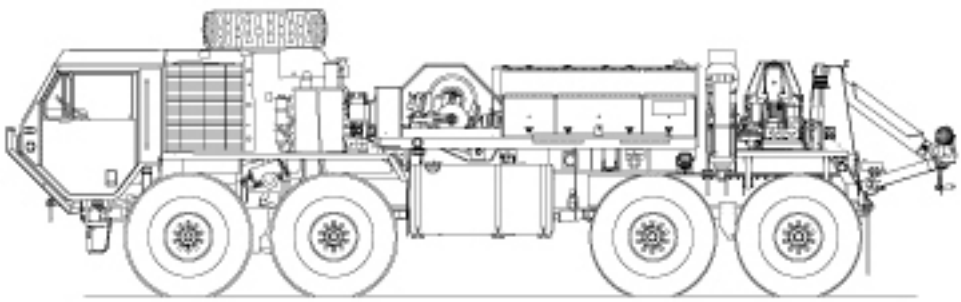
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TECHNICAL MANUAL
OPERATOR'S MANUAL
FOR

TRUCK, WRECKER, 8X8
M984A4
NSN 2320-01-534-2245 (EIC BG5)



DISTRIBUTION STATEMENT A - Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY
15 OCTOBER 2008

WARNING SUMMARY

GENERAL SAFETY CAUTION/WARNING SUMMARY

- This list summarizes critical warnings. They are repeated here to let you know how important they are.
- Study these warnings carefully.
- They can save your life and the lives of personnel you work with.
- If there is any doubt about handling tools, materials, equipment, and procedures, see TB 43-0216, Safety and Hazard Warnings for Operation and Maintenance of TACOM Equipment.

Table 1. Warning Icons Used In This Manual.

WARNING ICON	DESCRIPTION
	AIR PRESSURE - human hand blocking air gun shows the need to reduce air pressure before use, or debris may injure user and/or damage equipment.
	BIOLOGICAL - abstract symbol bug shows that a material may contain bacteria or viruses that present a danger to life or health.
	CHEMICAL - drops of liquid on hand show that the material will cause burns or irritation to human skin or tissue.
	CRYOGENIC - hand in block of ice shows that the material is extremely cold and can injure human skin and tissue.

Table 1. Warning Icons Used In This Manual. - Continued

WARNING ICON	DESCRIPTION
	ELECTRICAL - electrical wire to arm with electricity symbol running through human body shows that shock hazard is present.
	EXPLOSION - rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition, or high pressure.
	EXTREMELY COLD SURFACE - hand touching object with ice formed on both shows that surface is extremely cold and can damage human tissue.
	EYE PROTECTION - person with goggles shows that the material will injure the eyes.
	FIRE - flame shows that material may ignite and cause burns.

Table 1. Warning Icons Used In This Manual. - Continued

WARNING ICON	DESCRIPTION
	FIRE EXTINGUISHER - fire extinguisher shows that material may ignite and a fire extinguisher should be within easy reach.
	HEAVY OBJECT - human figure stooping over heavy object shows physical injury potential for improper lifting technique, and/or aid of assistant(s) and/or lifting device (as required).
	HEAVY PARTS - hand with heavy object on top shows that heavy parts can crush and harm.
	HEAVY PARTS - foot with heavy object on top shows that heavy parts can crush and harm.
	HEAVY PARTS - moving heavy object pinning human figure against stationary object shows that heavy, moving parts/objects present a danger to life or limb.

Table 1. Warning Icons Used In This Manual.

WARNING ICON	DESCRIPTION
	HEAVY PARTS - heavy object on human figure shows that heavy parts present a danger to life or limb.
	HOT AREA - hand over object radiating heats shows that part is hot and can burn.
	MOVING PARTS - hand with fingers caught between gears shows that the moving parts of the equipment present a danger to life or limb.
	PRESSURE/TENSION HAZARD - human body being impacted by rotating projectile shows that equipment is under pressure or tension presenting a danger to life or limb if pressure or tension is not carefully released.
	PROJECTILE HAZARD - human body with object passing through it shows that a projectile hazard exists.

Table 1. Warning Icons Used In This Manual.

WARNING ICON	DESCRIPTION
	RADIATION - three circular wedges show that the material emits radioactive energy and can injure human tissue.
	ROLLOVER HAZARD - vehicle indicating direction of human figure shows that vehicle may roll over if conditions are not avoided, presenting a danger to life or limb.
	RUN OVER HAZARD - vehicle running over human body shows hazard.
	SHARP OBJECT - pointed object in hand shows that a sharp object presents a danger to life or limb.
	SKIN IRRITATION - hand radiating shows that material can cause skin irritation.

Table 1. Warning Icons Used In This Manual.

WARNING ICON	DESCRIPTION
	SLICK FLOOR - wavy line on floor with legs prone shows that slick floor presents a danger of falling.
	STEAM HAZARD - human engulfed in steam cloud shows steam hazard exists that could injure/burn human tissue.
	TIRE BLOWOUT - tire with hole shows that an over or under inflated tire may rupture, presenting a danger to life or limb.
	VAPOR - human figure in a cloud shows that material vapors present a danger to life or health.
	WARNING/CAUTION - triangle with exclamation point within shows that a WARNING or CAUTION is present that indicates a potential hazard, which may cause injury or death to personnel (warning), or damage to equipment (caution).

Table 1. Warning Icons Used In This Manual.

WARNING ICON	DESCRIPTION
	WIRE CABLE/ROPE - human hand with frayed wire cable/rope running across shows injury to unprotected (bare) hands may result.
	EAR PROTECTION - headphones over ears show that noise level will harm ears.

FOR INFORMATION ON FIRST AID:

Reference FM 4-25.11. (Volume 2, WP 0200)

WARNING



MODIFICATION HAZARD

- Unauthorized modifications to, alterations to, or installations on this equipment are prohibited and are in violation of AR 750-10.
- Failure to comply may result in injury or death to personnel or damage to equipment.

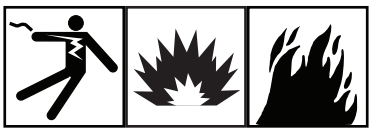
WARNING



HIGH-PRESSURE HYDRAULIC SYSTEM

- Hydraulic systems can cause serious injuries if high-pressure lines or equipment fails.
- Never work on hydraulic systems or equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and can give first aid.
- Never disconnect any hydraulic hose or part while the engine is running. Allow several minutes to elapse after shutting off engine, to allow pressure to relieve itself, before attempting to remove hoses. Failure to comply may result in injury to personnel.
- The HEMTT vehicles contain hydraulic systems operating at oil pressures up to 3,000 psi (20 685 kPa) and 3,200 psi (22 064 kPa). Never disconnect any hydraulic line or fitting without first dropping the pressure to zero. Failure to comply may result in serious injury or death to personnel.

WARNING



ELECTRICAL SYSTEM

- Remove all jewelry, such as rings, ID tags, bracelets, etc. If jewelry or tools contact electrical circuits, a direct short may result. Failure to comply may result in serious injury or death to personnel.
- Do not smoke, use open flame, make sparks or other ignition sources around batteries. A battery giving off gas could explode. Failure to comply may result in serious injury or death to personnel.
- Be careful when working on or with electrical equipment. Do not be misled by the term "low voltage". Voltages as low as 50 volts can cause death. For artificial respiration, refer to FM 4-25.11.
- When working inside the vehicle with power off, be sure to ground every capacitor likely to hold a dangerous voltage potential.

- Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment.

WARNING



SOLVENT CLEANING COMPOUND

- Solvent cleaning compound MIL-PRF-680 Type II and III may be irritating to the eyes and skin. Use protective gloves and goggles. Use in a well-ventilated area. Use respirator as needed. Accidental ingestion can cause irritation of digestive tract and respiratory tract, may cause lung and central nervous system damage. Can be fatal if swallowed. Inhalation of high/massive concentrations can cause coma or be fatal. First aid for ingestion: do not induce vomiting. Seek immediate medical attention. First aid of skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms persist, seek medical attention. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Keep away from open flames and other sources of ignition. Failure to follow this warning may result in injury or death to personnel.
- The flashpoint for Type II solvent cleaning compound is 141 to 198°F (61 to 92°C), and Type III is 200 to 241°F (93 to 116°C).
- Improper cleaning methods and use of unauthorized cleaning solvents may injure personnel and damage equipment.
- Fire extinguishers should be placed nearby when using solvent cleaning compound. Failure to follow this warning may result in injury or death.
- Cloths or rags saturated with solvent cleaning compound must be disposed of IAW authorized facilities' procedures. Failure to follow this warning may result in injury.
- Eye shields must be worn when cleaning with a wire brush. Flying rust and metal particles may cause injury.

WARNING



POLYURETHANE COATING (CARC)

- Eye and hearing protection must be worn at all times when using power tools for grinding, cutting, sawing, and drilling. Failure to do so may result in injury to personnel. Chemical Agent Resistant Coating (CARC) paint contains isocyanate which is highly irritating to skin and respiratory system. High concentrations of isocyanate can produce symptoms of itching and reddening of skin, a burning sensation in the throat and nose, and watering of the eyes. In extreme concentrations, isocyanate can cause cough, shortness of breath, pain during respiration, increased sputum production, and chest tightness. First aid for ingestion: do not induce vomiting. Seek immediate medical attention. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms persist, seek medical attention. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention.
- The following precautions must be taken whenever using CARC paint:
- Protective equipment (gloves, goggles, ventilation mask) must be worn when using CARC paint.
- NEVER cut CARC-coated materials without high-efficiency, air-purifying respirators in use.
- DO NOT grind or sand painted equipment without high-efficiency, air-purifying respirators in use.
- BE AWARE of CARC paint exposure symptoms; symptoms can occur a few days after initial exposure. Seek medical help immediately if symptoms are detected.
- Use only in well-ventilated area. Check with local environmental office for methods and locations approved for painting in accordance with local and state environmental regulations.
- Always use air line respirators when using CARC paint unless air sampling shows exposure to be below standards. Use chemical cartridge respirator if air sampling is below standards.

WARNING



ADHESIVE

- Adhesive, solvents and sealing compounds can burn easily and are harmful causing immediate bonding on contact with eyes, skin, or clothing and gives off harmful vapors.
- If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.
- If adhesive gets in your eyes, try to keep them open; flush them with water for 15 minutes and get immediate medical attention.
- Wear protective goggles and use in a well-ventilated area.
- Keep away from open fire and use in well-ventilated area to avoid injury or death.

WARNING

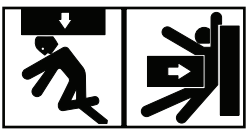


FLAMMABLE LIQUID AND COMBUSTIBLE VAPOR

- Gasoline, fuel oil, lubricating oil, grease, paint, paint thinner, cleaning solvents, and other combustible liquids present a serious fire hazard.
- Combustible liquids must ALWAYS be stored in their approved containers and designated compartments or deck storage locations.
- Ensure exhaust and ventilation fans are operating while using cleaning solvents or paint products.
- Never store or charge batteries in a confined space without ventilation or near electrical equipment.
- Fuel is very flammable and can explode easily.
- To avoid serious injury or death, keep fuel away from open fire and keep fire extinguisher within easy reach when working with fuel.
- Do not work on fuel system when engine is hot. Fuel can be ignited by hot engine.

- When working with fuel, post signs that read NO SMOKING WITHIN 50 FEET OF VEHICLE.
- Starting fluid is toxic and flammable. Do not store in cab and do not breathe fumes. Do not puncture or burn containers. Dispose of container following manufacturer's recommendations on the container.

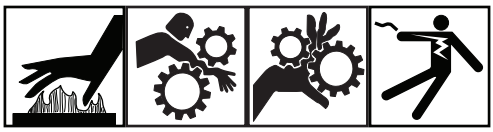
WARNING



LIFTING OPERATIONS This section is applicable to all lifting operations regardless of lifting equipment (crane, LHS, etc.) used.

- All personnel must stand clear during lifting operations. A swinging or shifting load may cause injury or death to personnel.
- Never crawl under equipment when performing maintenance unless equipment is securely blocked. Failure to comply may cause injury or death to personnel.
- Keep clear of equipment when it is being raised or lowered. Failure to comply may cause injury or death to personnel.
- Do not work on any item supported only by lift jacks or hoist. Always use blocks or proper stands to support the item prior to any work. Failure to comply may result in injury or death to personnel.
- Do not lift a load greater than the rated load capacity of the crane or materiel handling equipment. Failure to comply may result in injury or death to personnel or damage to equipment.
- Do not allow heavy components to swing while hanging by lifting device. Failure to comply may cause injury or death to personnel.
- Any part or component that weighs between 50 lbs (23 kg) and 75 lbs (34 kg) must be removed with the aid of an assistant. Any part or component that weighs over 75 lbs (34 kg) must be removed with the aid of an assistant and a lifting device. Failure to comply may cause injury or death to personnel.
- Ensure all chains, hooks, and slings are in good condition and are of correct capacity. Ensure hooks are positioned correctly. Failure to comply may result in injury or death to personnel.

WARNING



MOVING MACHINERY

- Use extreme care when operating or working near moving machinery including running engine, rotating shafts, and other moving parts. Failure to comply may result in injury or death to personnel.
- Use extreme care when measuring voltage while engine is running around rotating fan blade and hot engine parts. Failure to comply may result in injury or death to personnel.

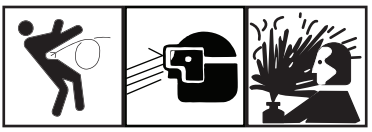
WARNING



HEAVY-DUTY WINCH OPERATION

- All personnel must stand clear during winching operations from possible snapping cable or shifting load. Failure to comply may result in injury or death to personnel.
- When hooking up for winching operations, position throat (open part) of hook upward in case overloading straightens out hook. Failure to comply may result in injury or death to personnel.
- The cable drum requires a minimum of three or four wraps of wire rope (cable) for safety. Failure to comply may result in injury or death to personnel.
- Be careful when handling the winch cable. Ensure cut ends are taped. Ensure cut ends of cable on winch assembly are securely fastened down. Failure to comply may result in injury or death to personnel.
- Always wear leather gloves when handling winch cable. Failure to comply may result in injury or death to personnel.

WARNING



PARTS UNDER PRESSURE

- Wear safety goggles and use caution when removing or installing springs, snap rings, retaining rings, and other parts under spring tension. These parts can act as projectiles. Failure to comply may result in injury or death to personnel.
- The radiator is very hot and pressurized during vehicle operation. Let radiator cool before removing cap. Failure to do so can result in serious burns.
- During pressure tests, ensure air pressure is drained to 0 psi (0 kPa) before taking off any components. If pressure is not released, plates or line could blow off and harm personnel. Do not drain air from tank with any part of body in air spray path. Skin embolisms and/or debris in eyes can occur from released pressure.
- High air pressure may be released from valve stem when valve core is removed. Stay clear of valve stem after core is removed. Ensure all personnel wear suitable eye protection. Failure to comply may result in injury to personnel.
- Stand clear of trajectory area during deflation or personal injury or death may result.
- Lock-ring is under tension. If lock-ring breaks loose it could cause injury to personnel. Keep hands and fingers away from lock-ring when removing.
- Never adjust relief valve so that personnel must stand on strongback to operate latch.
- If there is any residual pressure in tank when relief valve is open, personnel may lose their balance and fall. Failure to comply may result in injury or death to personnel.
- Use extreme care when removing or installing spring retainers. Spring retainers are under tension and can act as projectiles when released suddenly. Ensure proper eye protection is worn to prevent injury to personnel.
- Use extreme care when removing or installing springs. Springs are under tension and can act as projectiles when released. Ensure proper eye protection is worn to prevent injury to personnel. Eye

protection is required during all grinding operations. Failure to comply may result in serious injury to personnel.

- Failure to relieve tank pressure may result in sudden, unexpected loss of pressure. Failure to comply may result in personal injury or death.
- Do not remove the radiator cap when the engine is hot, as steam and hot coolant can escape. Failure to comply may result in personal injury or death.

WARNING



HEAVY PARTS

Any part or component that weigh over 50 lbs (23 kg) must be removed with the aid of an assistant and a lifting device. Failure to comply may result in personal injury or death.

WARNING



CRANE SYSTEM

- Always refer to the range diagram BEFORE making any lift. It is extremely important that the crane is properly leveled to prevent overstressing.
- Do not operate crane unless outriggers are set up. Always chock front wheels when using outriggers. Failure to comply may result in injury or death to personnel.
- When using crane on any vehicle, park vehicle clear of all overhead powerlines. If operating crane under power lines, do not allow vehicle to contact high-voltage connections. Failure to comply will result in death to personnel.
- Do not stand under crane. Failure to comply may result in injury or death to personnel.
- Refuse to work with worn, frayed, or damaged wire rope. Always wear heavy gloves when handling winch cables; never let cable run

through hands. Frayed cables can cut. Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.

- When using crane on any vehicle, park vehicle clear of all overhead power lines. Do not operate crane near overhead power lines. Failure to comply may result in injury or death to personnel.
- Boom has a 370 degree rotation and is mechanically stopped at five degrees on either side of the left outrigger beam. Swing operations must be slowed no later than 15 degrees prior to contacting the stop.
- Keep boom clear of electrical powerlines and other obstacles. Do not operate crane near overhead powerlines. Failure to comply will result in death to personnel.
- Avoid quick, jerking, winch operation. Keep other personnel well away from vehicles involved in winching operations. A snapped cable or shifting load can cause serious injury or death.
- If possible, keep one hand away from equipment to reduce the hazard of current flowing through vital organs of the body.
- Keep fingers clear of top of lift-hook. Failure to comply could result in personnel injury.

WARNING



CARBON MONOXIDE (EXHAUST GAS) CAN CAUSE DEATH

- Carbon monoxide does not have color or smell and can cause death.
- Breathing air with carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, a sleepy feeling and coma. Brain damage or death can result from heavy exposure.
- Carbon monoxide is in exhaust fumes of fuel-burning heaters and internal combustion engines.
- Carbon monoxide can become dangerously concentrated under conditions of no ventilation.
- Precautions must be followed to ensure crew safety when the personnel heater or engine of any vehicle is operated for any purpose. Failure to comply may result in injury or death to personnel.

- DO NOT operate vehicle engine in a closed place unless the place has proper ventilation. Failure to comply may result in injury or death to personnel.
- DO NOT drive any vehicle with inspection plates, cover plates, or engine compartment covers removed unless necessary for maintenance purposes. Failure to comply may result in injury or death to personnel.
- BE ALERT at all times during vehicle operation for exhaust odors and exposure symptoms. If either odor or exposure symptoms are present, IMMEDIATELY VENTILATE personnel compartments. If symptoms continue, remove affected crew to fresh air and keep warm. DO NOT PERMIT PHYSICAL EXERCISE. If necessary, give artificial respiration and get immediate medical attention. For artificial respiration, refer to FM 4-25.11 . Failure to comply may result in injury or death to personnel.
- BE AWARE that the gas particulate filter unit or the field protection mask for nuclear-biological-chemical protection WILL NOT offer safety from carbon monoxide poisoning.

WARNING



EXTREME HEAT

If required to remain inside the vehicle during extreme heat, occupants should follow the water intake, work/rest cycle, and other heat stress preventive medicine measures contained in FM 21-10, Field Hygiene and Sanitation.

WARNING

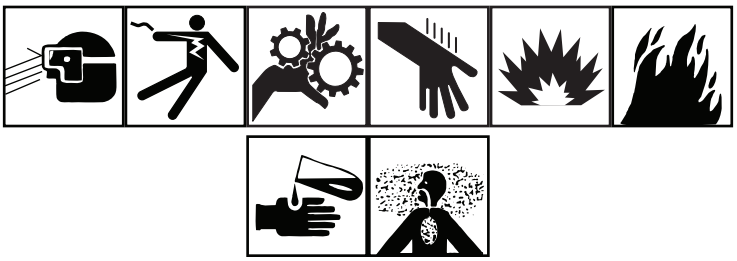


CABLES

- Always wear heavy gloves when handling winch cables; never let cable run through hands. Frayed cables can cut. Failure to comply may result in injury or death to personnel.

- Never operate winch with less than five wraps of cable on winch drum. Frayed cables can cut. Failure to comply may result in injury or death to personnel.

WARNING



LEAD-ACID BATTERIES

- Wear proper eye protection when working around batteries. Failure to comply may result in injury or death to personnel.
- Use extreme care not to short out battery terminals. Remove all jewelry such as rings, ID tags, bracelets, etc. prior to working on or around vehicle. Jewelry and tools can catch on equipment, contact positive electrical circuits, and cause a direct short, severe burns, or electrical shock. Failure to comply may result in injury or death to personnel.
- Batteries produce explosive gases. Do not smoke or use open flame near batteries. Do not allow hot, sparking, or glowing objects near batteries. If batteries are giving off gases, presence of a heat, flame, or spark may cause fire and/or explosion. Failure to comply may result in injury or death to personnel.
- Battery electrolyte is harmful to skin, and eyes. Avoid battery electrolyte contact with skin, eyes, or clothing. If battery electrolyte spills, take immediate action to stop burning effects:

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WARNING



NBC

- NBC-contaminated air filters must be handled and disposed of only by authorized and trained personnel.

- The unit commander or senior officer in charge of maintenance personnel must ensure that prescribed protective clothing (FM 3-11.4) is used, and prescribed safety measures and decontamination procedures (FM 3-11.5) are followed.
- The local unit SOP is responsible for final disposal of contaminated air filters. Failure to comply may cause severe injury or death to personnel.

WARNING



TIRE OPERATION

- Operating a vehicle with a tire in an overinflated or underinflated condition, or with a questionable defect, may lead to premature tire failure. Ensure tire has proper tire pressure. Failure to comply may result in injury or death to personnel.
- When inflating tires mounted on the vehicle, all personnel must remain out of trajectory of the side ring and lock-ring as shown by the areas indicated. Failure to follow proper procedures may result in serious injury or death to personnel.
- Cracked, broken, bent or otherwise damaged rim components shall not be reworked, welded, brazed, or otherwise heated or damage or personal injury or death may result.
- No heat shall be applied to a multi-piece wheel or wheel component or damage or injury or death may result.
- Failure to place wheel/tire assembly in safety cage prior to initial inflation could result in serious injury or death to personnel.
- When a wheel/tire is in a restraining device, do not rest or lean any part of body or equipment on or against the restraining device, or injury or death could result.
- While changing tires or while performing tire maintenance, stay out of the trajectory path. Failure to comply may result in injury or death to personnel.
- Always use an inflation hose with an in-line gauge and a clip-on chuck when inflating tires. The gauge and valve must be mounted a minimum of 10 feet (3.10 m) away from air chuck.

- High air pressure may be released from valve stem when valve core is removed. Stay clear of valve stem after core is removed. Ensure all personnel wear suitable eye protection. Failure to comply may result in injury to personnel.
- Tire is heavy. Brace tire to ensure tire will not fall over on you or on others.

WARNING



VEHICLE OPERATION

- Speed limits posted on curves reflect speeds that are considered safe for automobiles. Heavy trucks with a high center of gravity can roll over at these speed limits. Use caution and reduce your speed below the posted limit before entering a curve. Failure to comply may result in vehicle crash and injury to personnel.
- Use caution and reduce your speed below the posted limit before entering a curve. Failure to comply may result in vehicle crash and injury to personnel.
- Always use seatbelts when operating vehicle. Failure to use seatbelt can result in serious injury or death in case of accident.
- Operation at speeds over 15 mph (24 kph) on paved roads can be achieved when the operator determines that the vehicle being towed and the terrain allow safe operation.
- Under no condition can speeds over 35 mph (55 kph) on paved road and 15 mph (24 kph) off-road be allowed. Loss of control can cause serious injury or death. Excessive speed can cause damage to vehicle being towed.

WARNING



BRAKES

- Ensure all personnel are clear from front of truck before performing brake stall check. Be ready to apply service brake. Operator must

remain in cab while performing this check. Failure to comply could result in personnel injury.

- Never use parking brake for normal braking or wheels will lock up causing severe skid. Skidding vehicle may result in serious personal injury or death.
- Engine must be shut OFF and parking brake set before performing PMCS walkaround. Failure to comply may result in injury or death to personnel.

WARNING



BURNS

The exhaust pipe and muffler can become very hot during vehicle operation. Be careful not to touch these parts with bare hands, or allow body to come in contact with exhaust pipe or muffler. Exhaust system parts can become hot enough to cause serious burns.

WARNING



HEARING PROTECTION

- Excessive noise levels are present any time the heavy-duty winch or crane is operating.
- Wear single hearing protection (earplugs or equivalent) while working around equipment while it is running. Failure to do so could result in damage to your hearing.
- Seek medical aid should you suspect a hearing problem.

WARNING



COMPRESSED AIR

- Brake shoes may be coated with dust. Breathing this dust may be harmful to your health.
- Do not use compressed air to clean brake shoes. Wear a filter mask approved for use against brake dust. Failure to comply may result in injury or death to personnel.
- Compressed air used for cleaning purposes will not exceed 30 psi (207 kPa).
- Use only with effective chip guarding and personal protective equipment, goggles, shield, and gloves.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE:

Zero in the “Change No.” column indicates an original page or work package.

Date of issue for the original manual is:

Original 15 October 2008

TOTAL NUMBER OF VOLUMES IS 2, TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 181 AND TOTAL NUMBER OF WORK PACKAGES IS 203, CONSISTING OF THE FOLLOWING.

Page/WP No.	Change No.	Page/WP No.	Change No.
Volume 2		WP 0154 (4 pages)	0
Front Cover	0	WP 0155 (4 pages)	0
Warning Summary	0	WP 0156 (4 pages)	0
i-xxii	0	WP 0157 (8 pages)	0
Chp 3 - Troubleshooting		WP 0158 (4 pages)	0
Procedures		WP 0159 (6 pages)	0
WP 0135 (8 pages)	0	WP 0160 (4 pages)	0
WP 0136 (6 pages)	0	WP 0161 (6 pages)	0
WP 0137 (6 pages)	0	WP 0162 (4 pages)	0
WP 0138 (4 pages)	0	WP 0163 (6 pages)	0
WP 0139 (4 pages)	0	WP 0164 (6 pages)	0
WP 0140 (4 pages)	0	WP 0165 (4 pages)	0
WP 0141 (4 pages)	0	WP 0166 (8 pages)	0
WP 0142 (4 pages)	0	WP 0167 (8 pages)	0
WP 0143 (4 pages)	0	WP 0168 (4 pages)	0
WP 0144 (4 pages)	0	WP 0169 (4 pages)	0
WP 0145 (2 pages)	0	WP 0170 (2 pages)	0
WP 0146 (4 pages)	0	WP 0171 (4 pages)	0
WP 0147 (4 pages)	0	WP 0172 (6 pages)	0
WP 0148 (4 pages)	0	WP 0173 (2 pages)	0
WP 0149 (4 pages)	0	WP 0174 (2 pages)	0
WP 0150 (4 pages)	0	WP 0175 (4 pages)	0
WP 0151 (10 pages)	0	WP 0176 (2 pages)	0
WP 0152 (6 pages)	0	WP 0177 (4 pages)	0
WP 0153 (6 pages)	0	WP 0178 (2 pages)	0

Page/WP No.	Change No.
Chp 4 - Preventive Maintenance Checks and Services (PMCS)	0
WP 0179 (4 pages)	0
WP 0180 (42 pages)	0
WP 0181 (46 pages)	0
WP 0182 (64 pages)	0
WP 0183 (74 pages)	0
WP 0184 (38 pages)	0
WP 0185 (16 pages)	0
Chp 5 - Maintenance Instructions	0
WP 0186 (16 pages)	0
WP 0187 (4 pages)	0
WP 0188 (6 pages)	0
WP 0189 (2 pages)	0
WP 0190 (18 pages)	0
WP 0191 (2 pages)	0
WP 0192 (6 pages)	0
WP 0193 (10 pages)	0
WP 0194 (6 pages)	0
WP 0195 (8 pages)	0
WP 0196 (4 pages)	0
WP 0197 (2 pages)	0
WP 0198 (2 pages)	0
WP 0199 (2 pages)	0
Chp 6 - Supporting Information	0
WP 0200 (8 pages)	0
WP 0201 (36 pages)	0
WP 0202 (6 pages)	0
WP 0203 (8 pages)	0

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 15 OCTOBER 2008

TECHNICAL MANUAL

OPERATOR'S MANUAL
TRUCK, WRECKER, 8X8
M984A4
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TABLE OF CONTENTS

WP Sequence No.
Page No.

Chapter 3 - Troubleshooting Procedures

BUZZER SOUNDS AND AIR INDICATOR IS LIT..... WP 0135
Figure 1. 0135-2
Figure 2. 0135-3
Figure 3. 0135-4
Figure 4. 0135-5
Figure 5. 0135-6
Figure 6. 0135-7
WINDSHIELD WASHER WILL NOT OPERATE..... WP 0136
Figure 1. 0136-1
Figure 2. 0136-2
Figure 3. 0136-3
Figure 4. 0136-4
Figure 5. 0136-4
Figure 6. 0136-5
AIR SYSTEM LOSES PRESSURE DURING OPERATION..... WP 0137
Figure 1. 0137-2
Figure 2. 0137-3
Figure 3. 0137-4
Figure 4. 0137-5
TRAILER BRAKE DOES NOT APPLY WHEN SERVICE BRAKE TREADLE OR PARKING BRAKE IS USED..... WP 0138

WP Sequence No.
Page No.

Figure 1. 0138-2

Figure 2. 0138-3

AIR HORN WILL NOT OPERATE..... WP 0139

Figure 1. 0139-2

Figure 2. 0139-3

Figure 3. 0139-4

ONE OR MORE LIGHTING CIRCUITS NOT OPERATING..... WP 0140

Figure 1. 0140-2

Figure 2. 0140-3

FAILS TO CRANK WHEN ENGINE START SWITCH IS TURNED TO START POSITION..... WP 0141

Figure 1. 0141-1

Figure 2. 0141-2

CRANKS BUT FAILS TO START..... WP 0142

Figure 1. 0142-1

Figure 2. 0142-2

Figure 3. 0142-3

STARTS OR RUNS ROUGHLY AFTER PROPER WARM-UP, DOES NOT MAKE FULL POWER, OR MAKES EXCESSIVE EXHAUST SMOKE..... WP 0143

Figure 1. 0143-2

Figure 2. 0143-3

Figure 3. 0143-4

ENGINE OVERHEATS..... WP 0144

Figure 1. 0144-2

	Page No.	WP Sequence No.
Figure 2.	0144-3	
LOW OIL PRESSURE GAUGE INDICATION		WP 0145
Figure 1.	0145-1	
EXCESSIVE OIL CONSUMPTION		WP 0146
Figure 1.	0146-2	
HEAVY-DUTY WINCH WILL NOT OPERATE IN REMOTE CONTROL		WP 0147
Figure 1.	0147-2	
Figure 2.	0147-3	
Figure 3.	0147-4	
WINCH CABLE WILL NOT REEL OUT OR IN, OR OPERATES SLOWLY IN REMOTE CONTROL		WP 0148
Figure 1.	0148-2	
Figure 2.	0148-3	
Figure 3.	0148-4	
HEAVY-DUTY WINCH WILL NOT OPERATE IN MANUAL CONTROL		WP 0149
Figure 1.	0149-2	
Figure 2.	0149-3	
Figure 3.	0149-4	
WINCH CABLE WILL NOT REEL OUT OR IN, OR OPERATES SLOWLY IN MANUAL CONTROL		WP 0150
Figure 1.	0150-2	
Figure 2.	0150-3	
Figure 3.	0150-4	
CONTROLS (REMOTE OR MANUAL) STICKING IN ENGAGED POSITION		WP 0151

WP Sequence No.
Page No.

Figure 1. 0151-2
Figure 2. 0151-3
Figure 3. 0151-5
Figure 4. 0151-6
Figure 5. 0151-7
Figure 6. 0151-8
Figure 7. 0151-9
Figure 8. 0151-10

HYDRAULIC SYSTEM OPERATES TOO SLOW, TOO FAST, WITH JERKY MOVEMENTS; OR ONE OR MORE HYDRAULICS CIRCUITS WILL NOT OPERATE..... WP 0152

Figure 1. 0152-2
Figure 2. 0152-4

BOOM OPERATION ABNORMAL WHEN TELESCOPING IN OR OUT..... WP 0153

Figure 1. 0153-2
Figure 2. 0153-3
Figure 3. 0153-4
Figure 4. 0153-4

BOOM RAISES OR LOWERS SLOWLY..... WP 0154

Figure 1. 0154-2
Figure 2. 0154-3

BOOM WILL NOT RAISE OR LOWER..... WP 0155

Figure 1. 0155-2

BOOM WILL NOT TELESCOPE IN OR OUT..... WP 0156

Figure 1. 0156-2

WP Sequence No.
Page No.

CRANE CONTROLS STICKING IN ENGAGED POSITION..... WP 0157
Figure 1. 0157-2
Figure 2. 0157-3
Figure 3. 0157-5
Figure 4. 0157-6
Figure 5. 0157-7
CRANE WILL NOT OPERATE, OR OPERATES ABNORMALLY..... WP 0158
Figure 1. 0158-2
Figure 2. 0158-3
Figure 3. 0158-4
HOIST OPERATION SLOW OR ABNORMAL WHEN LIFTING OR LOWERING LOAD..... WP 0159
Figure 1. 0159-2
Figure 2. 0159-3
Figure 3. 0159-4
Figure 4. 0159-5
Figure 5. 0159-6
HOIST WILL NOT LIFT LOAD..... WP 0160
Figure 1. 0160-2
Figure 2. 0160-3
MAST RAISES OR LOWERS ABNORMALLY..... WP 0161
Figure 1. 0161-2
Figure 2. 0161-4
MAST RAISES OR LOWERS SLOWLY..... WP 0162

WP Sequence No.
Page No.

Figure 1. 0162-2
Figure 2. 0162-3
OUTRIGGER OPERATION SLOW OR ABNORMAL..... WP 0163
Figure 1. 0163-2
Figure 2. 0163-3
Figure 3. 0163-4
Figure 4. 0163-5
Figure 5. 0163-6
SWING OPERATION ABNORMAL IN BOTH DIRECTIONS..... WP 0164
Figure 1. 0164-2
Figure 2. 0164-3
Figure 3. 0164-4
Figure 4. 0164-5
Figure 5. 0164-6
SWING OPERATION ABNORMAL IN ONLY ONE DIRECTION..... WP 0165
Figure 1. 0165-2
Figure 2. 0165-3
Figure 3. 0165-4
CONTROLS STICKING IN ENGAGED POSITION..... WP 0166
Figure 1. 0166-2
Figure 2. 0166-3
Figure 3. 0166-5
Figure 4. 0166-6
Figure 5. 0166-7

WP Sequence No.
Page No.

RETRIEVAL CYLINDERS RAISE OR LOWER SLOWLY..... WP 0167
Figure 1. 0167-2
Figure 2. 0167-4
Figure 3. 0167-6
Figure 4. 0167-7
RETRIEVAL SYSTEM WILL NOT OPERATE..... WP 0168
Figure 1. 0168-2
Figure 2. 0168-3
Figure 3. 0168-4
SELF-RECOVERY WINCH DOES NOT WORK..... WP 0169
Figure 1. 0169-2
Figure 2. 0169-3
UNUSUALLY NOISY WHEN OPERATING..... WP 0170
Figure 1. 0170-2
VEHICLE IS HARD TO STEER, SHIMMIES, WANDERS, OR PULLS TO ONE SIDE..... WP 0171
Figure 1. 0171-2
Figure 2. 0171-3
VEHICLE STEERING SLOW TO RESPOND OR INTERMITTENT..... WP 0172
Figure 1. 0172-2
Figure 2. 0172-4
UNUSUALLY NOISY WHEN OPERATING..... WP 0173
Figure 1. 0173-1
SLOW OR DIFFICULT ENGAGEMENT..... WP 0174

WP Sequence No.
Page No.

Figure 1. 0174-1

TRANSFER CASE SHIFT LEVER WILL NOT SHIFT..... WP 0175

Figure 1. 0175-1

Figure 2. 0175-2

Figure 3. 0175-3

Figure 4. 0175-4

TRANS TEMP GAUGE INDICATES OVERHEATING DURING NORMAL OPERATION..... WP 0176

Figure 1. 0176-1

Figure 2. 0176-2

WHEEL WOBBLES..... WP 0177

Figure 1. 0177-2

Figure 2. 0177-3

TIRES WORN UNEVENLY OR EXCESSIVELY..... WP 0178

Figure 1. 0178-2

Chapter 4 - Preventive Maintenance Checks and Services (PMCS)

INTRODUCTION - PREVENTIVE MAINTENANCE ..... WP 0179

Figure 1. 0179-3

BEFORE - PREVENTIVE MAINTENANCE..... WP 0180

Table 1. PMCS - BEFORE..... 0180-1

Figure 1. 0180-4

Figure 2. 0180-5

Figure 3. 0180-8

Figure 4. 0180-9

WP Sequence No.
Page No.

Figure 5. 0180-10
Figure 6. 0180-11
Figure 7. 0180-12
Figure 8. 0180-13
Figure 9. 0180-16
Figure 10. 0180-17
Figure 11. 0180-21
Figure 12. 0180-22
Figure 13. 0180-24
Figure 14. 0180-25
Figure 15. 0180-27
Figure 16. 0180-31
Figure 17. 0180-34
Figure 18. 0180-36
Figure 19. 0180-38
Figure 20. 0180-39
Figure 21. 0180-40

DURING - PREVENTIVE MAINTENANCE..... WP 0181

Table 1. PMCS - DURING..... 0181-1
Figure 1. 0181-2
Figure 2. 0181-5
Figure 3. 0181-6
Figure 4. 0181-7
Figure 5. 0181-8

WP Sequence No.
Page No.

Figure 6. 0181-10
Figure 7. 0181-11
Figure 8. 0181-12
Figure 9. 0181-13
Figure 10. 0181-14
Figure 11. 0181-15
Figure 12. 0181-17
Figure 13. 0181-20
Figure 14. 0181-22
Figure 15. 0181-23
Figure 16. 0181-24
Figure 17. 0181-25
Figure 18. 0181-26
Figure 19. 0181-28
Figure 20. 0181-30
Figure 21. 0181-31
Figure 22. 0181-32
Figure 23. 0181-34
Figure 24. 0181-35
Figure 25. 0181-38
Figure 26. 0181-39
Figure 27. 0181-41
Figure 28. 0181-42
Figure 29. 0181-44

WP Sequence No.
Page No.

Figure 30. 0181-45

AFTER - PREVENTIVE MAINTENANCE ..... WP 0182

Table 1. PMCS - AFTER..... 0182-1

Figure 1. 0182-5

Figure 2. 0182-7

Figure 3. 0182-8

Figure 4. 0182-10

Figure 5. 0182-12

Figure 6. 0182-13

Figure 7. 0182-15

Figure 8. 0182-16

Figure 9. 0182-17

Figure 10. 0182-18

Figure 11. 0182-19

Figure 12. 0182-20

Figure 13. 0182-21

Figure 14. 0182-22

Figure 15. 0182-24

Figure 16. 0182-25

Figure 17. 0182-26

Figure 18. 0182-28

Figure 19. 0182-29

Figure 20. 0182-31

Figure 21. 0182-32

WP Sequence No.
Page No.

Figure 22. 0182-33
Figure 23. 0182-35
Figure 24. 0182-36
Figure 25. 0182-38
Figure 26. 0182-41
Figure 27. 0182-43
Figure 28. 0182-44
Figure 29. 0182-45
Figure 30. 0182-46
Figure 31. 0182-47
Figure 32. 0182-49
Figure 33. 0182-51
Figure 34. 0182-52
Figure 35. 0182-53
Figure 36. 0182-55
Figure 37. 0182-56
Figure 38. 0182-59
Figure 39. 0182-60
Figure 40. 0182-62
Figure 41. 0182-63

WEEKLY - PREVENTIVE MAINTENANCE..... WP 0183

Table 1. PMCS - WEEKLY..... 0183-1
Figure 1. 0183-4
Figure 2. 0183-6

WP Sequence No.
Page No.

Figure 3. 0183-7
Figure 4. 0183-8
Figure 5. 0183-9
Figure 6. 0183-10
Figure 7. 0183-11
Figure 8. 0183-12
Figure 9. 0183-13
Figure 10. 0183-15
Figure 11. 0183-16
Figure 12. 0183-18
Figure 13. 0183-20
Figure 14. 0183-23
Figure 15. 0183-24
Figure 16. 0183-25
Figure 17. 0183-27
Figure 18. 0183-29
Figure 19. 0183-30
Figure 20. 0183-32
Figure 21. 0183-33
Figure 22. 0183-34
Figure 23. 0183-35
Figure 24. 0183-36
Figure 25. 0183-37
Figure 26. 0183-38

WP Sequence No.
Page No.

Figure 27. 0183-40
Figure 28. 0183-41
Figure 29. 0183-43
Figure 30. 0183-46
Figure 31. 0183-48
Figure 32. 0183-49
Figure 33. 0183-50
Figure 34. 0183-51
Figure 35. 0183-52
Figure 36. 0183-54
Figure 37. 0183-56
Figure 38. 0183-57
Figure 39. 0183-58
Figure 40. 0183-60
Figure 41. 0183-61
Figure 42. 0183-64
Figure 43. 0183-65
Figure 44. 0183-67
Figure 45. 0183-68
Figure 46. 0183-70
Figure 47. 0183-71
Figure 48. 0183-72
Figure 49. 0183-73

SEMIANNUAL - PREVENTIVE MAINTENANCE..... WP 0184

WP Sequence No.
Page No.

Table 1. PMCS- SEMIANNUAL..... 0184-1
Figure 1. 0184-3
Figure 2. 0184-6
Figure 3. 0184-8
Figure 4. 0184-9
Figure 5. 0184-10
Figure 6. 0184-11
Figure 7. 0184-11
Figure 8. 0184-13
Figure 9. 0184-14
Figure 10. 0184-15
Figure 11. 0184-16
Figure 12. 0184-17
Figure 13. 0184-18
Figure 14. 0184-19
Figure 15. 0184-20
Figure 16. 0184-22
Figure 17. 0184-23
Figure 18. 0184-24
Figure 19. 0184-25
Figure 20. 0184-26
Figure 21. 0184-27
Figure 22. 0184-28
Figure 23. 0184-29

WP Sequence No.
Page No.

Figure 24. 0184-30
Figure 25. 0184-31
Figure 26. 0184-32
Figure 27. 0184-33
Figure 28. 0184-34
Figure 29. 0184-36
Figure 30. 0184-37

MONTHLY - PREVENTIVE MAINTENANCE..... WP 0185

Table 1. PMCS - MONTHLY..... 0185-1
Figure 1. 0185-4
Figure 2. 0185-5
Figure 3. 0185-6
Figure 4. 0185-7
Figure 5. 0185-8
Figure 6. 0185-8
Figure 7. 0185-9
Figure 8. 0185-10
Figure 9. 0185-12
Figure 10. 0185-14
Figure 11. 0185-15

Chapter 5 - Maintenance Instructions

LUBRICATION INSTRUCTIONS..... WP 0186

Table 1. Engine Lubrication..... 0186-2
Table 2. Transmission and Transfer Case Lubrication..... 0186-3

WP Sequence No.
Page No.

Table 3. Axle Lubrication..... 0186-4
Table 4. Hydraulic Reservoir Servicing..... 0186-6
Table 5. Radiator Servicing..... 0186-7
Table 6. Tire Carrier Lubrication..... 0186-9
Table 7. Self-Recovery Winch Lubrication..... 0186-10
Table 8. Heavy-Duty Winch Lubrication..... 0186-11
Table 9. Material Handling Crane Lubrication..... 0186-11
Table 10. Oil Can Point Lubrication..... 0186-12
Table 11. Miscellaneous Lubrication Points..... 0186-13
Table 12. Vehicle Cleaning..... 0186-14

CLOSE/OPEN HEATER VALVES..... WP 0187
Figure 1. 0187-1
Figure 2. 0187-2
Figure 3. 0187-3
Figure 4. 0187-3

PRE/POST TOWING PROCEDURE (FRONT LIFT ONLY)..... WP 0188
Figure 1. 0188-2
Figure 2. 0188-3
Figure 3. 0188-4
Figure 4. 0188-5

CLEAN VEHICLE..... WP 0189
Figure 1. 0189-1
Figure 2. 0189-2

CHANGE WHEEL AND TIRE ASSEMBLY..... WP 0190

WP Sequence No.
Page No.

Figure 1. 0190-2
Figure 2. 0190-4
Figure 3. 0190-4
Figure 4. 0190-5
Figure 5. 0190-6
Figure 6. 0190-6
Figure 7. 0190-7
Figure 8. 0190-8
Figure 9. 0190-9
Figure 10. 0190-10
Figure 11. 0190-11
Figure 12. 0190-11
Figure 13. 0190-13
Figure 14. 0190-14
Figure 15. 0190-15
Figure 16. 0190-15
Figure 17. 0190-16
Figure 18. 0190-17

CLEAN FUEL TANK STRAINER..... WP 0191
Figure 1. 0191-1
Figure 2. 0191-2

SERVICE AIR CLEANER ELEMENT..... WP 0192
Figure 1. 0192-1
Figure 2. 0192-2

WP Sequence No.
Page No.

Figure 3. 0192-3
Figure 4. 0192-4
Figure 5. 0192-4
Figure 6. 0192-5

SERVICE TIRES..... WP 0193
Figure 1. 0193-3
Figure 2. 0193-4
Figure 3. 0193-5
Figure 4. 0193-6
Figure 5. 0193-8

OPEN/CLOSE BATTERY BOX..... WP 0194
Figure 1. 0194-3
Figure 2. 0194-5

OPEN/CLOSE ENGINE COVERS AND ENGINE SIDE PANEL REMOVAL/INSTALLATION..... WP 0195
Figure 1. 0195-1
Figure 2. 0195-2
Figure 3. 0195-3
Figure 4. 0195-4
Figure 5. 0195-5
Figure 6. 0195-5
Figure 7. 0195-6
Figure 8. 0195-7

PRIMING FUEL SYSTEM..... WP 0196

WP Sequence No.
Page No.

Figure 1. 0196-2

OPEN/CLOSE CIRCUIT BREAKER ACCESS PANEL..... WP 0197

Figure 1. 0197-1

Figure 2. 0197-2

1.5 IN. (38 MM) SPACER ASSEMBLY..... WP 0198

Figure 1. 0198-1

3 IN. (76 MM) SPACER ASSEMBLY..... WP 0199

Figure 1. 0199-1

Chapter 6 - Supporting Information

REFERENCES..... WP 0200

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS..... WP 0201

Table 1. List of Usable On Codes..... 0201-2

Table 2. Components of End Item..... 0201-2

Table 3. Basic Issue Items..... 0201-4

ADDITIONAL AUTHORIZATION LIST (AAL)..... WP 0202

Table 1. List of Usable On Codes..... 0202-1

Table 2. Additional Authorization List..... 0202-2

EXPENDABLE AND DURABLE ITEMS LIST..... WP 0203

Table 1. Expendable and Durable Items List..... 0203-1

CHAPTER 3

TROUBLESHOOTING PROCEDURES

OPERATOR MAINTENANCE
BUZZER SOUNDS AND AIR INDICATOR IS LIT

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
BUZZER SOUNDS AND AIR INDICATOR IS LIT

TEST 1 - Is air pressure greater than 75 psi (517 kPa)?
1. Start engine, (Volume 1, WP 0044)and allow air pressure to build.
2. Check air pressure.

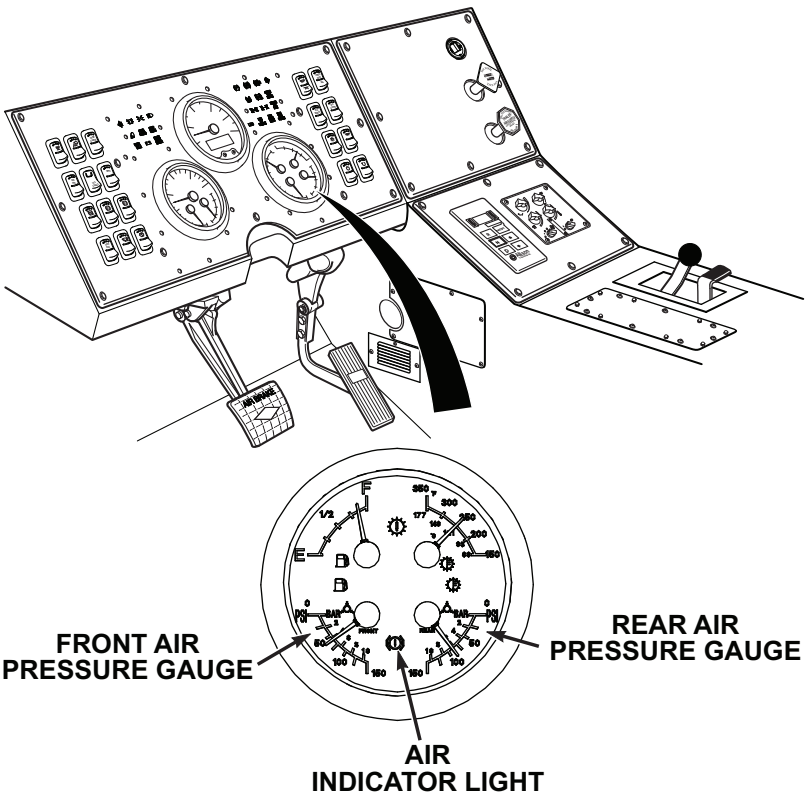


Figure 1.

3. Turn engine OFF. (Volume 1, WP 0057)

CONDITION/INDICATION

Is air pressure greater than 75 psi (517 kPa)?

DECISION

No - Test 2 - Are any petcock valves open?
Yes - Notify Supervisor.

TEST 2 - Are any petcock valves open?

