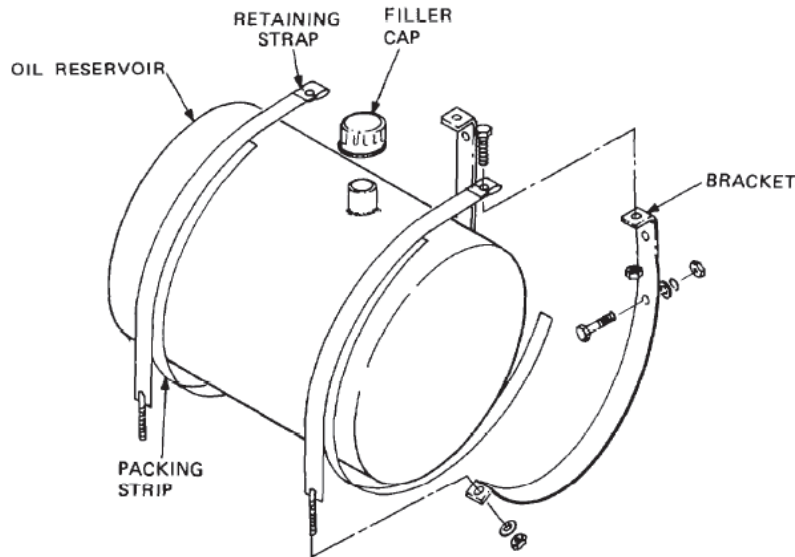


Figure 10 Oil Reservoir Removal

- a. Place a suitable receptacle (72 litre minimum) beneath the oil reservoir to enable the reservoir to be drained.
 - b. Remove the oil reservoir filler cap.
 - c. Remove the hydraulic hoses from the elbow connectors at the bottom of the oil reservoir and allow the hydraulic fluid to drain into the receptacle. Plug the hoses with suitable plastic plugs.
 - d. When the oil reservoir has drained completely, remove the receptacle.
 - e. Remove the nuts and washers securing the bottom of the retaining straps to the brackets.
 - f. Lift the oil reservoir off the brackets and remove the two rubber packing strips.
 - g. Remove the two elbow connectors from the inlet and outlet ports.
23. **Cleaning and Inspection.** Clean and inspect the components as follows:
- a. Clean the outside of the oil reservoir and brackets with a recommended cleaning agent then flush out the reservoir with clean, fresh hydraulic fluid (OM-65). Plug all reservoir openings with plastic plugs until ready for installation.
 - b. Inspect the reservoir for cracks and fractures particularly around the inlet and outlet ports. Repair as necessary.
 - c. Inspect the two rubber packing strips for deterioration. Replace as necessary.
24. **Installation.** Install the oil reservoir as follows (Figure 10):
- a. Remove the plastic plugs and fit the two elbow connectors to the inlet and outlet ports on the bottom of the reservoir.
 - b. Position the reservoir on the mounting brackets with a rubber packing strip between each bracket and the reservoir.
 - c. Secure the reservoir in position with the two retaining straps.

- d. Connect the hydraulic hoses to the elbow connectors.
- e. Fill the reservoir with clean, fresh hydraulic fluid (OM-65). Install the filler cap then check for any leaks around the inlet and outlet connectors.
- f. Start the engine, engage the PTO and operate the hoist several times to bleed air from the system.
- g. Lower the hoist, disengage the PTO and shut down the engine. Check the fluid level in the oil reservoir and top it up with OM-65 if necessary.

Hoist System Fault Finding

25. A fault finding table for the hoist system is shown at Table 2.

Table 2 Hoist System – Fault Finding

Serial	Symptom	Probable Cause	Action
1	No fluid flow – No pressure	Fluid level in reservoir too low	Top up with OM-65.
		Pump not receiving fluid	Check for blocked pump supply hose, clean or replace as necessary. Clean the reservoir breather vent then check the fluid level in the reservoir. Top up if necessary with OM 65
		Power take-off to pump spline connection damaged	If the pump only is damaged, replace. If the PTO is damaged, repair as necessary
		Air leaks in pump supply line	Check hose connections, tighten as necessary. Replace hose if necessary
		Cavitations or aeration in pump	Check for air leaks in the pump supply line and rectify. Clean or replace blocked pump supply line. Clean reservoir breather vent and if necessary change the system fluid
2	Low fluid flow rate	Fluid level in reservoir is incorrect	Top up with OM-65
		Leaking pipe or hose connections	Tighten connections
		Damaged or leaking pipes or hoses	Replace pipes and/or hoses
		Fluid viscosity too high	Warm fluid up to operating temperature. If viscosity is still too high, change fluid. Use only OM-65
		Pump not operating at optimum capacity	Replace the pump
		Air leaks in pump supply line	Check hose connections, tighten as necessary. Replace hose if necessary.
		Cavitations or aeration in pump	Check for air leaks in the pump supply line and rectify. If the supply line is blocked, clean or replace as necessary. Ensure that the reservoir breather vent is clear and if necessary change the system fluid
3	Low fluid pressure	Inadequate flow rate	Refer to 'No fluid flow – No pressure', or 'Low fluid flow'
		Excessive external leakage	Rectify leaks and fill reservoir to correct level with OM-65
4	Slow or erratic movement	Air in fluid	Repair or replace damaged hoses or pipes. Tighten leaking connections then fill the reservoir to correct level with OM-65
		Hydraulic fluid contaminated	Check for a blocked pump supply hose and clean or replace as necessary. Ensure that the breather vent is clear and change the system hydraulic fluid. Use only OM-65
		Lack of lubrication of mechanical components	Lubricate
		Fluid viscosity too high	Warm fluid up to operating temperature. If viscosity is still too high, change fluid. Use only OM-65
		Refer to 'Low fluid flow rate'.	

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AIR SYSTEM

PTO Hoist Control Valve

- 26. Removal.** Remove the PTO hoist control valve as follows:
- Drain the air from the brake system secondary reservoir then close the drain valve.
 - Remove the four screws securing the cover to the control box, then lift the cover and valve assembly from the control box.
 - Remove the wire from the PTO indicator light switch, then tag and disconnect the air lines from the valve body. Remove the valve assembly.
- 27. Installation.** Install the PTO hoist control valve as follows:
- Position the valve assembly over the control box in the truck cab.
 - Reconnect the air lines to their correct positions on the valve body and tighten the connections securely, then reconnect the wire to the PTO indicator light switch.
 - Secure the control box cover to the control box with the four screws, then start the engine and allow air pressure in the brake reservoir to build.
 - Check for air leaks at the control valve and rectify if necessary.
 - Engage the PTO and operate the control to raise and lower the dump body. Ensure that the controls are functioning correctly, then lower the dump body, disengage the PTO and shut down the engine.

PTO/Hoist Control Box

- 28. Removal.** Remove the control box as follows:
- Drain the air from the brake system secondary air reservoir then close the valve.
 - Remove the four screws securing the cover to the control box, then lift the cover and valve assembly from the control box.
 - Remove the wire from the PTO indicator light switch then tag and disconnect the air lines from the valve body.
- 29. Disassembly.** Disassemble the control box as follows (Figure 11):
- Remove the facia plate by inserting a knife blade or similar between the facia plate and the control box cover. Discard the facia plate.

NOTE

When the control box cover and the valve body are separated, the control knobs which are held in place by the cover will come away under spring pressure. Take care not to lose the steel balls located beneath the control knobs.

- Remove the five screws securing the valve body to the control box cover and separate the cover from the valve body.
- Remove the steel balls from the spool valves on both the PTO and hoist control valves, and then remove the detent balls from the valve body.
- Remove the detent springs from the valve body and the regulator spring from the hoist lower spool valve.
- Remove the spool valves from the valve body and the spool valve return springs from the PTO and hoist raise sections of the valve body.
- Remove the two selector locking pins from the PTO section of the control valve.