1. Check if any air reservoir petcock/drain valves are open. If valve(s) open, close petcock(s).

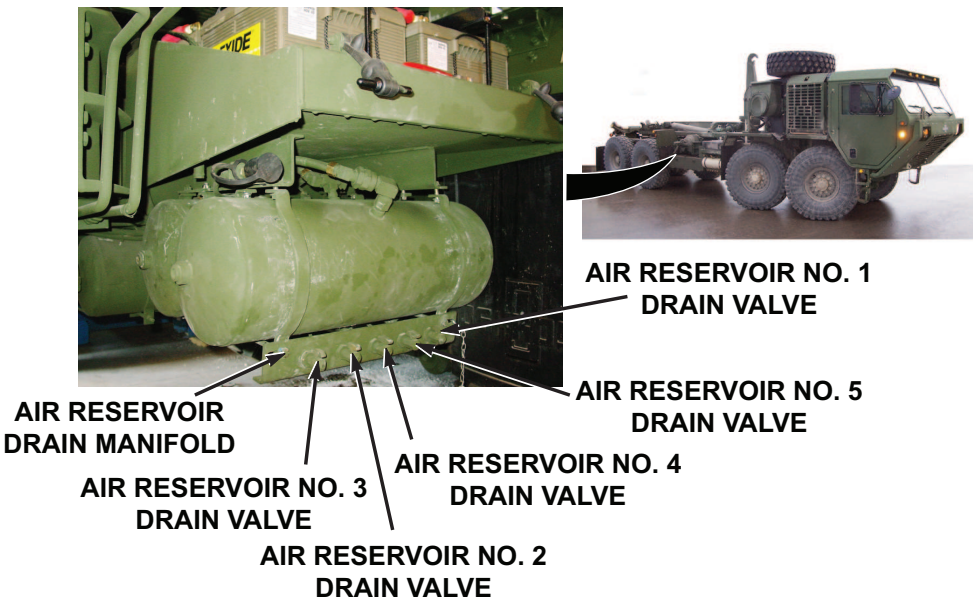


Figure 2.

CONDITION/INDICATION

Are any petcock valves open?

DECISION

Petcock(s) open - Test 6 - Does buzzer stop, and air indicator light extinguish?
Petcock's closed - Test 3 - Is trailer air supply control in correct position?

TEST 3 - Is trailer air supply control in correct position?

1. Check that trailer air supply control is pulled out (OFF position) if no trailer is coupled, and pushed in (ON position) if trailer is coupled.
2. If trailer air control is found in an incorrect position, set to correct position.

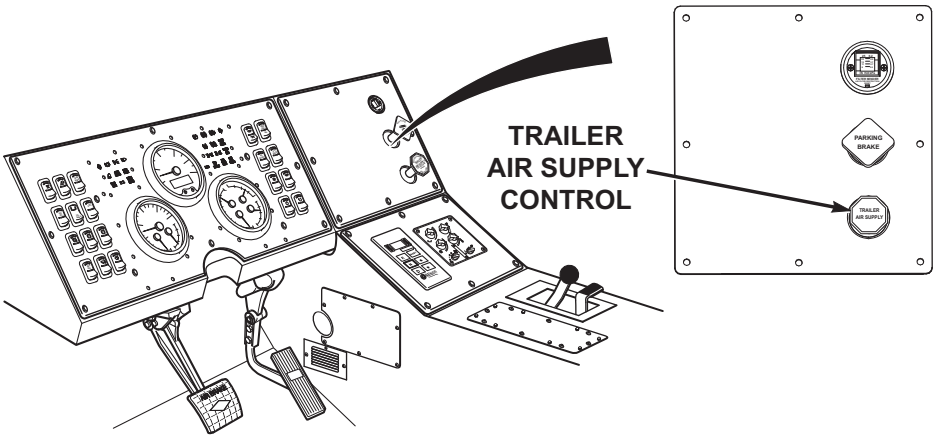


Figure 3.

CONDITION/INDICATION

Is trailer air supply control in correct position?

DECISION

No - Test 6 - Does buzzer stop, and air indicator light extinguish?
Yes - Test 4 - Does air reservoir, hoses, lines, fittings, and/or connectors leak?

TEST 4 - Does air reservoir, hoses, lines, fittings, and/or connectors leak?

1. Check air reservoir, hoses, lines, fittings, and/or connectors for leaks. Tighten any leaks found.

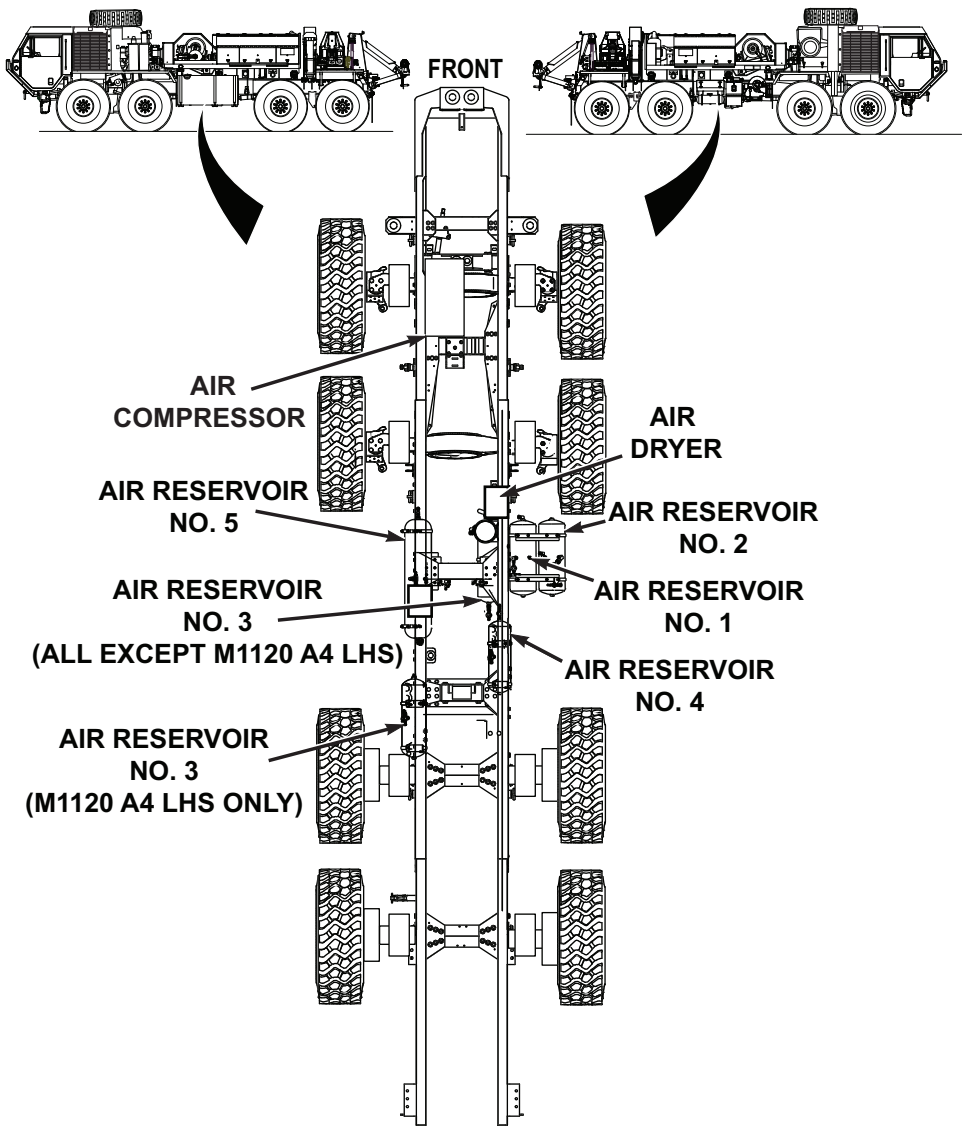


Figure 4.

CONDITION/INDICATION

Does air reservoir, hoses, lines, fittings, and/or connectors leak?

DECISION

Air reservoir, hoses, lines and/or connectors leak. - Notify Supervisor. Test 6 - Does buzzer stop, and air indicator light extinguish?Notify Supervisor.
Air reservoir, hoses, lines, fittings, and/or connectors OK - Test 5 - Does buzzer sound, and air indicator light illuminate when trailer is disconnected?

TEST 5 - Does buzzer sound, and air indicator light illuminate when trailer is disconnected?

1. If trailer is coupled, disconnect trailer from vehicle.

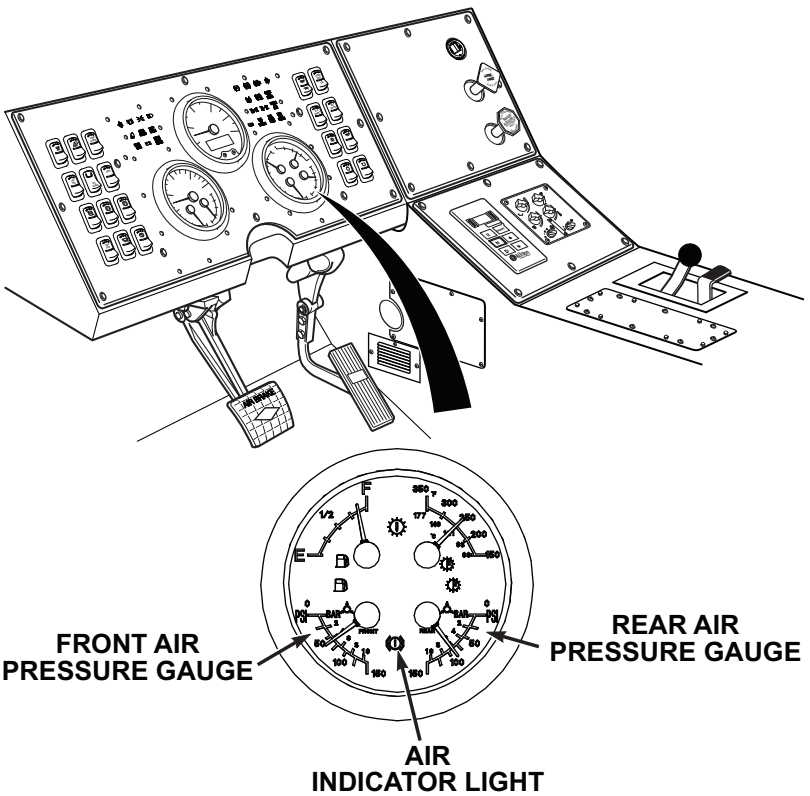


Figure 5.

2. Start engine, (Volume 1, WP 0044) and allow air pressure to build.
3. Check if buzzer continues to sound, and if air indicator light is illuminated.
4. Turn engine off. (Volume 1, WP 0057)

CONDITION/INDICATION

Does buzzer sound, and air indicator light illuminate when trailer is disconnected?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

TEST 6 - Does buzzer stop, and air indicator light extinguish?

1. Start engine, (Volume 1, WP 0044) and allow air pressure to build.
2. Check that buzzer does not sound, and air indicator light is off.

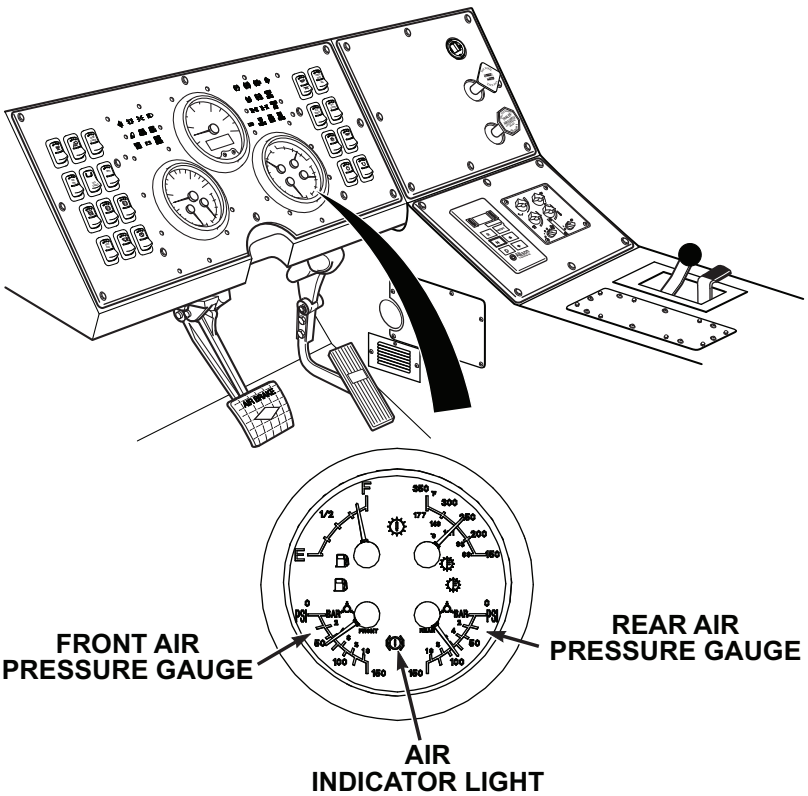


Figure 6.

3. Turn engine off. (Volume 1, WP 0057)

CONDITION/INDICATION

Does buzzer stop, and air indicator light extinguish?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
WINDSHIELD WASHER WILL NOT OPERATE

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
WINDSHIELD WASHER WILL NOT OPERATE

TEST 1 - Is washer fluid reservoir free from damage or cracks?
1. Check washer fluid reservoir for cracks and/or damage.

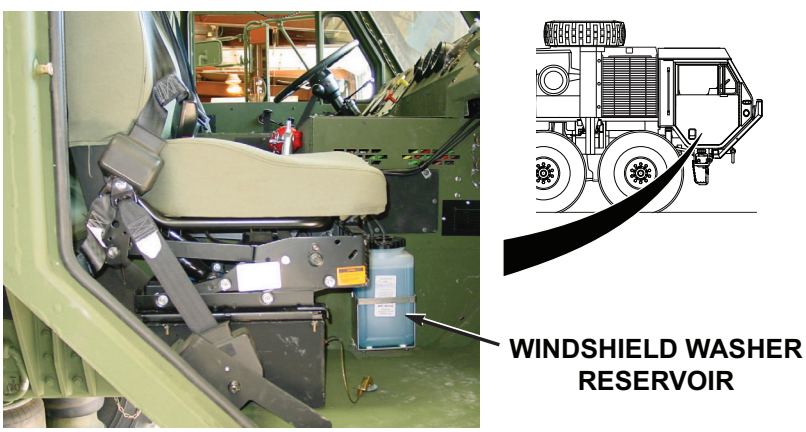


Figure 1.

CONDITION/INDICATION
Is washer fluid reservoir free from damage or cracks?

DECISION
No - Notify Supervisor.
Yes - Test 2 - Is washer fluid present in washer fluid reservoir?

TEST 2 - Is washer fluid present in washer fluid reservoir?

CAUTION

Do not fill windshield washer reservoir with water when temperatures are likely to be 32°F (0°C) or less. If water freezes, reservoir can crack or break.

1. Check washer fluid level in reservoir. if low, fill windshield washer reservoir.

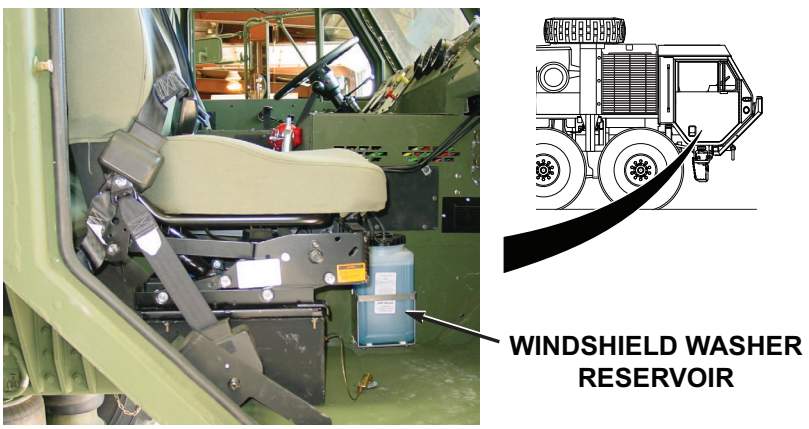


Figure 2.

CONDITION/INDICATION

Is washer fluid present in washer fluid reservoir?

DECISION

No - Test 6 - Does the windshield washer operate?
Yes - Test 3 - Are all hoses securely attached to reservoir?

TEST 3 - Are all hoses securely attached to reservoir?

1. Check that all hoses are securely attached to reservoir. If loose hoses are found, attach to reservoir.

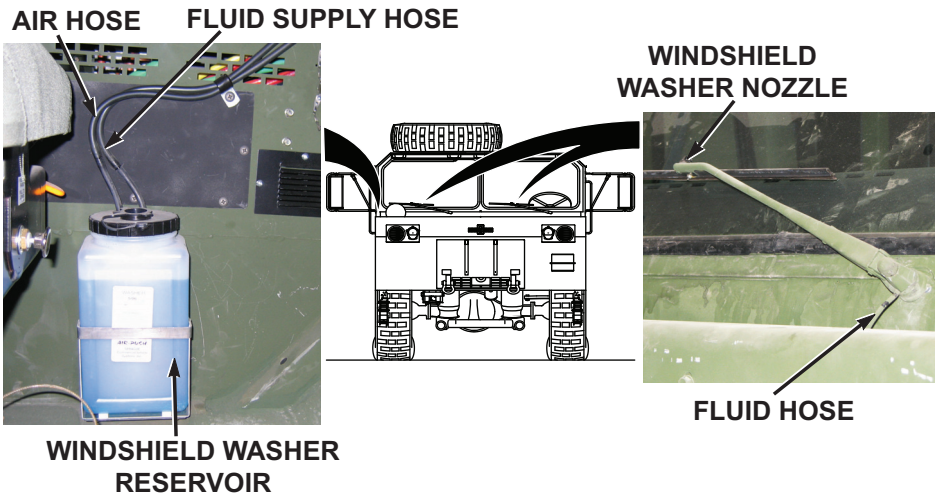


Figure 3.

CONDITION/INDICATION

Are all hoses securely attached to reservoir?

DECISION

No - Test 6 - Does the windshield washer operate?
Yes - Test 4 - Are hoses free of cracks or damage?

TEST 4 - Are hoses free of cracks or damage?

1. Check if hoses are cracked or damaged.

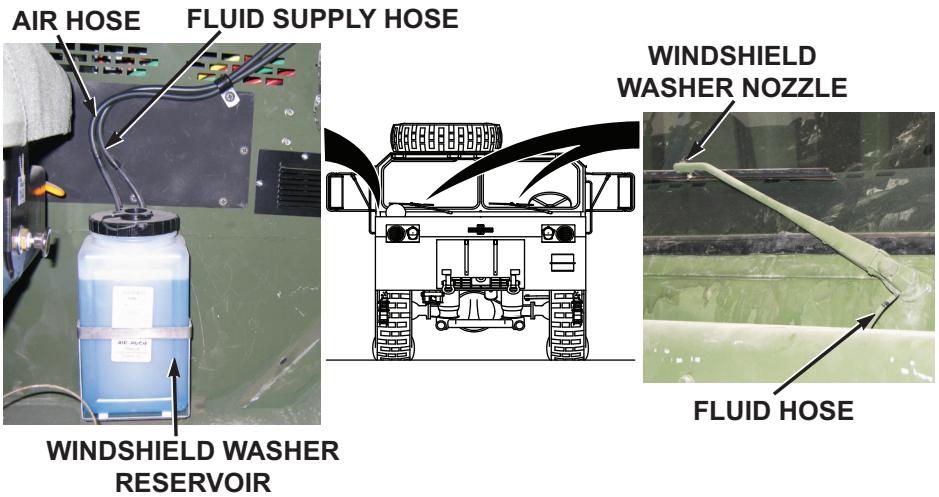


Figure 4.

CONDITION/INDICATION

Are hoses free of cracks or damage?

DECISION

No - Notify Supervisor.

Yes - Test 5 - Are washer spray openings free of debris?

TEST 5 - Are washer spray openings free of debris?

1. Check washer spray openings on wipers for clogs.

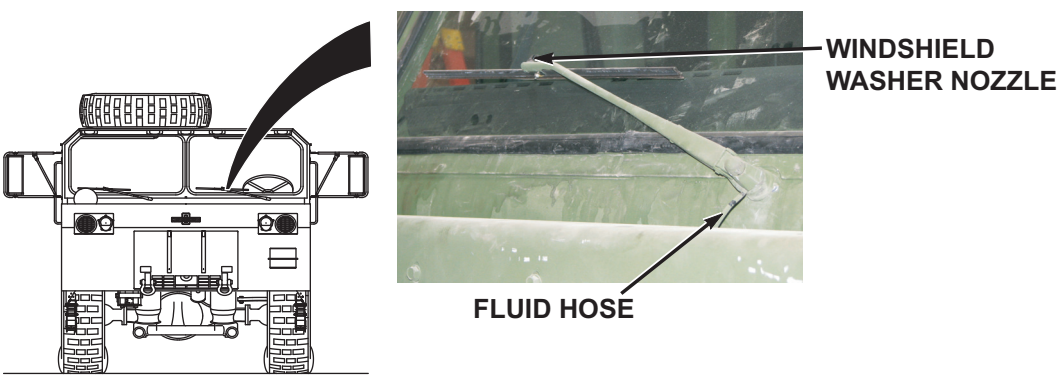


Figure 5.

2. If openings are clogged, clear washer spray opening using pin, wire, or similar item.

CONDITION/INDICATION

Are washer spray openings free of debris?

DECISION

No - Test 6 - Does the windshield washer operate?
Yes - Notify Supervisor.

TEST 6 - Does the windshield washer operate?

1. Start engine, (Volume 1, WP 0044)and allow air pressure to build.
2. Check windshield washer for proper operation.

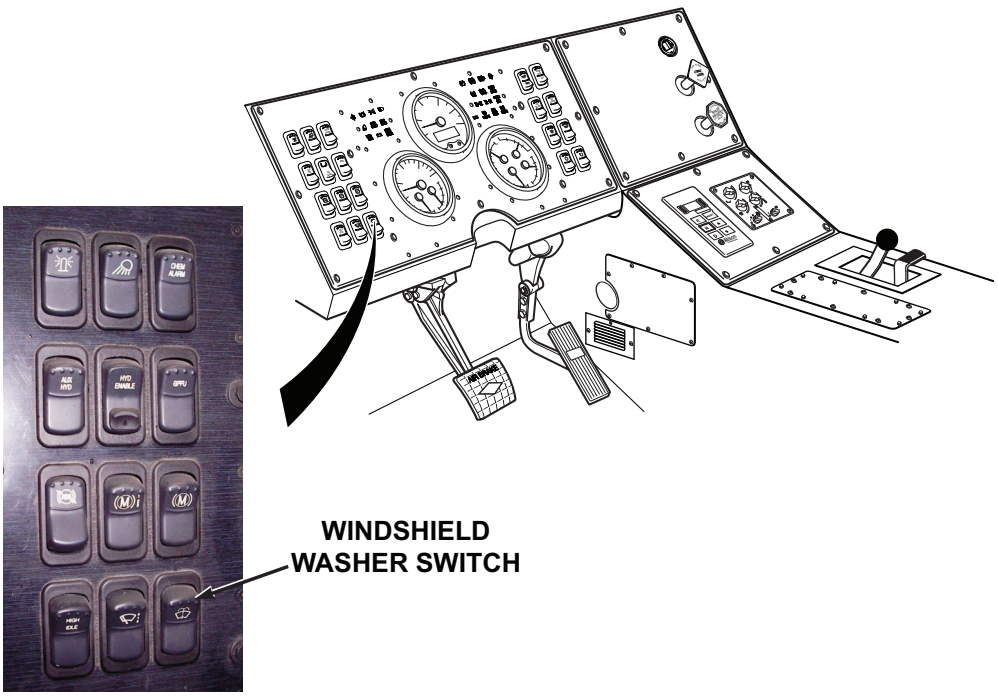


Figure 6.

CONDITION/INDICATION

Does the windshield washer operate?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
AIR SYSTEM LOSES PRESSURE DURING OPERATION

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
AIR SYSTEM LOSES PRESSURE DURING OPERATION

TEST 1 - Are any petcock valves open?

WARNING



Caution the hose connections could be under pressure be sure to wear eye protection to avoid personal injury.

1. Check to make sure all five air reservoir petcock/drain valves are closed.

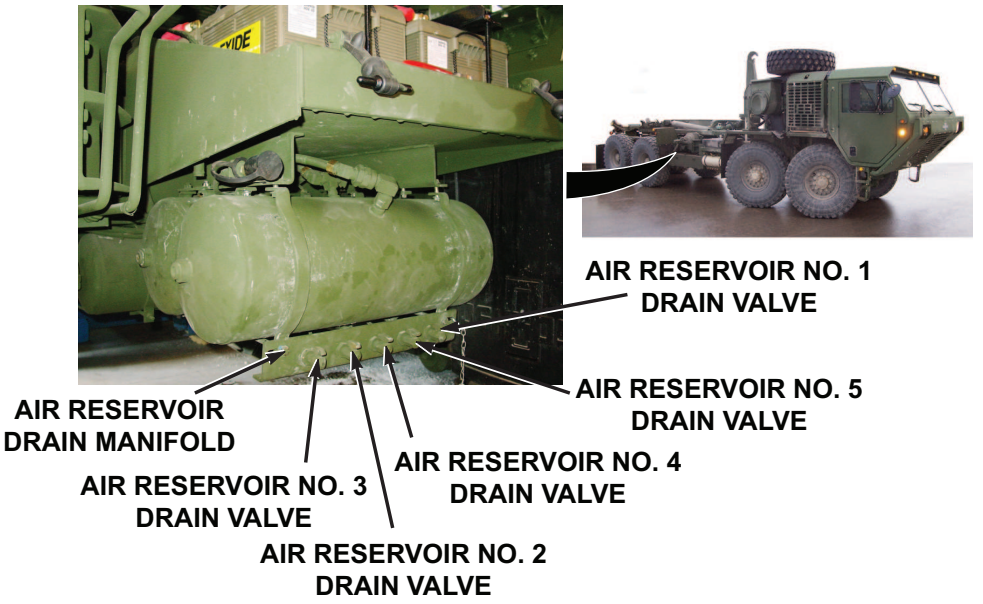


Figure 1.

CONDITION/INDICATION

Are any petcock valves open?

DECISION

Petcock(s) open - Test 5 - Does air system lose pressure during operation?
Petcocks closed - Test 2 - Is trailer air supply control in correct position?

TEST 2 - Is trailer air supply control in correct position?

1. Check if trailer air supply control is pulled out (OFF position) if no trailer is coupled, and pushed in (ON position) if trailer is coupled.
2. If trailer air supply control is found in an incorrect position, set to correct position.

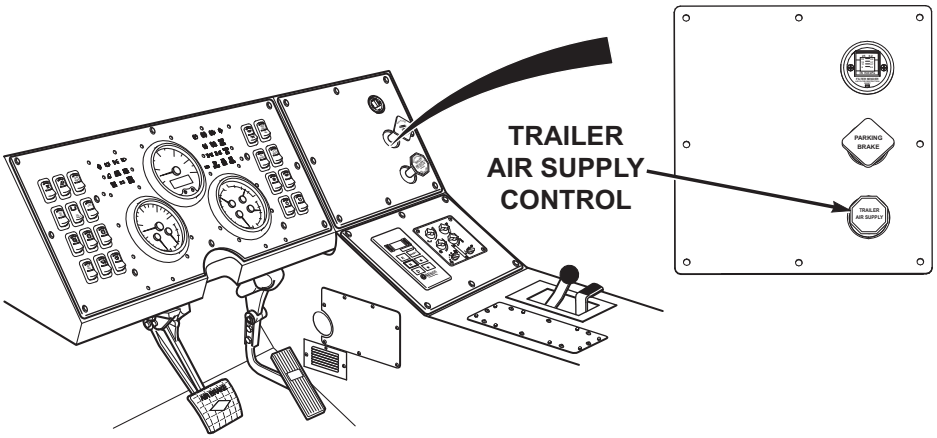


Figure 2.

CONDITION/INDICATION

Is trailer air supply control in correct position?

DECISION

No - Test 5 - Does air system lose pressure during operation?

Yes - Test 3 - Does air pressure reach 120 psi (827 kPa) with engine accelerated?

TEST 3 - Does air pressure reach 120 psi (827 kPa) with engine accelerated?

1. Start engine. (Volume 1, WP 0044)
2. Accelerate engine and check if air pressure reaches 120 psi (827 kPa).

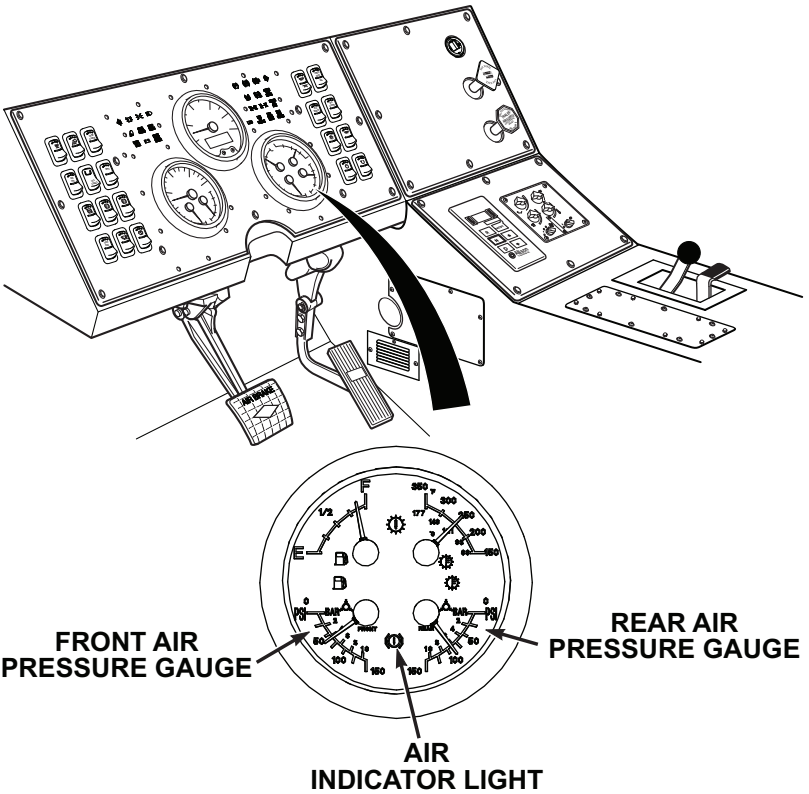


Figure 3.

CONDITION/INDICATION

Does air pressure reach 120 psi (827 kPa) with engine accelerated?

DECISION

No - Notify Supervisor.

Yes - Test 4 - Are air leaks present?

TEST 4 - Are air leaks present?

1. Turn engine off. (Volume 1, WP 0057)
2. Press service brake treadle completely down, and have crew member check for air leaks.

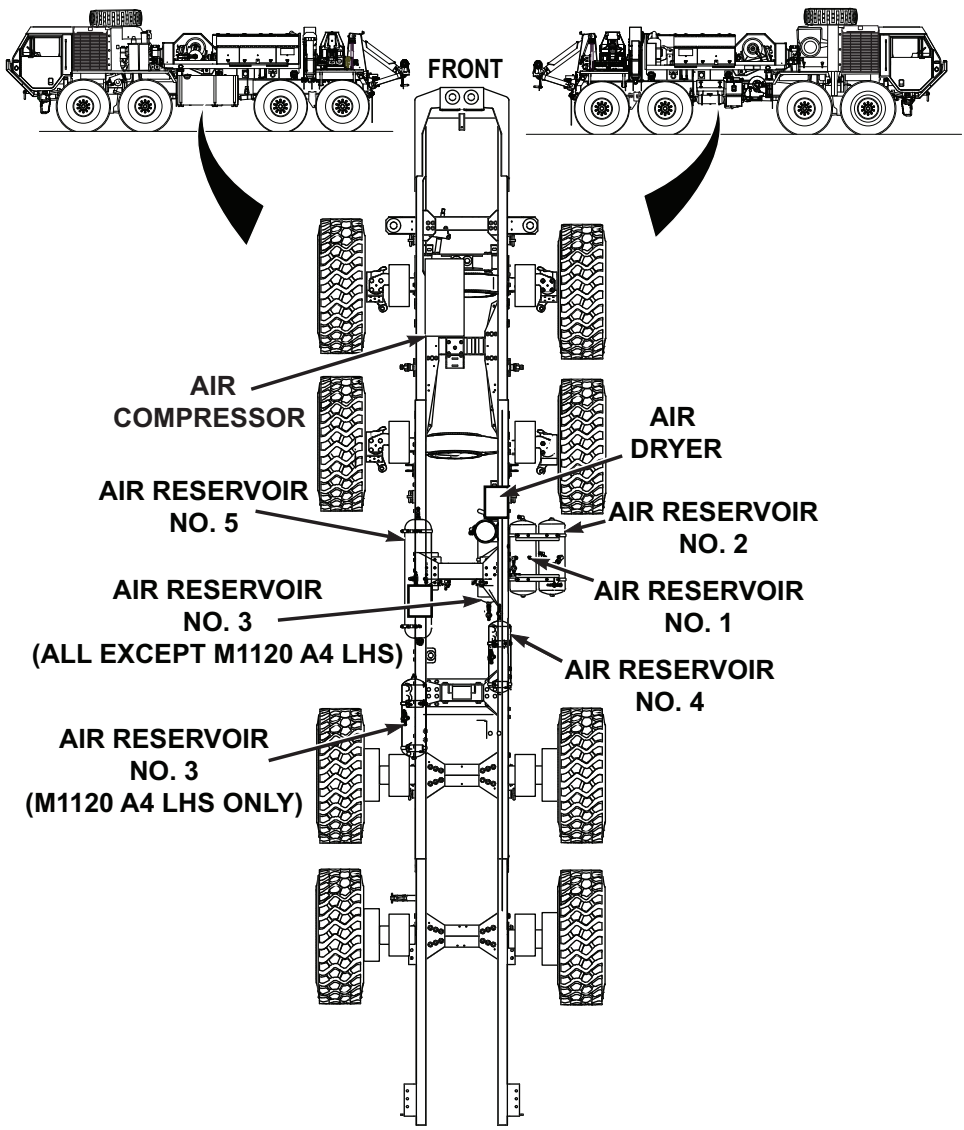


Figure 4.

3. If leaky fitting(s) found, tighten fittings.

CONDITION/INDICATION

Are air leaks present?

DECISION

Air leaks found - Notify Supervisor.

No air leaks found - Test 5 - Does air system lose pressure during operation?

TEST 5 - Does air system lose pressure during operation?

1. Start engine. (Volume 1, WP 0044)
2. Test drive vehicle.
3. Observe and note air pressure.

CONDITION/INDICATION

Does air system lose pressure during operation?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
TRAILER BRAKE DOES NOT APPLY WHEN SERVICE BRAKE TREADLE OR PARKING BRAKE IS USED

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
TRAILER BRAKE DOES NOT APPLY WHEN SERVICE BRAKE TREADLE OR PARKING BRAKE IS USED

TEST 1 - Are intervehicular air hoses securely and correctly connected?
1. Check that intervehicular air hoses are secure and correctly connected. If not, reconnect correctly.

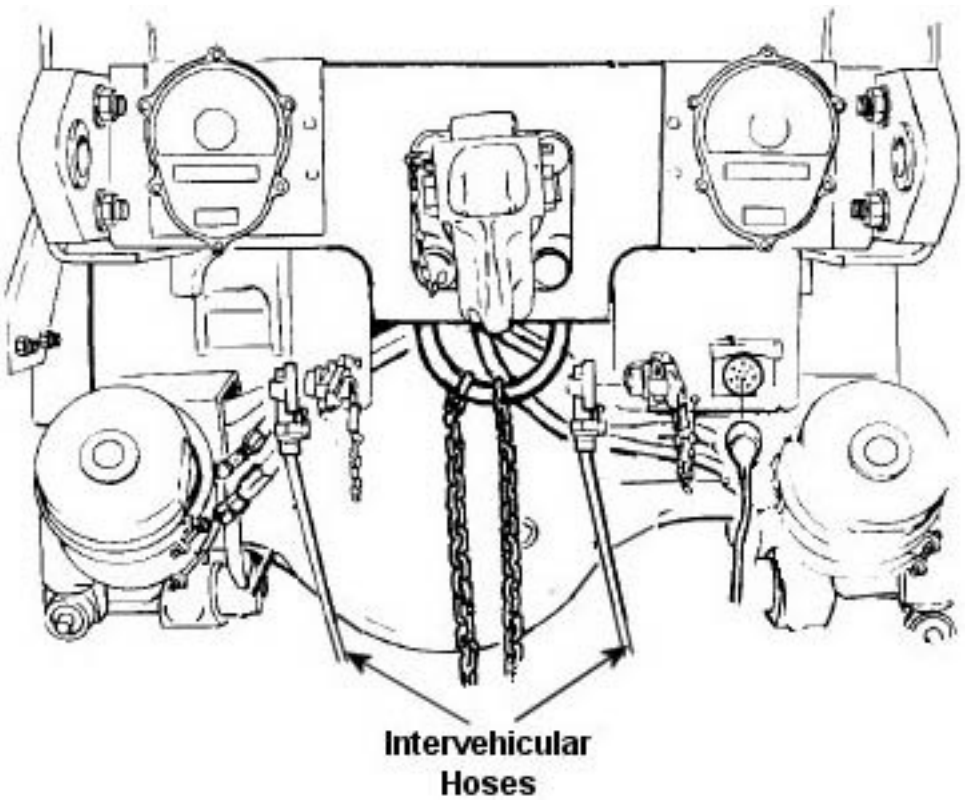


Figure 1.

CONDITION/INDICATION

Are intervehicular air hoses securely and correctly connected?

DECISION

No - Test 3 - Do trailer brakes apply when service brake treadle or parking brake is used?

Yes - Test 2 - Is trailer air supply control pushed in (ON position)?

TEST 2 - Is trailer air supply control pushed in (ON position)?

1. Check if trailer air supply control is pushed in (ON position).

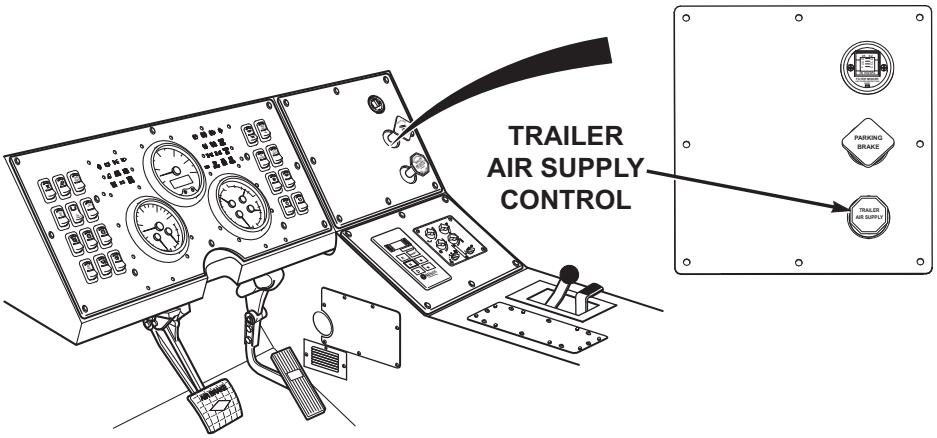


Figure 2.

2. If trailer air supply control is found pulled out (OFF position), push in.

CONDITION/INDICATION

Is trailer air supply control pushed in (ON position)?

DECISION

No - Test 3 - Do trailer brakes apply when service brake treadle or parking brake is used?

Yes - Notify Supervisor.

TEST 3 - Do trailer brakes apply when service brake treadle or parking brake is used?

1. Start engine. (Volume 1, WP 0044)
2. Test drive vehicle.
3. Note trailer brake operations.

CONDITION/INDICATION

Do trailer brakes apply when service brake treadle or parking brake is used?

DECISION

No - Notify Supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
AIR HORN WILL NOT OPERATE

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
AIR HORN WILL NOT OPERATE

TEST 1 - Are air hoses tight?

WARNING



Caution the hose connections could be under pressure be sure to wear eye protection to avoid personal injury.

1. Check air hose connections for tightness. Tighten any loose hose connections found.

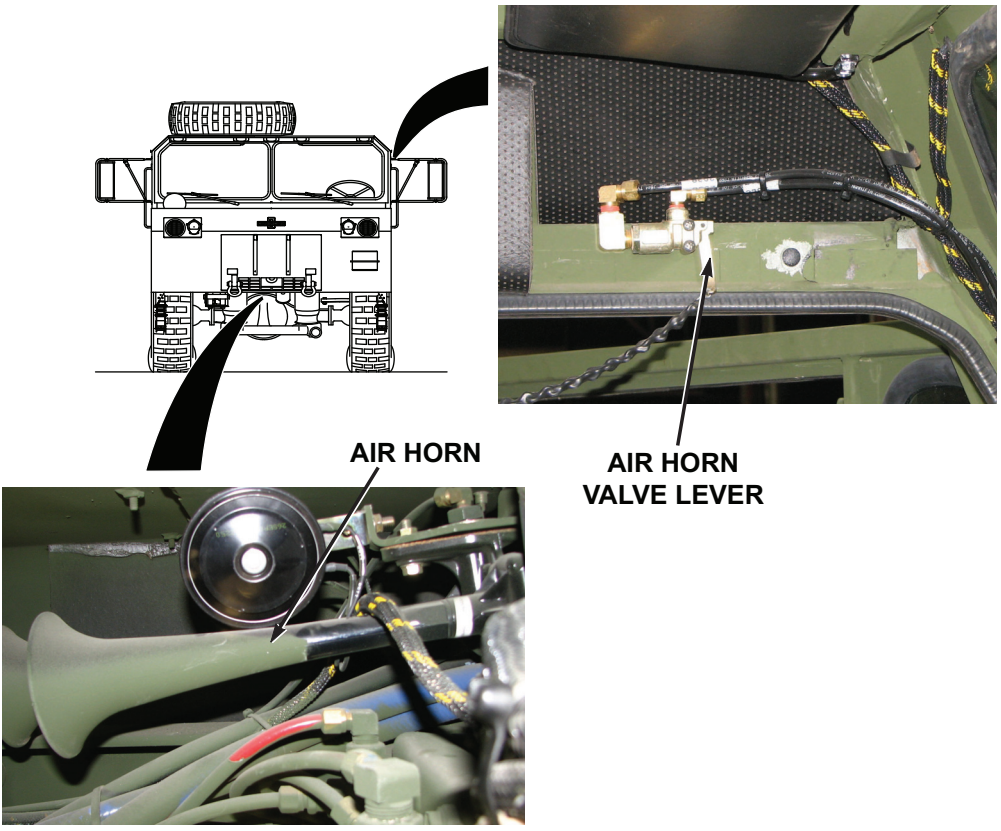


Figure 1.

CONDITION/INDICATION

Are air hoses tight?

DECISION

Connections loose - Test 3 - Does air horn operate?
Connections OK - Test 2 - Does horn valve lever move freely?

TEST 2 - Does horn valve lever move freely?

1. Check horn valve lever for freedom of movement.

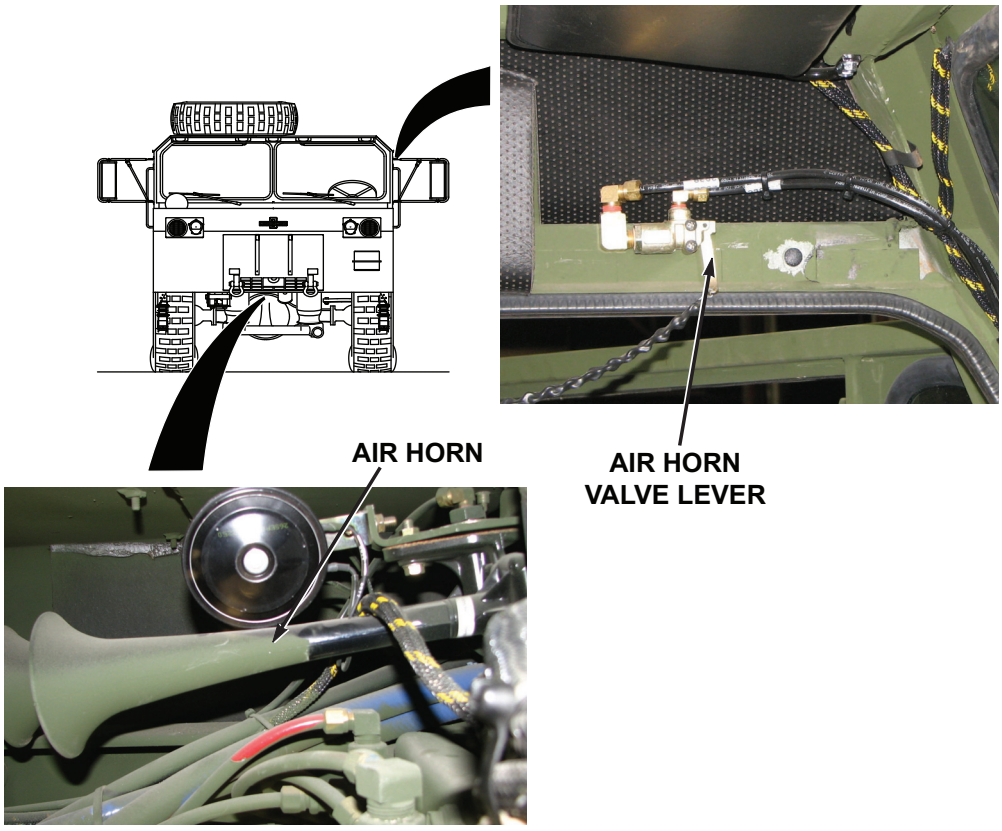


Figure 2.

CONDITION/INDICATION

Does horn valve lever move freely?

DECISION

No - Notify Supervisor.

Yes - Test 3 - Does air horn operate?

TEST 3 - Does air horn operate?

1. Start engine, (Volume 1, WP 0044) and allow air pressure to build.
2. Check air horn for proper operation.

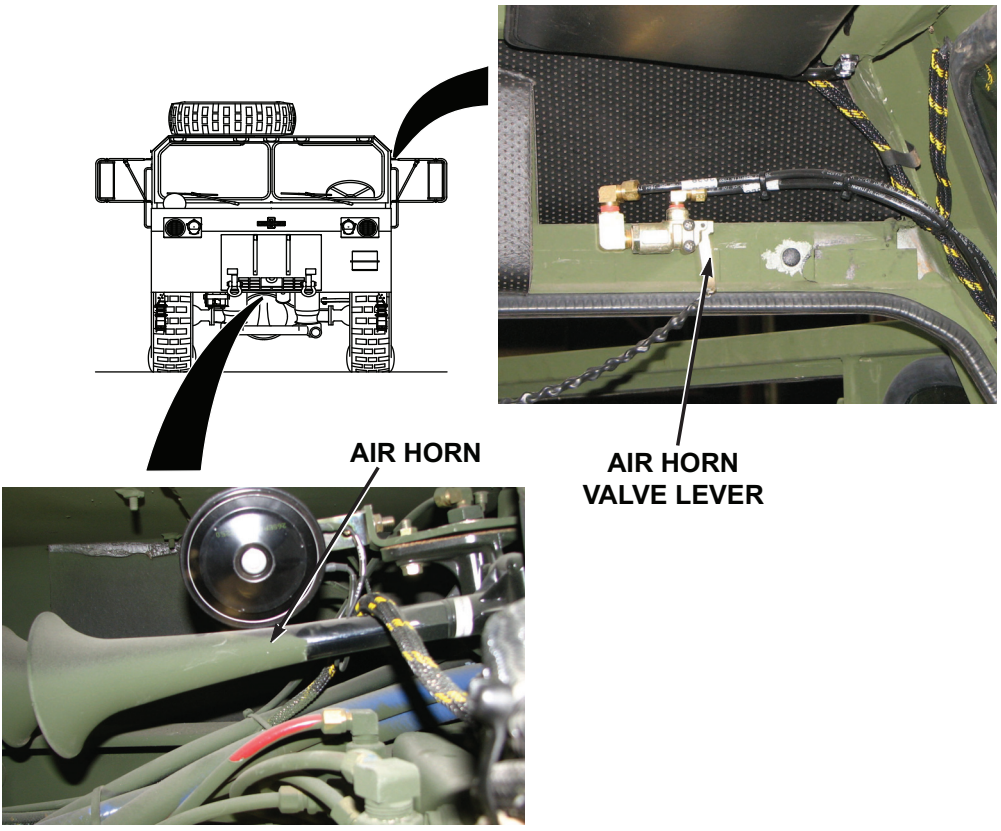


Figure 3.

3. Turn engine off. (Volume 1, WP 0057)

CONDITION/INDICATION

Does air horn operate?

DECISION

No - Notify Supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
ONE OR MORE LIGHTING CIRCUITS NOT OPERATING

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
ONE OR MORE LIGHTING CIRCUITS NOT OPERATING

TEST 1 - Is the lighting system control in the ON or OPERATING position?
1. Check if lighting system control is ON or in OPERATING position.

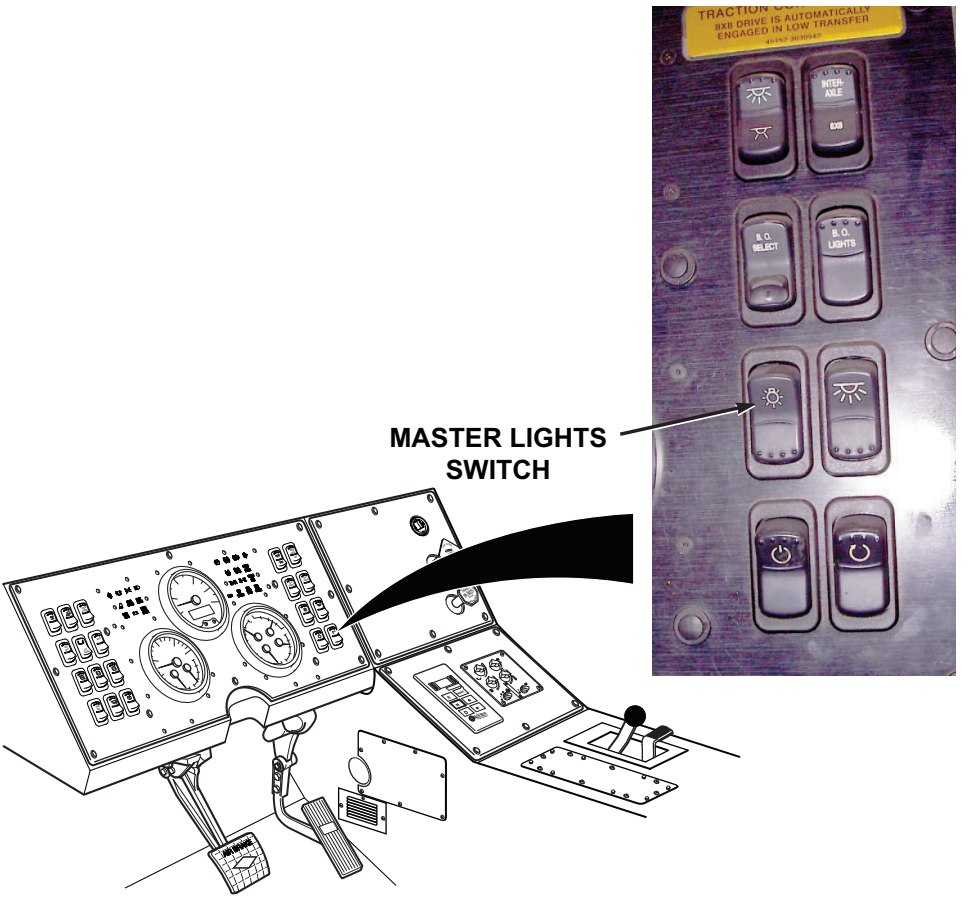


Figure 1.