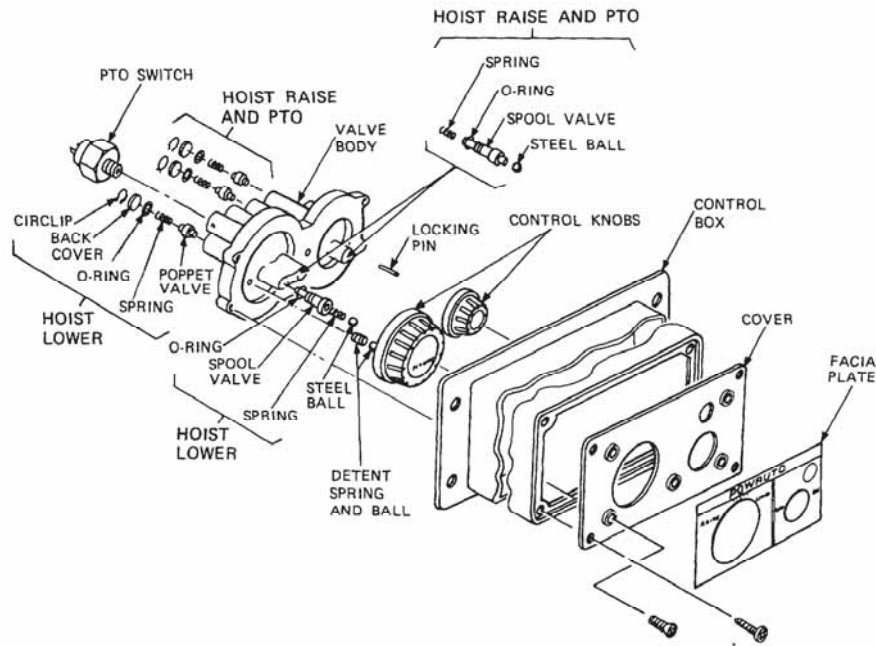


Figure 11 PTO/Hoist Control Box – Exploded View

- g.** Invert the valve body and remove the indicator light switch, then remove the circlips, the back covers, the O rings, the return springs and the poppet valves. Discard the poppet valves.
- h.** Discard all O rings and circlips.
- 30. Cleaning and Inspection.** Clean and inspect the components as follows:
- Clean all components with white spirit.
 - Inspect all components for nicks, burrs and signs of excessive wear. Replace as necessary.
- 31. Reassembly.** Reassemble the control box as follows:
- Smear the new poppet valves with rubber grease and install them into the valve bores. Install the return springs, new O rings, the back covers and new circlips.
 - Install the PTO indicator light switch and tighten it securely.
 - Smear the spool valve O rings with rubber grease then install new O rings onto the spools.
 - Install the hoist lower spool valve, and then install the return springs and the spool valves into the hoist raise and PTO sections of the valve body.
 - Place the valve body (with its mounting surface facing up) in a soft jawed vice. Install the locking pins into the PTO section and the detent springs and balls into the hoist section of the valve body.
 - Install the regulator spring into the top of the hoist lower spool valve.
 - Position a steel ball on the top of each spool valve, and then correctly position the control knobs on the two sections of the valve body. Place the control box cover over the control knobs and onto the valve body. Secure the control box cover in place with the five socket-head screws.
- 32. Installation.** Install the control box as follows:
- Remove the control valve assembly from the vice and position the assembly over the control box in the truck cab.
 - Reconnect the air lines to their correct positions on the valve body and tighten the connections securely, then reconnect the wire to the PTO indicator light switch.
 - Secure the control box cover to the control box with the four screws, then start the engine and allow air pressure in the brake reservoir to build. Check for air leaks at the control valve and rectify if necessary. Engage the PTO and operate the control to raise and lower the dump body. Ensure that the controls are functioning correctly, then lower the dump body, disengage the PTO and shut down the engine.

- d. Ensure that the control valve retaining screws are tight, and then stick a new facia plate onto the control box cover.

Dump Body Lock

33. **Removal.** Remove the dump body lock as follows:
 - a. Drain the air from the brake system secondary reservoir then close the drain valve.
 - b. Disconnect the air line from the body lock air chamber.
 - c. Remove the nuts and bolts securing the body lock mounting bracket to the mounting bracket on the sub-frame and remove the body lock assembly.
34. **Disassembly.** Disassemble the dump body lock (Figure 12) as follows:

WARNING

Do not attempt to remove the air chamber diaphragm clamp from the air chamber as personal injury may result.