CONDITION/INDICATION

Is the lighting system control in the ON or OPERATING position?

DECISION

No - Test 3 - Do all lighting circuits operate properly?
Yes - Notify Supervisor.

TEST 2 - Is intervehicular connection secure and/or connected correctly?

1. If trailer lights are the problem, make sure cable is securely connected.

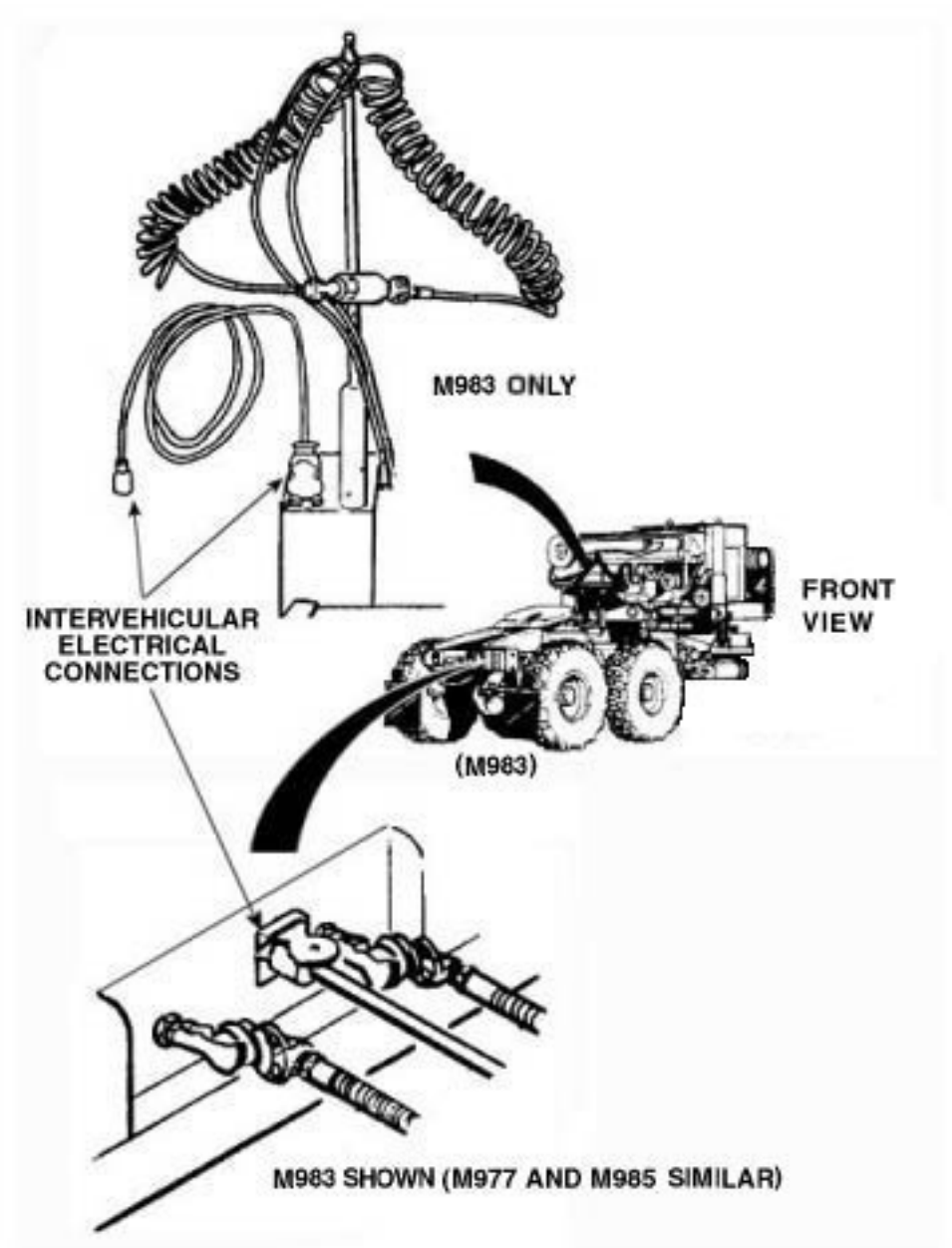


Figure 2.

CONDITION/INDICATION

Is intervehicular connection secure and/or connected correctly?

DECISION

Intervehicular cable loose. - Test 3 - Do all lighting circuits operate properly?Notify Supervisor.
Intervehicular connection OK. - Notify Supervisor.

TEST 3 - Do all lighting circuits operate properly?

1. Check for proper operation of dome lights. (Volume 1, WP 0084)
2. Check for proper operation of panel lights. (Volume 1, WP 0085)
3. Check for proper operation of service drive lights. (Volume 1, WP 0087)
4. Check for proper operation of parking lights. (Volume 1, WP 0086)
5. Check for proper operation of clearance lights. (Volume 1, WP 0089)
6. Check for proper operation of stoplight. (Volume 1, WP 0088)
7. Check for proper operation of worklights. (Volume 1, WP 0092)
8. Check for proper operation of beacon lights. (Volume 1, WP 0093)
9. Check for proper operation of blackout drive lights. (Volume 1, WP 0090)
10. Check for proper operation of blackout marker lights. (Volume 1, WP 0091)
11. Check for proper operation of turn signal lights. (Volume 1, WP 0095)

CONDITION/INDICATION

Do all lighting circuits operate properly?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
FAILS TO CRANK WHEN ENGINE START SWITCH IS TURNED TO START POSITION

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
FAILS TO CRANK WHEN ENGINE START SWITCH IS TURNED TO START POSITION

TEST 1 - Is transmission range selector in neutral (N)?

1. Verify range selector is in neutral (N) position. If not in neutral (N), shift it to neutral (N).

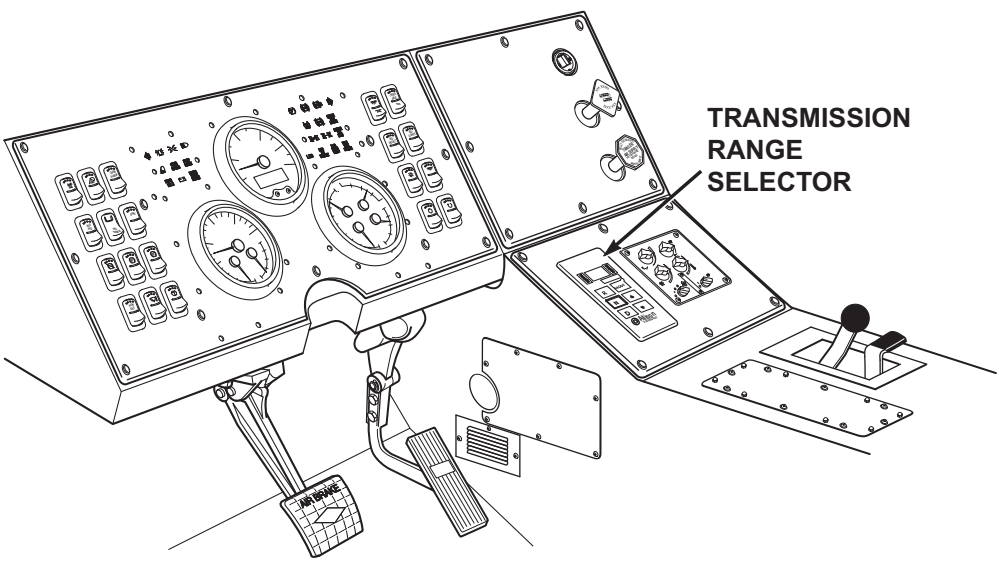


Figure 1.

CONDITION/INDICATION
Is transmission range selector in neutral (N)?

DECISION

No - Test 3 - Does engine crank when engine start switch is turned to start position?
Yes - Test 2 - Are battery cable connections clean, tight, and free from damage?

TEST 2 - Are battery cable connections clean, tight, and free from damage?

1. Remove battery box cover. (WP 0194)
2. Check battery cable connections for dirt, corrosion and/or looseness.

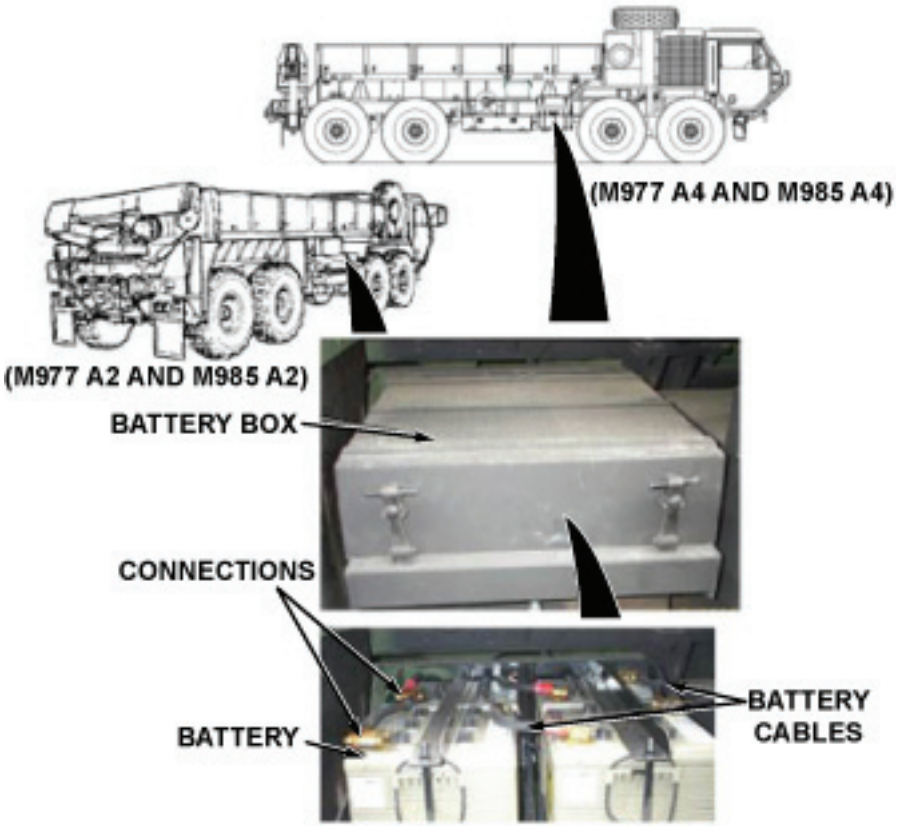


Figure 2.

3. Check battery cables for damage.

CONDITION/INDICATION

Are battery cable connections clean, tight, and free from damage?

DECISION

No - Notify Supervisor.
Yes - Test 3 - Does engine crank when engine start switch is turned to start position?

TEST 3 - Does engine crank when engine start switch is turned to start position?

1. Install battery box cover. (WP 0194)
2. Attempt to start engine. (Volume 1, WP 0044)

CONDITION/INDICATION

Does engine crank when engine start switch is turned to start position?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CRANKS BUT FAILS TO START

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
CRANKS BUT FAILS TO START

TEST 1 - Does fuel gauge indicate the presence of fuel?

1. Turn engine start switch ON. (Volume 1, WP 0022)
2. Check fuel gauge for indication of fuel presence.

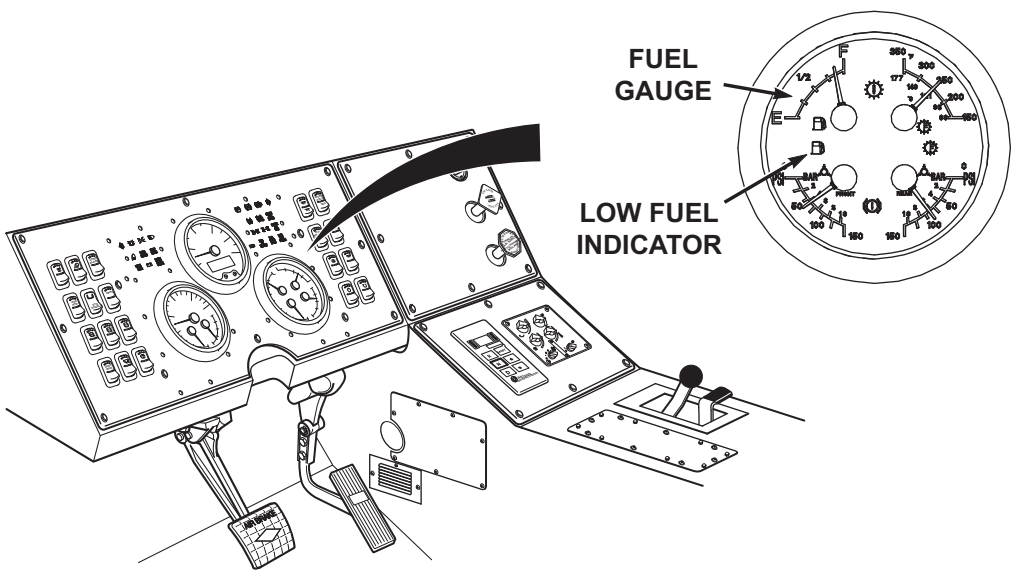


Figure 1.

3. Turn engine start switch OFF. (Volume 1, WP 0022)

CONDITION/INDICATION

Does fuel gauge indicate the presence of fuel?

DECISION

No - Test 4 - Does engine start?
Yes - Test 2 - Is there fuel present in fuel tank?

TEST 2 - Is there fuel present in fuel tank?

1. Remove fuel tank cap and filter screen from fuel tank.

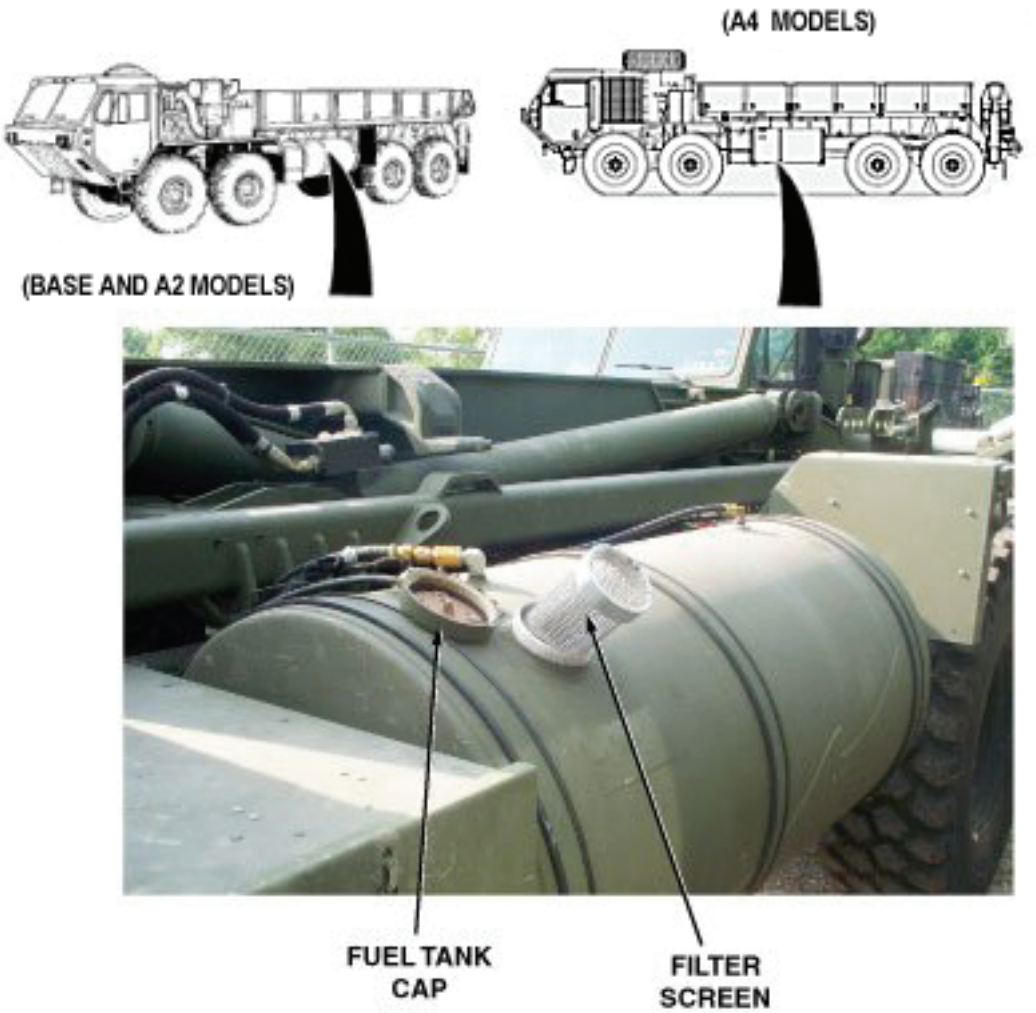


Figure 2.

2. Check fuel tank for presence of fuel.
3. Add fuel to fuel tank if no fuel was present.
4. Replace filter screen and fuel tank cap on fuel tank.

CONDITION/INDICATION
Is there fuel present in fuel tank?

DECISION
No - Test 4 - Does engine start?
Yes - Test 3 - Is air filter restricted?

TEST 3 - Is air filter restricted?
1. Attempt to start engine and note indication on air filter restriction indicator.

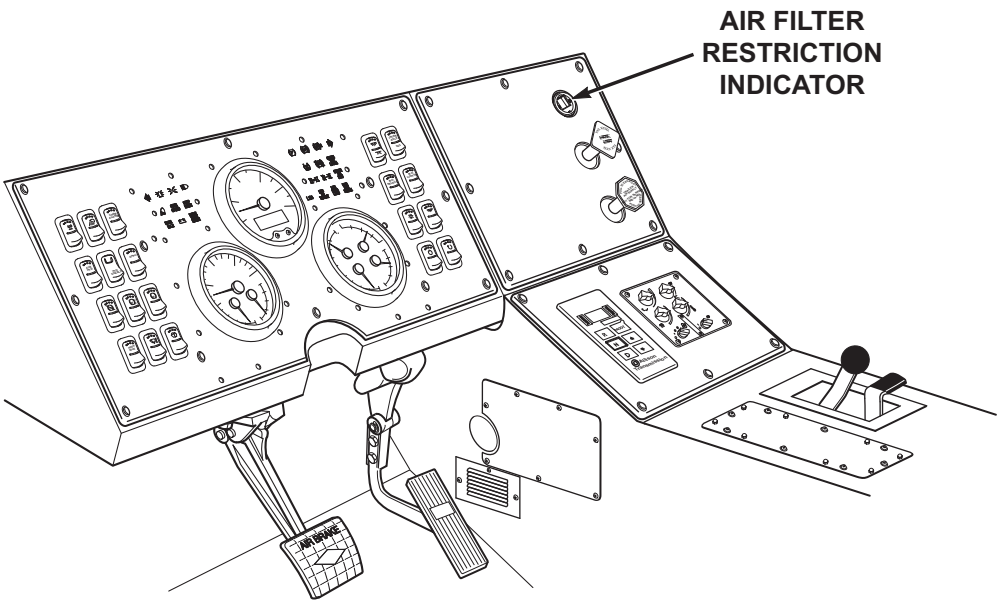


Figure 3.

CONDITION/INDICATION
Is air filter restricted?

DECISION
Restricted - Service air filter. (WP 0192)
Not Restricted - Test 4 - Does engine start?

TEST 4 - Does engine start?
1. Attempt to start engine. (Volume 1, WP 0044)

CONDITION/INDICATION

Does engine start?

DECISION

Air filter indicator shows red after cleaning filter. - Notify Supervisor. Notify Supervisor.
Engine starts. - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
STARTS OR RUNS ROUGHLY AFTER PROPER WARM-UP, DOES NOT MAKE FULL POWER, OR MAKES EXCESSIVE EXHAUST SMOKE

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
STARTS OR RUNS ROUGHLY AFTER PROPER WARM-UP, DOES NOT MAKE FULL POWER, OR MAKES EXCESSIVE EXHAUST SMOKE

TEST 1 - Is PTO engaged?
1. Start engine and allow engine to reach normal operating temperature. (Volume 1, WP 0044)
2. Check HYD Enable switch and Main HYD Enable indicator to make sure that PTO is disengaged. Light should be off.

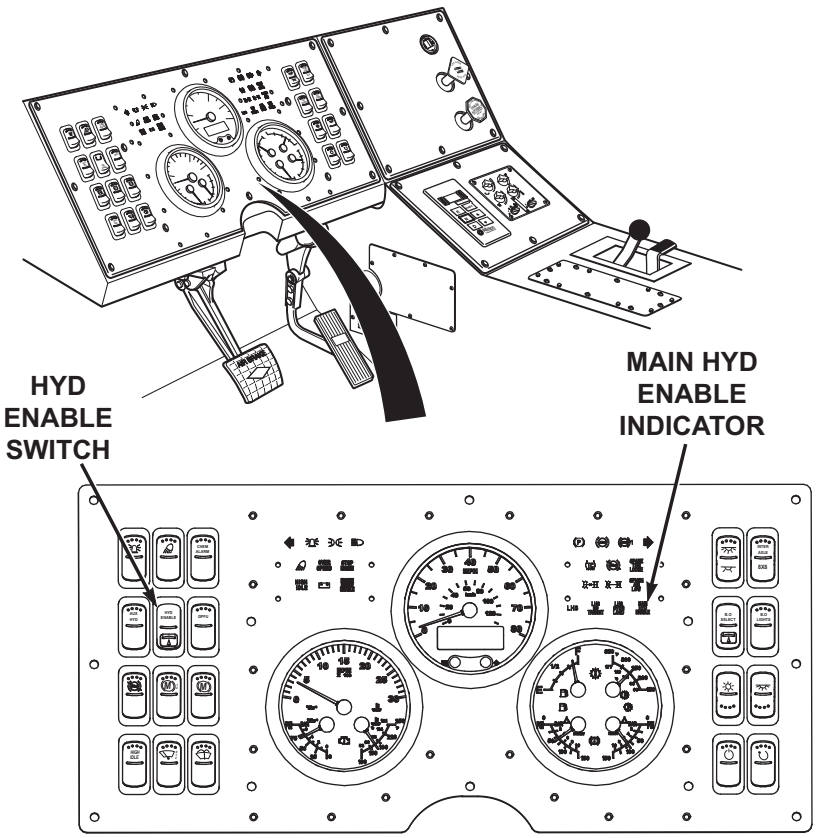


Figure 1.

CONDITION/INDICATION

Is PTO engaged?

DECISION

PTO engaged. - Test 4 - Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

PTO disengaged. - Test 2 - Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being reset?

TEST 2 - Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being reset?

1. Reset air filter restriction indicator.
2. Start engine. (Volume 1, WP 0044)
3. Check if air filter restriction indicator is red and/or VACUUM INCHES/kPa H2O window shows 18 or more.

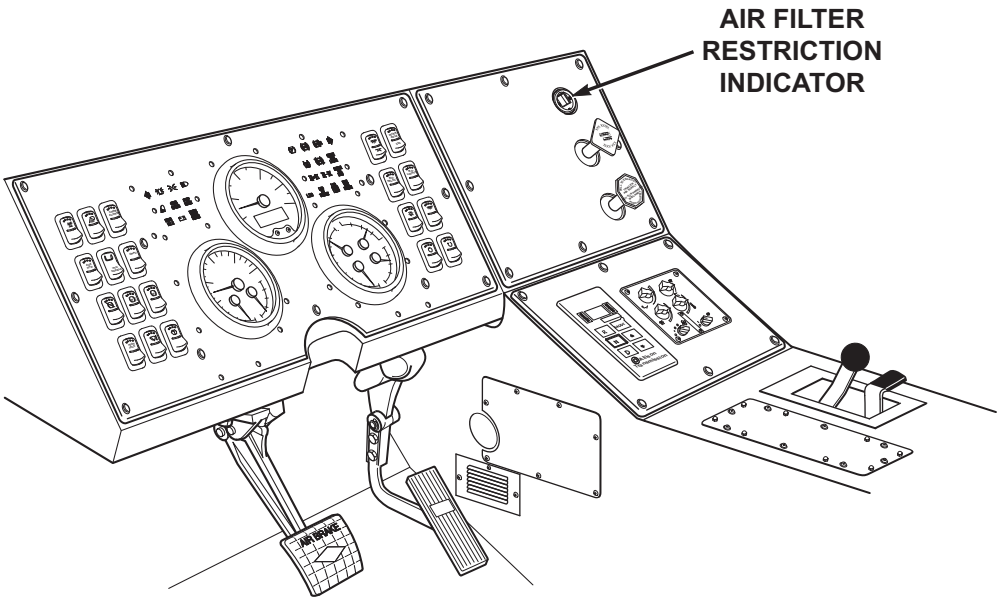


Figure 2.

CONDITION/INDICATION

Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being reset?

DECISION

Restricted. - Test 3 - Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being cleaned?

Not restricted. - Test 4 - Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

TEST 3 - Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being cleaned?

1. Turn engine OFF. (Volume 1, WP 0057)
2. Clean air filter. (WP 0192)
3. Start engine. (Volume 1, WP 0044)
4. Check if air filter restriction indicator is red and/or VACUUM INCHES/kPa H2O window shows 18 or more.

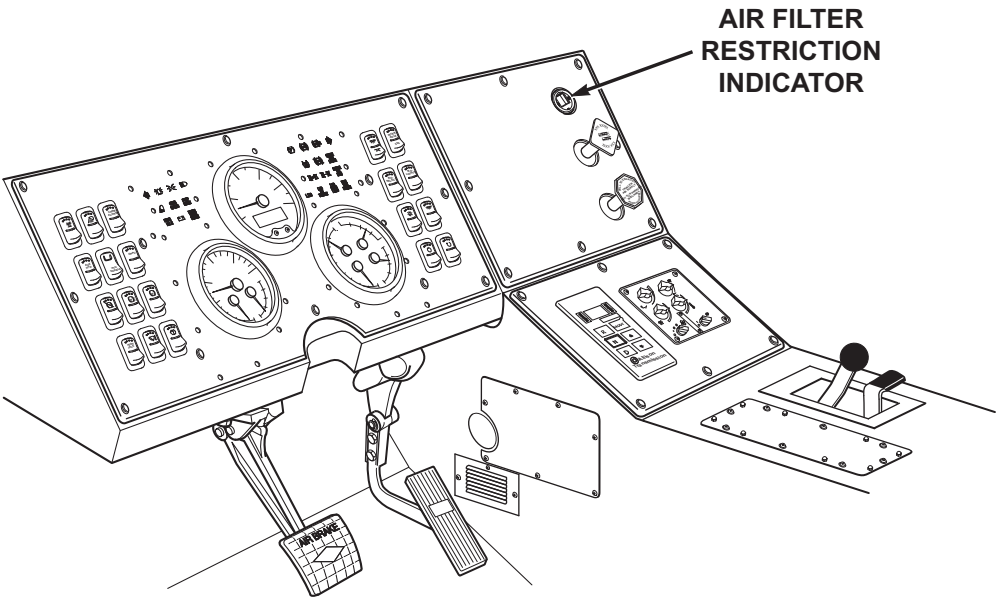


Figure 3.

CONDITION/INDICATION

Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being cleaned?

DECISION

Restricted. - Notify Supervisor.
Not restricted. - Test 4 - Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

TEST 4 - Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

1. Test drive vehicle.

CONDITION/INDICATION

Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

DECISION

Runs rough. - Notify Supervisor.
Runs normal. - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
ENGINE OVERHEATS

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
ENGINE OVERHEATS

TEST 1 - Are right-side radiator hoses and housing free from leaks?

WARNING



Radiator coolant hoses are very hot and pressurized during vehicle operation. Allow radiator to cool prior to checking hoses. Failure to comply may result in injury or death to personnel.

1. Open driver and passenger side engine covers. (WP 0195)
2. Check upper and lower radiator hoses and housing for leaks.
3. Check that all clamps are tight and secure.

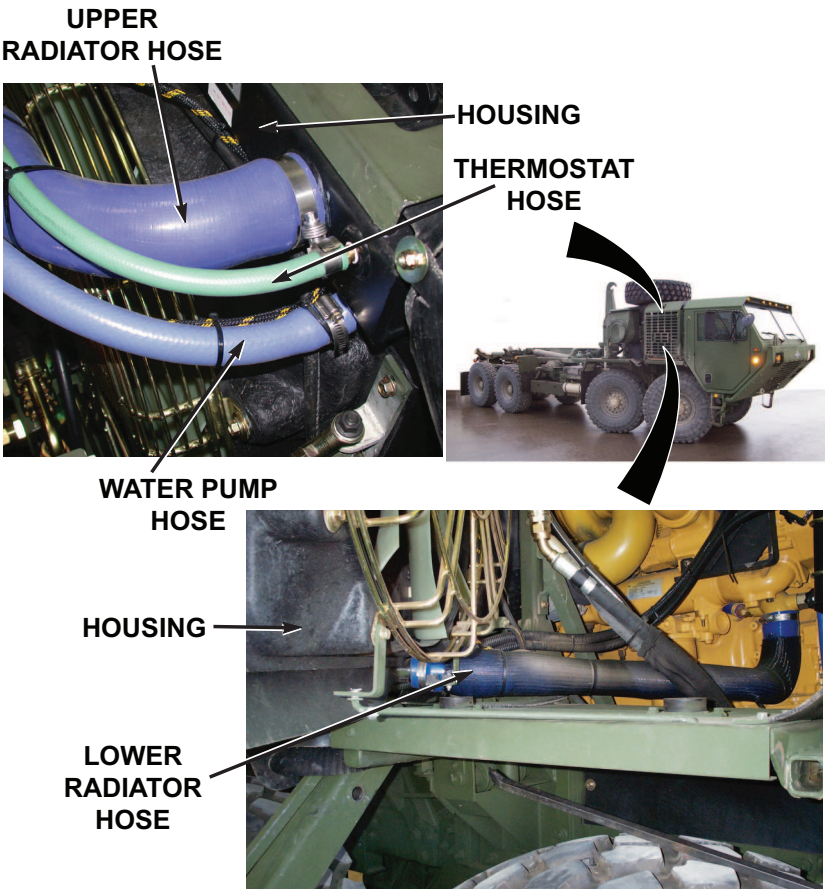


Figure 1.

CONDITION/INDICATION

Are right-side radiator hoses and housing free from leaks?

DECISION

Radiator hoses and/or housing damaged. - Notify Supervisor. Test 2 - Does engine overheat?Notify Supervisor.

Radiator hoses and/or housing free from damage and/or leaks. - Notify Supervisor.

TEST 2 - Does engine overheat?

1. Close driver and passenger side engine covers. (WP 0195)
2. Start engine. (Volume 1, WP 0044)

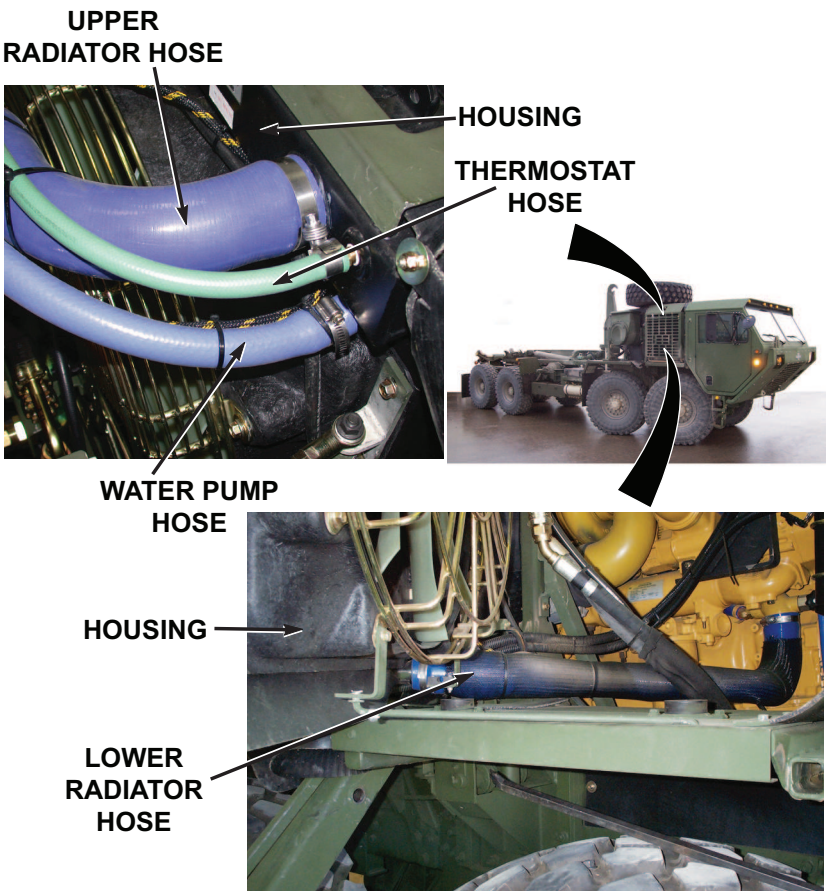


Figure 2.

3. Test drive vehicle.

CONDITION/INDICATION

Does engine overheat?

DECISION

Engine overheats - Notify Supervisor.
Engine OK - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
LOW OIL PRESSURE GAUGE INDICATION

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
LOW OIL PRESSURE GAUGE INDICATION

TEST 1 - Is engine oil level low?
1. Check engine oil level. (WP 0182)

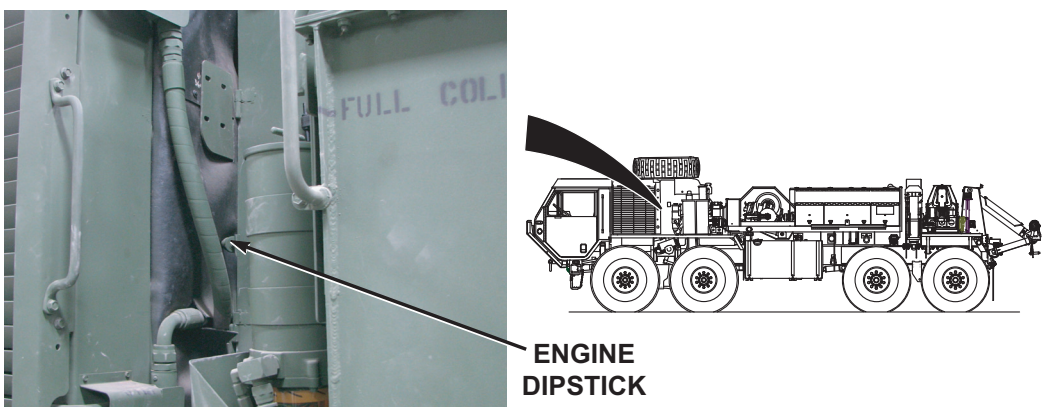


Figure 1.

2. If oil level is low, fill oil to proper level. (WP 0182)

CONDITION/INDICATION
Is engine oil level low?

DECISION
-
Continue - Test 2 - Is engine oil pressure still low?

TEST 2 - Is engine oil pressure still low?

1. Start engine and allow engine to reach operating temperature. (Volume 1, WP 0044)
2. Check OIL PRESS gauge. Gauge should read as follows:
    - At idle, oil pressure can go as low as 5 psi (34 kPa).
    - Normal operation range is 40 psi to 60 psi (276 to 414 kPa) between engine speeds 1800 to 2100 rpm. Minimum for safe operation is 30 psi (207 kPa).

CONDITION/INDICATION

Is engine oil pressure still low?

DECISION

Oil pressure low. - Notify Supervisor.
Oil pressure OK. - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
EXCESSIVE OIL CONSUMPTION

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
EXCESSIVE OIL CONSUMPTION

TEST 1 - Are engine oil lines loose?

WARNING



Caution the oil lines could be under pressure be sure to wear the proper eye protection to avoid personal injury.

1. Open driver and passenger side engine covers. (WP 0195)

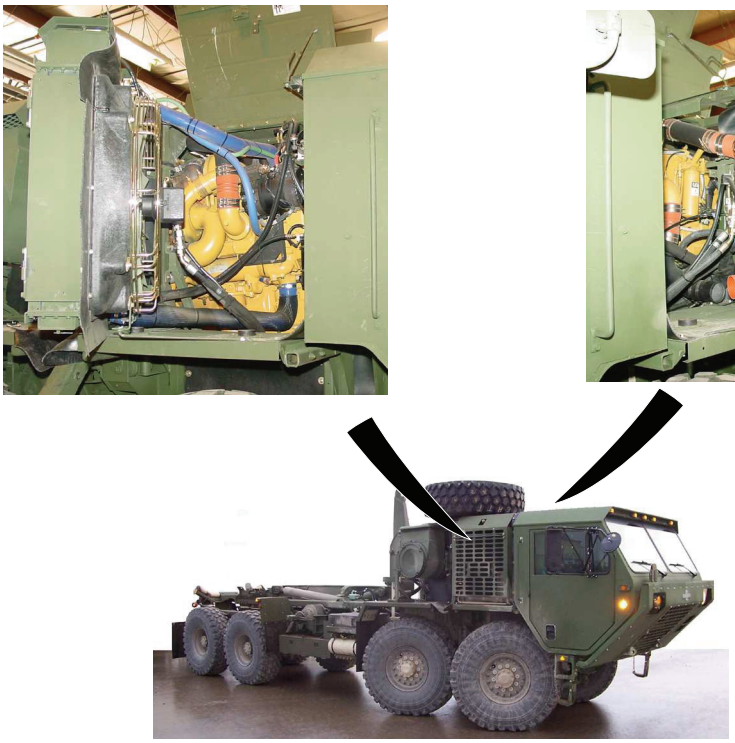


Figure 1.

2. Check for loose engine oil lines or damaged components.

CONDITION/INDICATION

Are engine oil lines loose?

DECISION

Lines Loose - Notify Supervisor.
Lines OK - Test 2 - Are any engine oil leaks present?

TEST 2 - Are any engine oil leaks present?

1. Tighten any loose fittings/components if found.
2. Visually check for engine oil leaks.

CONDITION/INDICATION

Are any engine oil leaks present?

DECISION

Leaks found. - Notify Supervisor.
No leaks found. - Notify Supervisor.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
HEAVY-DUTY WINCH WILL NOT OPERATE IN REMOTE CONTROL

INITIAL SETUP:

Equipment Condition
Vehicle setup for heavy-duty winch operations using remote control. (Volume 1, WP 0039)

TROUBLESHOOTING PROCEDURE
HEAVY-DUTY WINCH WILL NOT OPERATE IN REMOTE CONTROL

TEST 1 - Are all electrical switches in the correct positions?

NOTE

Common problems with heavy-duty winch that may be found are:
1. Slow or abnormal operation.
2. Winch will not pull required load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Controls malfunction (remote and manual).

Report all problems to organizational maintenance.

1. Check that all electrical switches are set in correct position. (Volume 1, WP 0039)

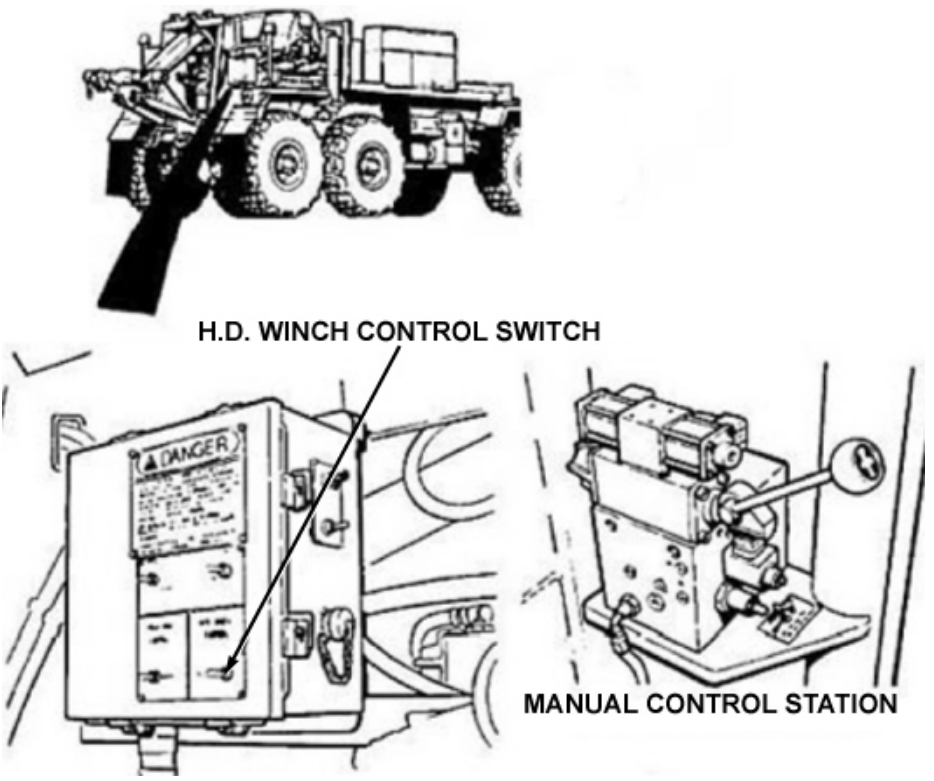


Figure 1.

CONDITION/INDICATION

Are all electrical switches in the correct positions?

DECISION

No - Test 3 - Does heavy-duty winch operate in remote control?

Yes - Test 2 - Does winch operate in and out with H.D. WINCH CONTROL set to manual.

TEST 2 - Does winch operate in and out with H.D. WINCH CONTROL set to manual.

1. Set H.D. WINCH CONTROL to manual. (Volume 1, WP 0039)

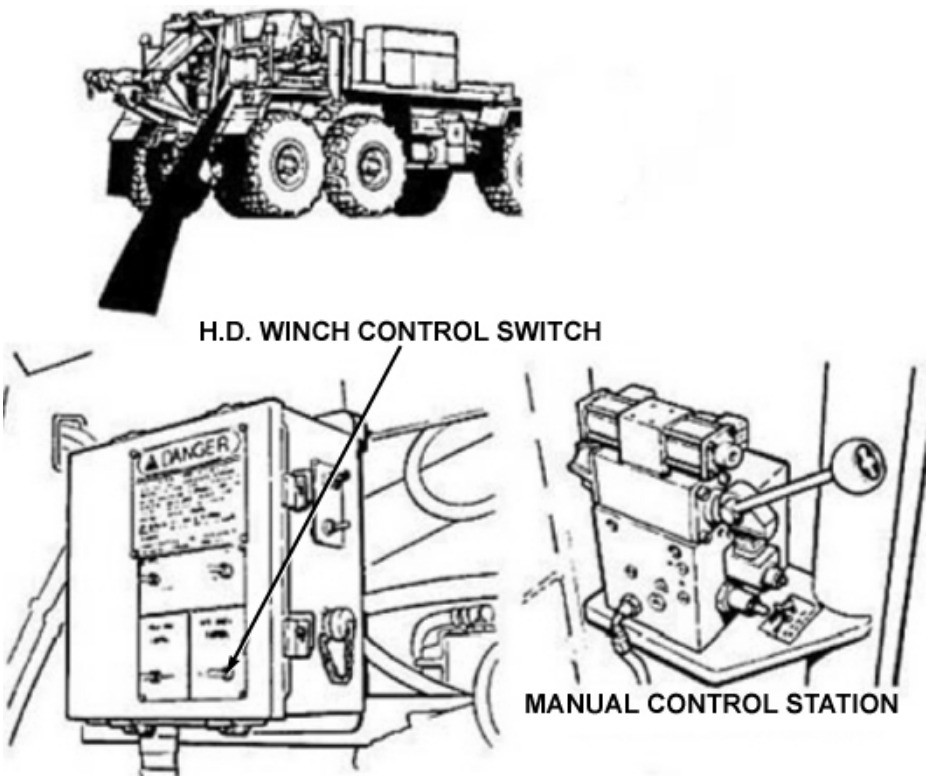


Figure 2.

2. Operate winch OUT and IN (Volume 1, WP 0039) from manual control station.

CONDITION/INDICATION

Does winch operate in and out with H.D. WINCH CONTROL set to manual.

DECISION

No - Notify supervisor.
Yes - Notify supervisor.

TEST 3 - Does heavy-duty winch operate in remote control?

1. Operate heavy-duty winch out and in. (Volume 1, WP 0039)

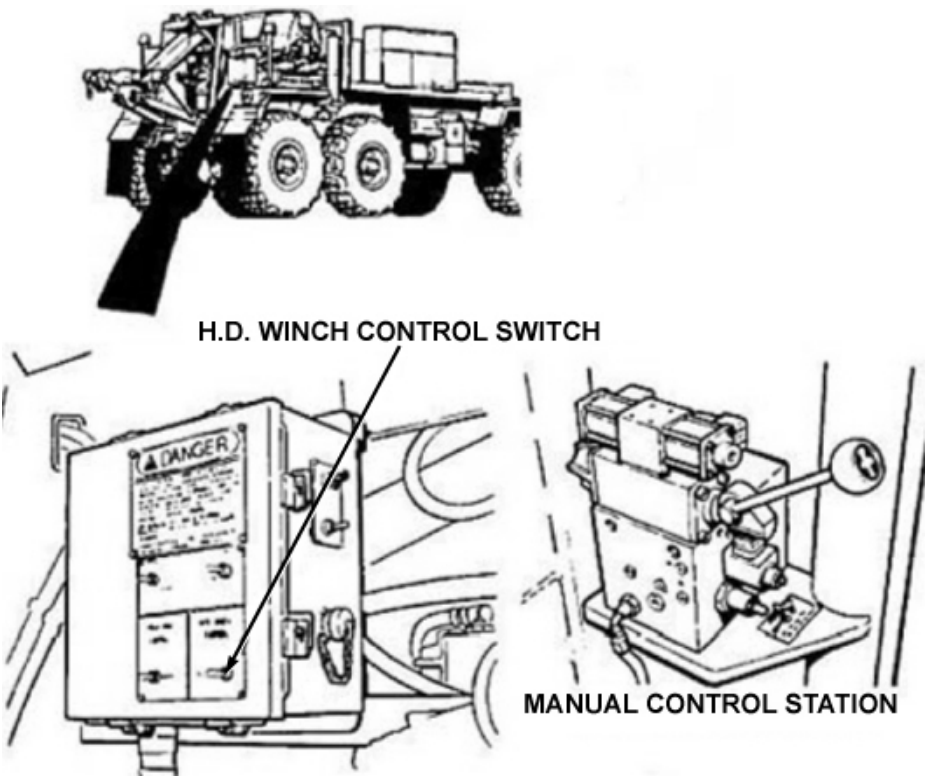


Figure 3.

CONDITION/INDICATION

Does heavy-duty winch operate in remote control?

DECISION

No - Notify supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
WINCH CABLE WILL NOT REEL OUT OR IN, OR OPERATES SLOWLY IN REMOTE CONTROL

INITIAL SETUP:

Equipment Condition
Vehicle setup for heavy-duty winch operations using remote control. (Volume 1, WP 0039)

TROUBLESHOOTING PROCEDURE
WINCH CABLE WILL NOT REEL OUT OR IN, OR OPERATES SLOWLY IN REMOTE CONTROL

TEST 1 - Does winch operate normally IN and OUT with H.D. WINCH CONTROL set to manual?

NOTE

Common problems with heavy-duty winch that may be found are:
1. Slow or abnormal operation.
2. Winch will not pull required load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Controls malfunction (remote and manual).

Report all problems to organizational maintenance.

1. Set H.D. WINCH CONTROL to manual. (Volume 1, WP 0039)

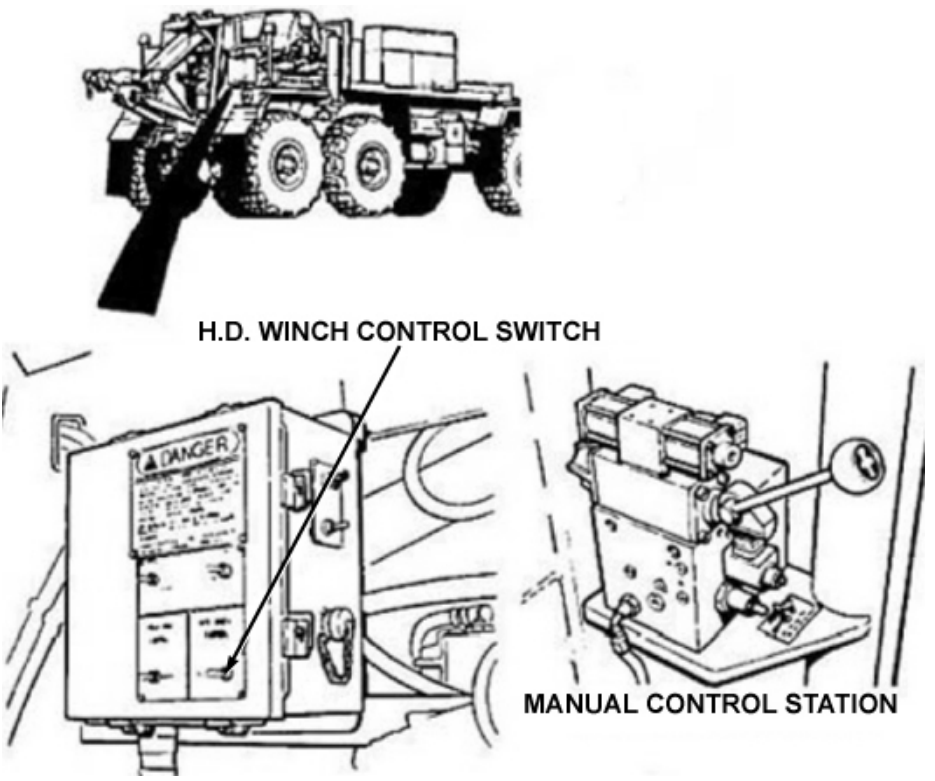


Figure 1.

2. Operate winch OUT and IN (Volume 1, WP 0039) from manual control station.

CONDITION/INDICATION

Does winch operate normally IN and OUT with H.D. WINCH CONTROL set to manual?

DECISION

No - Test 2 - Does winch operate normally after warming hydraulic fluid for 20 minutes?
Yes - Notify Supervisor.

TEST 2 - Does winch operate normally after warming hydraulic fluid for 20 minutes?

NOTE

If outside temperature is 0°F (-17°C) hydraulic fluid may not flow easily.

1. Operate engine (Volume 1, WP 0044) for 20 minutes with HYD ENABLE switch set to ON, to bring hydraulic fluid up to operating temperature.

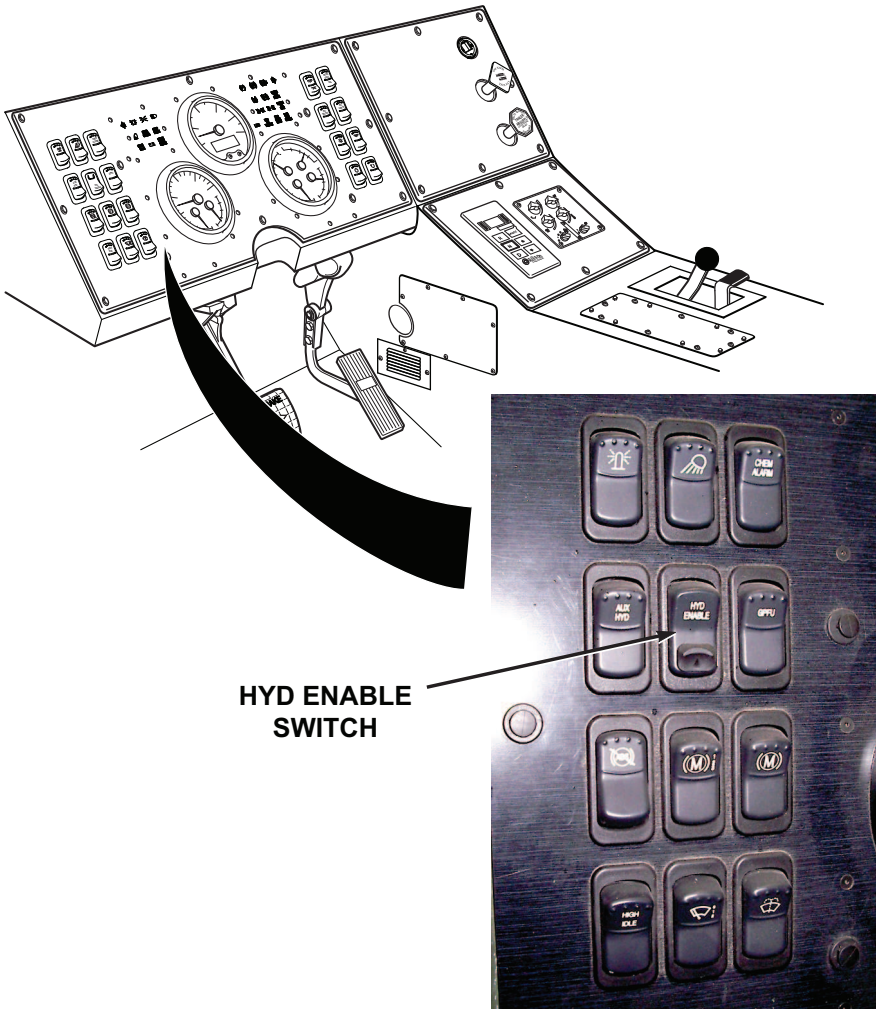


Figure 2.

CONDITION/INDICATION

Does winch operate normally after warming hydraulic fluid for 20 minutes?

DECISION

No - Test 3 - Does winch operate normally after cycling mast?
Yes - Problem corrected.

TEST 3 - Does winch operate normally after cycling mast?

1. Lower crane to stowed position. (Volume 1, WP 0102)

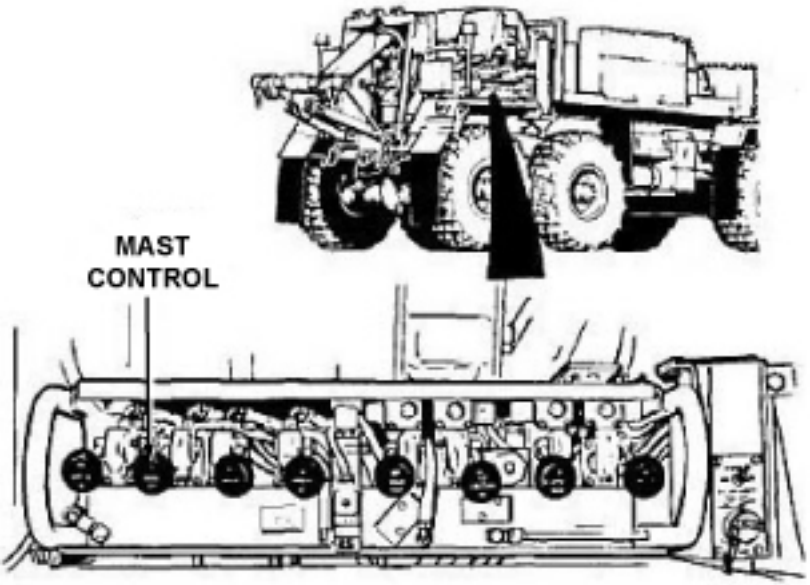


Figure 3.

2. Operate MAST control DOWN. (Volume 1, WP 0102) Hold MAST control DOWN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

CONDITION/INDICATION

Does winch operate normally after cycling mast?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
HEAVY-DUTY WINCH WILL NOT OPERATE IN MANUAL CONTROL

INITIAL SETUP:

Equipment Condition
Vehicle setup for heavy-duty winch operations using manual control. (Volume 1, WP 0039)

TROUBLESHOOTING PROCEDURE
HEAVY-DUTY WINCH WILL NOT OPERATE IN MANUAL CONTROL

TEST 1 - Are all electrical switches in correct positions?

NOTE

Common problems with heavy-duty winch that may be found are:
1. Slow or abnormal operation.
2. Winch will not pull required load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Controls malfunction (remote and manual).

Report all problems to organizational maintenance.

1. Check that all electrical switches are set in correct position. (Volume 1, WP 0039)

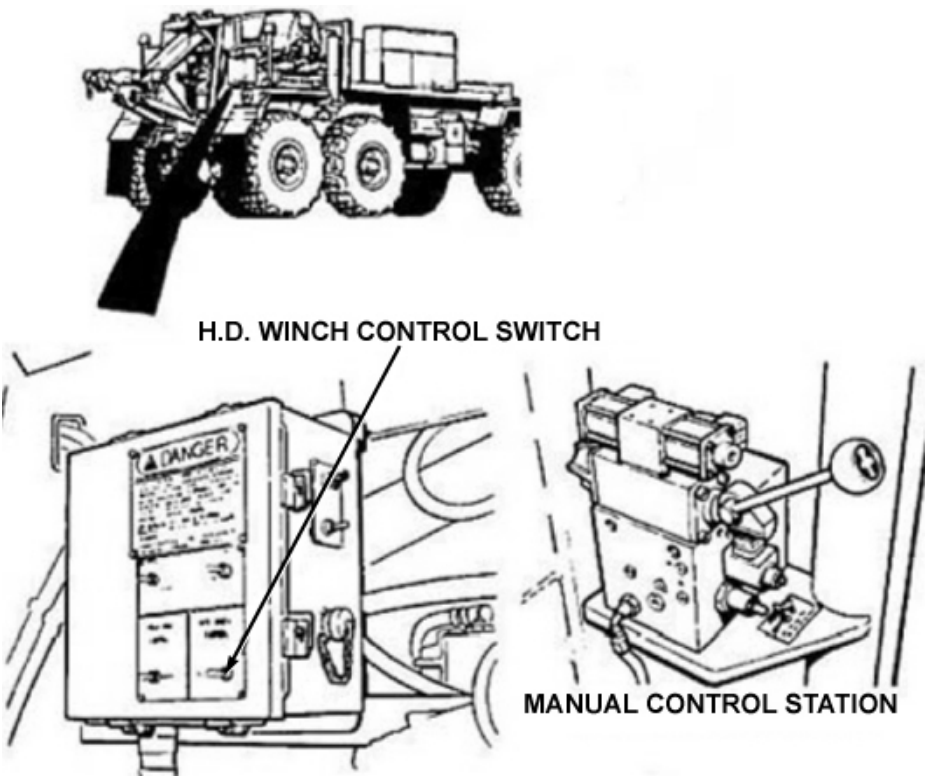


Figure 1.

CONDITION/INDICATION

Are all electrical switches in correct positions?

DECISION

No - Test 3 - Does heavy-duty winch operate in manual control?

Yes - Test 2 - Does winch operate in and out with H.D. WINCH CONTROL set to remote?

TEST 2 - Does winch operate in and out with H.D. WINCH CONTROL set to remote?

1. Set H.D. WINCH CONTROL to remote. (Volume 1, WP 0039)

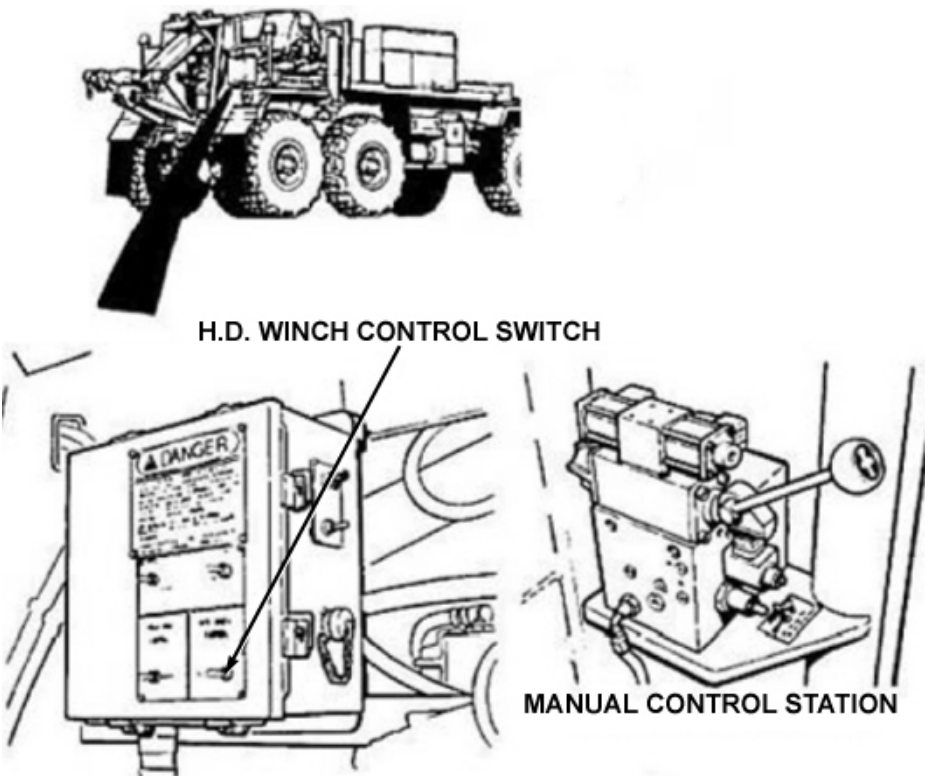


Figure 2.

2. Operate winch OUT and IN (Volume 1, WP 0039) from remote control station.

CONDITION/INDICATION

Does winch operate in and out with H.D. WINCH CONTROL set to remote?

DECISION

No - Notify supervisor.
Yes - Notify supervisor.

TEST 3 - Does heavy-duty winch operate in manual control?

1. Operate heavy-duty winch out and in. (Volume 1, WP 0039)

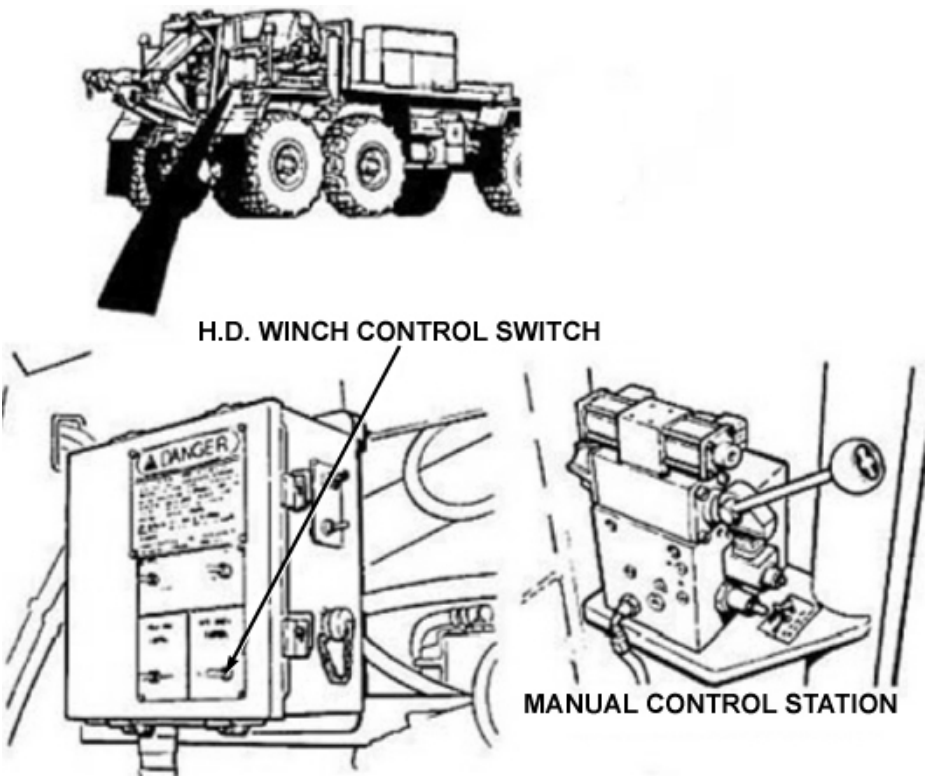


Figure 3.

CONDITION/INDICATION

Does heavy-duty winch operate in manual control?

DECISION

No - Notify supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
WINCH CABLE WILL NOT REEL OUT OR IN, OR OPERATES SLOWLY IN MANUAL CONTROL

INITIAL SETUP:

Equipment Condition
Vehicle setup for heavy-duty winch operations using manual control. (Volume 1, WP 0039)

TROUBLESHOOTING PROCEDURE
WINCH CABLE WILL NOT REEL OUT OR IN, OR OPERATES SLOWLY IN MANUAL CONTROL

TEST 1 - Does winch operate normally IN and OUT with H.D. WINCH CONTROL set to remote?

NOTE

Common problems with heavy-duty winch that may be found are:
1. Slow or abnormal operation.
2. Winch will not pull required load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Controls malfunction (remote and manual).

Report all problems to organizational maintenance.

1. Set H.D. WINCH CONTROL to remote. (Volume 1, WP 0039)

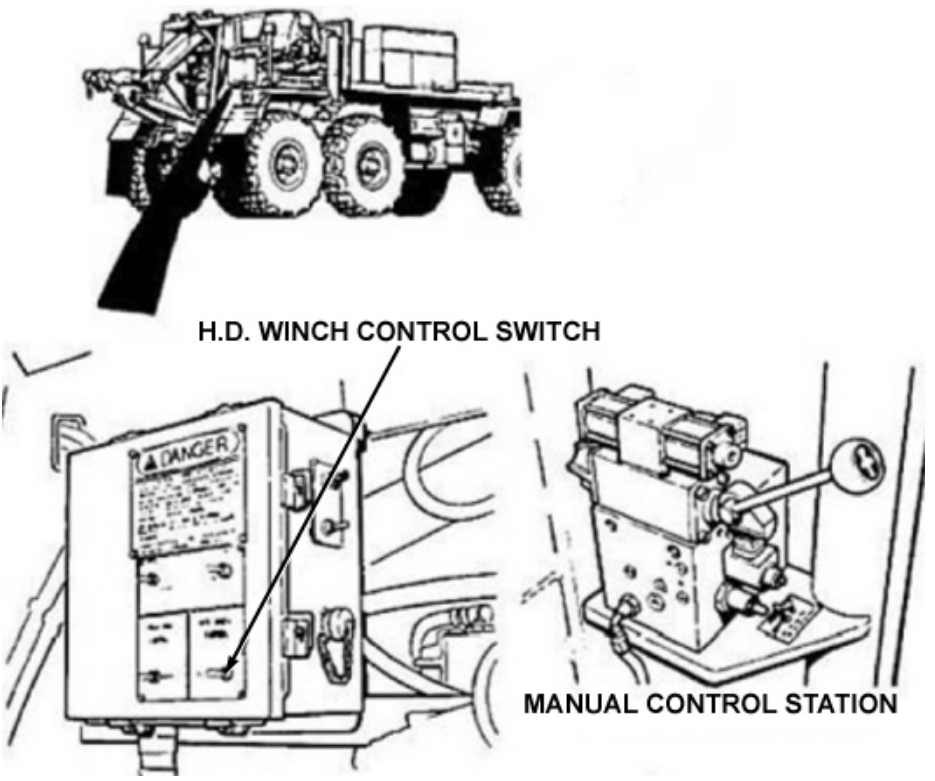


Figure 1.

2. Operate winch OUT and IN (Volume 1, WP 0039) from remote control station.

CONDITION/INDICATION

Does winch operate normally IN and OUT with H.D. WINCH CONTROL set to remote?

DECISION

No - Test 2 - Does winch operate normally after warming hydraulic fluid for 20 minutes?
Yes - Notify Supervisor.

TEST 2 - Does winch operate normally after warming hydraulic fluid for 20 minutes?

NOTE

If outside temperature is 0°F (-17°C) hydraulic fluid may not flow easily.

1. Operate engine (Volume 1, WP 0044) for 20 minutes with HYD ENABLE switch set to ON to bring hydraulic fluid up to operating temperature.

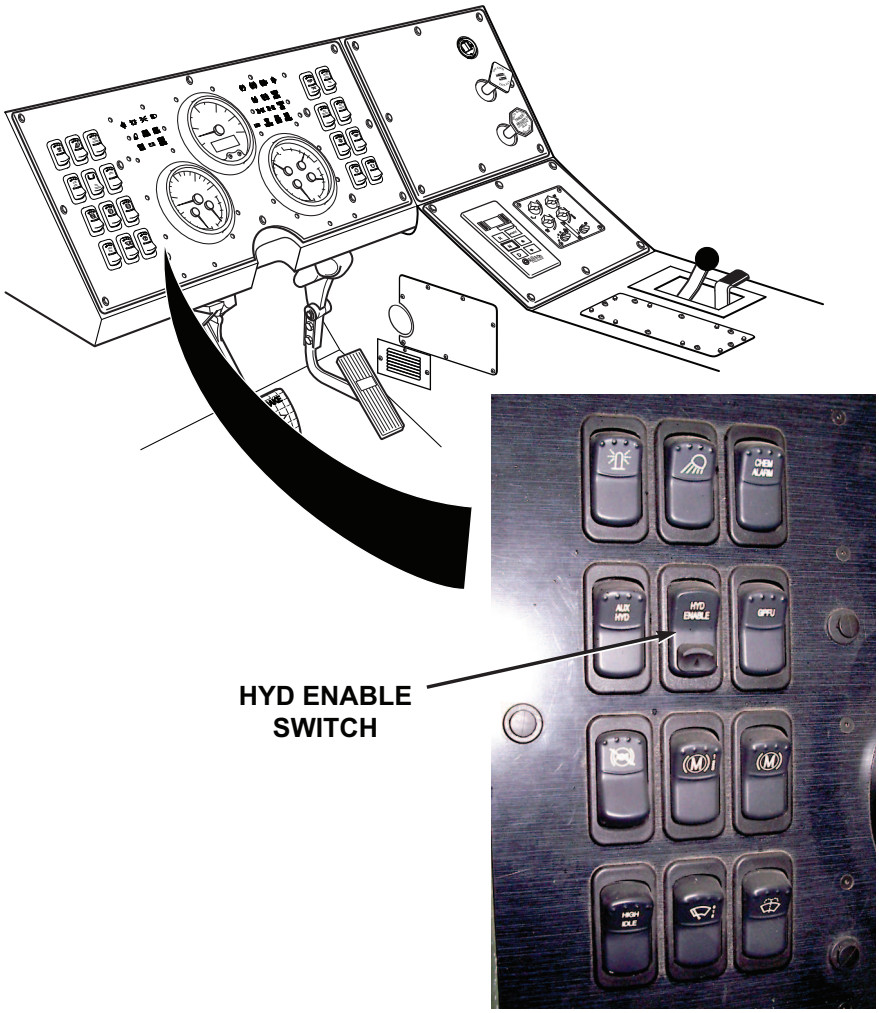


Figure 2.

CONDITION/INDICATION

Does winch operate normally after warming hydraulic fluid for 20 minutes?

DECISION

No - Test 3 - Does winch operate normally after cycling mast?
Yes - Problem corrected.

TEST 3 - Does winch operate normally after cycling mast?

1. Lower crane to stowed position. (Volume 1, WP 0102)

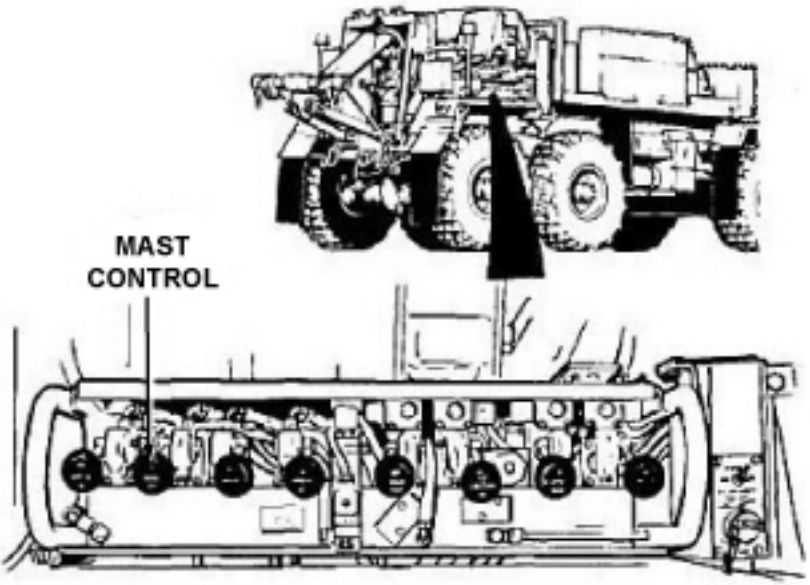


Figure 3.

2. Operate MAST control DOWN. (Volume 1, WP 0102) Hold MAST control DOWN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

CONDITION/INDICATION

Does winch operate normally after cycling mast?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTROLS (REMOTE OR MANUAL) STICKING IN ENGAGED POSITION

INITIAL SETUP:

Equipment Condition
Vehicle setup for heavy-duty winch operations. (Volume 1, WP 0039)

TROUBLESHOOTING PROCEDURE
CONTROLS (REMOTE OR MANUAL) STICKING IN ENGAGED POSITION

TEST 1 - Is hydraulic fluid below normal operating temperature?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

NOTE

Common problems with heavy-duty winch that may be found are:
1. Slow or abnormal operation.
2. Winch will not pull required load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Controls malfunction (remote and manual).

Report all problems to organizational maintenance.

NOTE

If outside temperature is 0°F (-17°C) or lower, hydraulic fluid may not flow easily.

1. Check if outside temperature is 0°F (-17°C) or lower.

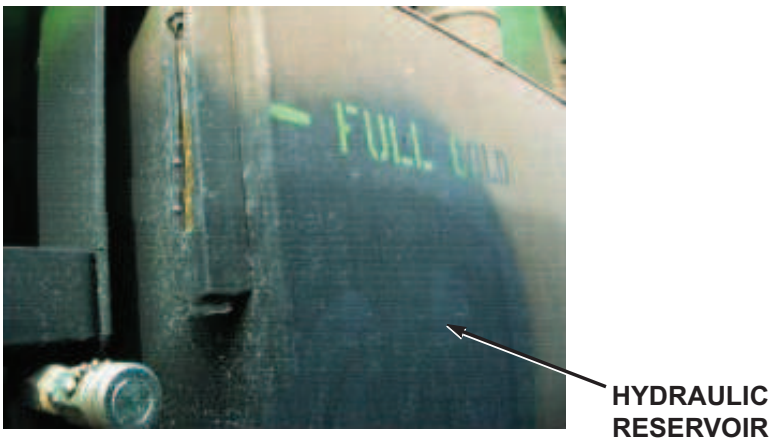


Figure 1.

CONDITION/INDICATION

Is hydraulic fluid below normal operating temperature?

DECISION

No - Test 4 - Do winch controls operate normally?

Yes - Test 2 - Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?

TEST 2 - Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

NOTE

If outside temperature is 0°F (-17°C) or lower, hydraulic fluid may not flow easily.

1. Set HYD ENABLE switch to ON. (Volume 1, WP 0039)

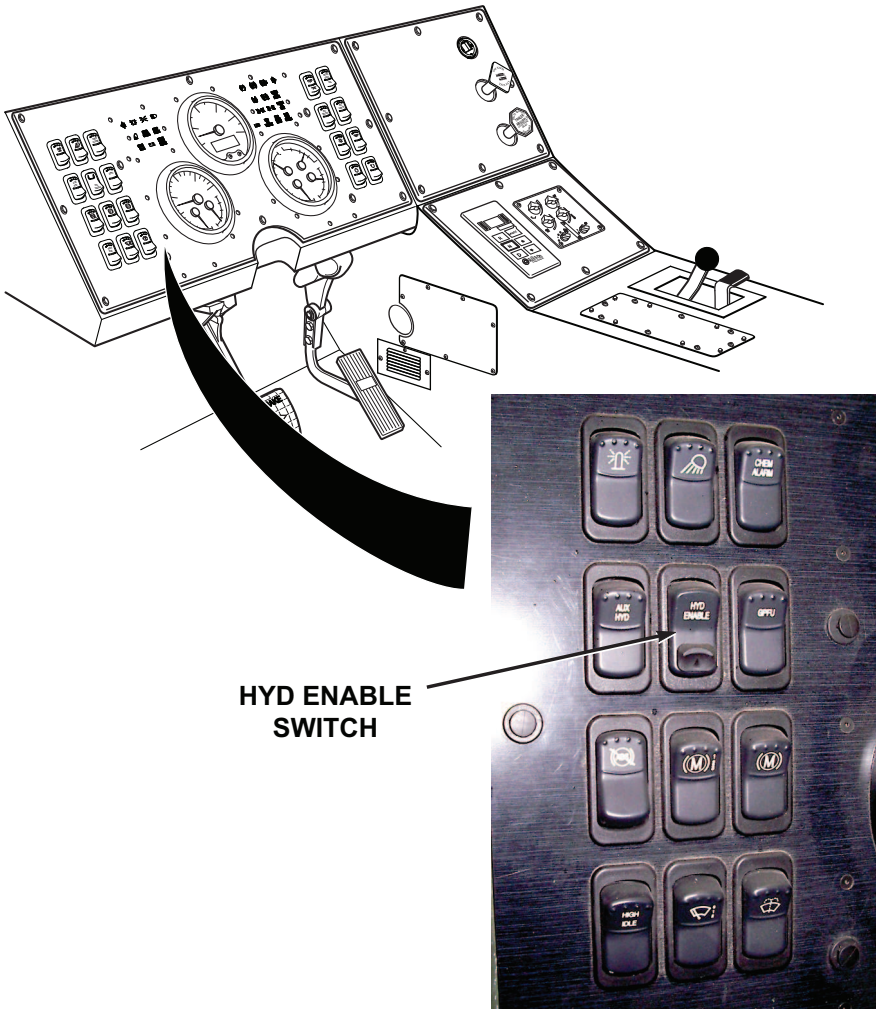


Figure 2.

2. Operate engine (Volume 1, WP 0044) for 20 minutes with PTO enabled to bring hydraulic fluid up to operating temperature.
3. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?

DECISION

No - Test 3 - Does hydraulic fluid reach normal operating temperature after cycling mast control down?

Yes - Test 4 - Do winch controls operate normally?

TEST 3 - Does hydraulic fluid reach normal operating temperature after cycling mast control down?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. If raised, lower crane to stowed position. (Volume 1, WP 0102)

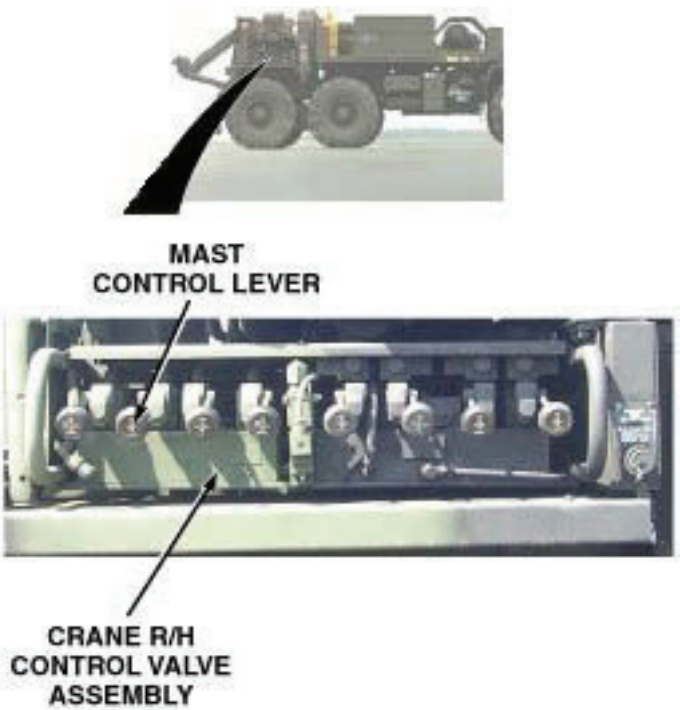


Figure 3.

2. Operate MAST control DOWN. (Volume 1, WP 0102) Hold MAST control DOWN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.
3. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Does hydraulic fluid reach normal operating temperature after cycling mast control down?

DECISION

No - Notify supervisor.
Yes - Test 4 - Do winch controls operate normally?

TEST 4 - Do winch controls operate normally?

1. Operate heavy-duty winch manual controls, observe heavy-duty winch control operation. (Volume 1, WP 0039)

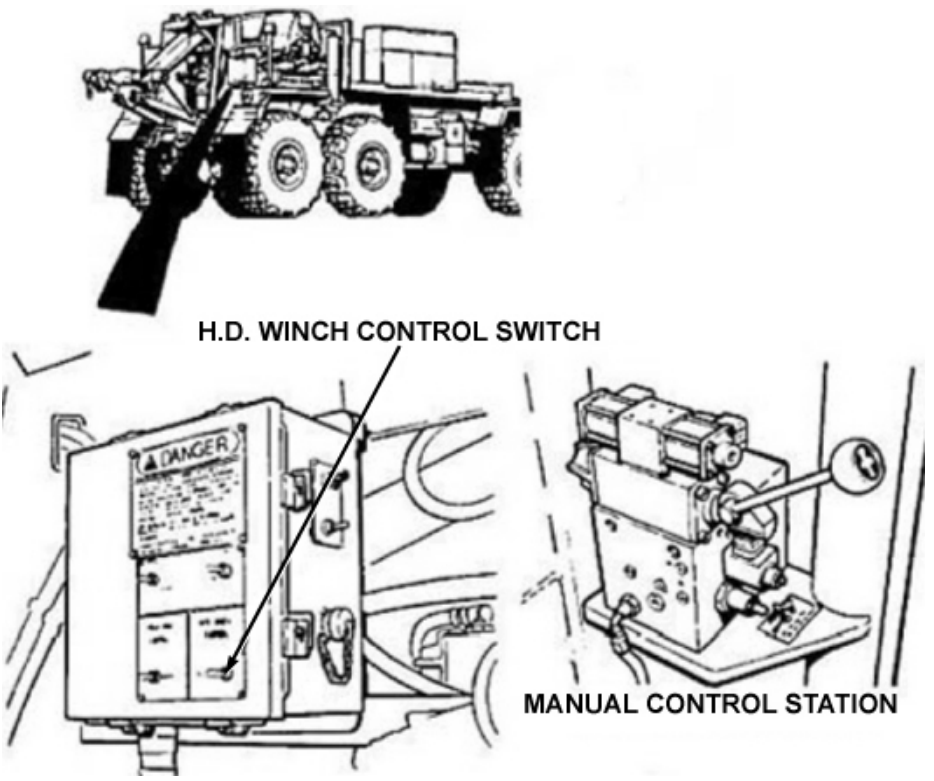


Figure 4.

CONDITION/INDICATION

Do winch controls operate normally?

DECISION

No - Test 6 - Hydraulic fluid overheated.
Yes - Problem corrected.

TEST 5 - Do controls stick in engaged position after running engine for 20 minutes?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir.

Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

NOTE

If outside temperature is 0°F (-17°C) or lower, hydraulic fluid may be below operating temperature. Operating system with PTO end hydraulic pump engaged should warm hydraulic fluid to an operating temperature.

1. Pull selector valve out. (Volume 1, WP 0039)
2. Set PTO ENGAGE switch to ON. (Volume 1, WP 0039)
3. Operate engine (Volume 1, WP 0044) for 20 minutes with PTO enabled to bring hydraulic fluid up to operating temperature.
4. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

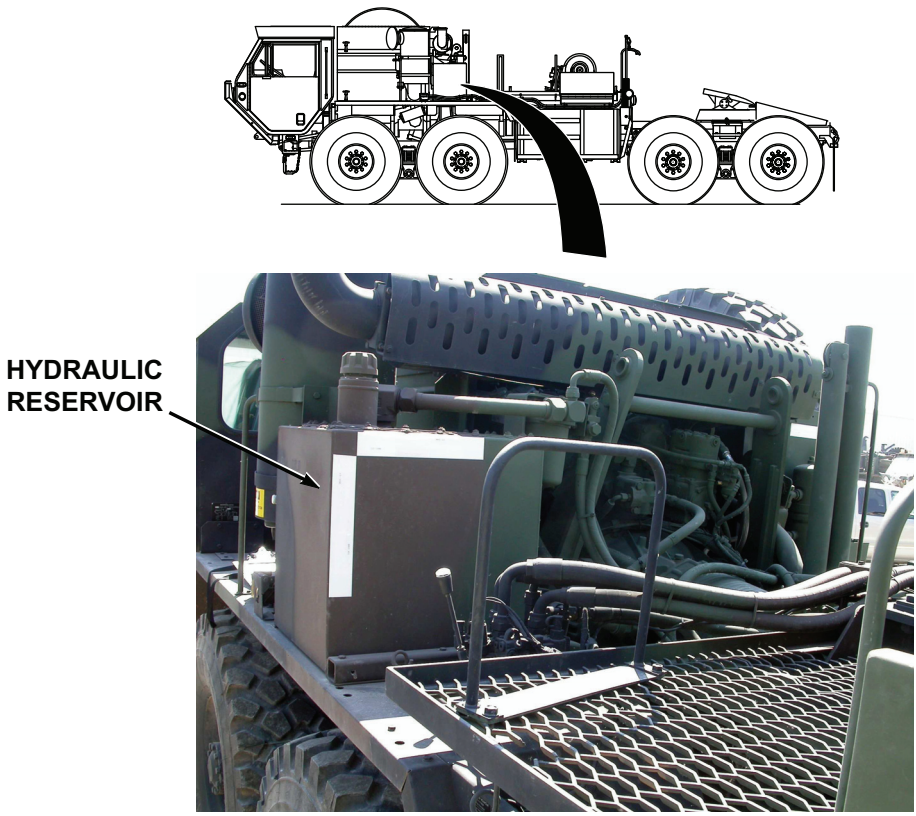


Figure 5.

5. Prepare vehicle for heavy-duty winch operation.
6. Operates heavy-duty winch manual controls, observe heavy-duty winch control operation.

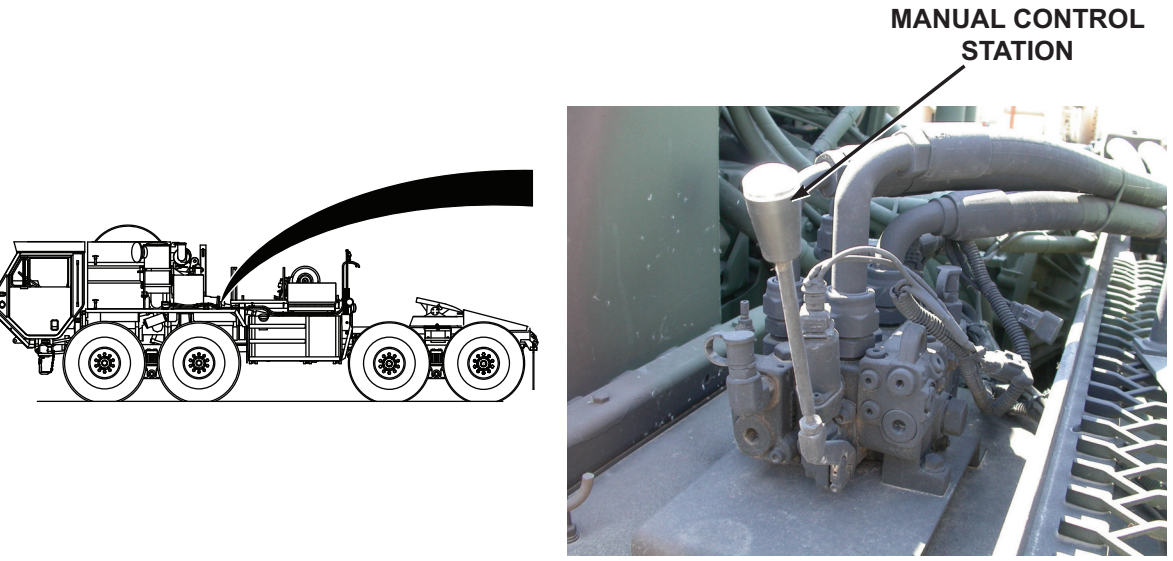


Figure 6.

CONDITION/INDICATION

Do controls stick in engaged position after running engine for 20 minutes?

DECISION

No - Test 6 - Hydraulic fluid overheated.
Yes - Problem corrected.

TEST 6 - Hydraulic fluid overheated.

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Set HYD ENABLE switch to OFF.
2. Shut off engine. (Volume 1, WP 0057)
3. Allow hydraulic oil to cool.

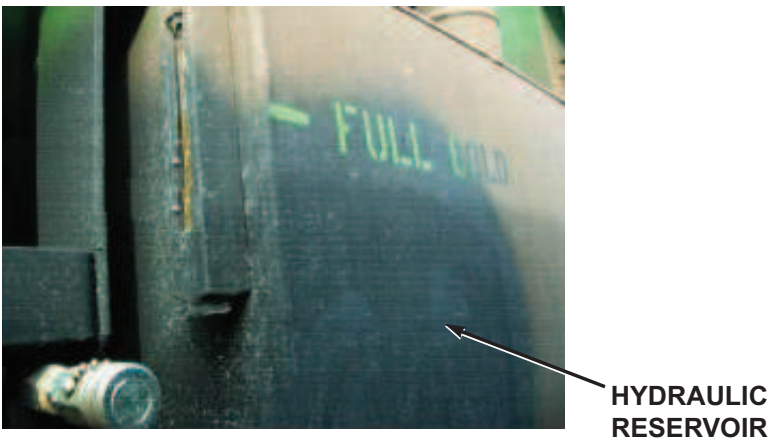


Figure 7.

CONDITION/INDICATION

Hydraulic fluid overheated.

DECISION

-

Continue - Test 7 - Do winch controls operate normally?

TEST 7 - Do winch controls operate normally?

1. Start engine. (Volume 1, WP 0044)
2. Prepare vehicle for heavy-duty winch operation. (Volume 1, WP 0039)

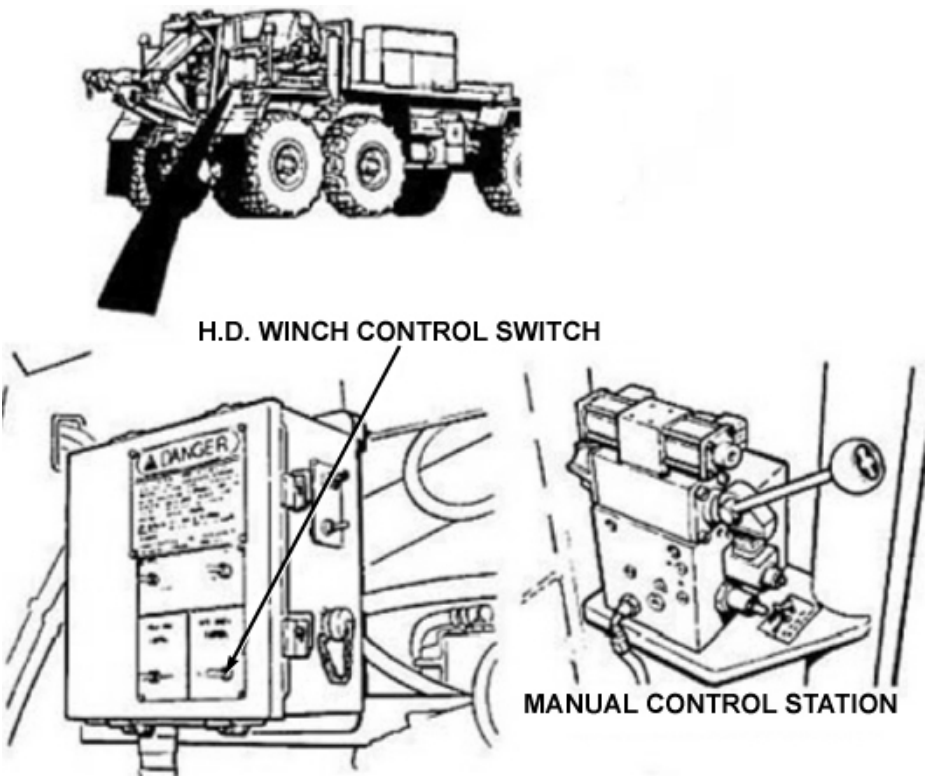


Figure 8.

3. Operate heavy-duty winch controls, observe heavy-duty winch control operation. (Volume 1, WP 0039)

CONDITION/INDICATION

Do winch controls operate normally?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
HYDRAULIC SYSTEM OPERATES TOO SLOW, TOO FAST, WITH JERKY MOVEMENTS; OR ONE OR MORE HYDRAULICS CIRCUITS WILL NOT OPERATE

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
HYDRAULIC SYSTEM OPERATES TOO SLOW, TOO FAST, WITH JERKY MOVEMENTS; OR ONE OR MORE HYDRAULICS CIRCUITS WILL NOT OPERATE

TEST 1 - Is hydraulic fluid level within normal operating range?
1. Check hydraulic fluid level. If low, add hydraulic fluid. (WP 0182)

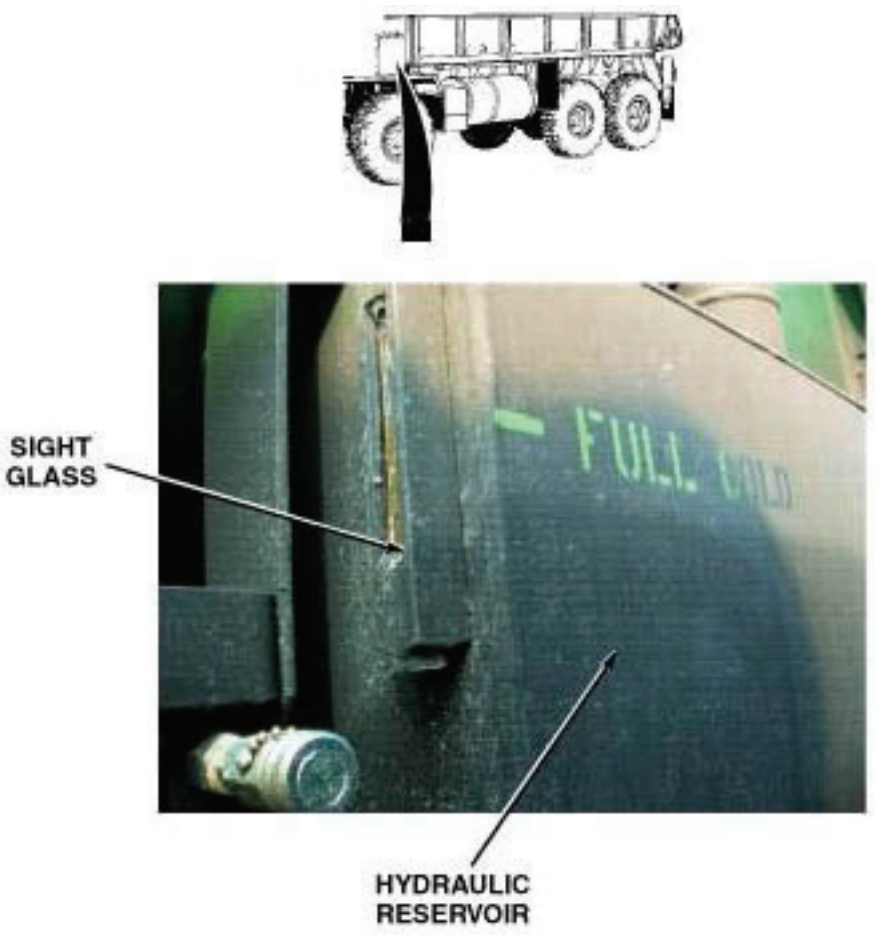


Figure 1.

CONDITION/INDICATION

Is hydraulic fluid level within normal operating range?

DECISION

No - Test 3 - Do all hydraulic systems operate properly?

Yes - Test 2 - Are hydraulic hoses and connections free from leaks and/or damage?

TEST 2 - Are hydraulic hoses and connections free from leaks and/or damage?

WARNING



Caution the hydraulic system maybe under pressure be sure to wear the proper eye protection to avoid personal injury.

1. Check hydraulic hoses and connections for leaks and/or damage.

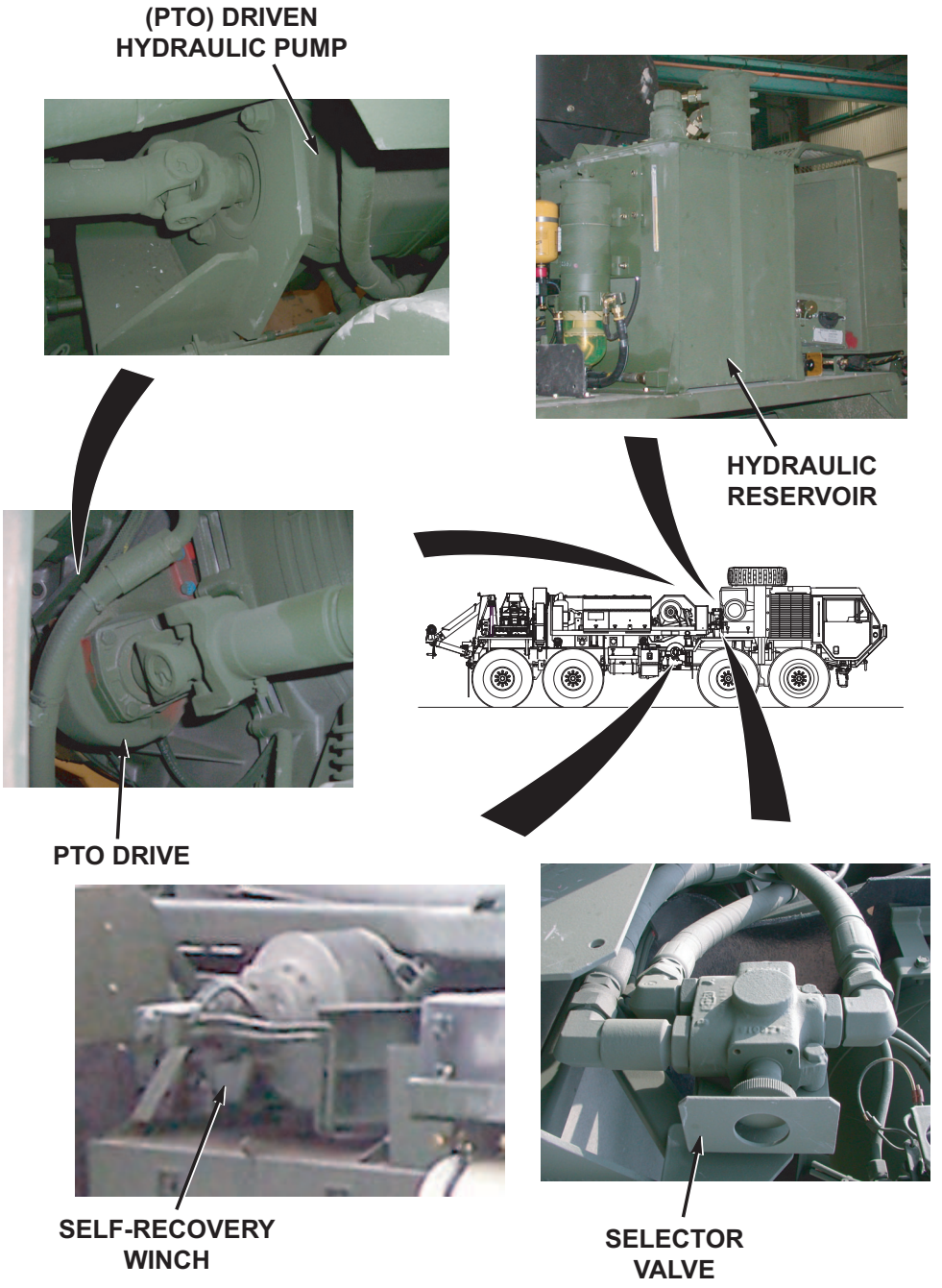

(PTO) DRIVEN
HYDRAULIC PUMP
HYDRAULIC
RESERVOIR
PTO DRIVE
SELF-RECOVERY
WINCH
SELECTOR
VALVE

Figure 2.

2. Attempt to tighten loose hose(s) and/or connection(s).

CONDITION/INDICATION

Are hydraulic hoses and connections free from leaks and/or damage?

DECISION

Hydraulic hose or connection damaged. - Notify Supervisor. Test 3 - Do all hydraulic systems operate properly?Notify Supervisor.
Hydraulic hoses and connections OK. - Notify Supervisor.

TEST 3 - Do all hydraulic systems operate properly?