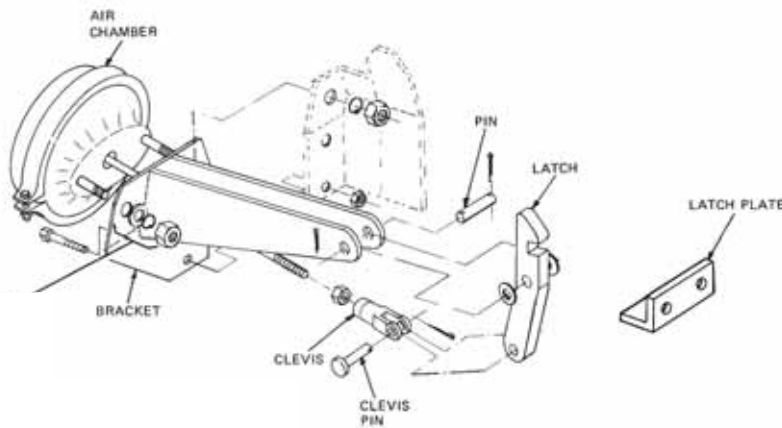


Figure 12 Dump Body Lock – Exploded View

- a. Slacken the clevis locknut, then remove the split pin from the clevis pin and remove the clevis pin, clevis and locknut.
 - b. Remove a split pin from the latch pivot pin, then remove the pivot pin, the latch and washers.
 - c. Remove the nuts securing the air chamber to the bracket and remove the air chamber from the mounting bracket.
35. **Cleaning and Inspection.** Clean and inspect the components as follows:
 - a. Clean all parts with a suitable cleaning agent, then allow them to dry.
 - b. Check the housings, the air chamber and shaft for wear or damage.
 - c. Replace parts as necessary.
 - d. Inspect the latch and latch plate for wear. Replace as necessary.
 36. **Reassembly.** Reassemble the dump body lock as follows:
 - a. Position and secure the air chamber onto the mounting bracket and secure it with the nuts and washers and tighten to between 180 N.m and 200 N.m (134 lbf.ft to 148 lbf.ft).
 - b. Install the clevis locknut and the clevis onto the shaft.
 - c. Install the latch, washers and pivot pin onto the mounting bracket and secure the pivot pin with a new split pin.

- d. Position the latch in the clevis and install the clevis pin.

37. Installation. Install the dump body lock as follows:

- a. Position the body lock assembly on the chassis mounting bracket. Install the two 3/8 in. bolts and nuts and tighten them to between 38 N.m and 42 N.m (28 lbf.ft to 31 lbf.ft).
- b. Reconnect the air line to the air chamber and tighten it securely.
- c. Operate the PTO control to the 'IN' position, then check that the latch on the body lock clears the dump body latch plate. Turn the PTO control to the 'OUT' position and check that the latch engages with the dump body latch plate. If necessary, adjust the position of the latch by removing the clevis pin and adjusting the clevis. After correct adjustment is made, install the clevis pin and new split pin, then tighten the clevis locknut against the clevis. It may be necessary to adjust the latch plate up or down to gain correct engagement of the latch.

Tailgate Lock Control Valve

38. Removal. Remove the tailgate lock control valve as follows:

- a. Drain the air from the brake system secondary reservoir then close the drain valve.
- b. Tag the air lines on the control valve for correct location at installation, then disconnect the air lines from the valve.
- c. Remove the two screws from the control valve nameplate, then remove the nameplate and the control valve from the mounting bracket.

39. Installation. Install the tailgate lock control valve as follows:

- a. Position the control valve and nameplate on the mounting bracket, then install and tighten the two retaining screws.
- b. Reconnect the air lines to their correct positions and tighten the connections securely.
- c. Start the engine and allow air pressure in the secondary reservoir to build.
- d. Check the operation of the control valve and check for air leaks at the line connections. Tighten the connections if necessary.
- e. Shut down the engine.

Tailgate Lock Air Chamber

40. Removal. Remove the tailgate lock air chamber (Figure 13) as follows:

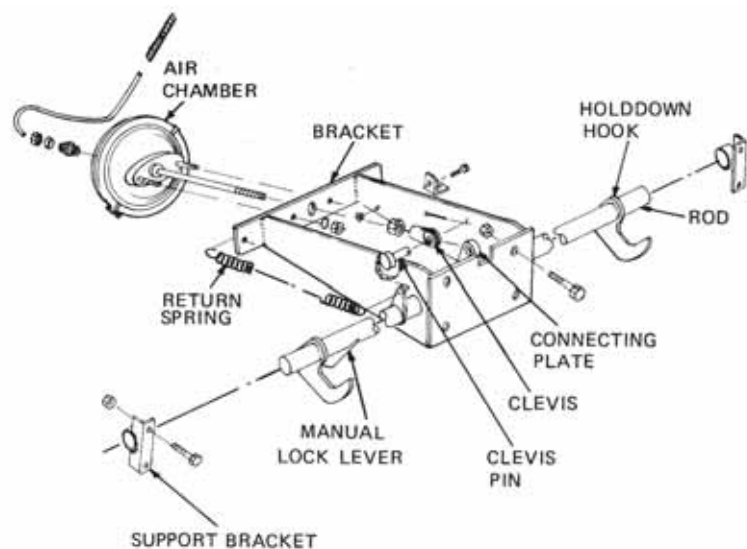


Figure 13 Tailgate Lock – Exploded View

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WARNING

Do not attempt to remove the air chamber diaphragm clamp from the air chamber as personal injury may result