1. Start engine. (Volume 1, WP 0044)
2. Operate hydraulic systems to check for proper operation.

CONDITION/INDICATION

Do all hydraulic systems operate properly?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
BOOM OPERATION ABNORMAL WHEN TELESCOPING IN OR OUT

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
BOOM OPERATION ABNORMAL WHEN TELESCOPING IN OR OUT

TEST 1 - Is POWER ON/OFF switch set to ON position?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic oil (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Ensure POWER ON/OFF switch is set to ON position.If switch found in OFF position, turn switch to ON. (Volume 1, WP 0102)

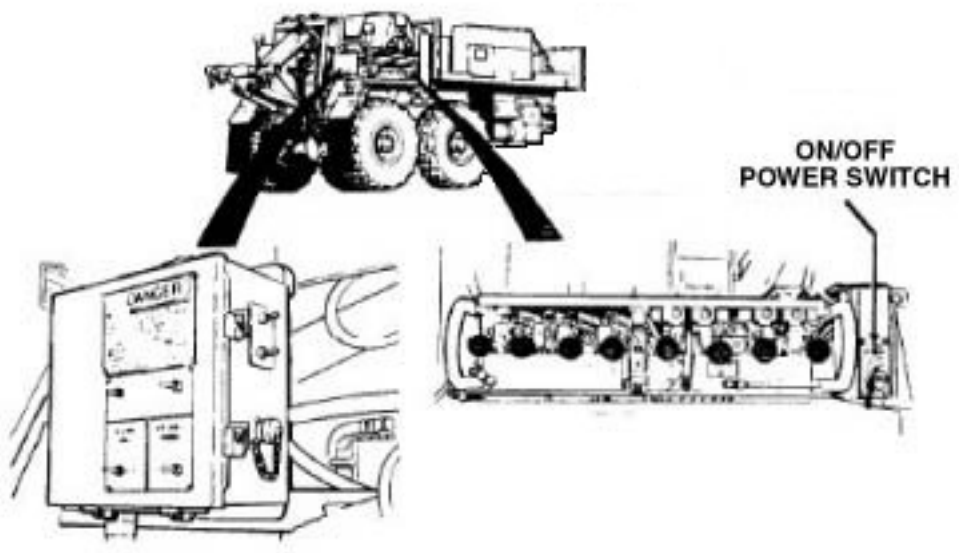


Figure 1.

CONDITION/INDICATION

Is POWER ON/OFF switch set to ON position?

DECISION

No - Test 4 - Does boom operate normally when telescoping in or out?
Yes - Test 2 - Are boom sections properly lubricated?

TEST 2 - Are boom sections properly lubricated?

1. Inspect boom sections for proper lubrication.

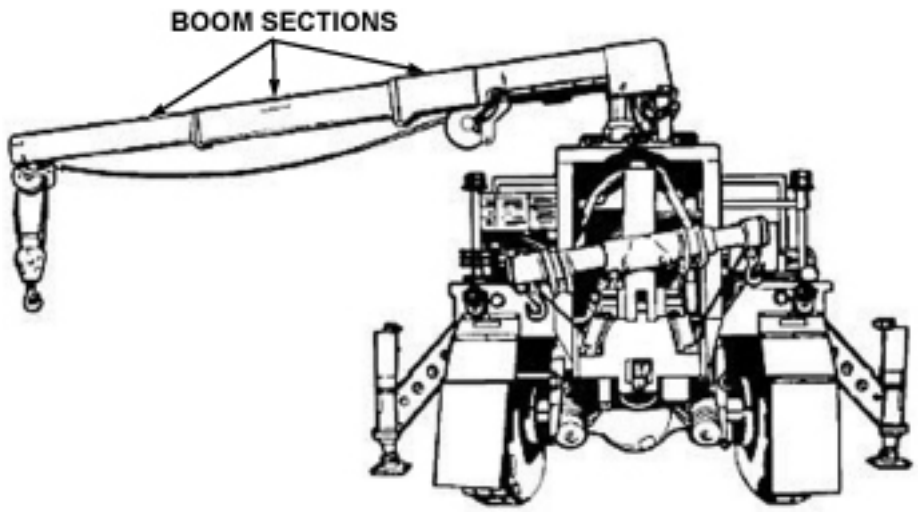


Figure 2.

CONDITION/INDICATION

Are boom sections properly lubricated?

DECISION

No - Lubricate boom sections.

Yes - Test 3 - Are cylinders free from trapped air after telescoping boom in and out several times?

TEST 3 - Are cylinders free from trapped air after telescoping boom in and out several times?

1. Lower boom below horizontal position. (Volume 1, WP 0102)



Figure 3.

2. Fully TELESCOPE boom IN and OUT several times to remove air from cylinders. (Volume 1, WP 0102)

CONDITION/INDICATION

Are cylinders free from trapped air after telescoping boom in and out several times?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

TEST 4 - Does boom operate normally when telescoping in or out?

1. Verify proper operation of boom telescoping. (Volume 1, WP 0102)



Figure 4.

CONDITION/INDICATION

Does boom operate normally when telescoping in or out?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
BOOM RAISES OR LOWERS SLOWLY

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
BOOM RAISES OR LOWERS SLOWLY

TEST 1 - Does boom raise or lower normally after running engine for 20 minutes with PTO engaged?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.
If outside temperature is 0°F (-17°C), hydraulic fluid may not flow easily.

1. Start engine. (Volume 1, WP 0044)
2. Set HYD ENABLE switch to ON. (Volume 1, WP 0102)

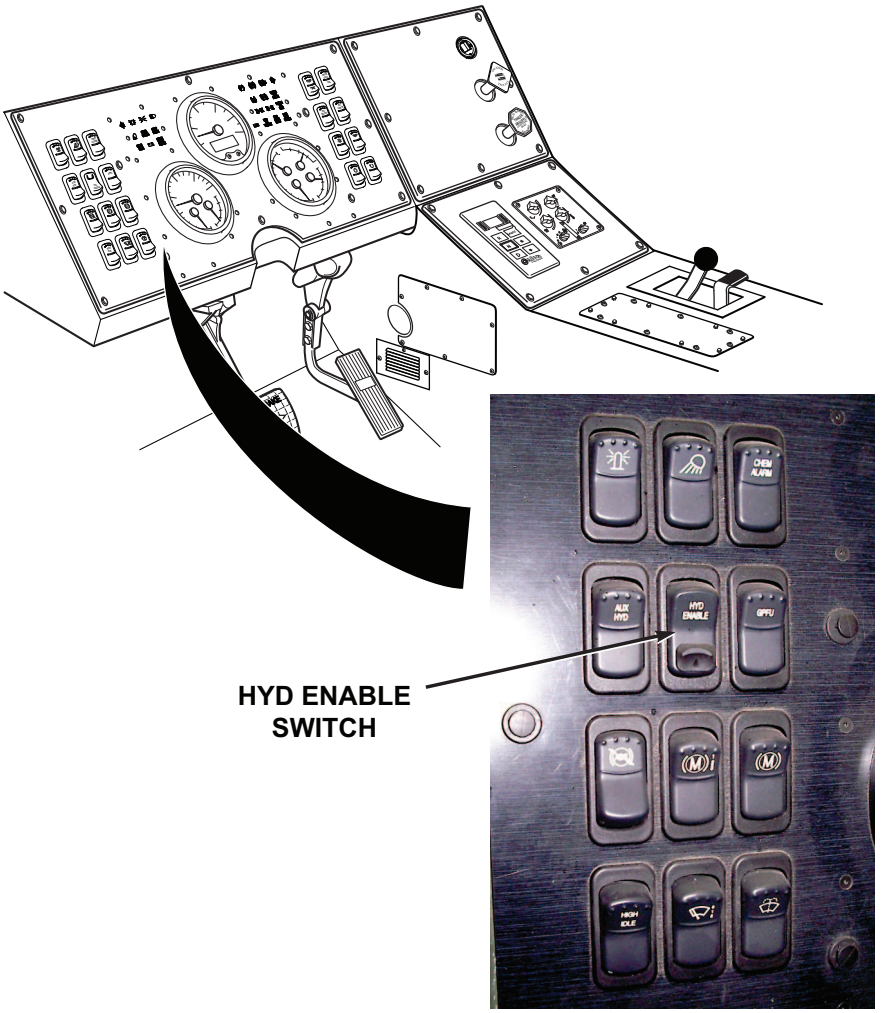


Figure 1.

3. Operate engine (Volume 1, WP 0044) for 20 minutes with PTO enabled to bring hydraulic fluid up to operating temperature.
4. Attempt to raise or lower boom. (Volume 1, WP 0102)

CONDITION/INDICATION

Does boom raise or lower normally after running engine for 20 minutes with PTO engaged?

DECISION

No - Test 2 - Does boom raise or lower normally after cycling mast?
Yes - Problem corrected.

TEST 2 - Does boom raise or lower normally after cycling mast?

1. Lower crane to stowed position. (Volume 1, WP 0102)
2. Operate MAST control DOWN. (Volume 1, WP 0102) Hold MAST control DOWN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

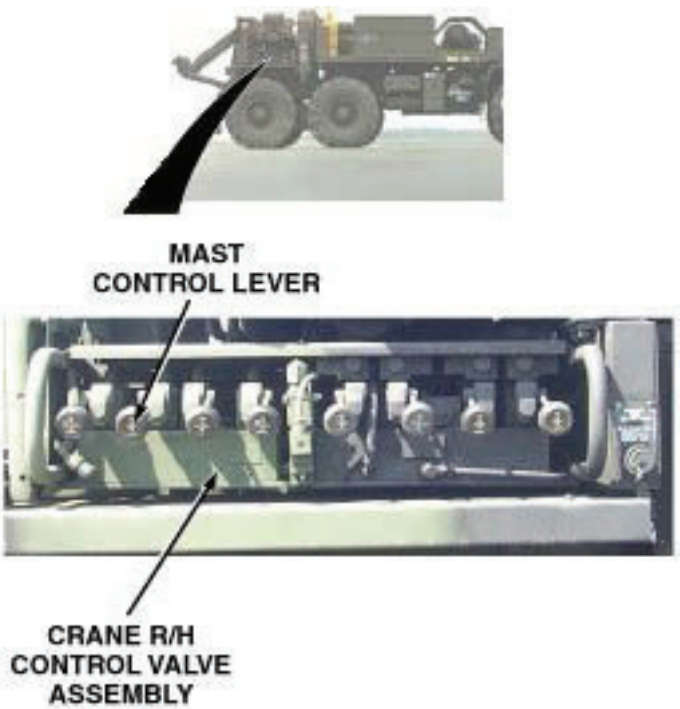


Figure 2.

3. Raise crane to operating position. (Volume 1, WP 0102)
4. Raise and lower boom. (Volume 1, WP 0102)

CONDITION/INDICATION

Does boom raise or lower normally after cycling mast?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
BOOM WILL NOT RAISE OR LOWER

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
BOOM WILL NOT RAISE OR LOWER

TEST 1 - Does boom operate after checking for overloading?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Check that load is not over load limit. If load is found to be over limit, reduce weight to below load limit.

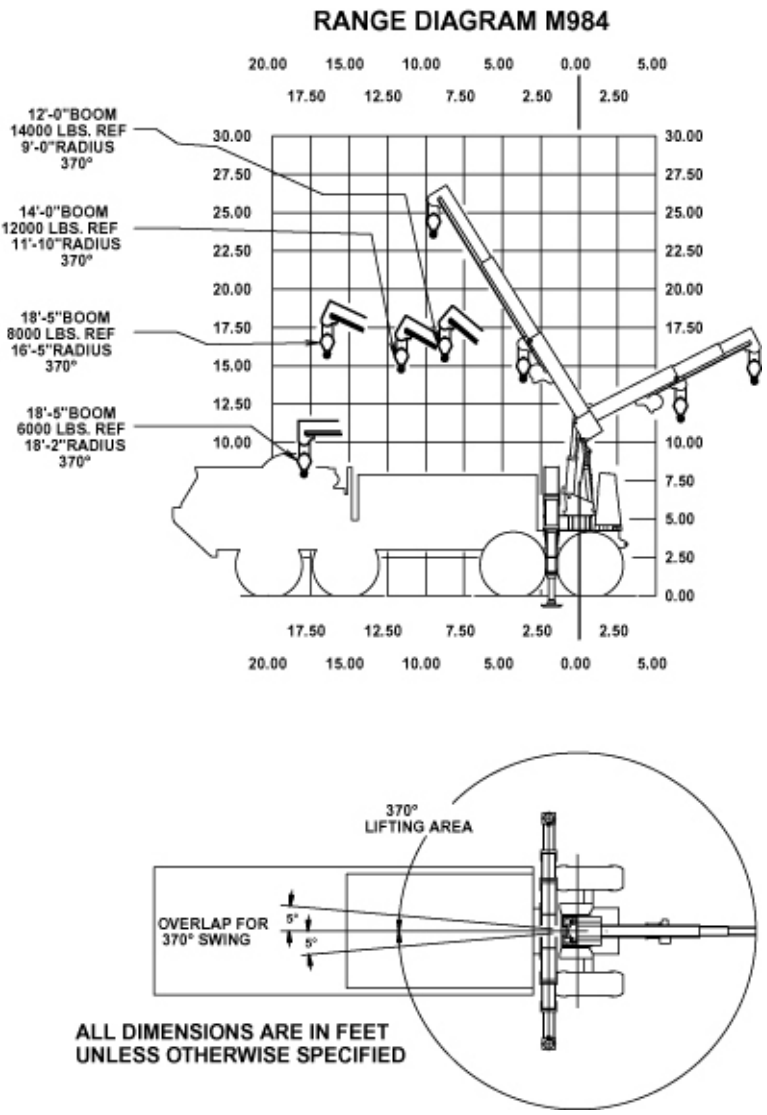


Figure 1.

2. Raise and lower boom. (Volume 1, WP 0102)

CONDITION/INDICATION

Does boom operate after checking for overloading?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
BOOM WILL NOT TELESCOPE IN OR OUT

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
BOOM WILL NOT TELESCOPE IN OR OUT

TEST 1 - Does boom telescope in or out after checking for overloaded condition?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Check that load is not over load limit. If load is found to be over limit, reduce weight to below load limit.

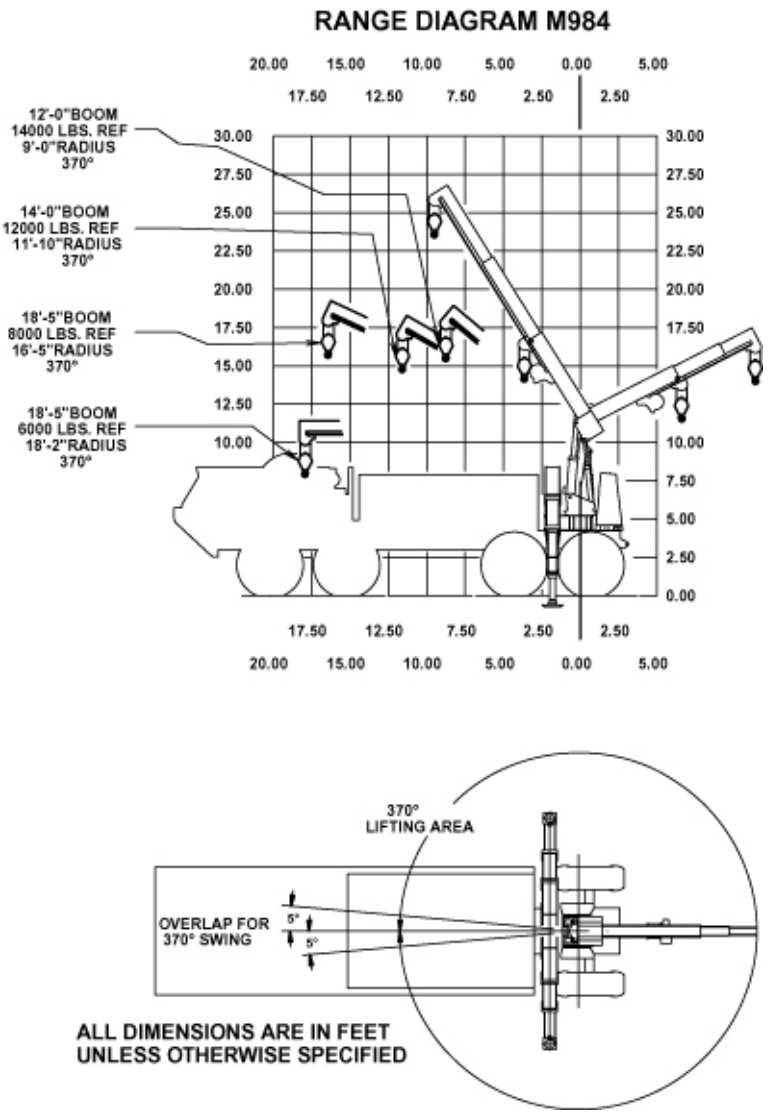


Figure 1.

2. Operate crane by telescoping boom IN and OUT. (Volume 1, WP 0102)

CONDITION/INDICATION

Does boom telescope in or out after checking for overloaded condition?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CRANE CONTROLS STICKING IN ENGAGED POSITION

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
CRANE CONTROLS STICKING IN ENGAGED POSITION

TEST 1 - Is hydraulic fluid at normal operating temperature?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

NOTE

Common problems that crane operator may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

NOTE

If outside temperature is 0°F (-17°C) or lower, hydraulic fluid may not flow easily.

1. Check hydraulic fluid temperature at reservoir.

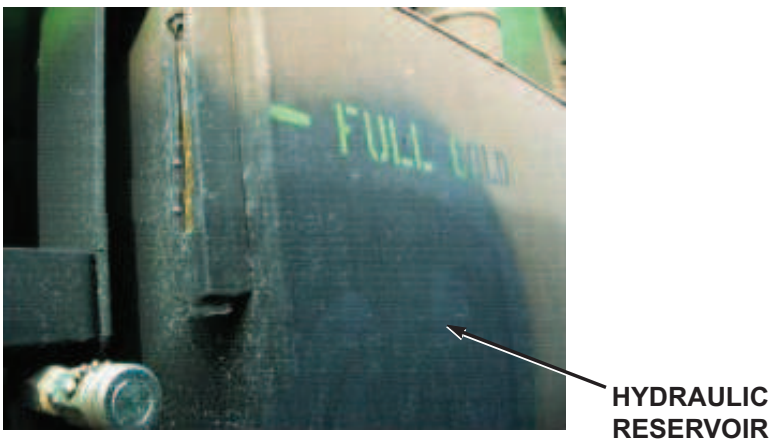


Figure 1.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature?

DECISION

Hydraulic fluid is below normal operating temperature. - Test 2 - Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?Test 4 - Is hydraulic fluid overheated?

Hydraulic fluid is at normal operating temperature. - Test 5 - Do crane controls operate normally after hydraulic fluid is at normal operating temperature?

TEST 2 - Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir.

Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Set HYD ENABLE switch to ON. (Volume 1, WP 0102)

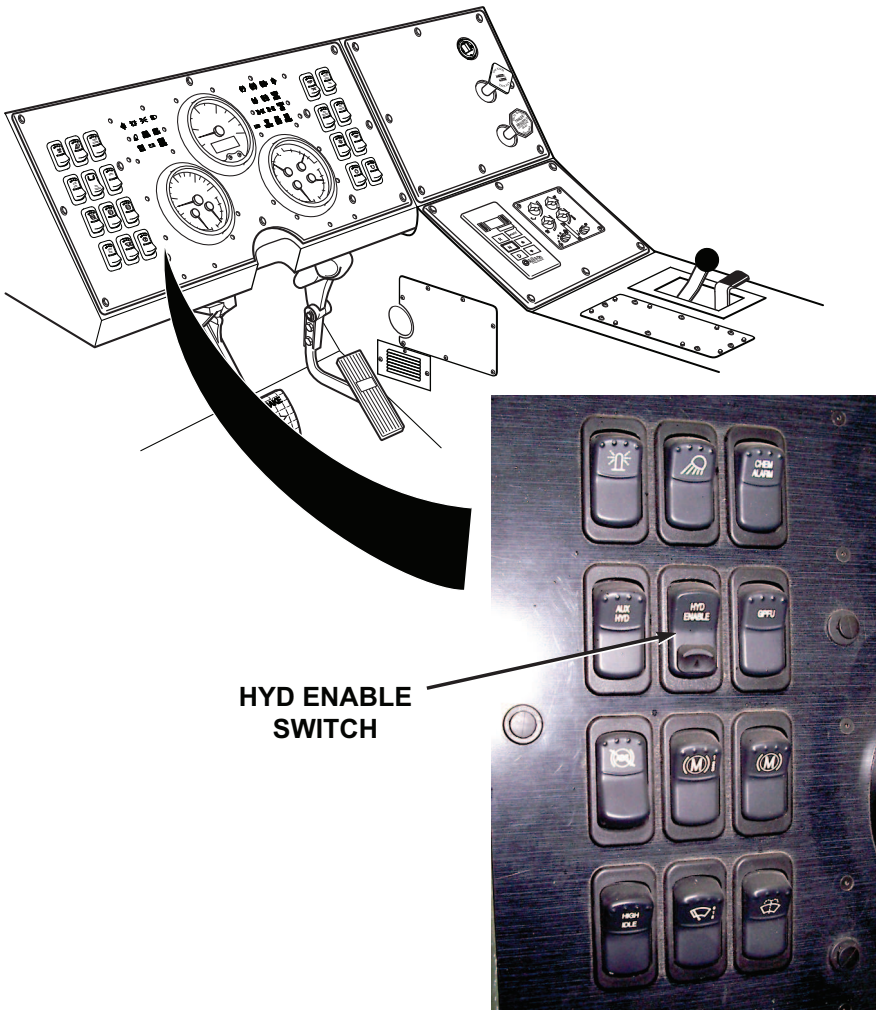


Figure 2.

2. Operate engine (Volume 1, WP 0044) for 20 minutes with PTO enabled to bring hydraulic fluid up to operating temperature.
3. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?

DECISION

Hydraulic fluid is below normal operating temperature. - Test 3 - Does hydraulic fluid reach normal operating temperature after cycling mast control down?Test 4 - Is hydraulic fluid overheated?

Hydraulic fluid is at normal operating temperature. - Test 5 - Do crane controls operate normally after hydraulic fluid is at normal operating temperature?

TEST 3 - Does hydraulic fluid reach normal operating temperature after cycling mast control down?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Lower crane to stowed position. (Volume 1, WP 0102)
2. Operate MAST control DOWN. (Volume 1, WP 0102) Hold MAST control DOWN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

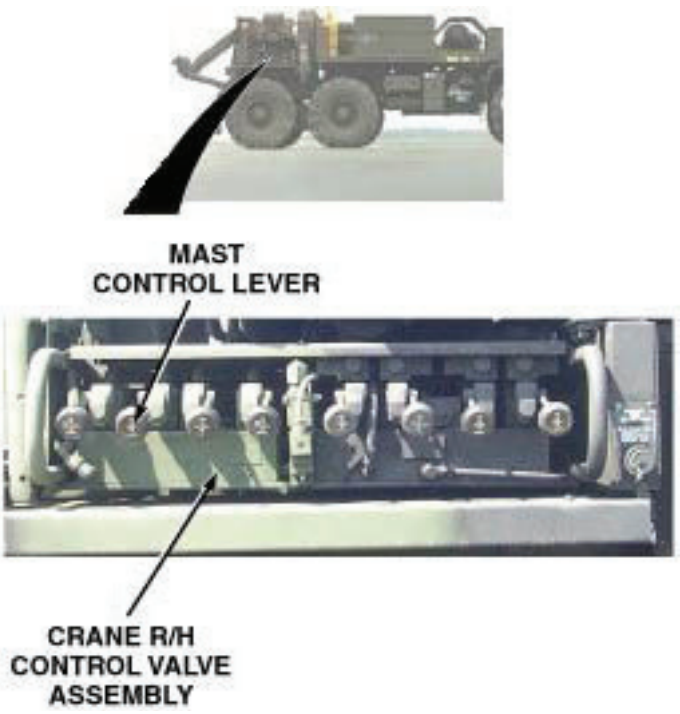


Figure 3.

3. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Does hydraulic fluid reach normal operating temperature after cycling mast control down?

DECISION

Hydraulic fluid is below normal operating temperature. - Notify Supervisor. Test 4 - Is hydraulic fluid overheated?

Hydraulic fluid is at normal operating temperature. - Test 5 - Do crane controls operate normally after hydraulic fluid is at normal operating temperature?

TEST 4 - Is hydraulic fluid overheated?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Shut off engine. (Volume 1, WP 0057)
2. Allow hydraulic oil to cool. (Volume 1, WP 0057)

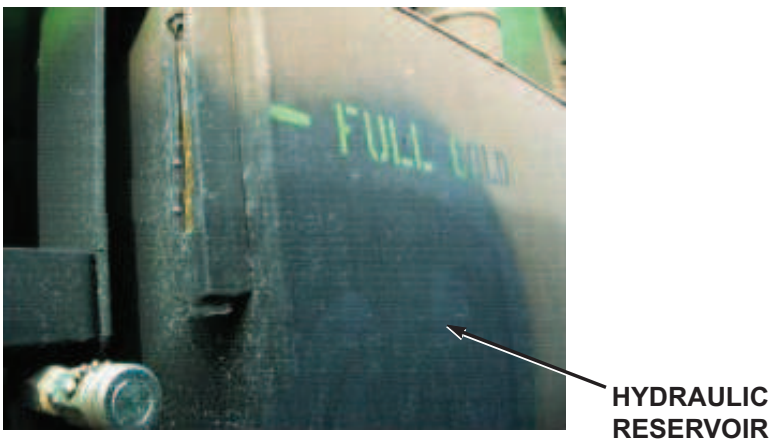


Figure 4.

CONDITION/INDICATION

Is hydraulic fluid overheated?

DECISION

-

Continue - Test 5 - Do crane controls operate normally after hydraulic fluid is at normal operating temperature?

TEST 5 - Do crane controls operate normally after hydraulic fluid is at normal operating temperature?

1. If off, start engine. (Volume 1, WP 0044)
2. Prepare vehicle for crane operation. (Volume 1, WP 0102)

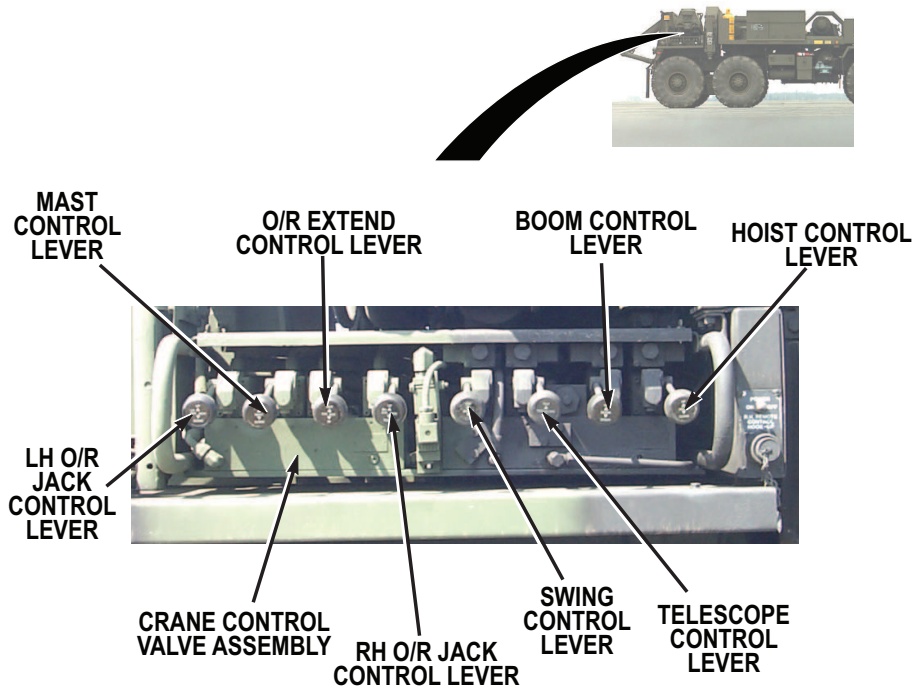


Figure 5.

3. Operate crane controls. (Volume 1, WP 0102)

CONDITION/INDICATION

Do crane controls operate normally after hydraulic fluid is at normal operating temperature?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CRANE WILL NOT OPERATE, OR OPERATES ABNORMALLY

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
CRANE WILL NOT OPERATE, OR OPERATES ABNORMALLY

TEST 1 - Is electrical connector on solenoid tight?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Check that electrical connector on solenoid valve is tight. If connector is loose, tighten.

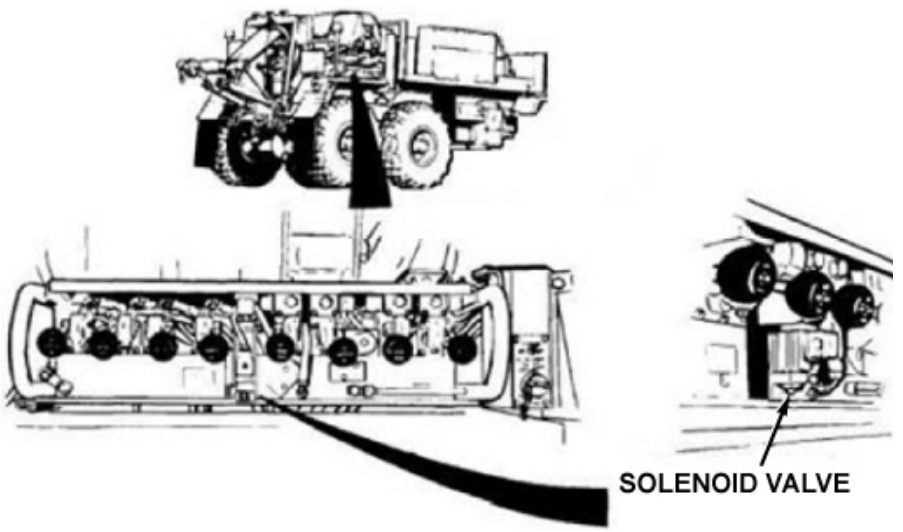


Figure 1.

CONDITION/INDICATION

Is electrical connector on solenoid tight?

DECISION

No - Test 3 - Does crane operate normally?

Yes - Test 2 - Does solenoid valve operate when power switch is set to ON?

TEST 2 - Does solenoid valve operate when power switch is set to ON?

1. Check solenoid for proper operation when power is turned to ON position. (Volume 1, WP 0102) If solenoid is faulty, place a screwdriver in slot on front of solenoid to hold solenoid closed (Volume 1, WP 0132) until mission can be completed.

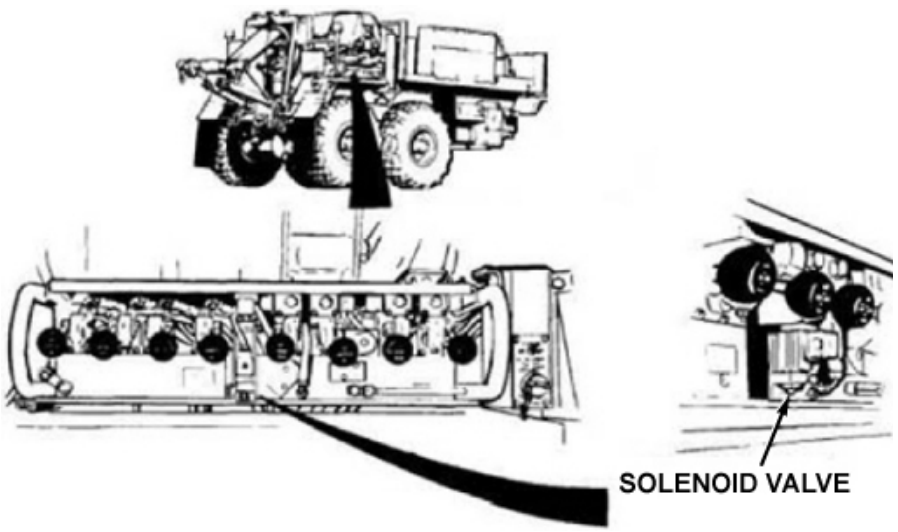


Figure 2.

CONDITION/INDICATION

Does solenoid valve operate when power switch is set to ON?

DECISION

No - Perform crane emergency hydraulic procedure. (Volume 1, WP 0132)
Yes - Notify Supervisor.

TEST 3 - Does crane operate normally?

1. Prepare vehicle for crane operation. (Volume 1, WP 0102)

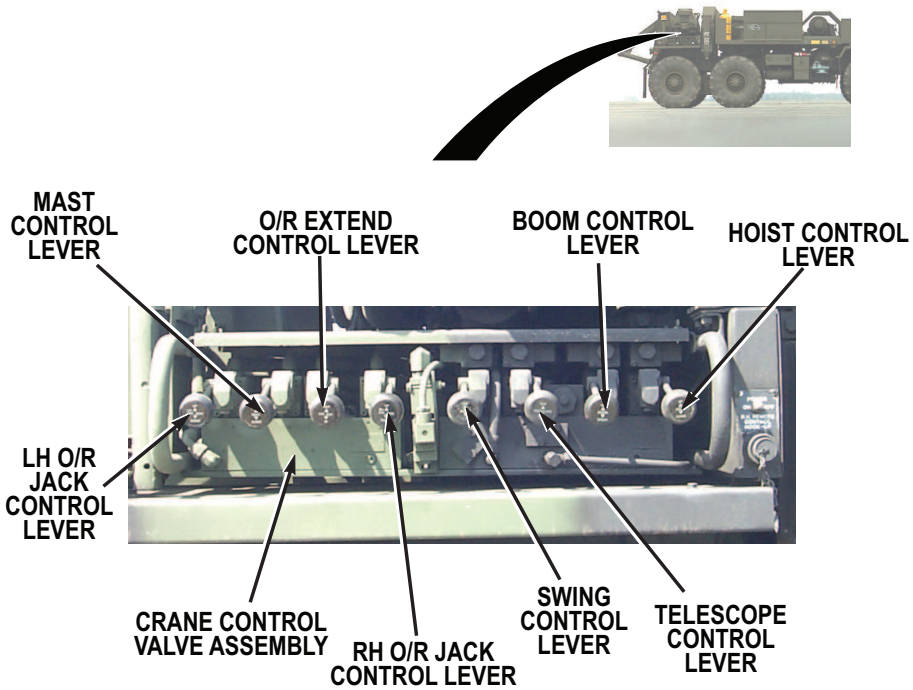


Figure 3.

2. Operate crane. (Volume 1, WP 0102)

CONDITION/INDICATION

Does crane operate normally?

DECISION

No - Notify supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
HOIST OPERATION SLOW OR ABNORMAL WHEN LIFTING OR LOWERING LOAD

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
HOIST OPERATION SLOW OR ABNORMAL WHEN LIFTING OR LOWERING LOAD

TEST 1 - Does hoist operate normally after removing air from motor?

CAUTION

Be sure to keep tension on cable. If tension is not maintained, cable may get tangled on drum.

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Set load down (Volume 1, WP 0102) and disconnect load hook.
2. Reel cable in and out several times to remove air from hoist motor.



Figure 1.

CONDITION/INDICATION

Does hoist operate normally after removing air from motor?

DECISION

No - Test 2 - Is hydraulic fluid at normal operating temperature?
Yes - Test 5 - Does hoist operate normally?

TEST 2 - Is hydraulic fluid at normal operating temperature?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

NOTE

If outside temperature is 0°F (-17°C) or lower, hydraulic fluid may not flow easily.

1. Check hydraulic fluid temperature at reservoir.

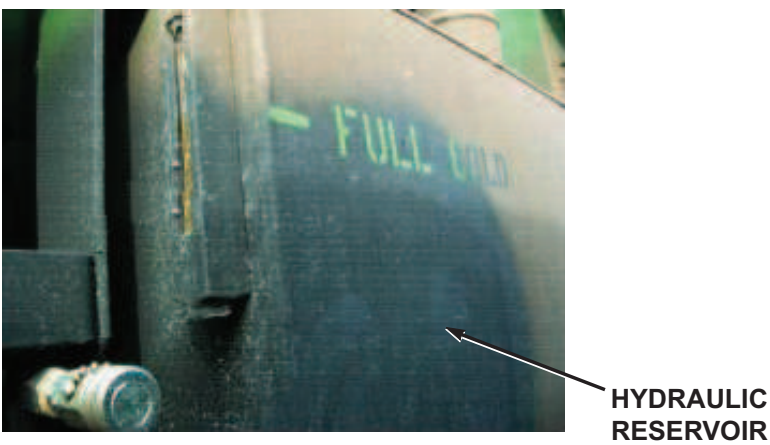


Figure 2.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature?

DECISION

No - Test 3 - Is hydraulic fluid at normal operating temperature after running engine for 20 minutes with PTO engaged?

Yes - Test 5 - Does hoist operate normally?

TEST 3 - Is hydraulic fluid at normal operating temperature after running engine for 20 minutes with PTO engaged?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Lower crane to stowed position. (Volume 1, WP 0102)
2. Operate engine (Volume 1, WP 0044) for 20 minutes with PTO engaged to bring hydraulic fluid up to operating temperature.
3. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

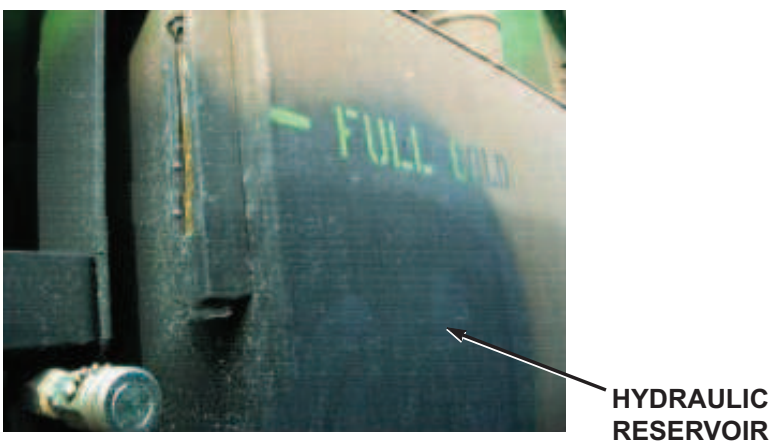


Figure 3.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature after running engine for 20 minutes with PTO engaged?

DECISION

No - Test 4 - Is hydraulic fluid at normal operating temperature after cycling mast control down?

Yes - Test 5 - Does hoist operate normally?

TEST 4 - Is hydraulic fluid at normal operating temperature after cycling mast control down?

1. Ensure crane is lowered to stowed position. (Volume 1, WP 0102)
2. Operate MAST control DOWN. (Volume 1, WP 0102) Hold MAST control DOWN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

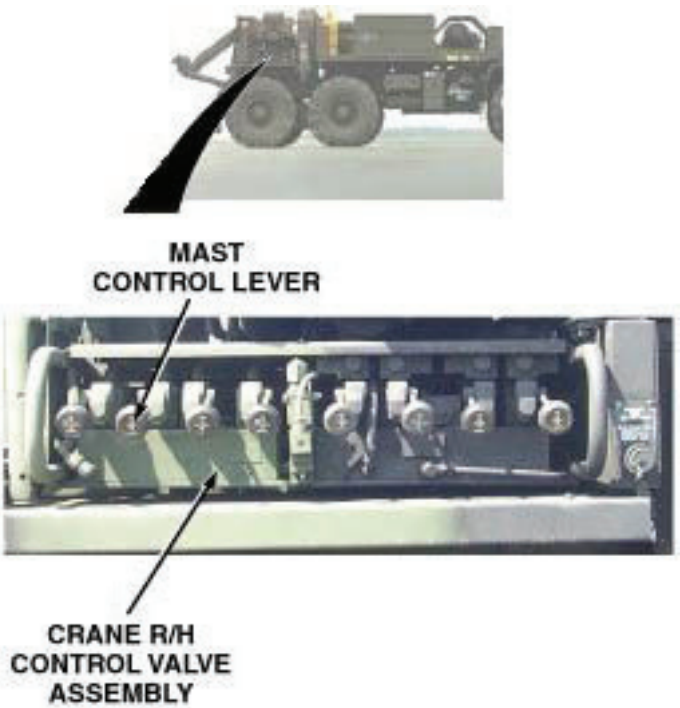


Figure 4.

3. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature after cycling mast control down?

DECISION

No - Notify Supervisor.

Yes - Test 5 - Does hoist operate normally?

TEST 5 - Does hoist operate normally?

1. If stowed, raise crane to operating position. (Volume 1, WP 0102)
2. Operate hoist. (Volume 1, WP 0102)



Figure 5.

CONDITION/INDICATION

Does hoist operate normally?

DECISION

No - Notify supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
HOIST WILL NOT LIFT LOAD

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
HOIST WILL NOT LIFT LOAD

TEST 1 - Is load within allowable limits?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Check that load is not over load limit. If load is found to be over-limit, reduce weight to below load limit.

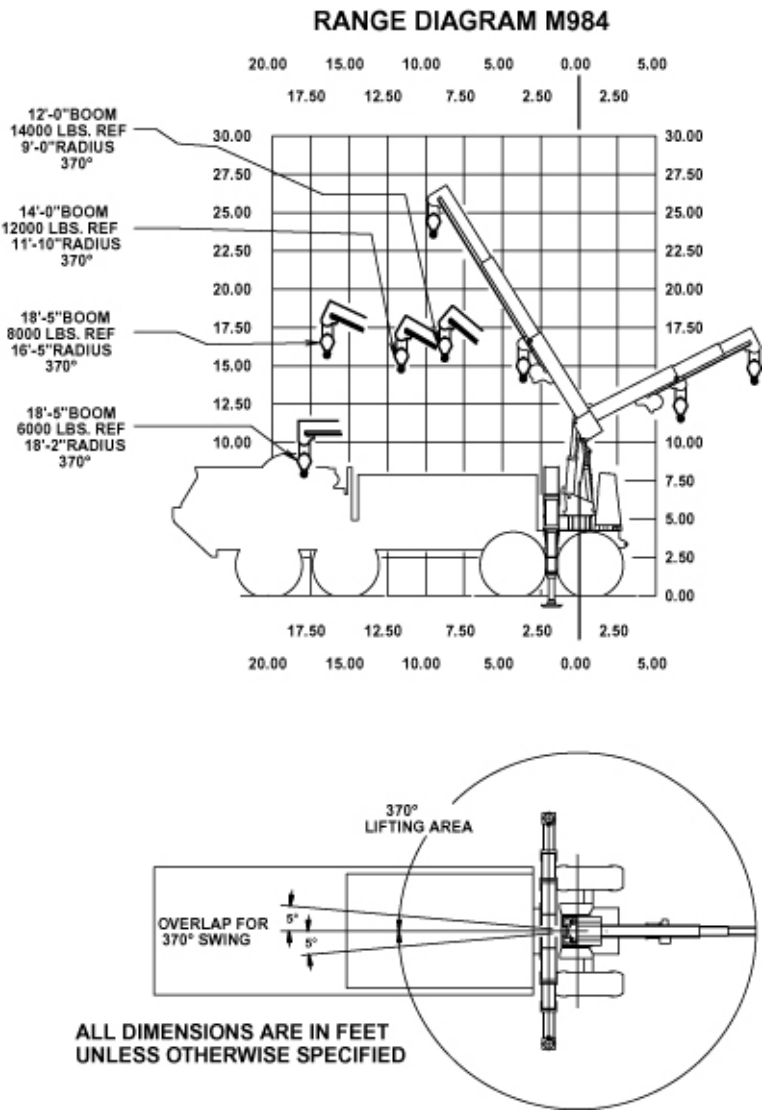


Figure 1.

CONDITION/INDICATION

Is load within allowable limits?

DECISION

No - Test 2 - Does hoist lift load?
Yes - Notify Supervisor.

TEST 2 - Does hoist lift load?

1. Operate hoist up and down. (Volume 1, WP 0102)

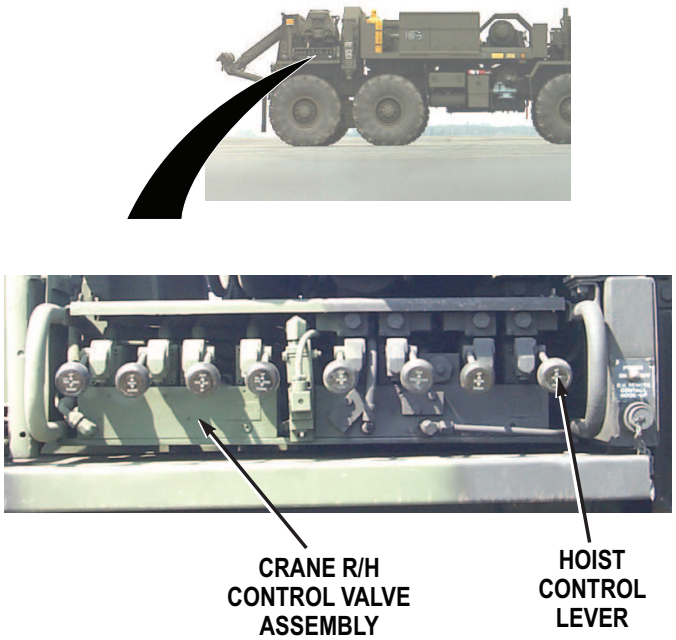


Figure 2.

CONDITION/INDICATION

Does hoist lift load?

DECISION

No - Notify supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
MAST RAISES OR LOWERS ABNORMALLY

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
MAST RAISES OR LOWERS ABNORMALLY

TEST 1 - Does mast raise and lower normally after cycling mast up and down to remove trapped air?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Fully raise and lower mast (Volume 1, WP 0102) several times to remove air from cylinders.

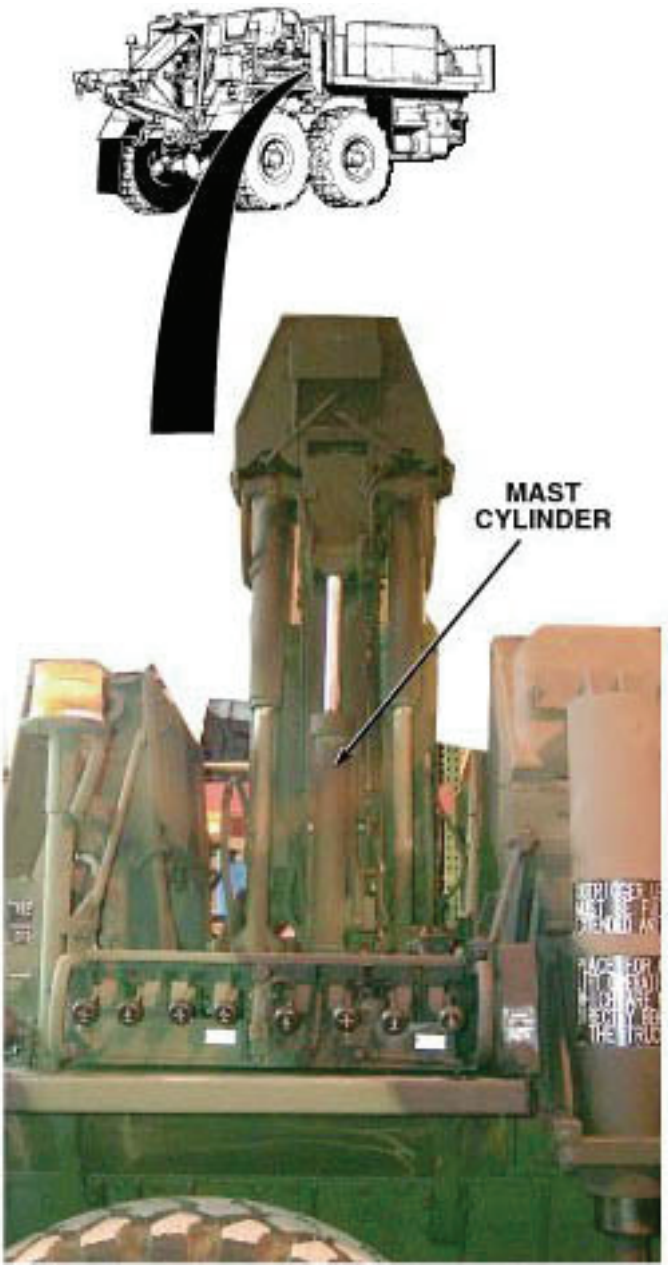


Figure 1.

CONDITION/INDICATION

Does mast raise and lower normally after cycling mast up and down to remove trapped air?

DECISION

- Notify supervisor. Test 2 - Does mast operate normally after leaving mast in fully raised position overnight?
Yes - Problem corrected.
- Notify supervisor. Test 2 - Does mast operate normally after leaving mast in fully raised position overnight?
No - Problem corrected.

TEST 2 - Does mast operate normally after leaving mast in fully raised position overnight?

1. Raise boom to vertical position.

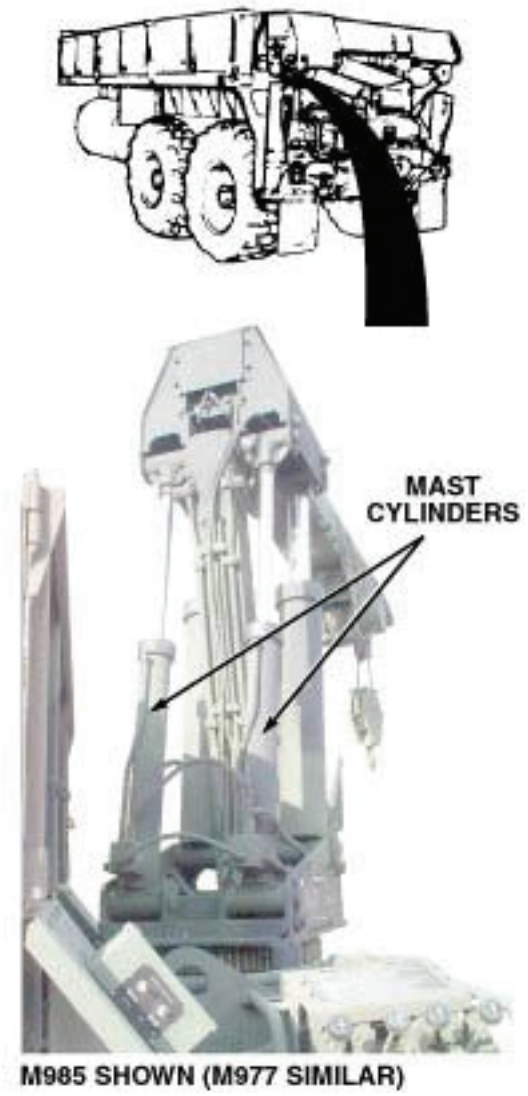


Figure 2.

2. Fully raise mast.
3. Shut down operation and leave mast in raised position overnight.
4. Start engine. (Volume 1, WP 0044)
5. Prepare vehicle for crane operations.

NOTE

When starting operations, operate mast control down (not up) first. Operating controls UP could force air back into cylinders.

6.
7. Lower and raise mast.

CONDITION/INDICATION

Does mast operate normally after leaving mast in fully raised position overnight?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
MAST RAISES OR LOWERS SLOWLY

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
MAST RAISES OR LOWERS SLOWLY

TEST 1 - Does mast raise and lower normally after running engine for 20 minutes with PTO engaged?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.
If outside temperature is 0°F (-17°C), hydraulic fluid may not flow easily.

1. If loaded, set load down (Volume 1, WP 0102) and disconnect load hook.
2. Operate engine (Volume 1, WP 0044) for 20 minutes with HYD ENABLE switch set to ON to bring hydraulic fluid up to operating temperature.

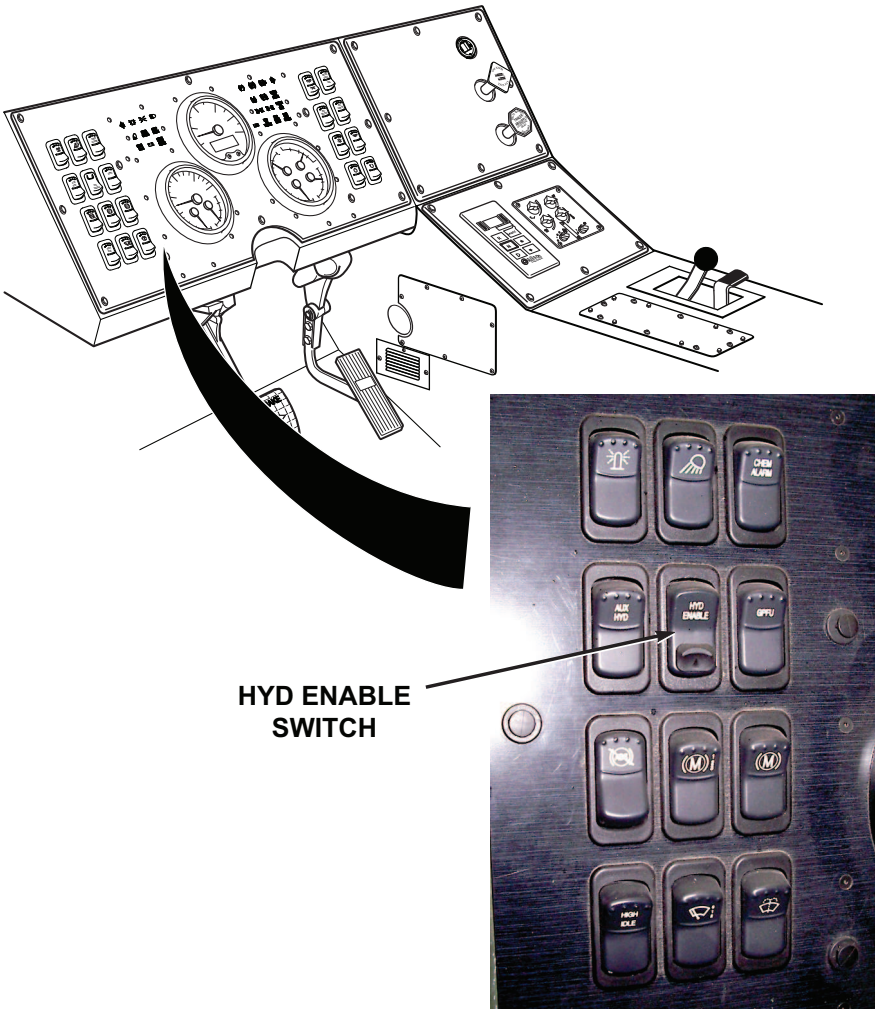


Figure 1.

3. Raise and lower mast. (Volume 1, WP 0102)

CONDITION/INDICATION

Does mast raise and lower normally after running engine for 20 minutes with PTO engaged?

DECISION

No - Test 2 - Does mast raise and lower normally after cycling mast?
Yes - Problem corrected.

TEST 2 - Does mast raise and lower normally after cycling mast?

1. Lower crane to stowed position. (Volume 1, WP 0102)
2. Operate MAST control DOWN. (Volume 1, WP 0102) Hold MAST control DOWN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

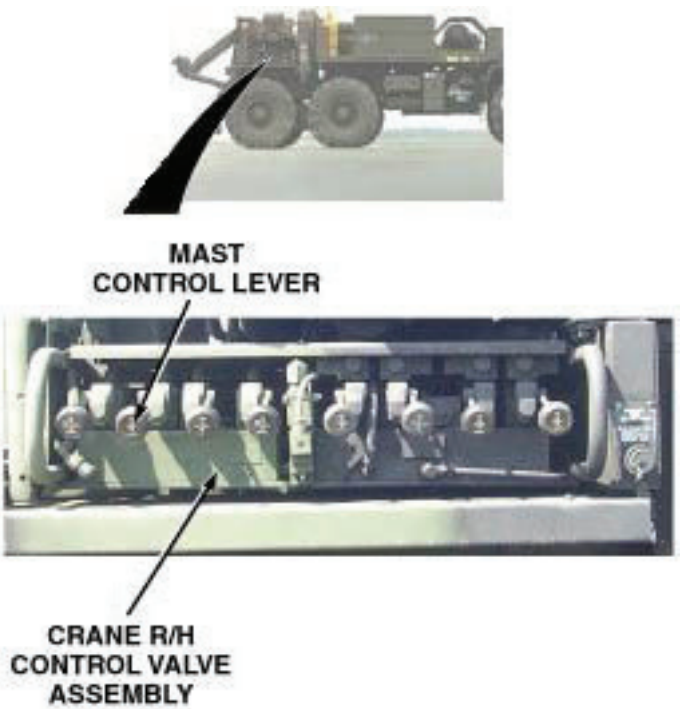


Figure 2.

3. Raise and lower mast. (Volume 1, WP 0102)

CONDITION/INDICATION

Does mast raise and lower normally after cycling mast?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OUTRIGGER OPERATION SLOW OR ABNORMAL

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
OUTRIGGER OPERATION SLOW OR ABNORMAL

TEST 1 - Is hydraulic fluid at normal operating temperature?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.
If outside temperature is 0°F (-17°C) or lower, hydraulic fluid may not flow easily.

1. Check hydraulic fluid temperature at reservoir.



Figure 1.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature?

DECISION

No - Test 2 - Is hydraulic fluid at normal operating temperature after running engine for 20 minutes with PTO engaged?

Yes - Test 4 - Do outriggers operate normally?

TEST 2 - Is hydraulic fluid at normal operating temperature after running engine for 20 minutes with PTO engaged?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Start engine. (Volume 1, WP 0044)
2. Set HYD ENABLE switch to ON. (Volume 1, WP 0102)

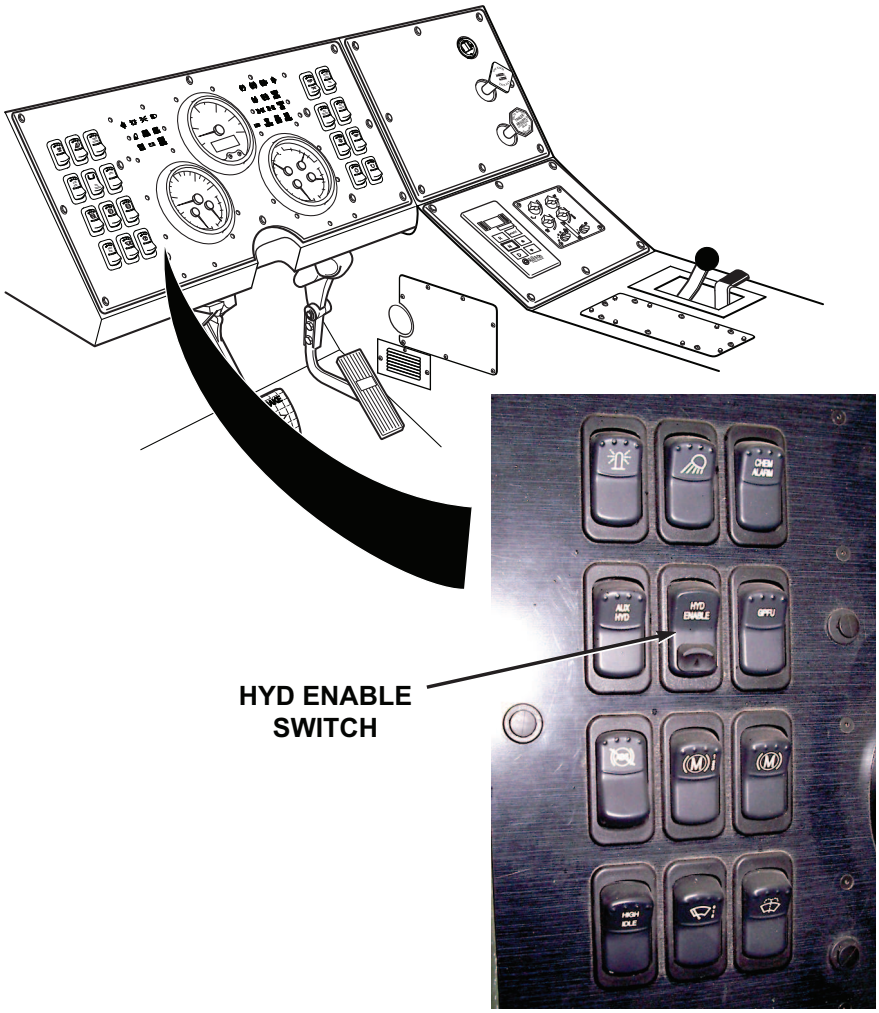


Figure 2.

3. Operate engine (Volume 1, WP 0044) for 20 minutes with PTO enabled to bring hydraulic fluid up to operating temperature.
4. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature after running engine for 20 minutes with PTO engaged?

DECISION

No - Test 3 - Is hydraulic fluid at normal operating temperature normal operating temperature after cycling mast control down?

Yes - Test 4 - Do outriggers operate normally?

TEST 3 - Is hydraulic fluid at normal operating temperature normal operating temperature after cycling mast control down?

1. Ensure crane is lowered to stowed position. (Volume 1, WP 0102)
2. Operate MAST control DOWN. (Volume 1, WP 0102) Hold MAST control DOWN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

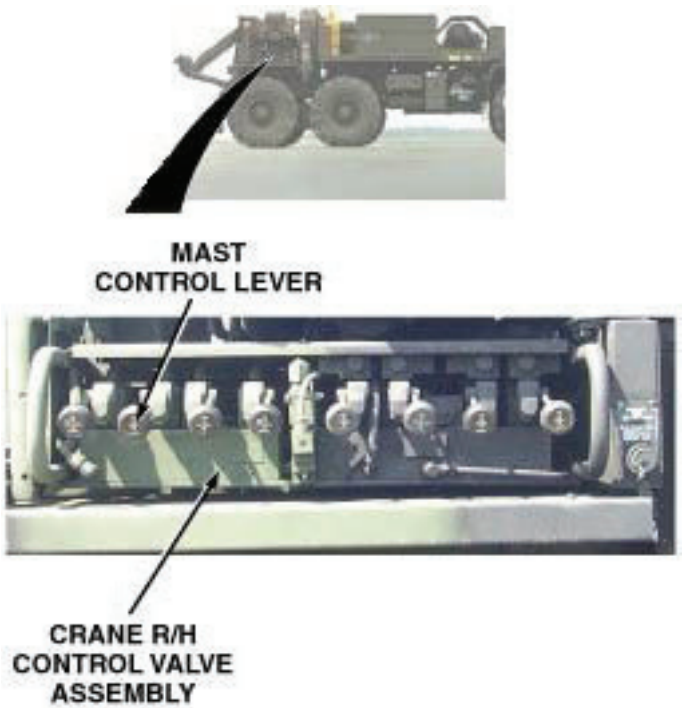


Figure 3.

3. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature normal operating temperature after cycling mast control down?

DECISION

No - Notify Supervisor.

Yes - Test 4 - Do outriggers operate normally?

TEST 4 - Do outriggers operate normally?

1. Ensure crane is lowered to stowed position. (Volume 1, WP 0102)
2. Operate outrigger. (Volume 1, WP 0102)

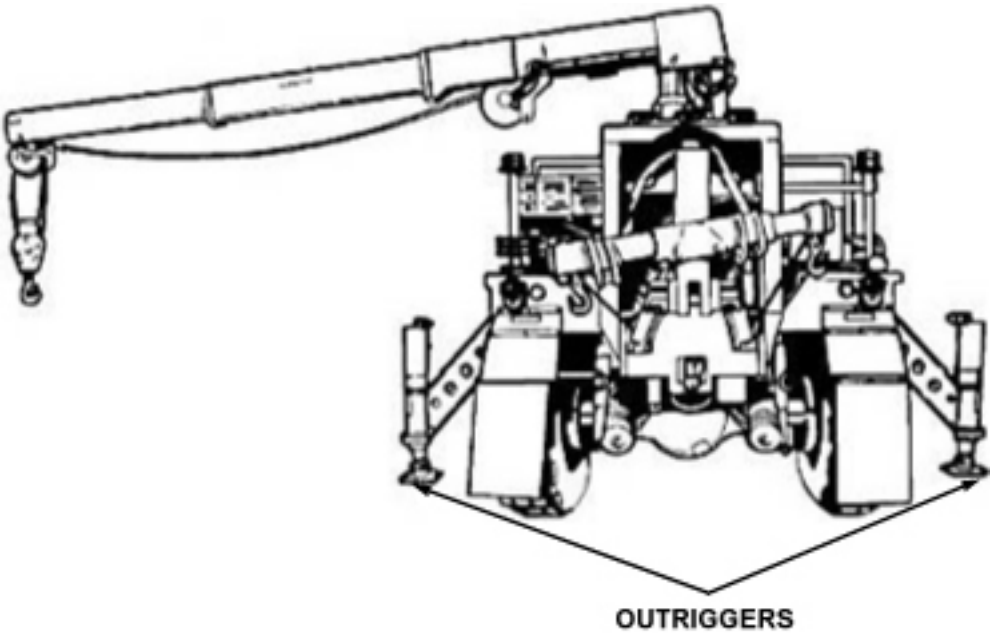


Figure 4.

CONDITION/INDICATION

Do outriggers operate normally?

DECISION

No - Test 5 - Do outriggers operate normally after purging cylinders of air?
Yes - Problem corrected.

TEST 5 - Do outriggers operate normally after purging cylinders of air?

1. Fully let out and draw back outriggers (Volume 1, WP 0102) several times to remove air from cylinders.

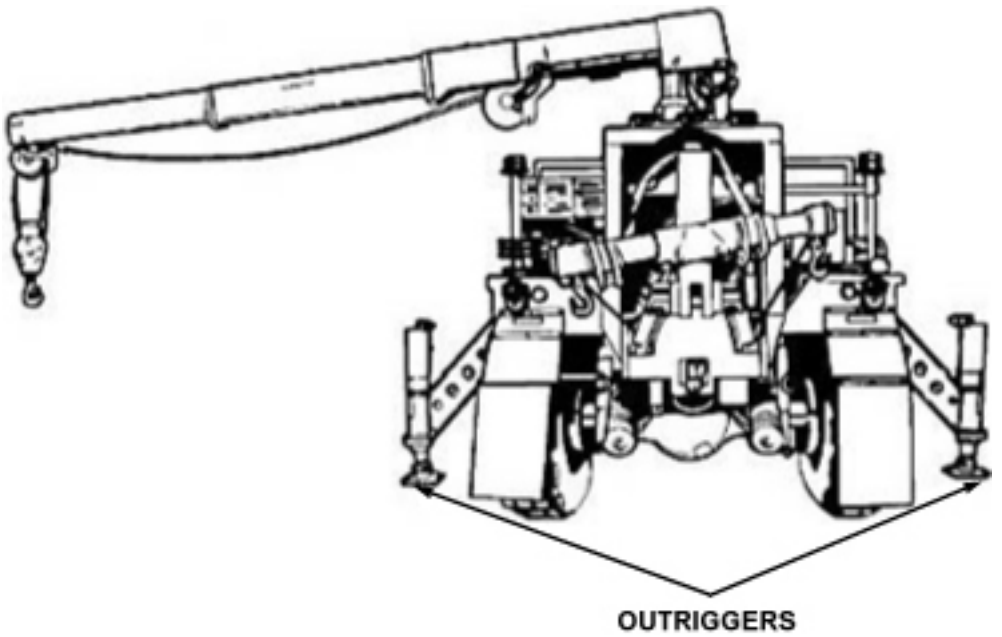


Figure 5.

2. Operate outriggers (Volume 1, WP 0102)

CONDITION/INDICATION

Do outriggers operate normally after purging cylinders of air?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
SWING OPERATION ABNORMAL IN BOTH DIRECTIONS

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
SWING OPERATION ABNORMAL IN BOTH DIRECTIONS

TEST 1 - Are control levers returned to neutral properly?

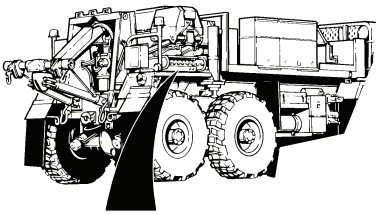
NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Verify that abnormal operation is not due to sharp movement of controls to NEUTRAL position.



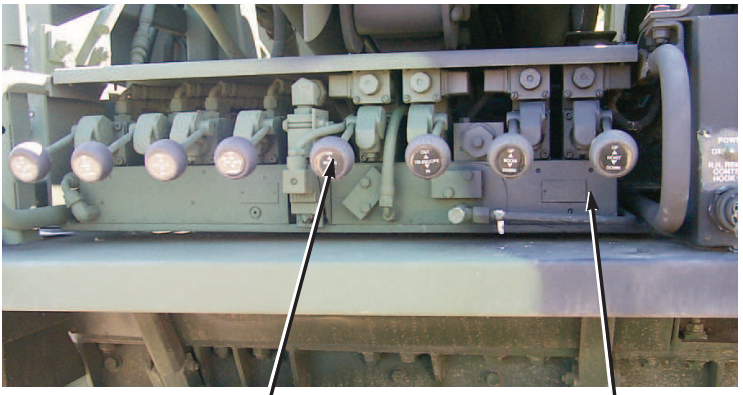


Figure 1.

2. Feather control lever to NEUTRAL (Volume 1, WP 0102) to maintain smooth stopping action.

CONDITION/INDICATION

Are control levers returned to neutral properly?

DECISION

No - Test 2 - Is vehicle level?
Yes - Problem corrected.

TEST 2 - Is vehicle level?

1. Check if vehicle is level.



Figure 2.

CONDITION/INDICATION

Is vehicle level?

DECISION

- Level vehicle. (Volume 1, WP 0102)Level vehicle.

Yes - Test 3 - Is turntable bearing properly lubricated?

- Level vehicle. (Volume 1, WP 0102)Level vehicle.

No - Test 3 - Is turntable bearing properly lubricated?

TEST 3 - Is turntable bearing properly lubricated?

1. Check turntable bearing for proper lubrication.

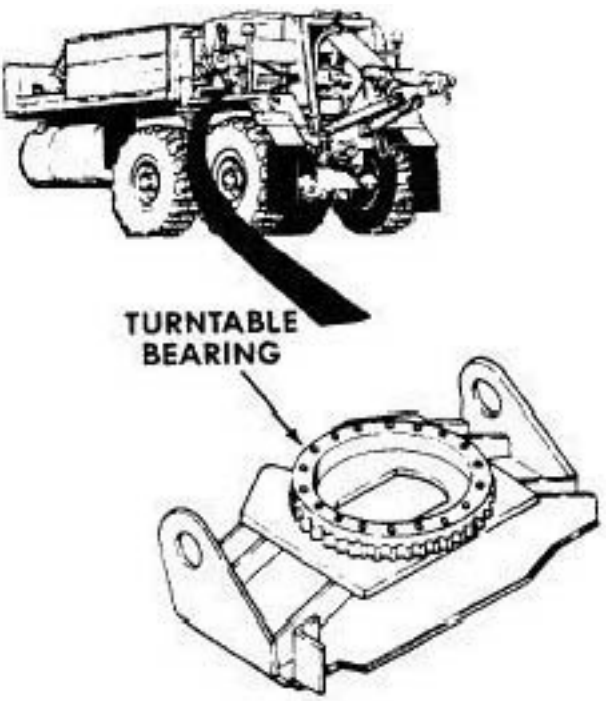


Figure 3.

2. If improperly lubricated, rotate turntable 360 degrees (Volume 1, WP 0102) in both directions several times, and lubricate turntable bearing. (WP 0184)

CONDITION/INDICATION

Is turntable bearing properly lubricated?

DECISION

- Test 5 - Does swing operate normally?

Yes - Test 4 - Is load within allowable limit?

- Test 5 - Does swing operate normally?

No - Test 4 - Is load within allowable limit?

TEST 4 - Is load within allowable limit?

1. Verify that load is below weight limit.

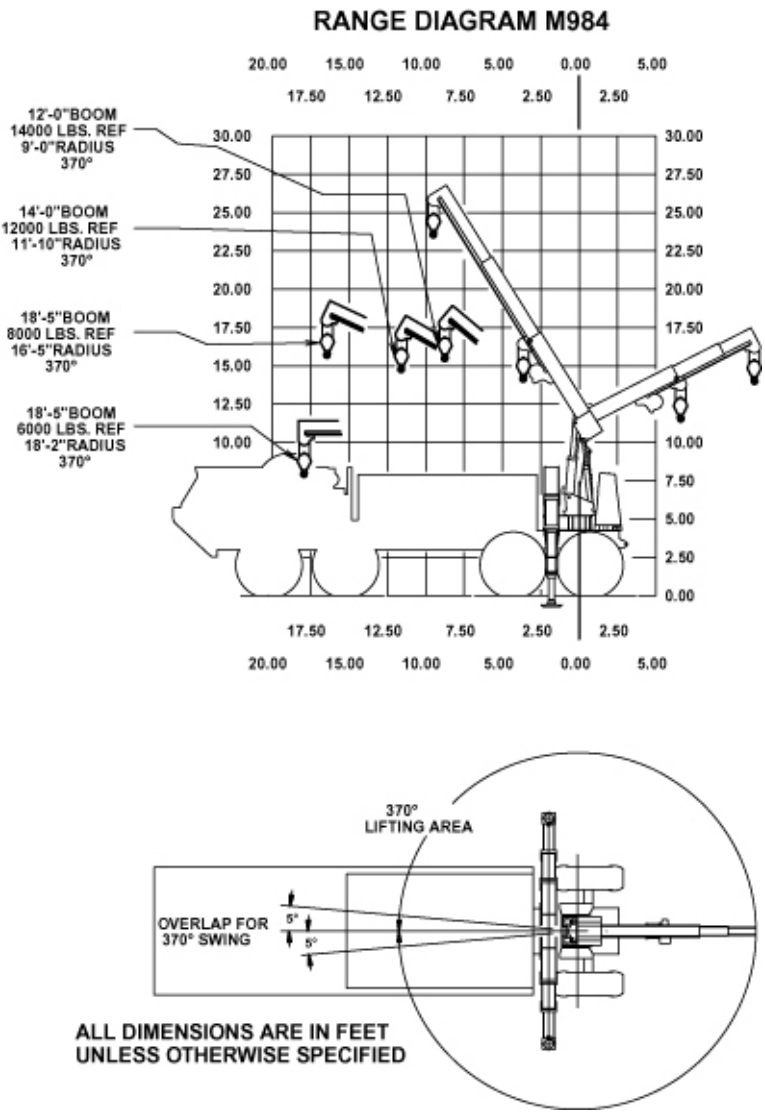


Figure 4.

2. If above weight limit, remove weight to decrease it to below the limit.

CONDITION/INDICATION

Is load within allowable limit?

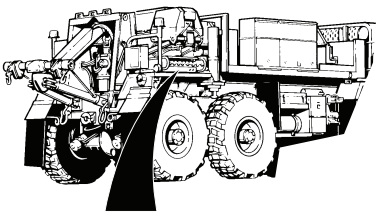
DECISION

No - Test 5 - Does swing operate normally?

Yes - Notify Supervisor.

TEST 5 - Does swing operate normally?

1. Operate crane (Volume 1, WP 0102) to verify proper operation of swing.



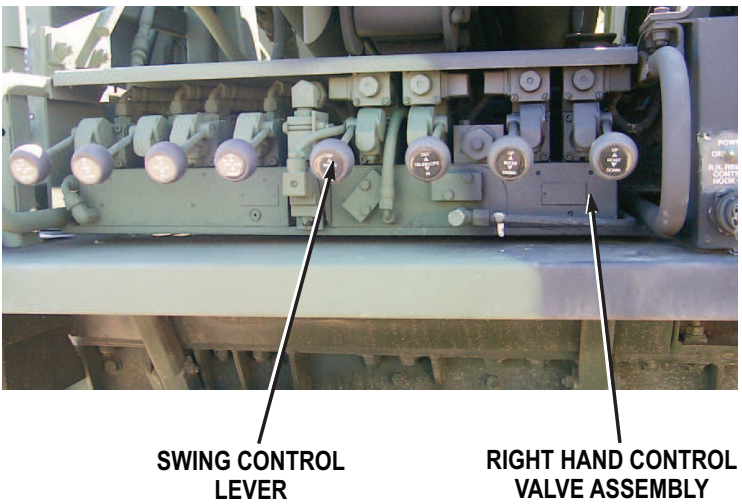


Figure 5.

CONDITION/INDICATION

Does swing operate normally?

DECISION

No - Notify Supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
SWING OPERATION ABNORMAL IN ONLY ONE DIRECTION

INITIAL SETUP:

Equipment Condition
Vehicle setup for crane operations.
(Volume 1, WP 0102)

TROUBLESHOOTING PROCEDURE
SWING OPERATION ABNORMAL IN ONLY ONE DIRECTION

TEST 1 - Is vehicle level?

NOTE

Common problems that crane operators may see are:
1. Slow or abnormal operation.
2. Crane will not pick up load.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two craning functions at the same time (slow operation).
4. Load too heavy (crane will not pick up load).
5. Air in cylinder or hoist motor (abnormal operation).

Report all problems to organizational maintenance.

1. Check if vehicle is level.



Figure 1.

CONDITION/INDICATION

Is vehicle level?

DECISION

Vehicle not level. - Level vehicle.

Vehicle level. - Test 2 - Is turntable bearing properly lubricated?

TEST 2 - Is turntable bearing properly lubricated?

1. Check turntable bearing for proper lubrication.

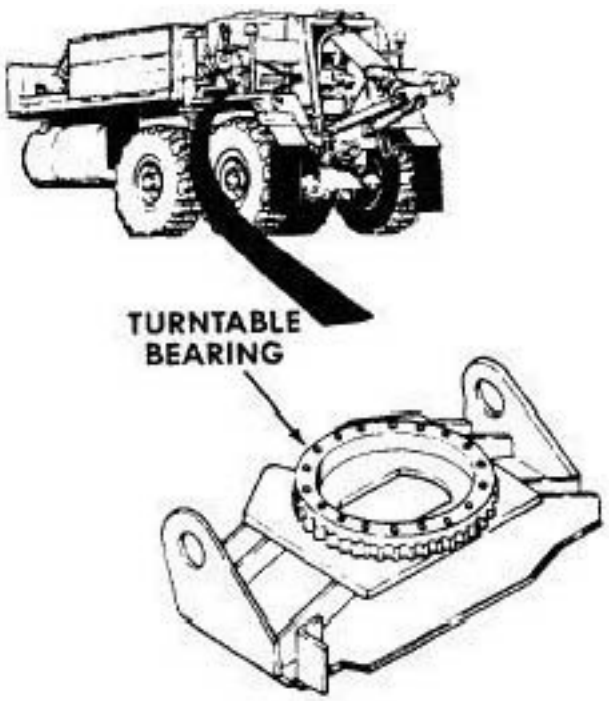


Figure 2.

2. If improperly lubricated, rotate turntable 360 degrees (Volume 1, WP 0102) in both directions several times, and lubricate turntable bearing. (WP 0184).

CONDITION/INDICATION

Is turntable bearing properly lubricated?

DECISION

- Test 3 - Does swing operate normally?

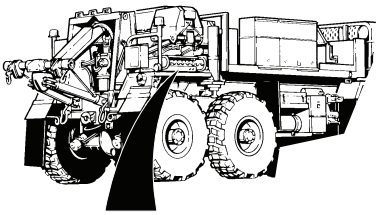
Yes - Test 3 - Does swing operate normally?

- Test 3 - Does swing operate normally?

No - Test 3 - Does swing operate normally?

TEST 3 - Does swing operate normally?

1. Operate crane (Volume 1, WP 0102) to verify proper operation of swing.



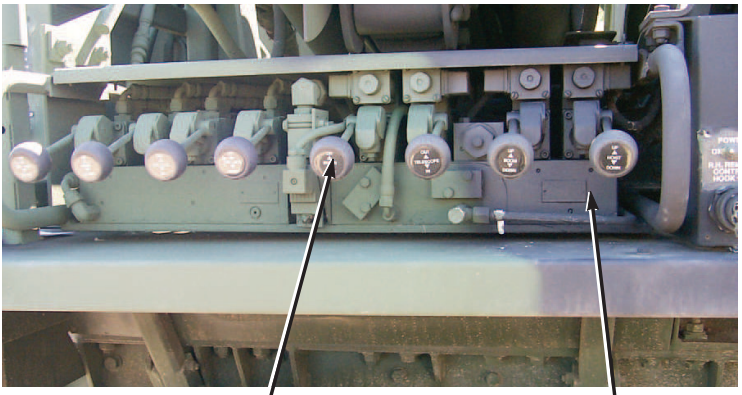


Figure 3.

CONDITION/INDICATION

Does swing operate normally?

DECISION

No - Notify supervisor.

Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CONTROLS STICKING IN ENGAGED POSITION

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
CONTROLS STICKING IN ENGAGED POSITION

TEST 1 - Is hydraulic fluid at normal operating temperature?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

NOTE

Common problems with retrieval system that may be found are:
1. Slow or abnormal operation.
2. Will not lift disabled vehicle.
3. Will not hold disabled vehicle in raised position.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two retrieval functions at the same time (slow operation).
4. Low hydraulic fluid.

Report all problems to organizational maintenance.

NOTE

If outside temperature is 0°F (-17°C) or lower, hydraulic fluid may not flow easily.

1. Check hydraulic fluid temperature at reservoir.

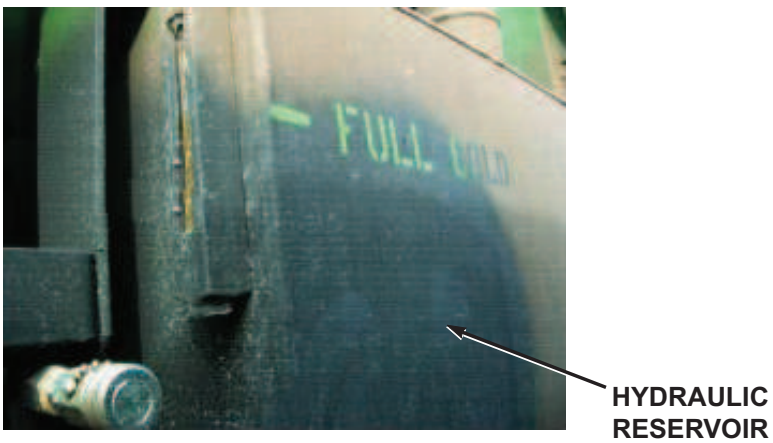


Figure 1.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature?

DECISION

Hydraulic fluid is below normal operating temperature. - Test 2 - Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes?Test 4 - Hydraulic fluid overheated.

Hydraulic fluid is at normal operating temperature. - Test 5 - Do retrieval controls operate normally?

TEST 2 - Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir.

Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Start engine. (Volume 1, WP 0044)
2. Set HYD ENABLE switch to ON. (Volume 1, WP 0059)

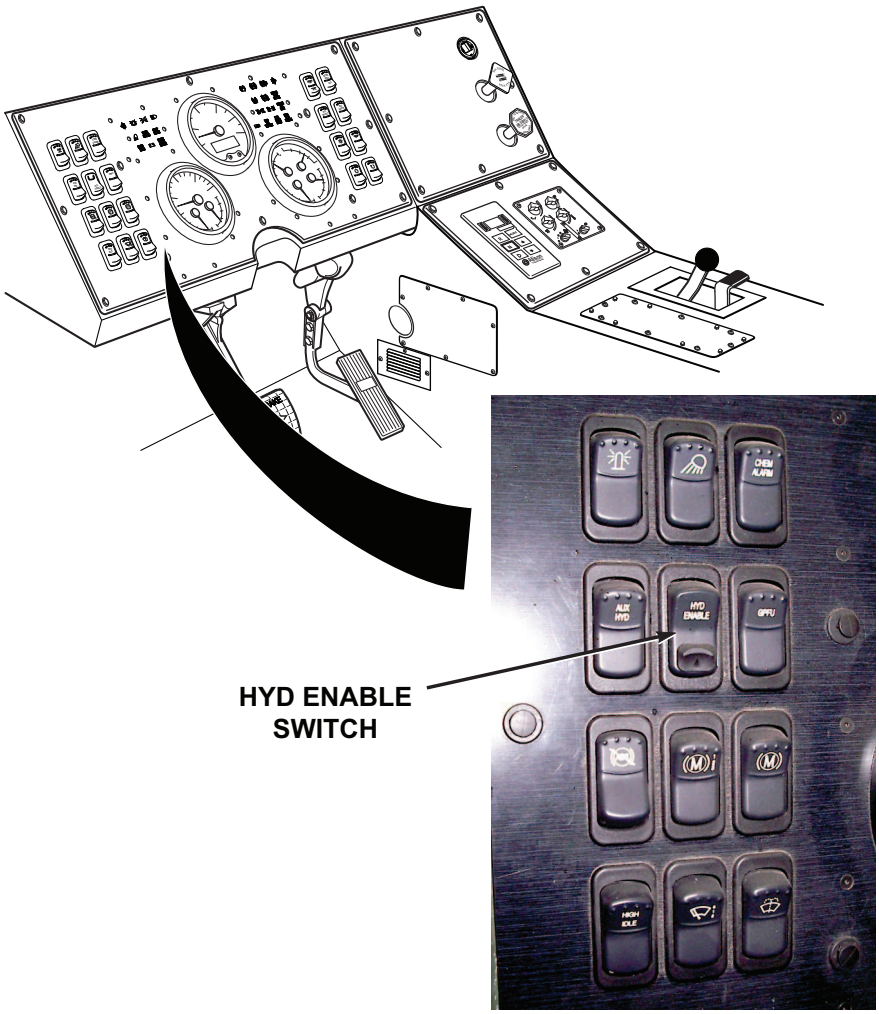


Figure 2.

3. Operate engine (Volume 1, WP 0044) for 20 minutes with PTO enabled to bring hydraulic fluid up to operating temperature.
4. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes?

DECISION

Hydraulic fluid is below normal operating temperature. - Test 3 - Does hydraulic fluid reach normal operating temperature after cycling lift cylinder control?Test 4 - Hydraulic fluid overheated.

Hydraulic fluid is at normal operating temperature. - Test 5 - Do retrieval controls operate normally?

TEST 3 - Does hydraulic fluid reach normal operating temperature after cycling lift cylinder control?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Operate LIFT CYLINDER control IN. (Volume 1, WP 0059) Hold LIFT CYLINDER control IN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

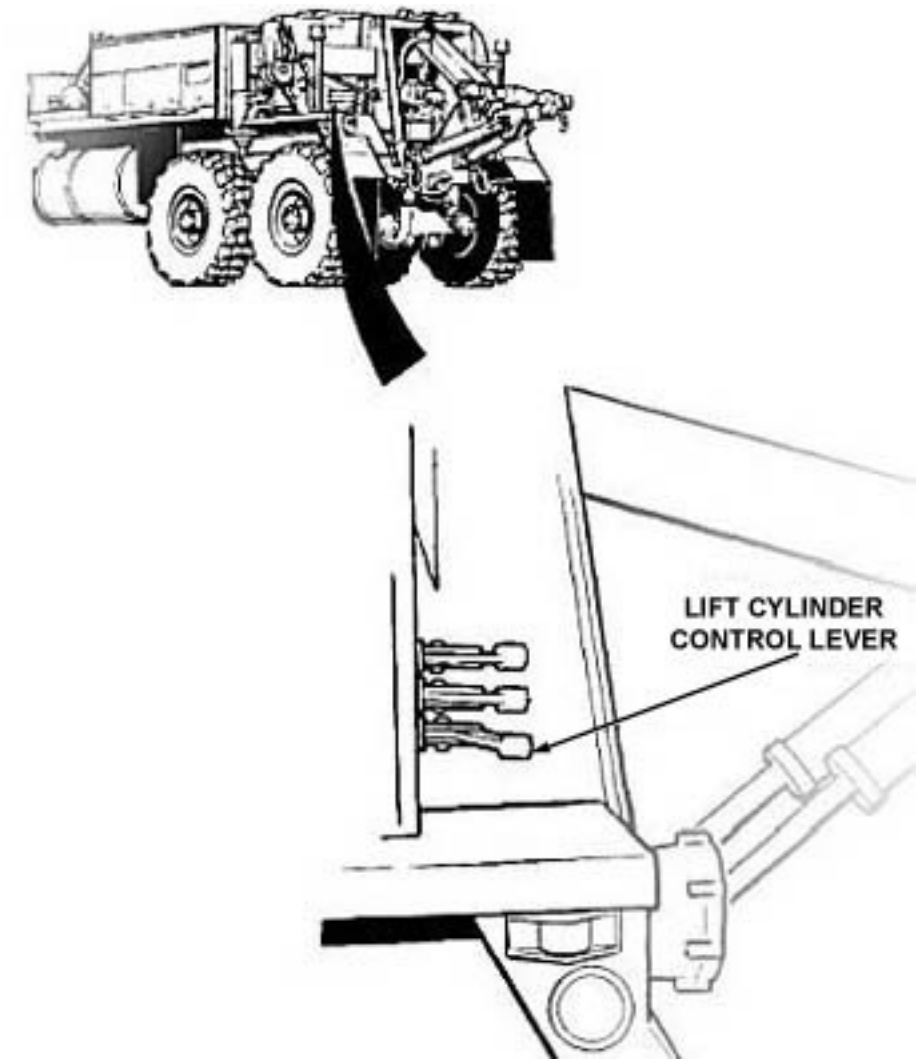


Figure 3.

2. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Does hydraulic fluid reach normal operating temperature after cycling lift cylinder control?

DECISION

Hydraulic fluid is below normal operating temperature. - Notify supervisor. Test 4 - Hydraulic fluid overheated.

Hydraulic fluid is at normal operating temperature. - Test 5 - Do retrieval controls operate normally?

TEST 4 - Hydraulic fluid overheated.

1. Set HYD ENABLE switch to OFF.

WARNING



Some models of fuel tanks have a socket head pipe plug. Others have a fusible socket head pipe plug. Fusible socket head pipe plug must be used with non-vented tank cap. Failure to comply may result in injury or death to personnel and damage to equipment. Refer to TM 9-2320-315-14&P for proper identification of parts.

2. Shut off engine. (Volume 1, WP 0057)

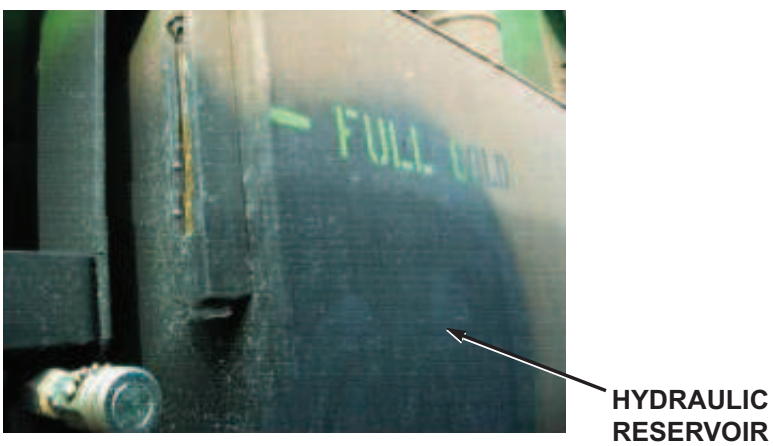


Figure 4.

3. Allow hydraulic oil to cool.

CONDITION/INDICATION

Hydraulic fluid overheated.

DECISION

-

Continue - Test 5 - Do retrieval controls operate normally?

TEST 5 - Do retrieval controls operate normally?

1. If off, start engine. (Volume 1, WP 0044)
2. Prepare vehicle for retrieval system operation. (Volume 1, WP 0059)
3. Operate retrieval system controls. (Volume 1, WP 0059)

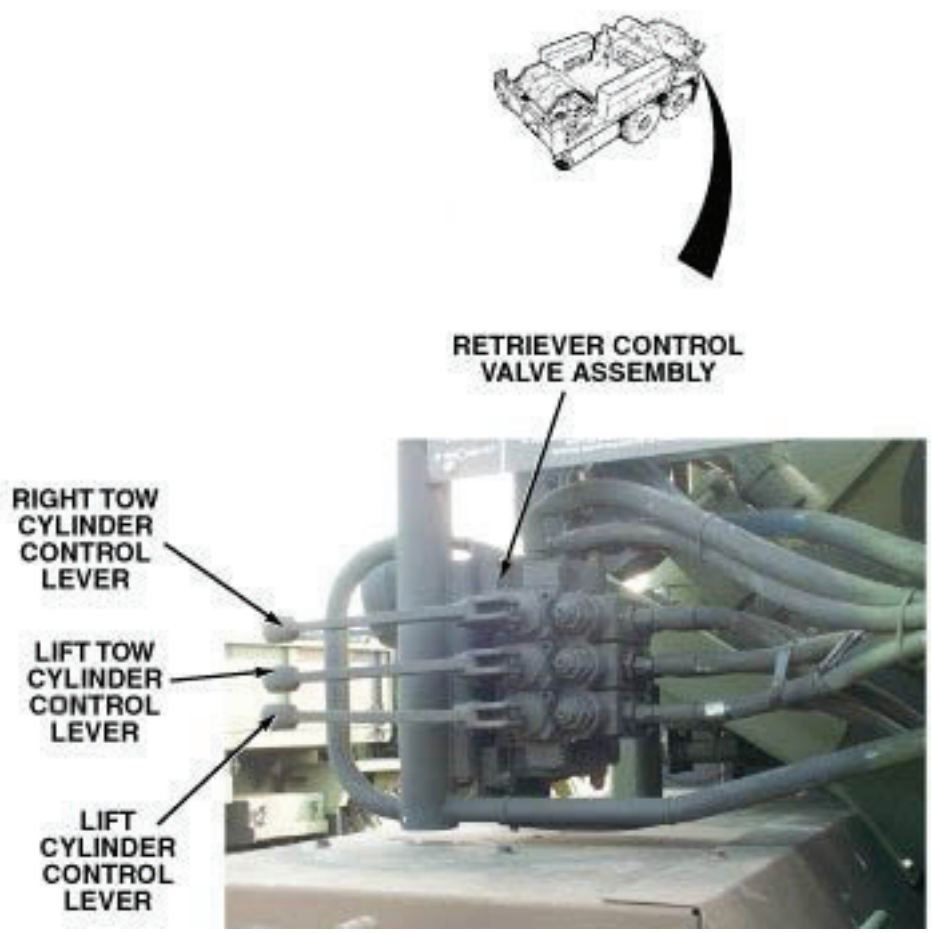


Figure 5.

CONDITION/INDICATION

Do retrieval controls operate normally?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
RETRIEVAL CYLINDERS RAISE OR LOWER SLOWLY

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
RETRIEVAL CYLINDERS RAISE OR LOWER SLOWLY

TEST 1 - Is hydraulic fluid at normal operating temperature?

NOTE

Common problems with retrieval system that may be found are:
1. Slow or abnormal operation.
2. Will not lift disabled vehicle.
3. Will not hold disabled vehicle in raised position.

Common causes of the problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two retrieval functions at the same time (slow operation).
4. Low hydraulic fluid.

Report all problems to organizational maintenance.

1. Check hydraulic fluid temperature at reservoir.

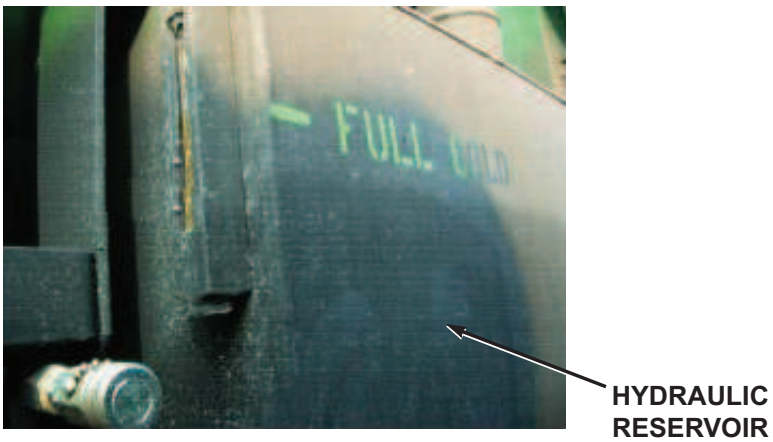


Figure 1.

WARNING

Some models of fuel tanks have a socket head pipe plug. Others have a fusible socket head pipe plug. Fusible socket head pipe plug must be used with non-vented tank cap. Failure to comply may result in injury or death to personnel and damage to equipment. Refer to TM 9-2320-315-14&P for proper identification of parts.

NOTE

If outside temperature is 0°F (-17°C) or lower, hydraulic fluid may not flow easily.

2.

CONDITION/INDICATION

Is hydraulic fluid at normal operating temperature?

DECISION

No - Test 2 - Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?

Yes - Test 4 - Do the retrieval cylinders operate normally?

TEST 2 - Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Start engine. (Volume 1, WP 0044)
2. Set HYD ENABLE switch to ON. (Volume 1, WP 0059)

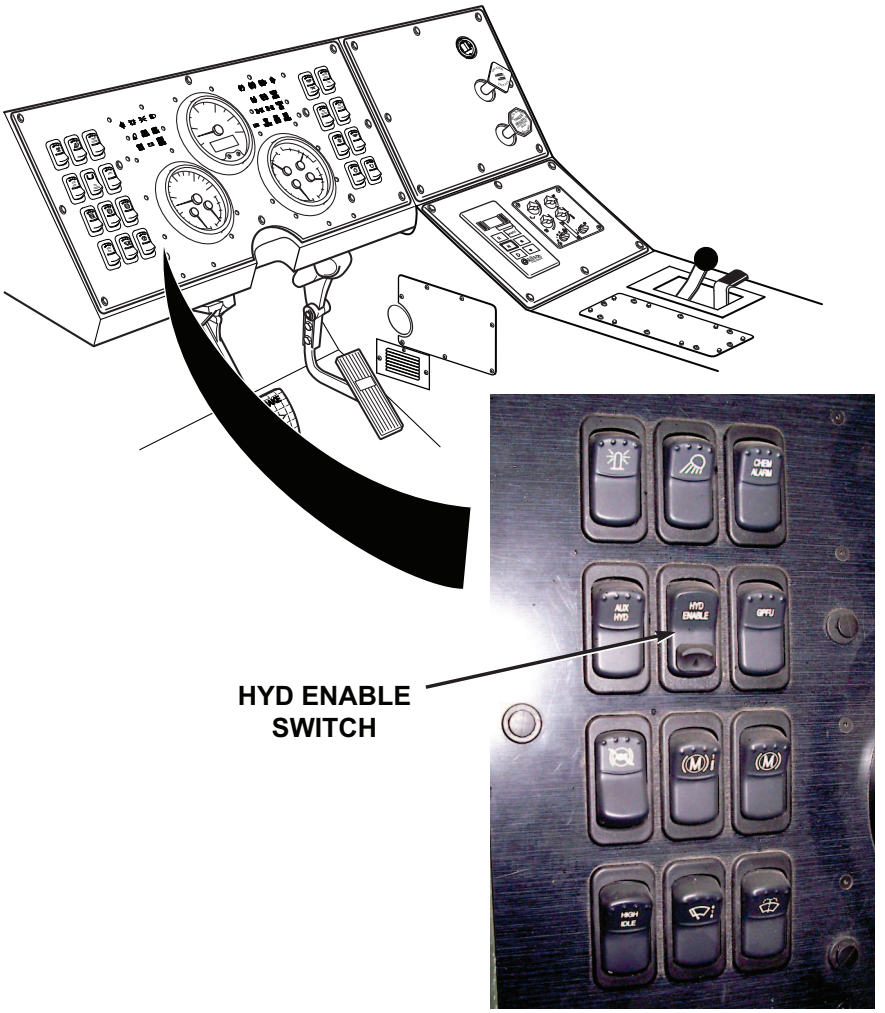


Figure 2.

3. Operate engine (Volume 1, WP 0044) for 20 minutes with PTO enabled to bring hydraulic fluid up to operating temperature.
4. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Does hydraulic fluid reach normal operating temperature after running engine for 20 minutes with PTO engaged?

DECISION

No - Test 3 - Does hydraulic fluid reach normal operating temperature after cycling lift cylinder control?

Yes - Test 4 - Do the retrieval cylinders operate normally?

TEST 3 - Does hydraulic fluid reach normal operating temperature after cycling lift cylinder control?

WARNING



Reservoir may be very hot. Use care when placing hand near reservoir. Reservoir can become hot enough to cause serious burns. Be careful not to touch the reservoir with bare hands or allow body to contact reservoir. Use gloves and insulated pads as necessary. Failure to comply may result in injury or death to personnel.

1. Operate LIFT CYLINDER control IN. (Volume 1, WP 0059) Hold LIFT CYLINDER control IN for approximately 30 seconds, then return control to NEUTRAL position. Repeat procedure several times until hydraulic fluid is warmed.