- a. Drain the air from the brake system secondary reservoir then close the drain valve.
- b. Remove the air line from the air chamber.
- c. Slacken the clevis locknut, then remove the split pin, clevis pin, clevis and locknut.
- d. Remove the nuts and washers securing the air chamber to the mounting bracket and remove the air chamber.

41. Cleaning and Inspection:

- a. Clean all parts with a suitable cleaning agent, then allow them to dry.
- b. Check the housings, the air chamber and shaft for wear or damage.
- c. Replace parts as necessary.

42. Installation. Install the tailgate lock air chamber as follows:

- a. Position the air chamber on the mounting bracket then install the retaining nuts and washers.
- b. Tighten the nuts to between 180 N.m and 200 N.m (134 lbf.ft to 148 lbf.ft).
- c. Install the clevis locknut and the clevis, then position the clevis on the connecting plate and install the clevis pin. Do not install the split pin at this stage.
- d. Reconnect the air line to the air chamber and tighten it securely.
- e. Operate the tailgate control valve and check that the hold-down hooks lock or clear the tailgate correctly. If not, make the necessary adjustments at the clevis joint.
- f. After correct adjustment is made, reinstall and secure the clevis pin with a new split pin and tighten the locknut against the clevis.

Pressure Protection Valve

43. Removal. Remove the valve as follows:

- a. Drain the air from the brake system secondary reservoir then close the drain valve.
- b. Remove the two air lines from the T-connector and plug the lines with plastic plugs. Remove the T-connector.
- c. Unscrew the valve from the connector securing the valve to the air reservoir. Plug the connector with a plastic plug.

44. Installation. Install the valve as follows:

- a. Screw the valve onto the connector at the brake system secondary reservoir after removing the plastic plug.
- b. Fit the T-connector to the valve delivery port. Remove the plastic plugs from the two air lines and connect the lines to the T-connector.
- c. Start the engine and allow air pressure in the secondary reservoir to build.
- d. Engage the PTO and operate the hoist, checking for correct operation and air leaks at the valve line connections. Rectify as necessary.
- e. Lower the hoist, disengage the PTO and shut down the engine.

Poppet Valve

45. Removal. Remove the poppet valve as follows (Figure 14):

- a. Drain the air from the brake system secondary reservoir then close the drain valve.

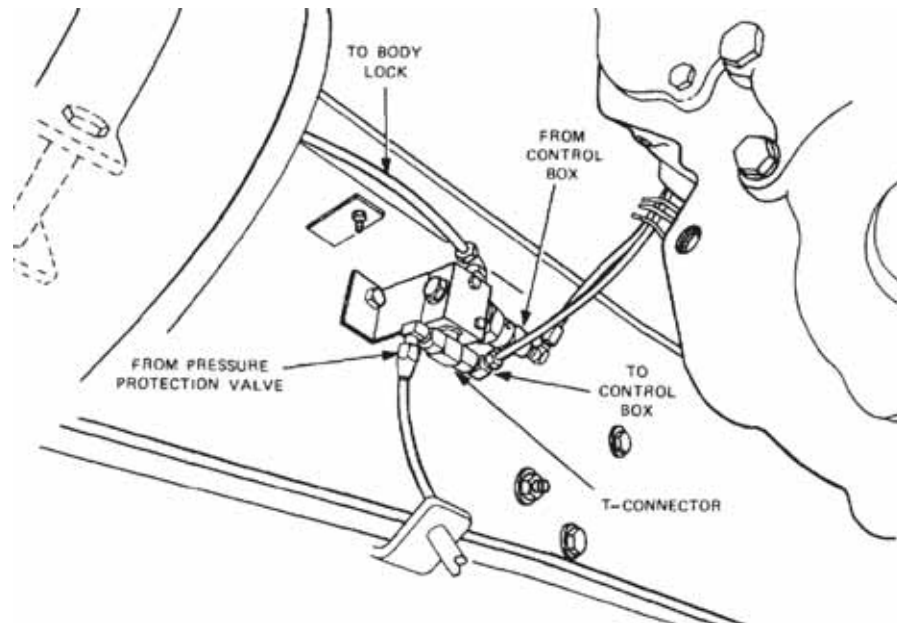


Figure 14 Poppet Valve Removal

- b. Tag the air lines on the valve to ensure correct connection on installation, then disconnect the air lines from the valve. Plug the lines with plastic plugs. Remove the T-connector from the valve inlet port.
- c. Remove the two bolts securing the valve to the mounting bracket. Remove the valve.