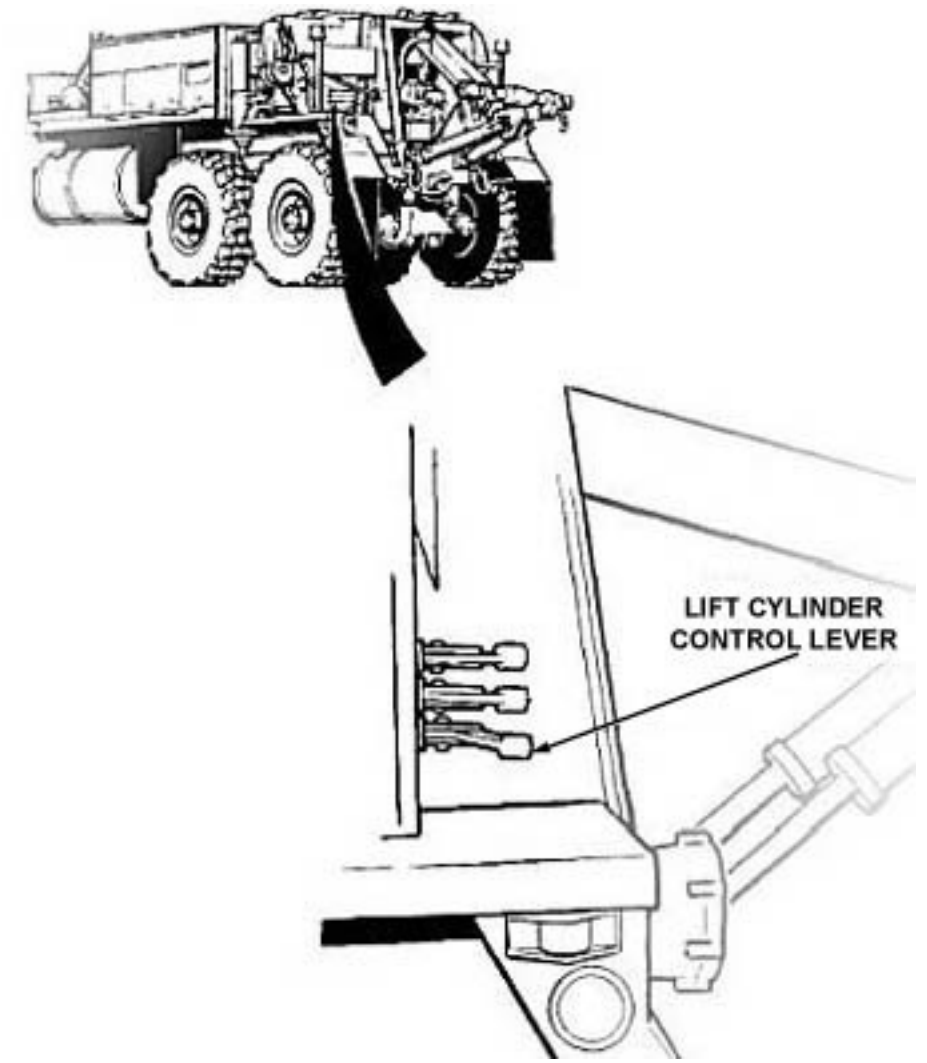


Figure 3.

2. Check hydraulic fluid temperature at reservoir. Reservoir should be warm.

CONDITION/INDICATION

Does hydraulic fluid reach normal operating temperature after cycling lift cylinder control?

DECISION

No - Notify Supervisor.

Yes - Test 4 - Do the retrieval cylinders operate normally?

TEST 4 - Do the retrieval cylinders operate normally?

1. If off, start engine. (Volume 1, WP 0044)
2. Prepare vehicle for retrieval system operation. (Volume 1, WP 0059)
3. Operate retrieval system controls. (Volume 1, WP 0059)

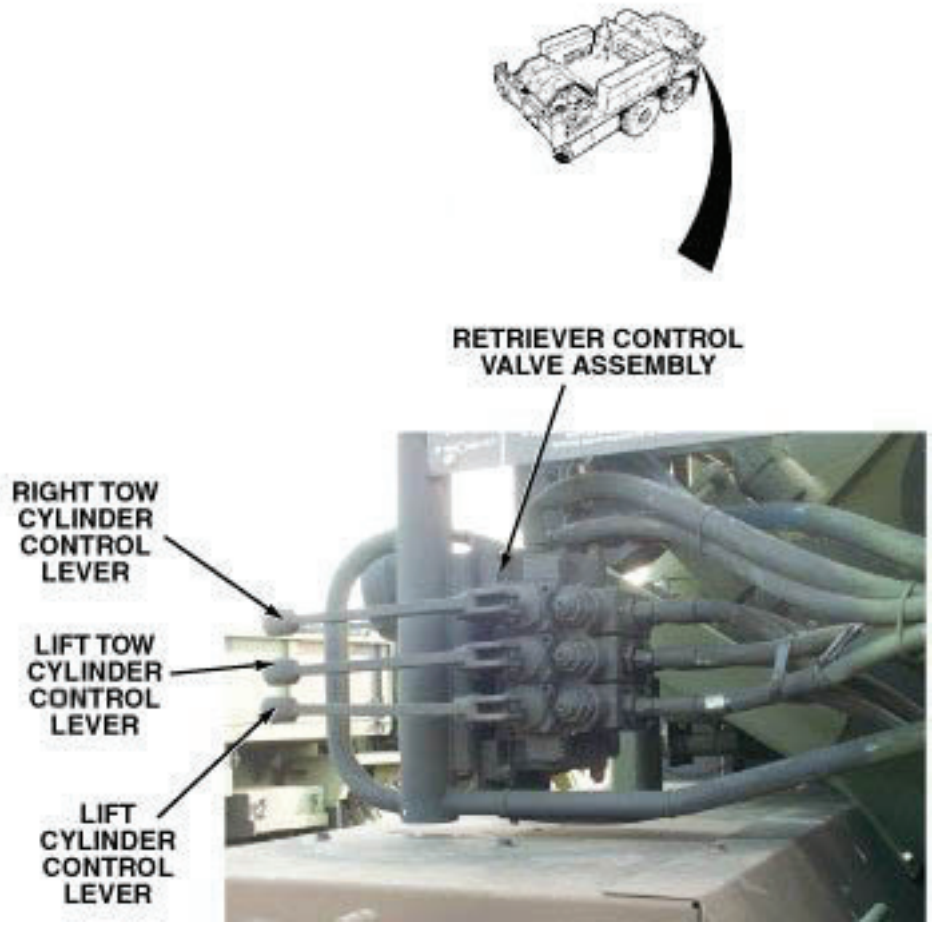


Figure 4.

CONDITION/INDICATION

Do the retrieval cylinders operate normally?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
RETRIEVAL SYSTEM WILL NOT OPERATE

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
RETRIEVAL SYSTEM WILL NOT OPERATE

TEST 1 - Are electrical connections tight?

NOTE

Common problems with retrieval system that may be found are:
1. Slow or abnormal operation.
2. Will not lift disabled vehicle.
3. Will not hold disabled vehicle in raised position.

Common causes of problems are:
1. Cold hydraulic fluid (slow operation).
2. Low engine speed (slow or abnormal operation).
3. Operating two retrieval functions at the same time (slow operation).
4. Low hydraulic fluid.

Report all problems to organizational maintenance.

1. Check that all electrical connections on solenoid valve are tight. If loose, tighten.

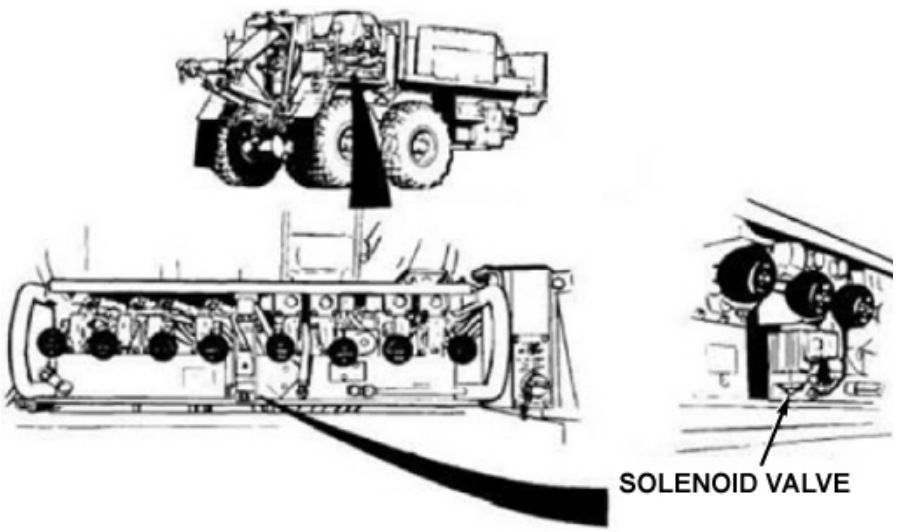


Figure 1.

CONDITION/INDICATION

Are electrical connections tight?

DECISION

No - Test 3 - Does retrieval system operate normally?

Yes - Test 2 - Does solenoid valve operate when power switch is set to ON?

TEST 2 - Does solenoid valve operate when power switch is set to ON?

1. Check solenoid for proper operation when power is turned to ON position. (Volume 1, WP 0059) If solenoid is faulty, place a screwdriver in slot on front of solenoid to hold solenoid closed (Volume 1, WP 0132) until mission can be completed.

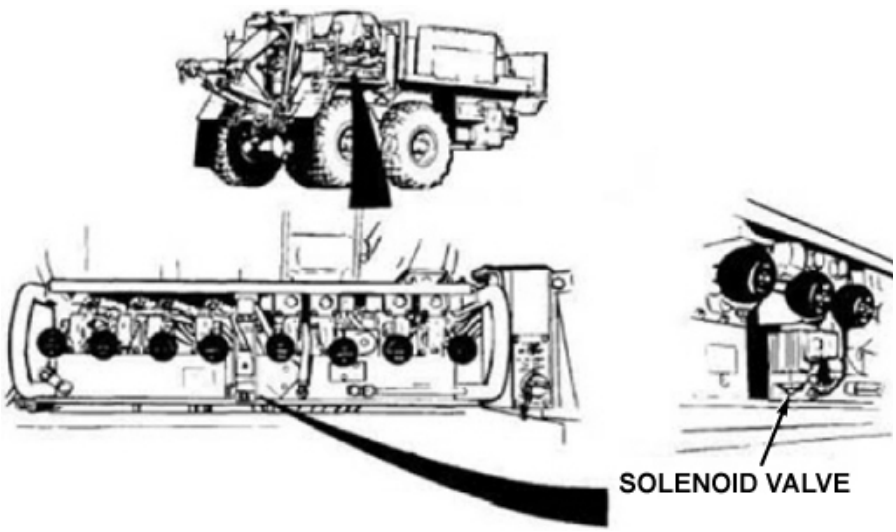


Figure 2.

CONDITION/INDICATION

Does solenoid valve operate when power switch is set to ON?

DECISION

No - Notify Supervisor.
Yes - Notify Supervisor.

TEST 3 - Does retrieval system operate normally?

1. Prepare vehicle for retrieval system operation. (Volume 1, WP 0059)

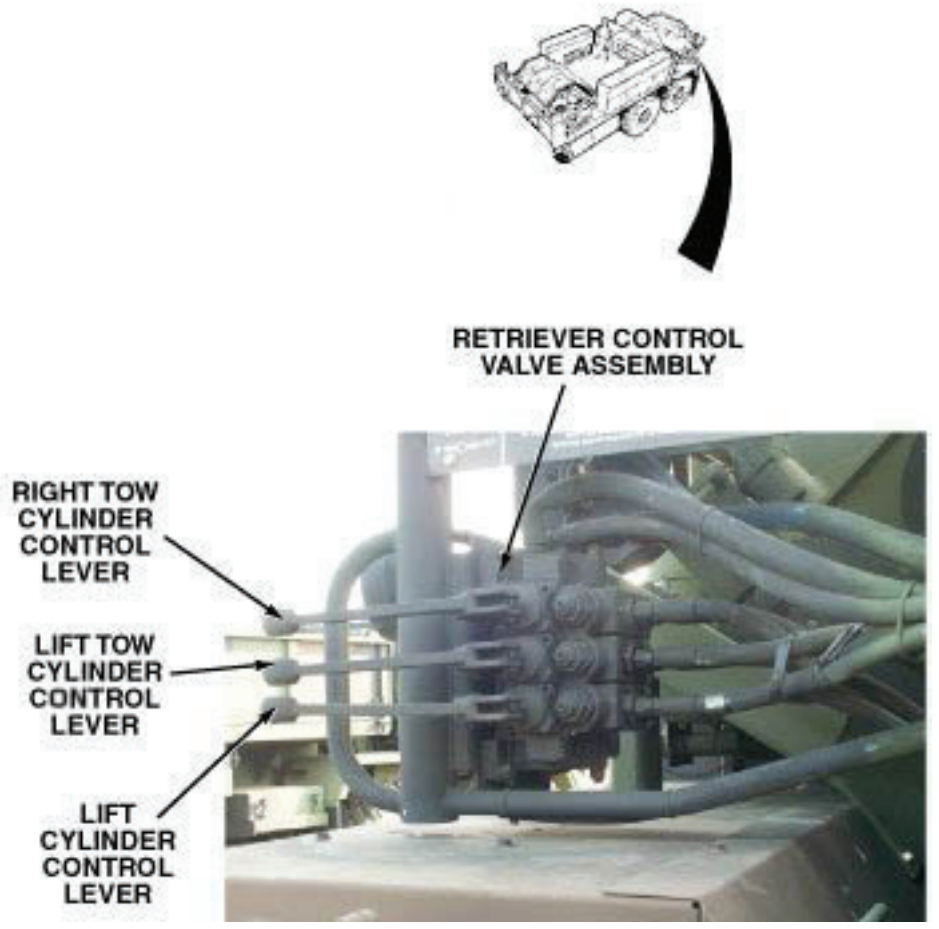


Figure 3.

2. Operate retrieval system controls. (Volume 1, WP 0059)

CONDITION/INDICATION

Does retrieval system operate normally?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
SELF-RECOVERY WINCH DOES NOT WORK

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
SELF-RECOVERY WINCH DOES NOT WORK

TEST 1 - Is hydraulic fluid level within normal operating range?
1. Check hydraulic fluid level. If low, add hydraulic fluid. (WP 0182)

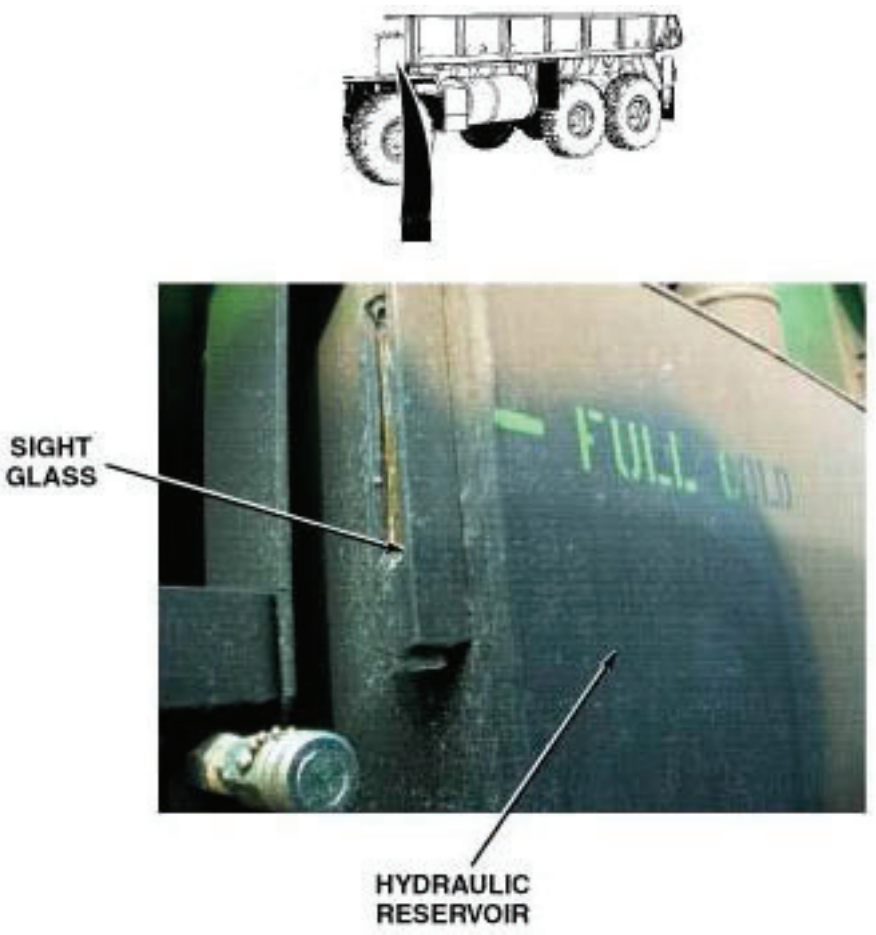


Figure 1.

CONDITION/INDICATION

Is hydraulic fluid level within normal operating range?

DECISION

No - Test 3 - Does self-recovery winch operate properly?

Yes - Test 2 - Is self-recovery winch shift linkage free from debris and damage?

TEST 2 - Is self-recovery winch shift linkage free from debris and damage?

1. Check self-recovery winch shift linkage for debris and damage. If debris found, clean shift linkage. (WP 0189)



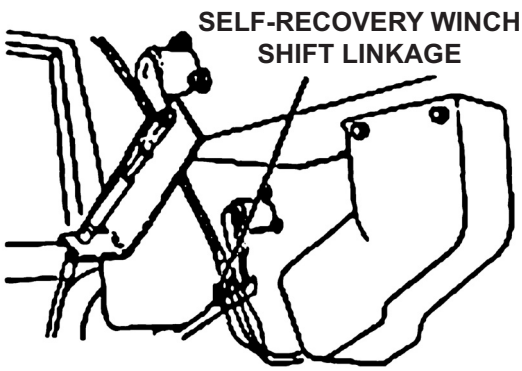


Figure 2.

CONDITION/INDICATION

Is self-recovery winch shift linkage free from debris and damage?

DECISION

Linkage damaged. - Notify Supervisor. Test 3 - Does self-recovery winch operate properly?Notify Supervisor.

Linkage OK. - Notify Supervisor.

TEST 3 - Does self-recovery winch operate properly?

1. Start engine. (Volume 1, WP 0044)
2. Check operation of self-recovery winch. (Volume 1, WP 0115)

CONDITION/INDICATION

Does self-recovery winch operate properly?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
UNUSUALLY NOISY WHEN OPERATING

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
UNUSUALLY NOISY WHEN OPERATING

TEST 1 - Is self-recovery winch cable free of twists, tangles, or binding?

1. Check if self-recovery winch cable is twisted, tangled, or causing drum to bind. If cable is tangled, pay out or take up cable as necessary to straighten.

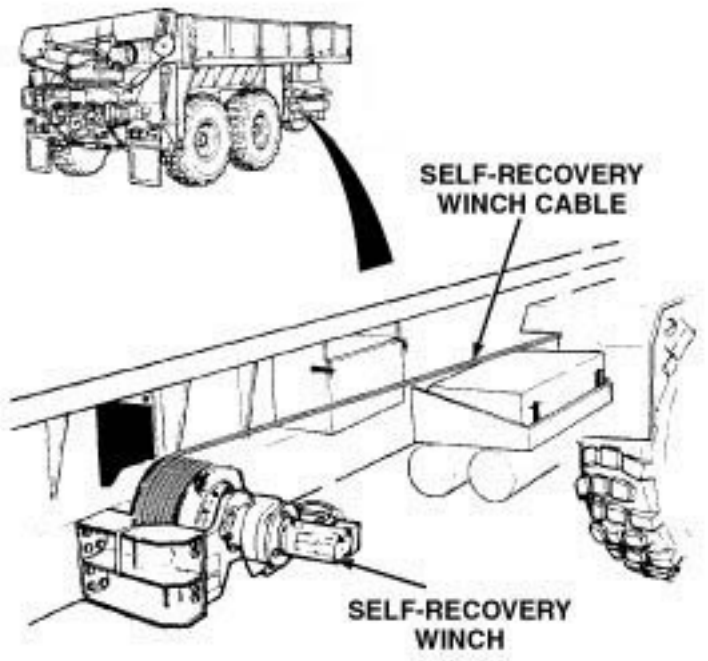


Figure 1.

CONDITION/INDICATION
Is self-recovery winch cable free of twists, tangles, or binding?

DECISION
No - Notify supervisor.
Yes - Test 2 - Is self-recovery winch free of unusual noise when operating?

TEST 2 - Is self-recovery winch free of unusual noise when operating?
1. Operate self-recovery winch, and listen for unusual noise. (Volume 1, WP 0115)

CONDITION/INDICATION
Is self-recovery winch free of unusual noise when operating?

DECISION
No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
VEHICLE IS HARD TO STEER, SHIMMIES, WANDERS, OR PULLS TO ONE SIDE

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
VEHICLE IS HARD TO STEER, SHIMMIES, WANDERS, OR PULLS TO ONE SIDE

TEST 1 - Are tires inflated to proper pressure for road condition?

WARNING



Tire air pressure must be checked properly. Failure to comply may result in injury or death to personnel.

NOTE

- Inflate tires only when they are cool. Inflate to proper pressure for road condition.
  Tire tread is non-directional. Vehicle operation is not affected by direction of traction bars.

1. Check tires for proper inflation. (WP 0180)

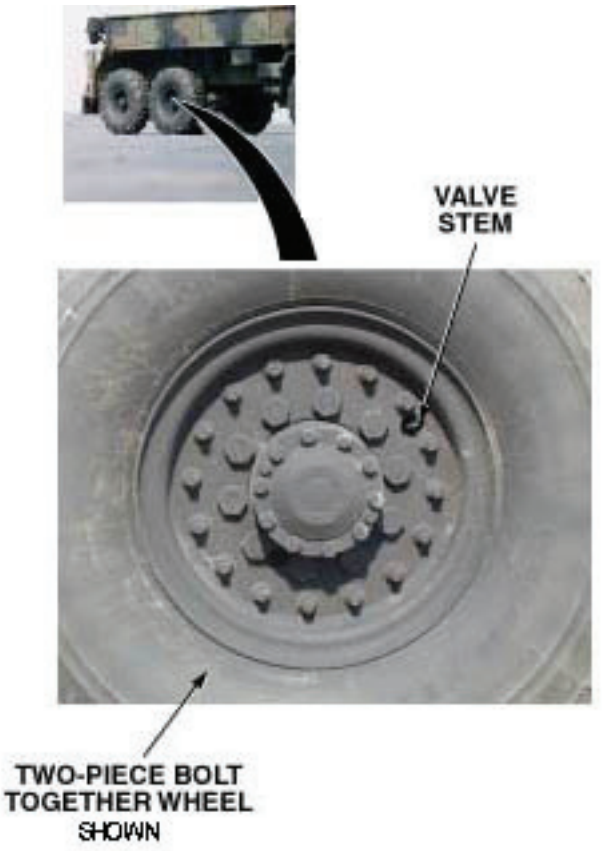


Figure 1.

2. If tires are improperly inflated, inflate or deflate tires to proper pressure.

CONDITION/INDICATION

Are tires inflated to proper pressure for road condition?

DECISION

Improperly inflated - Test 3 - Is vehicle hard to steer; or does it shimmy, wander, or pull to one side?

Inflation OK - Test 2 - Are wheels free of loose, missing, or broken lugnuts?

TEST 2 - Are wheels free of loose, missing, or broken lugnuts?

1. Check for loose, missing, or broken lugnuts.



Figure 2.

CONDITION/INDICATION

Are wheels free of loose, missing, or broken lugnuts?

DECISION

No - Tighten and/or replace loose, missing, or damaged lugnut(s). (WP 0190)
Yes - Notify Supervisor.

TEST 3 - Is vehicle hard to steer; or does it shimmy, wander, or pull to one side?

1. Start engine. (Volume 1, WP 0044)
2. Test drive vehicle.

CONDITION/INDICATION

Is vehicle hard to steer; or does it shimmy, wander, or pull to one side?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
VEHICLE STEERING SLOW TO RESPOND OR INTERMITTENT

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
VEHICLE STEERING SLOW TO RESPOND OR INTERMITTENT

TEST 1 - Is hydraulic fluid low?
1. Check for low hydraulic fluid. (WP 0182)
2. If fluid level is low,add hydraulic fluid. (WP 0182)

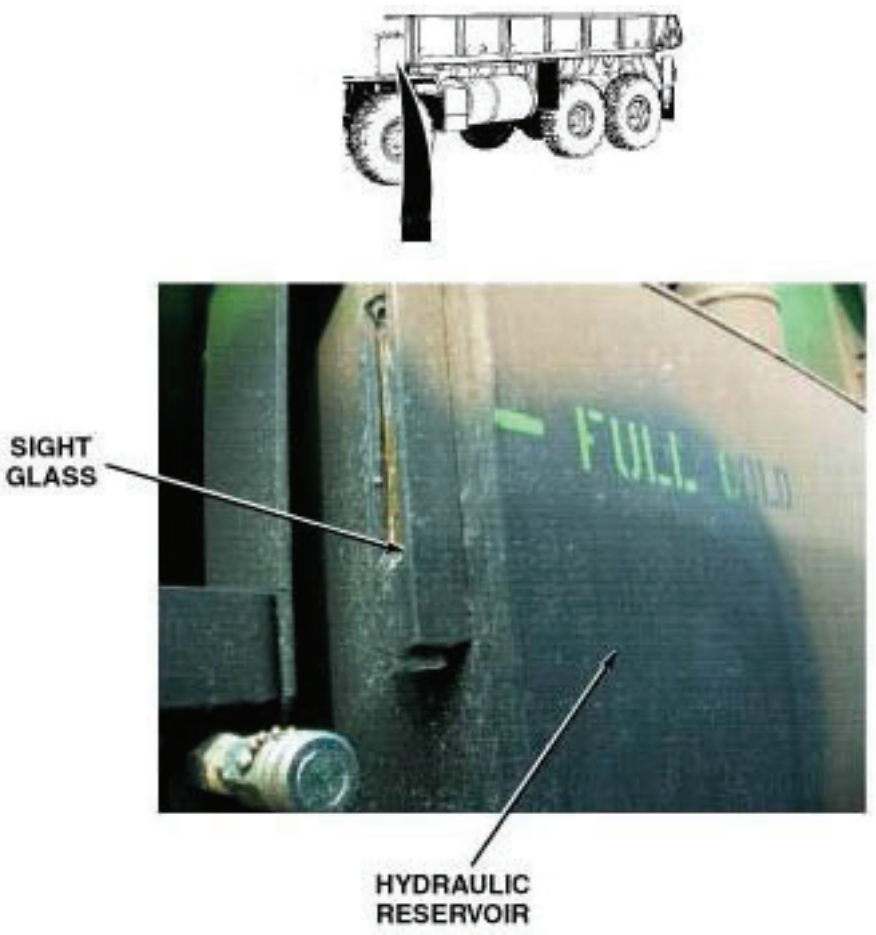


Figure 1.

CONDITION/INDICATION

Is hydraulic fluid low?

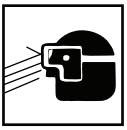
DECISION

Fluid level low - Test 3 - Is steering slow to respond or intermittent?

Fluid level OK - Test 2 - Are there any leaking or damaged hydraulic fittings or lines?

TEST 2 - Are there any leaking or damaged hydraulic fittings or lines?

WARNING



Caution the hydraulic system maybe under pressure be sure to wear the proper eye protection to avoid personal injury.

1. Check for leaking or damaged hydraulic lines and/or fittings.

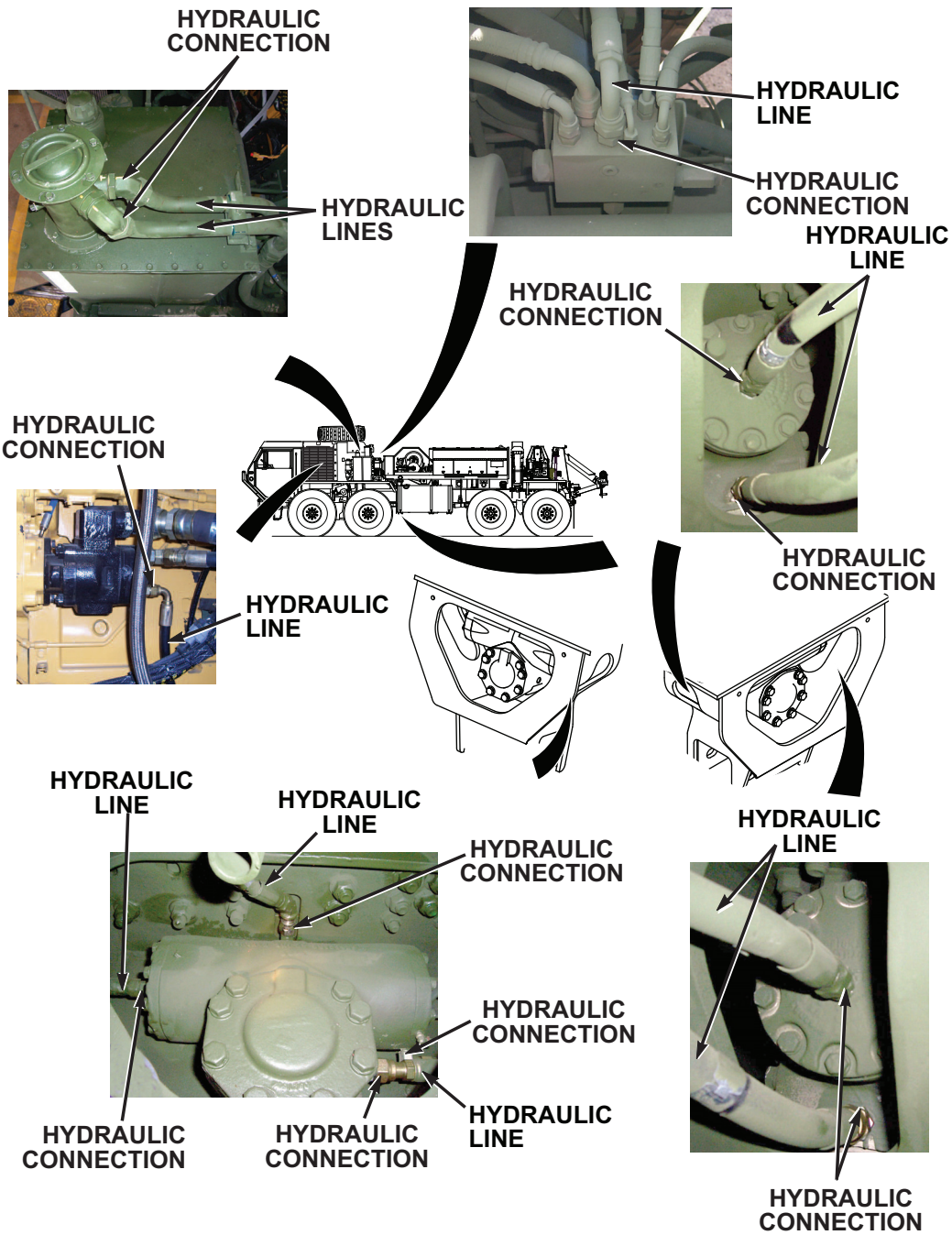

HYDRAULIC CONNECTION
HYDRAULIC LINES
HYDRAULIC LINE
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HYDRAULIC LINE
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HYDRAULIC CONNECTION

Figure 2.

2. If loose hydraulic fluid fittings are found, tighten fittings.

CONDITION/INDICATION

Are there any leaking or damaged hydraulic fittings or lines?

DECISION

Hydraulic lines damaged or leaking. - Ensure fittings are tightened and notify supervisor of faulty hydraulic lines. Tighten loose fittings. (Test 3 - Is steering slow to respond or intermittent?)Notify Supervisor.

No leaks, damaged lines or loose fittings found. - Notify Supervisor.

TEST 3 - Is steering slow to respond or intermittent?

1. Start engine. (Volume 1, WP 0044)
2. Test drive vehicle.

CONDITION/INDICATION

Is steering slow to respond or intermittent?

DECISION

Steering faulty - Notify Supervisor.

Steering OK - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
UNUSUALLY NOISY WHEN OPERATING

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
UNUSUALLY NOISY WHEN OPERATING

TEST 1 - Is transmission/transfer case free from unusual noise while operating?
1. Start engine. (Volume 1, WP 0044)
2. Test drive vehicle.



Figure 1.

CONDITION/INDICATION
Is transmission/transfer case free from unusual noise while operating?

DECISION

No - Notify supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
SLOW OR DIFFICULT ENGAGEMENT

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
SLOW OR DIFFICULT ENGAGEMENT

TEST 1 - Does transmission and/or transfer case engage normally?
1. Start engine. (Volume 1, WP 0044)
2. Test drive vehicle.



Figure 1.

CONDITION/INDICATION
Does transmission and/or transfer case engage normally?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
TRANSFER CASE SHIFT LEVER WILL NOT SHIFT

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
TRANSFER CASE SHIFT LEVER WILL NOT SHIFT

TEST 1 - Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Drive (D)?

1. Start engine (Volume 1, WP 0044)
2. Move transmission range selector from Neutral (N) to Drive (D). Apply throttle to roll vehicle slightly, and shift transmission from (D) to (N). As vehicle stops, shift TRANSFER CASE shift lever.

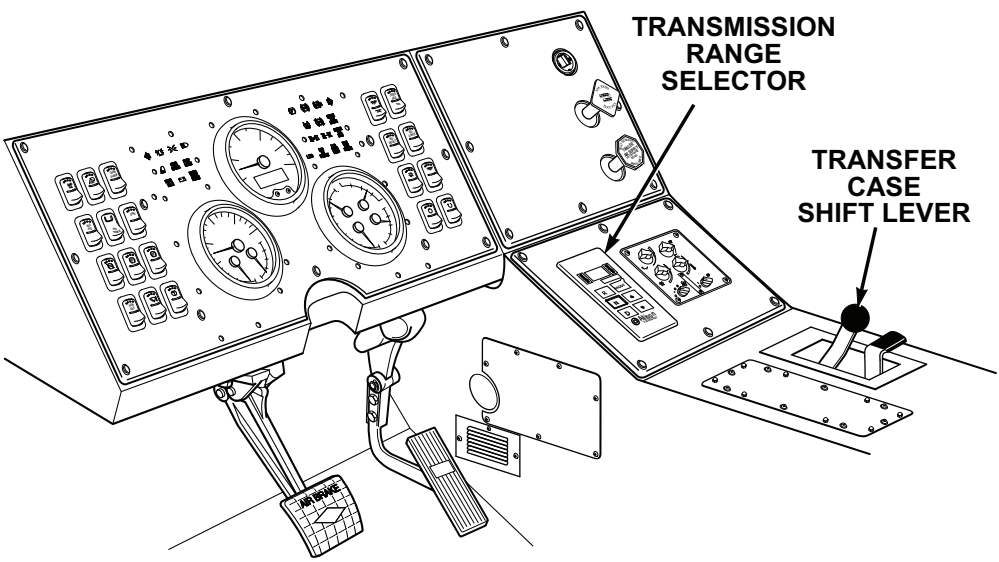


Figure 1.

CONDITION/INDICATION

Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Drive (D)?

DECISION

No - Test 2 - Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Reverse (R)?
Yes - Problem corrected.

TEST 2 - Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Reverse (R)?

1. Move transmission range selector from Neutral (N) to Reverse (R). Apply throttle to roll vehicle slightly and shift transmission from R to N. As vehicle stops, shift TRANSFER CASE shift lever.

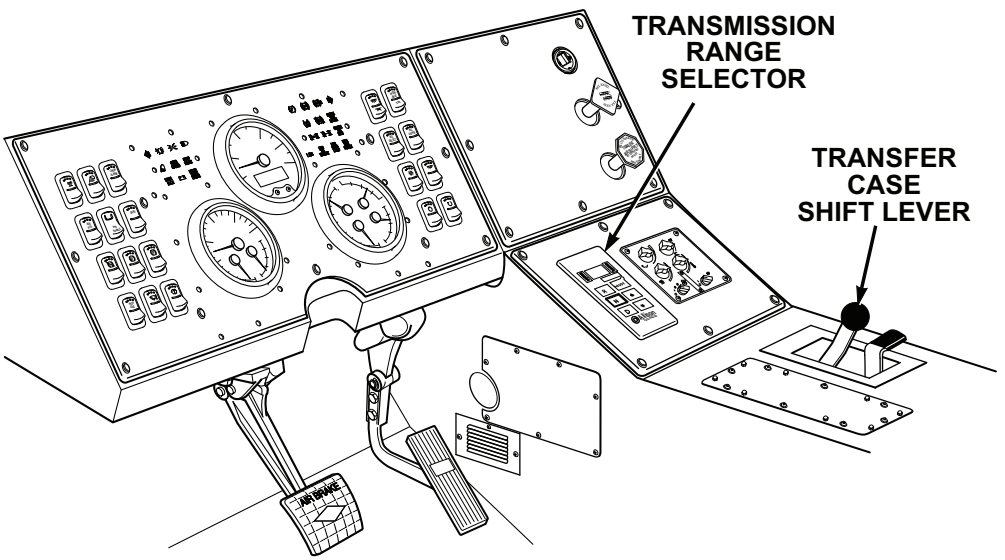


Figure 2.

CONDITION/INDICATION

Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Reverse (R)?

DECISION

No - Test 3 - Is shift cable free of mud and debris?
Yes - Problem corrected.

TEST 3 - Is shift cable free of mud and debris?

1. Turn engine OFF. (Volume 1, WP 0057)

2. Check shift cable for mud and/or debris.

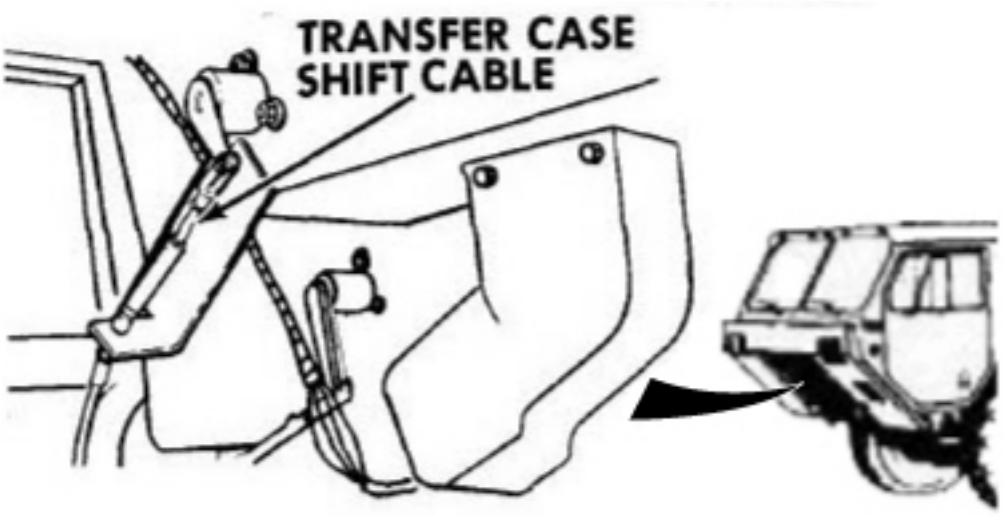


Figure 3.

3. If needed, clean shift cable. (WP 0189)

CONDITION/INDICATION

Is shift cable free of mud and debris?

DECISION

Dirty - Test 4 - Does transfer case shift lever shift normally?
Clean - Notify Supervisor.

TEST 4 - Does transfer case shift lever shift normally?

1. Start engine. (Volume 1, WP 0044)
   a. Test drive vehicle.
2. Attempt to shift transfer case. (Volume 1, WP 0048)

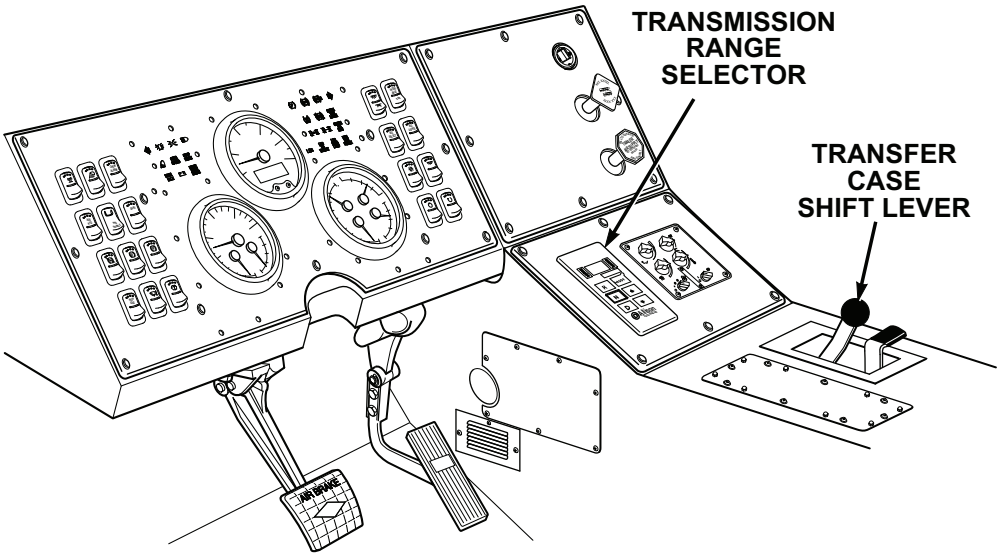


Figure 4.

3. Turn engine OFF. (Volume 1, WP 0057)

CONDITION/INDICATION

Does transfer case shift lever shift normally?

DECISION

No - Notify Supervisor.
Yes - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
TRANS TEMP GAUGE INDICATES OVERHEATING DURING NORMAL OPERATION

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
TRANS TEMP GAUGE INDICATES OVERHEATING DURING NORMAL OPERATION

TEST 1 - Is transmission fluid at proper operating level?

1. Check transmission fluid level. (WP 0182)

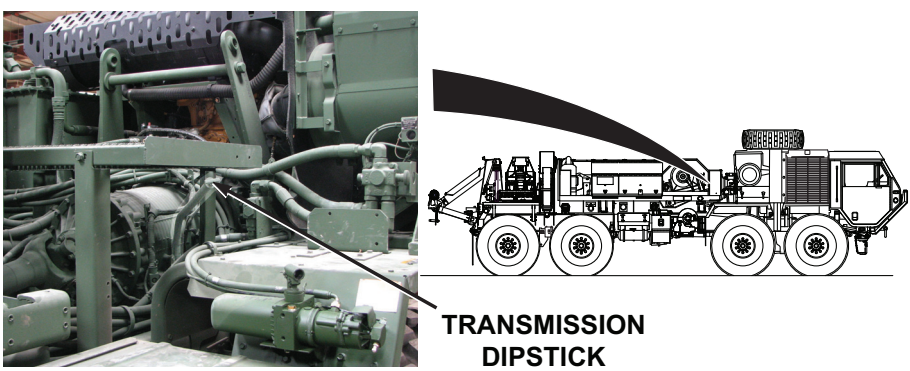


Figure 1.

2. If transmission fluid is low, add transmission fluid. (WP 0182)

CONDITION/INDICATION
Is transmission fluid at proper operating level?

DECISION
Transmission fluid was high. - Notify Supervisor. Test 2 - Does TRANS TEMP gauge indicate overheating during normal operation?
Transmission fluid was at proper level. - Notify Supervisor.

TEST 2 - Does TRANS TEMP gauge indicate overheating during normal operation?

1. Start engine. (Volume 1, WP 0044)
2. Test drive vehicle.

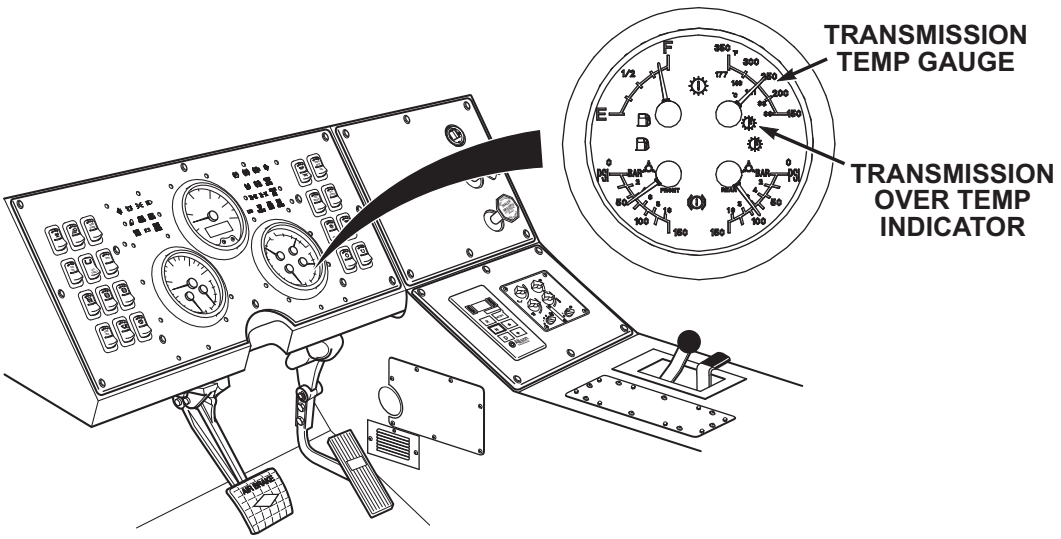


Figure 2.

CONDITION/INDICATION

Does TRANS TEMP gauge indicate overheating during normal operation?

DECISION

Overheating - Notify Supervisor.
Correct temperature - Problem corrected.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
WHEEL WOBBLES

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
WHEEL WOBBLES

TEST 1 - Are any lugnuts loose, missing or broken?
1. Check wheels for loose, missing or broken lugnuts.

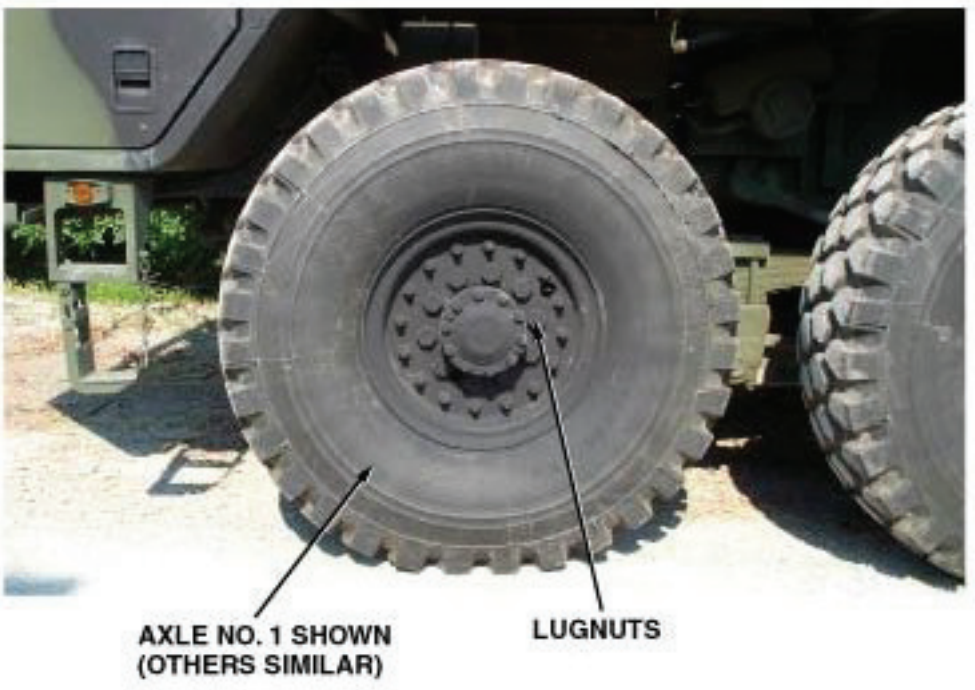


Figure 1.

CONDITION/INDICATION

Are any lugnuts loose, missing or broken?

DECISION

No - Tighten or replace lugnut(s). (WP 0190)
Yes - Test 2 - Are any of the wheels bent?

TEST 2 - Are any of the wheels bent?

1. Check to see if any of the wheels are bent.

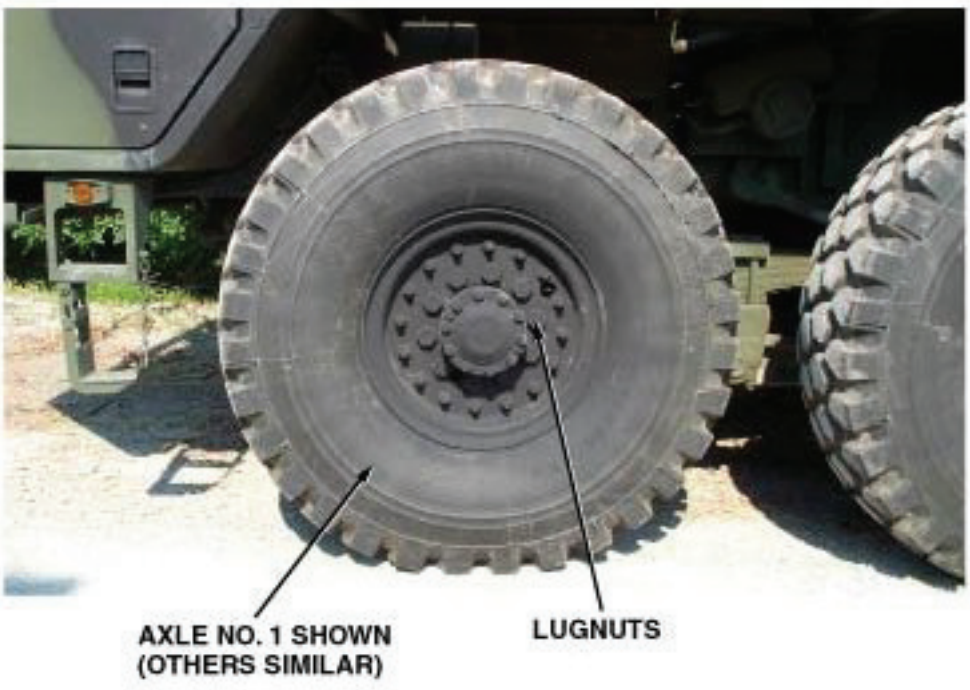


Figure 2.

CONDITION/INDICATION

Are any of the wheels bent?

DECISION

Wheel bent - Replace damaged wheel(s). (WP 0190)
Wheels OK - Notify Supervisor.

TEST 3 - Do any of the wheels wobble?

1. Start engine. (Volume 1, WP 0044)
2. Test drive vehicle.

CONDITION/INDICATION

Do any of the wheels wobble?

DECISION

Wheel wobbles - Notify Supervisor.
Wheel OK - Notify Supervisor.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
TIRES WORN UNEVENLY OR EXCESSIVELY

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Parking brakes applied. (Volume 1, WP 0056)
Wheels chocked. (Volume 1, WP 0097)

TROUBLESHOOTING PROCEDURE
TIRES WORN UNEVENLY OR EXCESSIVELY

TEST 1 - Are tires inflated to proper pressure for road condition?

WARNING



Tire air pressure must be checked properly. Failure to comply may result in injury or death to personnel.

NOTE

- Inflate tires only when they are cool. Inflate to proper pressure for road condition.
  Tire tread is non-directional. Vehicle operation is not affected by direction of traction bars.