46. Installation. Install the poppet valve as follows (Figure 14):

- a. Secure the valve assembly to the mounting bracket with the two retaining bolts.
- b. Fit the T-connector to the valve inlet port.
- c. Remove the plastic plugs from the air lines and connect the lines to the valve ports indicated on the tags.
- d. Start the engine and allow air pressure in the secondary reservoir to build.
- e. Engage the PTO and operate the hoist, checking for correct operation and air leaks at the valve line connections. Rectify as necessary.
- f. Lower the hoist, disengage the PTO and shut down the engine.

DUMP BODY

Cab Protector

47. Removal. Remove the cab protector as follows:

- a. Remove the two nuts and bolts securing the cab protector to the angle bracket at the top of the hoistwell (Figure 15). Discard the nuts.
- b. Remove the four nuts and bolts that secure each side of the cab protector to the dump body. Discard the nuts.
- c. Remove the cab protector from the dump body.

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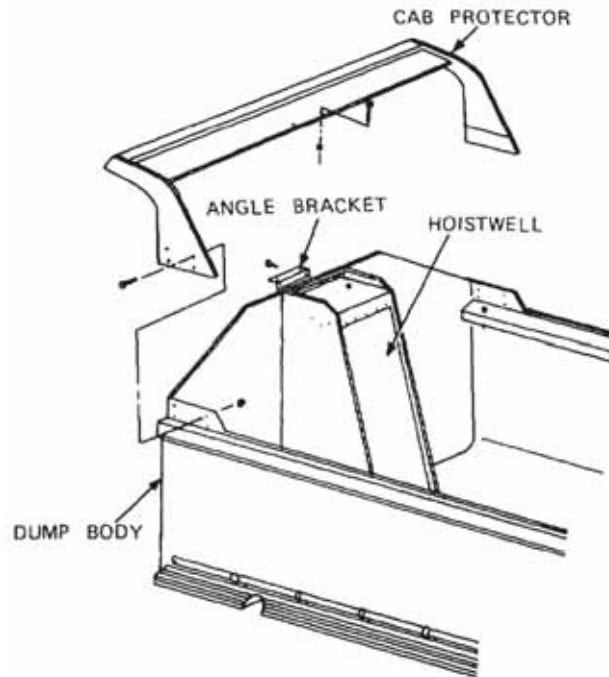


Figure 15 Cab Protector Removal

48. **Installation.** Install the cab protector as follows:
- Position the cab protector on the dump body, orientated as shown in Figure 19, aligning the bolt holes on each side of the dump body.
 - Secure the cab protector to the dump body using four bolts and new locknuts on each side.
 - Secure the cab protector to the angle bracket at the top of the hoist well using two bolts and new locknuts.
 - When all six bolts have been fitted, tighten them to between 95 N.m and 105 N.m (69 lbf.ft to 76 lbf.ft).

Tailgate Assembly

49. **Removal.** Remove the tailgate assembly as follows:
- Remove the securing pins from each of the upper hinges and carefully lower the tailgate onto suitable support stands.
 - Remove the safety chain D-shackles from each side of the tailgate.
 - Release the tailgate lock and lift the tailgate clear of the body.
50. **Installation.** Install the tailgate assembly as follows:
- Place suitable support stands at the rear of the dump truck, then lift the tailgate onto the stands.
 - Release the tailgate lock and engage the bottom hinges of the tailgate with the lugs on the body, then lock the tailgate lock.
51. Install the safety chain D-shackles on each side of the tailgate, then raise the tailgate into the vertical position (using the bottom hinges as pivots) and install the securing pins into the upper hinges.

END

Distribution List: **VEH G 26.0 – Code 2** (Maint Level)
(Sponsor: LV SPO Hvy B Vehicles)
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