1. Check tires for proper inflation. (WP 0183)

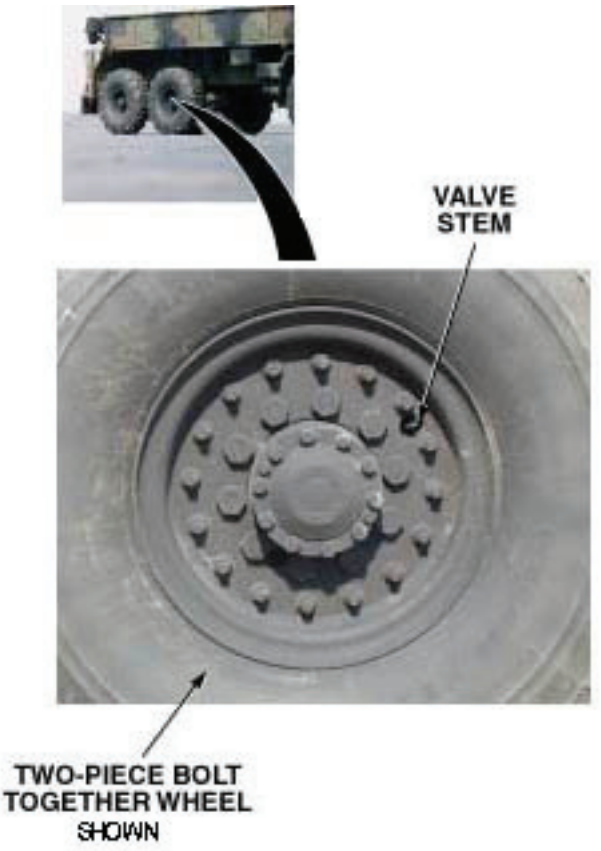


Figure 1.

2. If tires are improperly inflated, inflate or deflate to proper pressure.

CONDITION/INDICATION

Are tires inflated to proper pressure for road condition?

DECISION

Improperly inflated - Notify Supervisor.
Inflation OK - Notify Supervisor.

END OF WORK PACKAGE

CHAPTER 4

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

OPERATOR MAINTENANCE
INTRODUCTION - PREVENTIVE MAINTENANCE

PMCS INTRODUCTION

This section contains PMCS requirements for HEMTT series vehicles. The PMCS tables contain checks and services necessary to ensure that the vehicle is ready for operation. Using PMCS tables, perform maintenance at specified intervals.

MAINTENANCE FORMS AND RECORDS

Every mission begins and ends with paperwork. There is not much of it, but it must be kept up. The filled out forms and records have several uses. They are a permanent record of services, repairs, and modifications made on the vehicle; they are reports to unit maintenance and to your Commander; and they serve as a checklist to find out what is wrong with the vehicle after its last use, and whether those faults have been fixed. For the information needed on forms and records, refer to DA PAM 750-8. (WP 0200)

PREVENTIVE MAINTENANCE CHECKS AND SERVICES

- Do the before (B) PREVENTIVE MAINTENANCE just before operating vehicle. Pay attention to the CAUTIONS and WARNINGS.
- Do the during (D) PREVENTIVE MAINTENANCE while vehicle and/or its component systems are in operation. Pay attention to the CAUTIONS and WARNINGS.
- Do the after (A) PREVENTIVE MAINTENANCE right after operating vehicle. Pay attention to the CAUTIONS and WARNINGS.
- Do the (W) PREVENTIVE MAINTENANCE weekly. Pay attention to the CAUTIONS and WARNINGS
- Do the (M) PREVENTIVE MAINTENANCE once a month. Pay attention to the CAUTIONS and WARNINGS.
- If something does not work, troubleshoot and notify the supervisor.
- Always do PREVENTIVE MAINTENANCE in the same order until it gets to be habit. Once practiced, problems can be spotted in a hurry.
- If something looks wrong and cannot be fixed right then, write it on DA Form 2404 (WP 0200) or DA Form 5988-E. (WP 0200) If something seems seriously wrong, report it to organizational maintenance RIGHT NOW.
- When doing PREVENTIVE MAINTENANCE, take along the tools needed and a rag or two to make all the checks.

GENERAL MAINTENANCE PROCEDURE

- **Cleanliness:** Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Use solvent cleaning compound (WP 0203, Table 1, Item 6, 7, 8, 9, 10, 11) on all metal surfaces and soapy water on rubber.
- **Bolts, Nuts, and Screws:** Check bolts, nuts, and screws for obvious looseness, missing, bent, or broken condition and tighten or replace as necessary. They cannot all be checked with a tool, of course, but look for chipped paint, bare metal, or rust around bolt heads.
- **Welds:** Look for loose or chipped paint, rust, or gaps where parts are welded together. If a bad weld is found, have it repaired.
- **Electric Wires and Connectors:** Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors and make sure wires are in good shape.
- **Hydraulic Lines and Fittings:** Look for wear, damage, and leaks, and make sure clamps and fittings are tight. Wet spots show leaks, of course, but a stain around a fitting or connector can indicate a leak. If a connector or fitting is loose, tighten it. If something is broken or worn out, repair or replace per applicable procedure.
- **Damage is defined as:** Any conditions that affect safety or would render the vehicle unserviceable for mission requirements.

FLUID LEAKAGE

It is necessary to know how fluid leakage affects the status of fuel, oil, coolant, and the hydraulic systems. The following are definitions of types/classes of leakage necessary to know in order to determine the status of the vehicle.

NOTE

Equipment operation is allowable with minor leakage (Class I or II). Consideration must be given to the fluid capacity in the item/system being checked/inspected. When in doubt, notify the supervisor. When operating with Class I or II leaks, continue to check fluid levels as required in the PMCS. Class III leaks should be repaired per applicable procedure.

Class I : Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

Class II: Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.

Class III: Leakage of fluid great enough to form drops that fall from the item being checked/ inspected.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Prior to performing your PMCS, check with your PLL clerk to verify that the latest publications are being used by the operator and organizational unit.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued

Listed below are the sections of the PMCS.

PMCS - BEFORE (WP 0180)

PMCS - DURING (WP 0181)

PMCS - AFTER (WP 0182)

PMCS - WEEKLY (WP 0183)

PMCS - MONTHLY (WP 0185)

PMCS - SEMIANNUAL (WP 0184)

Vehicles designated or dispatched to transport Class A or B ammunition, explosives, poisons, or radioactive yellow III materials over public highways require more stringent inspections.

Daily Walk Around PMCS Diagram. This routing diagram will be of help to complete the B, D, or A PMCS. It shows the vehicle PMCS routing track, which matches the sequence of PMCS to be performed.

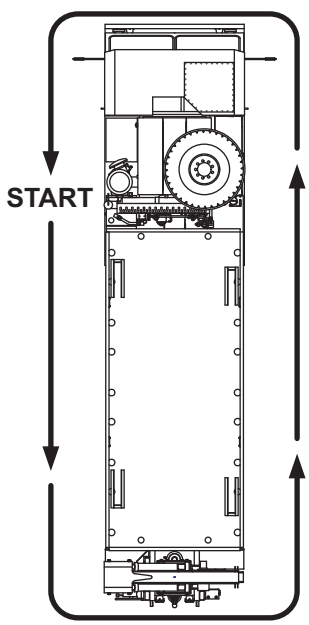


Figure 1.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
BEFORE - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Gloves, Welders

Table 1. PMCS - BEFORE

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel. **WARNING**  Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - BEFORE - Continued

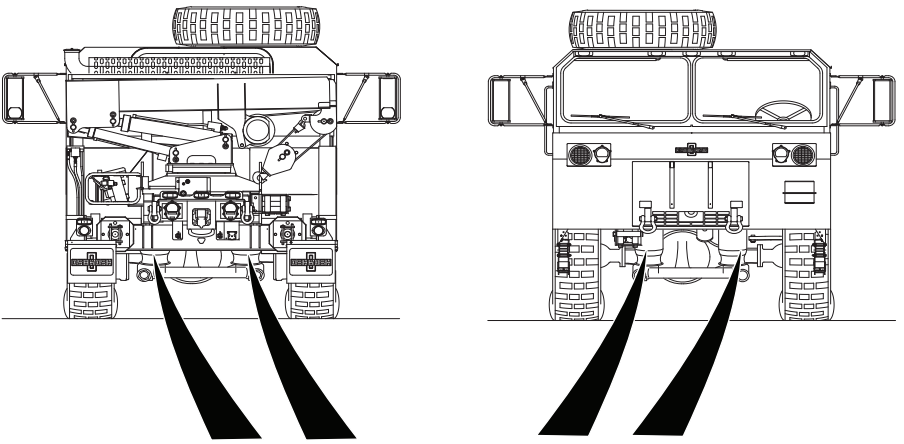
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE Perform Operator's Before, After, and Weekly PMCS checks if: • You are the assigned driver but have not operated the vehicle since the last weekly inspection. • You are operating the vehicle for the first time. **NOTE** • Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated. • Always refer to lubrication instructions (WP 0186) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as	

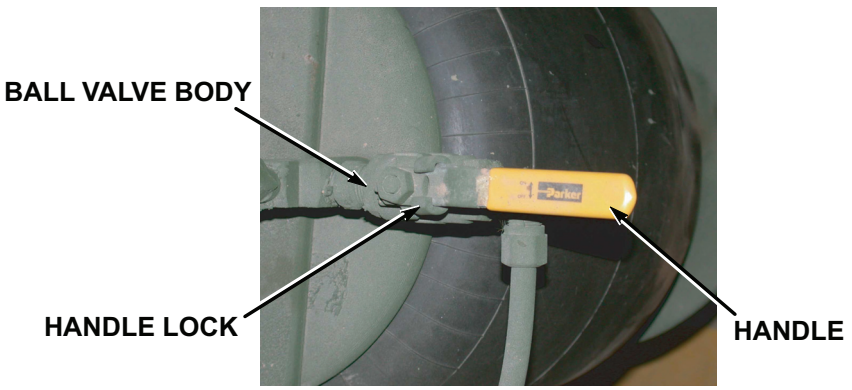
Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			prescribed in lubrication instructions. (WP 0186) **NOTE** If leakage is detected, further investigation is needed to determine the location and cause of the leak. If there is any doubt, contact your supervisor or field level maintenance.	
1	Before	Driver Side Exterior	1. Check underneath entire length of driver side of vehicle for fluid and air leaks.	Any fuel, Class III leak, or air lines/fittings leaking or damaged.
			2. Visually check driver side of vehicle for obvious damage that would impair operation.	Any damage that would impair operation.
			NOTE Ball valve is in ON position when handle is in line with ball valve body (shown below).	
2	Before	Driver Side Air Springs	1. Ensure two driver side air suspension ball valves are in ON position. (Volume 1, WP 0043)	Ball valves have damage that would prevent normal operation.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:





BALL VALVE SHOWN IN ON POSITION

Figure 1.

			2. Check each air spring for inflation and obvious damage.	Air springs will not inflate or have damage that would

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				prevent normal operation.



AIR SPRING

AIR SPRING SHOWN IS ON THE PASSENGER SIDE OF VEHICLE. EACH AXLE HAS AN AIR SPRING THAT IS SIMILAR.

Figure 2.

			WARNING  Do not operate a vehicle with a tire in an over-inflated or under-inflated condition, or with a questionable defect. Failure to comply may result in injury or death to personnel and damage to equipment.	

Table 1. PMCS - BEFORE - Continued

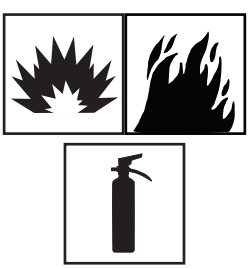
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE • A tire is bad or in need of repair if the bead, sidewall, and tread areas show signs of damage. • Remember that this process requires you to make judgment calls and the goal is to safely maintain equipment in top quality conditions.	
3	Before	Driver Side Tires	Check for correct air pressure on each driver side tire and service tire (WP 0193) as required. **WARNING**  Fuel is very flammable and can explode easily. Keep fuel away from open fire and keep fire extinguisher within easy reach when working with fuel. Do not work on fuel system when engine is hot. Fuel can be ignited when engine is hot. When working with fuel, post	Tire missing, deflated, or unserviceable.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			signs that read NO SMOKING WITHIN 50 FEET OF VEHICLE. Failure to comply may result in injury or death to personnel. **NOTE** • Drain fuel into suitable container. • Operation of vehicle with malfunctioning fuel/water separator may violate AR 385-55. (WP 0200)	
4	Before	Fuel/ Water Separator	1. Check for level of water in bowl of fuel/water separator. If there is water, turn thumb nut on bottom of bowl to open contaminant drain valve. Keep drain open until only pure fuel is flowing out of drain tube. Close drain valve by turning thumb nut.	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

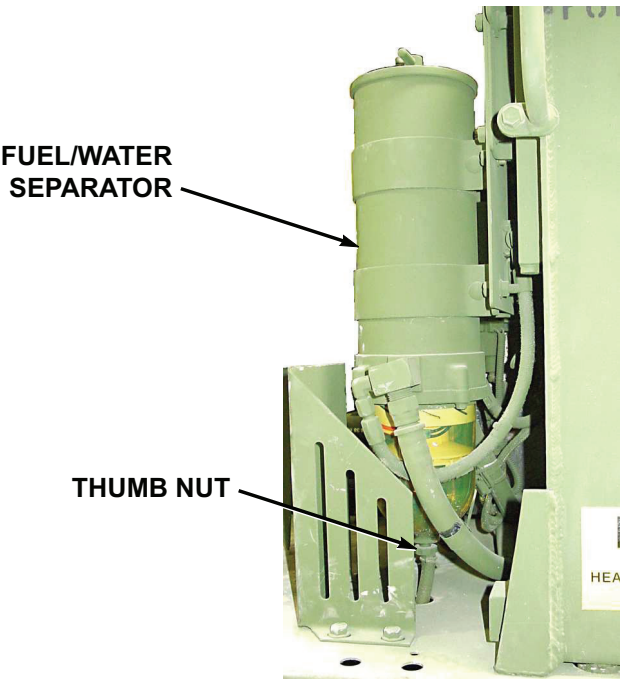


Figure 3.

			2. Check fuel/water separator for leaks and damage.	Any fuel leak.
5	Before	Engine	1. Check engine oil level on dipstick.	

Table 1. PMCS - BEFORE - Continued

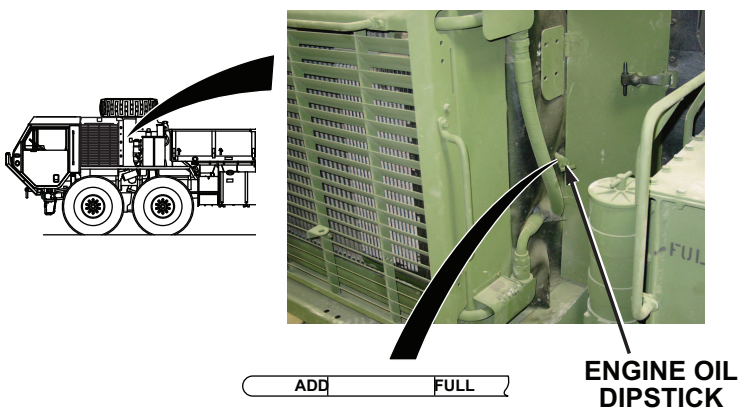
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 4.

			NOTE Engine oil level should be between ADD and FULL mark on dipstick. a. Add engine oil as required. (WP 0186, Table 1) b. Drain excess engine oil as required, or notify field level maintenance.	
6	Before	24V Battery Disconnect Switch	Check 24V battery disconnect switch for proper operation. (Volume 1, WP 0099)	24V battery disconnect switch inoperative.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

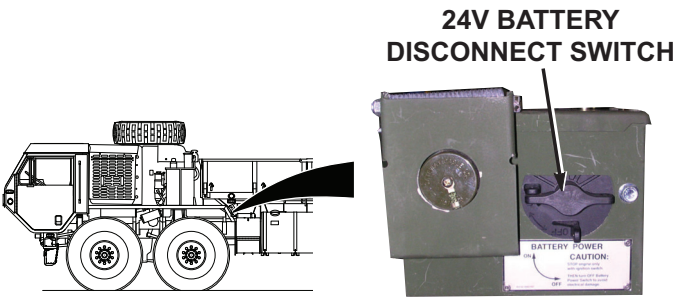


Figure 5.

7	Before	FRONT BRAKE APPLICATION Control	1. Check control box for damage that may preclude use.	Damaged to the extent that it cannot be used.
			2. Ensure FRONT BRAKE APPLICATION control is pulled out.	Unable to pull FRONT BRAKE APPLICATION control out/ release front brakes.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

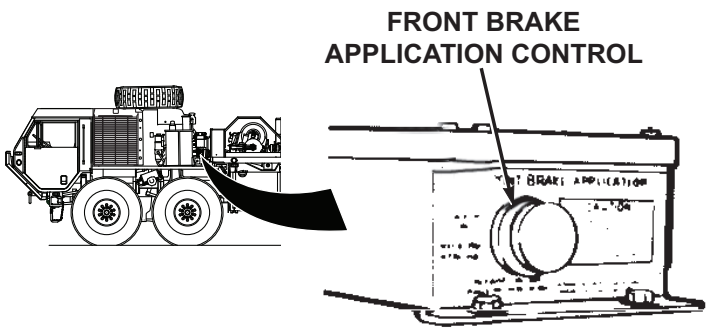


Figure 6.

8	Before	Rear of Vehicle	Visually check rear of vehicle for obvious damage that would impair operation.	Any damage that would impair operation.
9	Before	Retrieval System, Support Assembly, Hydraulic Filter	1. Check hydraulic filters for leaks. 2. Check support assembly for secure mounting or obvious damage.	Class III leak present.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

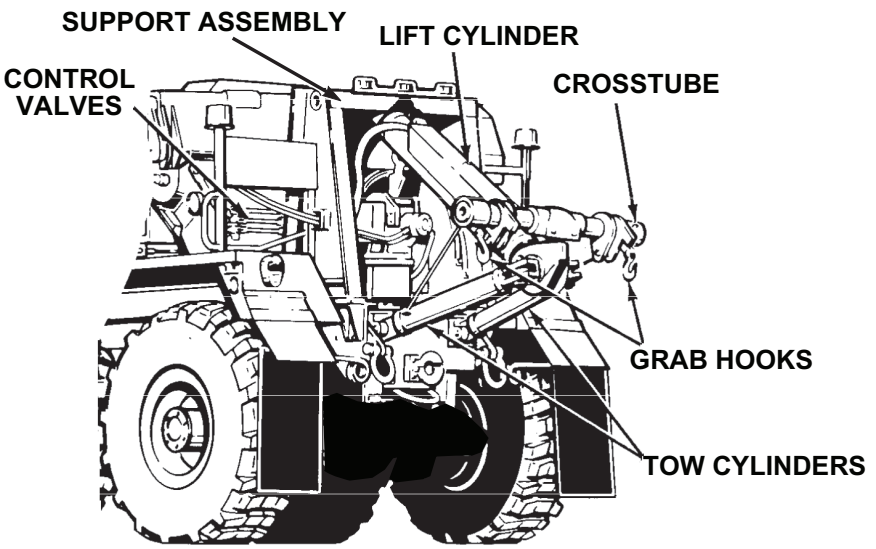


Figure 7.

			NOTE Retrieval cylinder (tow and lift) thermal relief valves (located on crosstube end of cylinders) can discharge small amounts of oil as part of normal operation.	
			3. Check lift cylinder and hoses, driver side and passenger side tow cylinders and hoses, crosstube, and control valves for leaks and obvious damage.	Class III leak present.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
10	Before	Self-Recovery Winch (SRW)	1. Inspect self-recovery winch for obvious damage.	

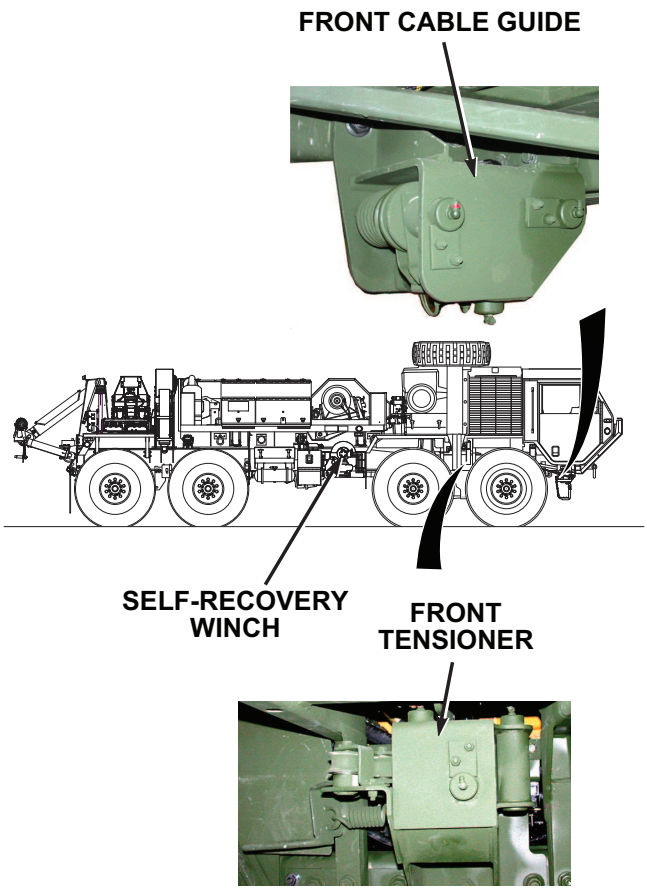


Figure 8.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			2. Inspect front cable guide for any loose or missing parts and any obvious damage.	Front cable guide has loose or missing parts, or is unserviceable.
			3. Inspect front tensioner for loose or missing parts and any obvious damage.	Front tensioner has loose or missing parts, or is unserviceable.
11	Before	Wheel Chocks	Ensure vehicle is equipped with four wheel chocks.	Vehicle is equipped with less than four wheel chocks.
			NOTE If leakage is detected, further investigation is needed to determine the location and cause of the leak. If there is any doubt, contact your supervisor or field level maintenance.	
12	Before	Passenger Side Exterior	1. Check underneath entire length of driver side of vehicle for fluid and air leaks.	Any fuel, Class III leak, or air lines/fittings

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				leaking or damaged.
			2. Visually check driver side of vehicle for obvious damage that would impair operation.	Any damage that would impair operation.
			3. Check for missing or damaged fire extinguisher mounted on top of stowage box:	Fire extinguisher missing or damaged.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

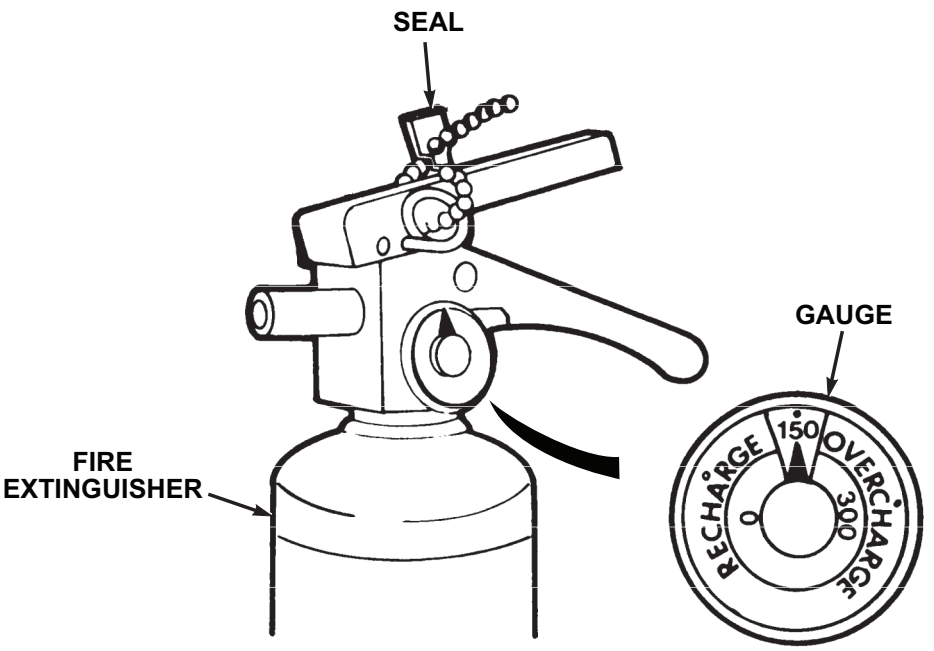


Figure 9.

			a. Check gauge for proper pressure.	Pressure gauge needle in RECHARGE area.
			b. Ensure fire extinguisher mounting is secure.	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			c. Check for damaged or missing seal.	Seal broken or missing.
13	Before	Passenger Side Air Springs	1. Ensure two passenger side air suspension ball valves are in ON position. (Volume 1, WP 0043)	Ball valve damaged/ will not move to ON position.



AIR SPRING

AIR SPRING SHOWN IS ON THE PASSENGER SIDE OF VEHICLE. EACH AXLE HAS AN AIR SPRING THAT IS SIMILAR.

Figure 10.

			2. Check each air spring for inflation and obvious damage.	Air springs will not inflate or have damage that would prevent normal operation.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Do not operate a vehicle with a tire in an over-inflated or under-inflated condition, or with a questionable defect. Failure to comply may result in injury or death to personnel and damage to equipment. **NOTE** • Remember that a tire in storage (spare) can be flat but not look like it. The HEMTT tire sidewalls can support the wheel. Don't be fooled. • A tire is bad or in need of repair if the bead, sidewall, and tread areas show signs of damage. • Remember that this process requires you to make judgment calls and the goal is to safely maintain equipment in top quality conditions.	
14	Before	Passenger Side Tires	1. Check for correct air pressure on each passenger side tire	Tire missing, defla-

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
		(including spare tire)	(including spare tire) and service tire (WP 0193) as required. **WARNING**  • During normal vehicle operation, cooling system can become very hot. Allow cooling system to cool prior to servicing. Failure to comply may result in injury to personnel. • Use extreme care when removing radiator cap. Sudden release of pressure can cause a steam flash. Slowly loosen radiator cap to the first stop to relieve pressure before removing radiator cap completely. Failure to comply may result in injury to personnel. • Use a clean, thick waste cloth or like material to remove radiator cap. Avoid using gloves. If hot water soaks through gloves, personnel could	ted, or un-serviceable.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			be burned. Failure to comply may result in injury to personnel. **NOTE** • Coolant should completely fill lower sight glass at any engine temperature. • Coolant should completely fill upper sight glass if engine is hot. • Coolant should partially fill upper sight glass if engine is cold.	
15	Before	Radiator	Check sight glass on radiator to ensure coolant level is correct.	Coolant is low.

Table 1. PMCS - BEFORE - Continued

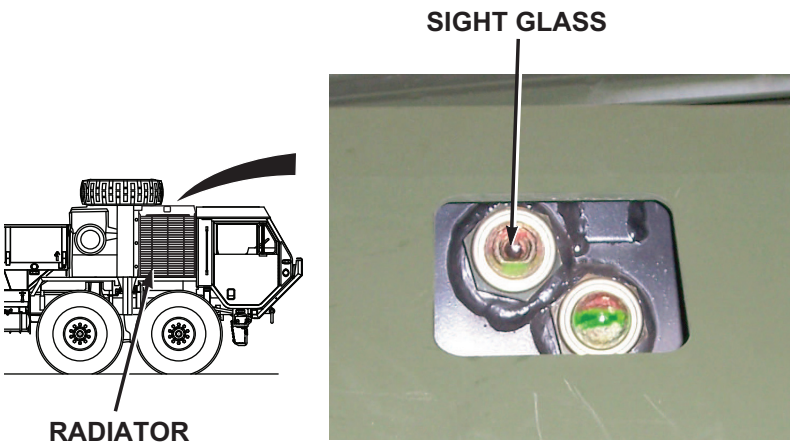
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 11.

			WARNING  Ensure proper inspection and maintenance procedures of seat belt systems are adhered to. Failure to comply may result in injury or death to personnel. **NOTE** Vehicle operation with inoperative seat belts may violate AR 385-55. (WP 0200)	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
16	Before	Seat Belts	1. Check seat belt strap webbing wear, tears, fraying, etc.	Webbing is cut, frayed or excessively worn.

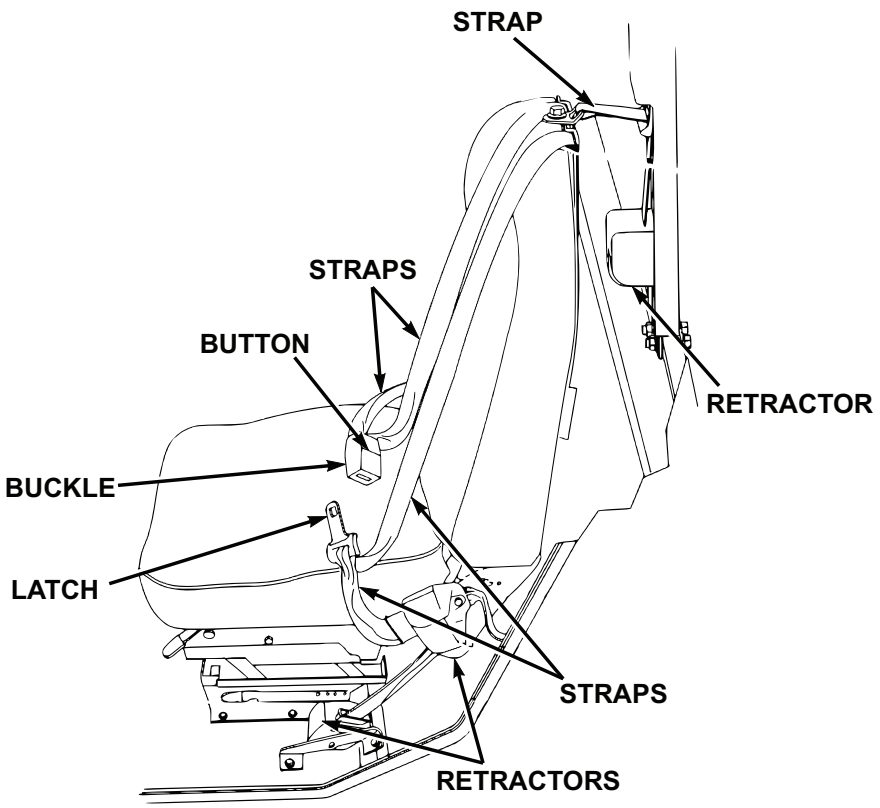


Figure 12.

		2. Check latch and buckle for proper operation, wear,	Buckle/latch does not en-

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			deformation, damage, and broken casing.	gage with a solid-sounding "click" and/ or does not release freely when button is pushed. Molded plastic around buckle/latch is de-formed, cracked, or broken.
			3. Check all seat belt retractors are not locked up and pay out/reel in webbing straps properly.	Retractor(s) do not oper-ate proper-ly, or retrac-tor cover(s) are cracked/ broken.
			4. Check all seat belt mounting hardware for looseness and other damage.	Hardware is loose, miss-ing, rusted, corroded, or damaged.
17	Before	Seats	Check operation of seat adjusting mechanisms. (Volume 1, WP 0025)	Seat adjust-ment mech-anism bro-

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				ken or miss-ing.

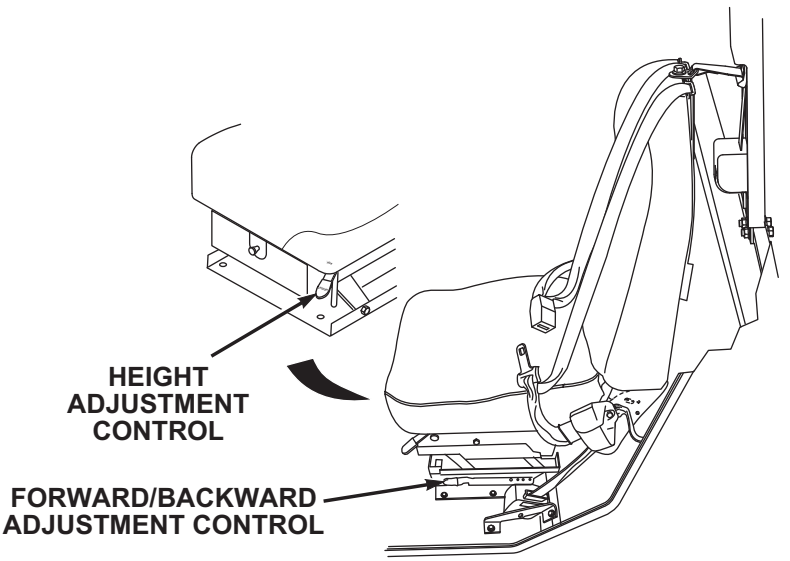


Figure 13.

18	Before	Fire Extinguis her (cab)	1. Check for missing or damaged fire extinguisher.	Fire extin-guisher missing or damaged.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

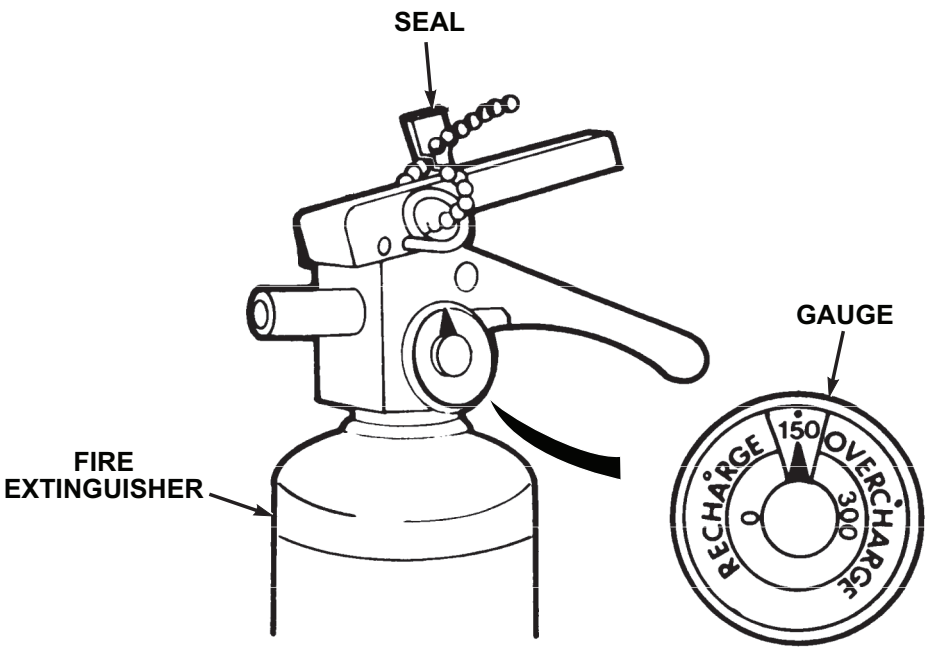


Figure 14.

			2. Check gauge for proper pressure of about 150 psi (1034 kPa).	Pressure gauge needle in RECHARGE area.
			3. Ensure fire extinguisher mounting is secure.	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			4. Check for damaged or missing seal. **NOTE** • Complete all start engine (Volume 1, WP 0044) procedures, and comply with all notes, cautions, and warnings within that procedure before completing the PMCS checks below. • Once all start engine (Volume 1, WP 0044) procedures are completed, engine should be kept running for the remaining PMCS checks.	Seal broken or missing.
19	Before	Engine	Start engine. (Volume 1, WP 0044) **NOTE** Check the instruments listed below for damage, operation, and condition.	Engine fails to start.
20	Before	Instruments	1. Engine oil pressure gauge.	Engine oil pressure gauge is in-operative.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

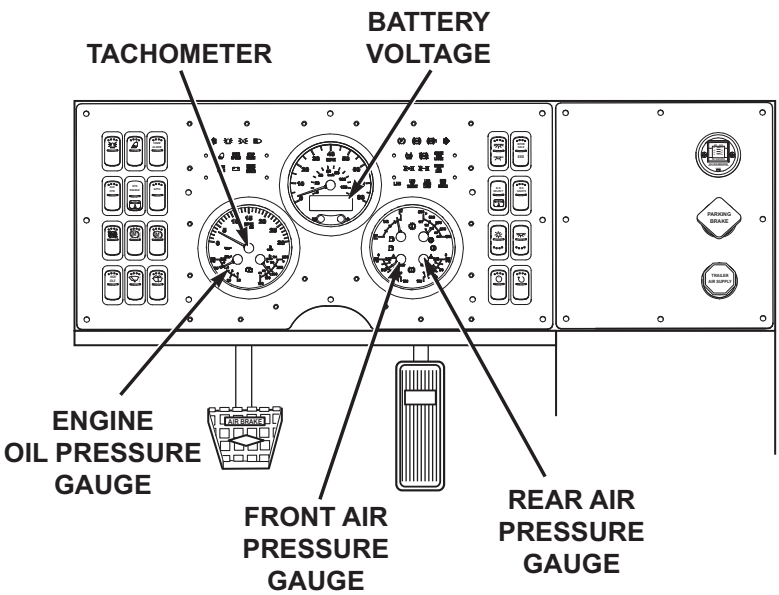


Figure 15.

			2. Tachometer.	Tachometer is inoperative or indicates less than 625 rpm or more than 725 rpm at idle after engine has been properly warmed up (start engine (Vol-

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				ume 1, WP 0044) procedure completed).
			3. Battery voltage readout.	Battery voltage readout is inoperative, or indicates less than 24 VDC or more than 28 VDC with engine running.
			NOTE Air pressure buzzer will sound anytime low air indicator is illuminated. Ensure low air indicator and buzzer activate when air pressure falls below 60 to 70 psi (4.83 bar) in FRONT air system.	
			4. FRONT air pressure gauge.	FRONT air pressure gauge is inoperative or indicates FRONT air system is below 70 psi (4.83 bar) after engine has been

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				properly warmed up (start engine (Volume 1, WP 0044) procedure completed). Low air pressure indicator and/ or buzzer remain on, or do not operate.
			NOTE Air pressure buzzer will sound anytime low air indicator is illuminated. Ensure low air indicator and buzzer activate when air pressure falls below 60 to 70 psi (4.83 bar) in REAR air system.	
			5. REAR air pressure gauge.	REAR air pressure gauge is inoperative or indicates REAR air system is below 70 psi (4.83 bar) after engine has been properly

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				warmed up (start engine (Volume 1, WP 0044) procedure completed). Low air pressure indicator and/ or buzzer remain on, or do not operate.
			6. Air filter restriction indicator.	Air filter restriction indicator inoperative, cracked, or unserviceable.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

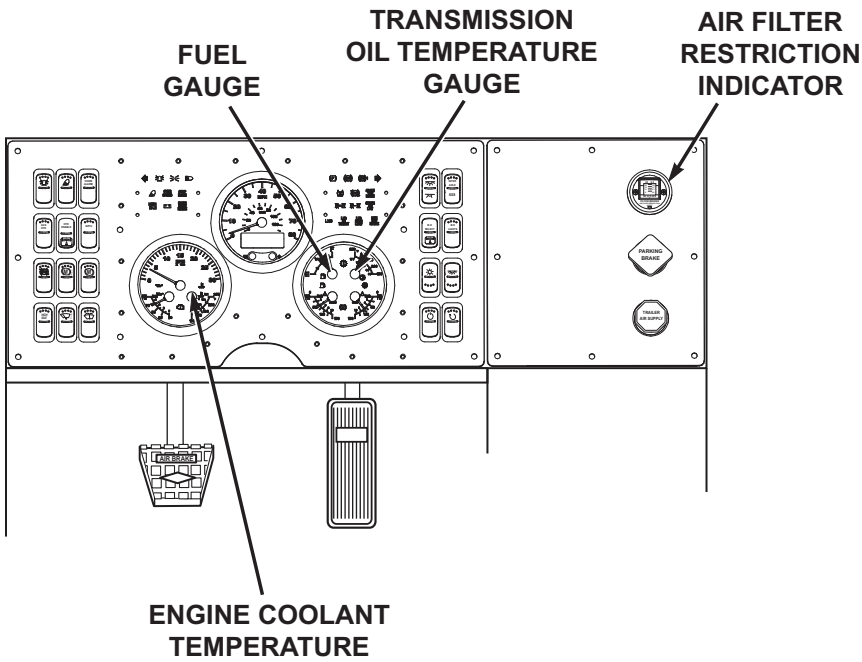


Figure 16.

			NOTE Several minutes are required for engine to warm up so an accurate reading can be taken.	
			7. Engine coolant temperature gauge.	Engine coolant temperature gauge is in-

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				operative, or indicates less than 180°F (82°C) or more than 219°F (104°C) after engine has been properly warmed up (start engine (Volume 1, WP 0044) procedure completed).
			NOTE Transmission may not reach 160°F (71°C) oil temperature at idle for several minutes.	
			8. Transmission oil temperature gauge.	Transmission oil temperature gauge indicates more than 250°F (121°C).
			9. Fuel gauge.	FUEL gauge is inoperative, or indicates less than

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				the required amount of fuel needed to complete the mission.
			CAUTION Vehicle must be parked when making this check. Failure to comply may result in damage to equipment. Transfer case will be damaged if shifted while vehicle is moving. **NOTE** Engine must be running to perform this check.	
21	Before	TRANSFER CASE Shift Lever and Traction Control Switch	1. TRANSFER CASE Shift Lever - Check operation: (Volume 1, WP 0048)	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

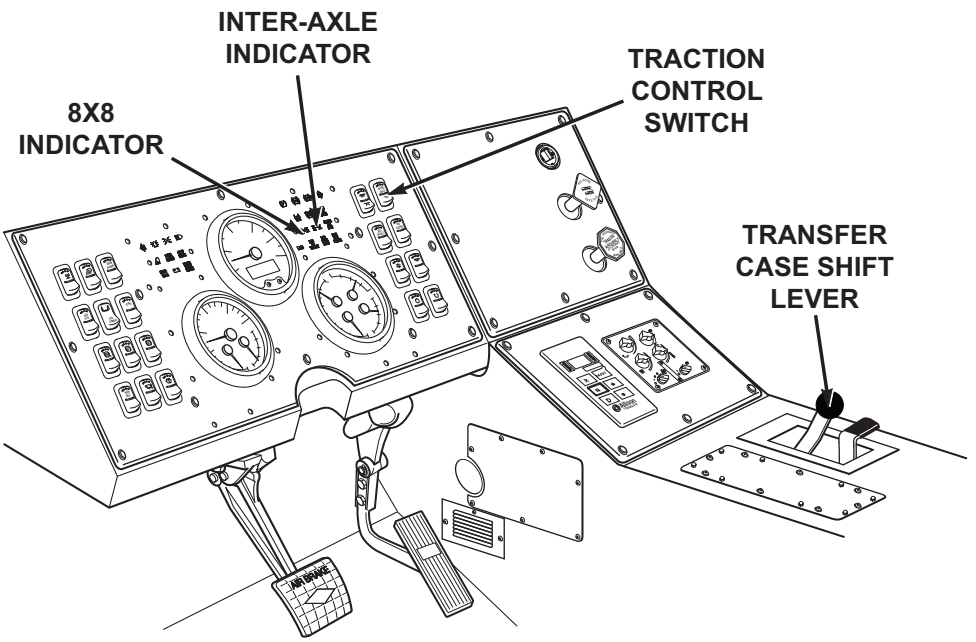


Figure 17.

			a. With transmission in N (neutral), shift transfer lever through all range positions. Lever should move freely through all range positions.	TRANSFER CASE shift lever inoperable or binds between range detents.
			2. Traction Control Switch - Check operation: (Volume 1, WP 0022)	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			a. Switch should interact with transfer case shift lever to show correct indications on instrument panel. (Volume 1, WP 0022)	Traction control switch or indicators inoperable.
			NOTE Engine must be running to perform this check.	
22	Before	Engine Brake	1. Check engine retarder/brake for proper operation: (Volume 1, WP 0049) a. Set transmission range selector to N (neutral) position.	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

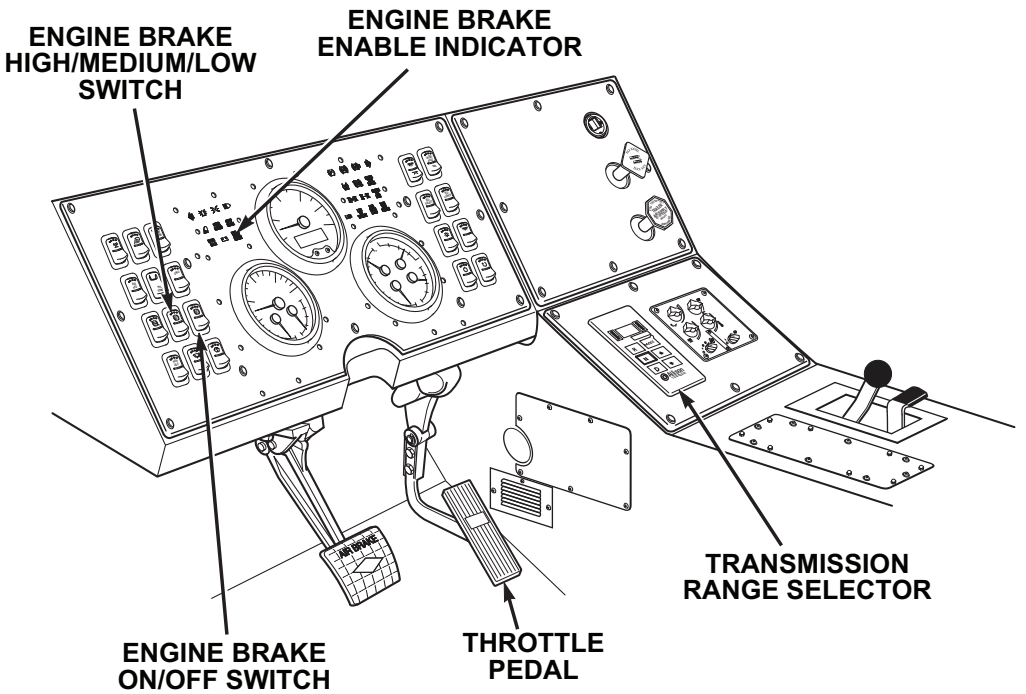


Figure 18.

			b. Push in throttle pedal and increase engine speed to between 1900 and 2100 rpm. c. Set engine brake high/ medium/low switch to low position. d. Place engine retarder/brake switch to ON.	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			e. Lift foot off throttle pedal and listen for a popping or chattering sound, which indicates the engine retarder/brake is working.	Engine retarder/brake does not engage.
			NOTE Engine must be running to perform this check.	
23	Before	Steering	1. Check vehicle steering for proper operation: a. Turn steering wheel from full left to full right, back to full left.	Steering inoperable or binds.
			NOTE Engine must be running to perform this check.	
24	Before	HYD ENABLE Switch	Set HYD ENABLE switch to on position. MAIN HYD ENABLE indicator will illuminate.	HYD ENABLE switch and/or MAIN HYD ENABLE indicator does not operate.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

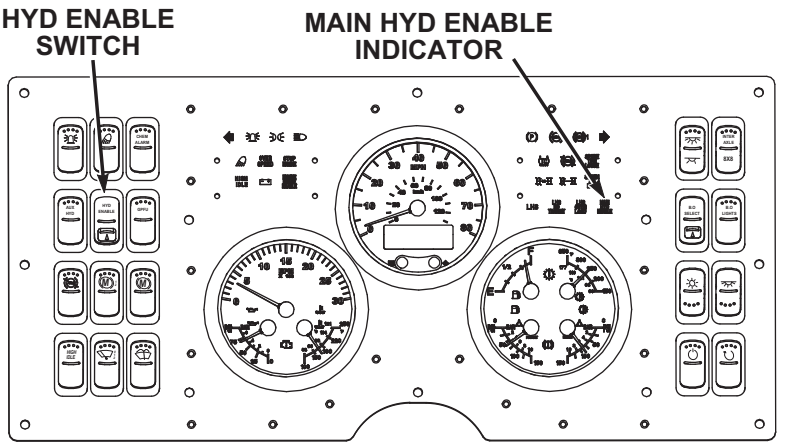


Figure 19.

			NOTE Operation of vehicle with malfunctioning windshield wiper may violate AR 385-55. (WP 0200)	
25	Before	Windshield Wiper/ Washer Switches	1. Check windshield wiper switch for proper operation. (Volume 1, WP 0034)	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

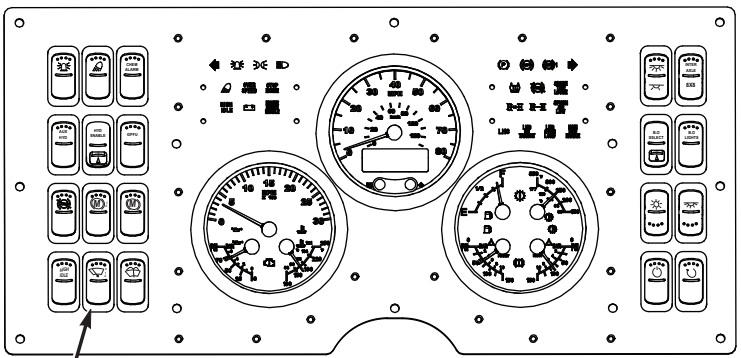


Figure 20.

			2. Check windshield washer switch for proper operation. (Volume 1, WP 0034) **NOTE** • Engine must be running to perform this check. • Operation of vehicle with malfunctioning windshield wiper may violate AR 385-55. (WP 0200)	
26	Before	Parking Brake Control	1. Check PARKING BRAKE control for proper operation: (Volume 1, WP 0045)	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

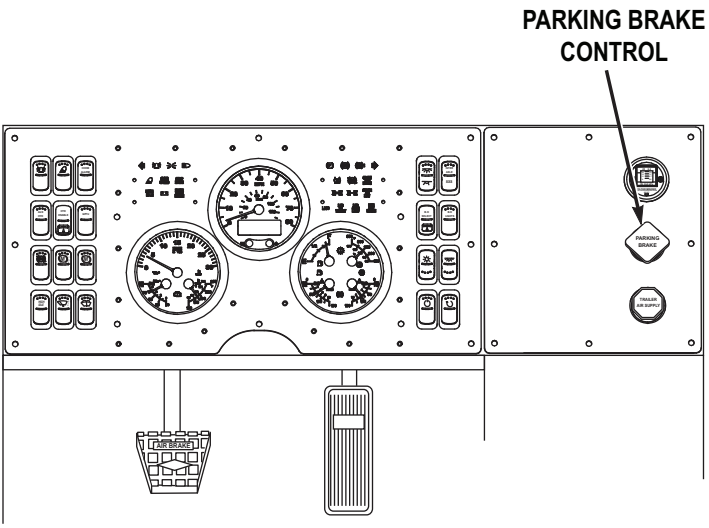


Figure 21.

			a. With vehicle at idle and service brake pedal engaged, (Volume 1, WP 0046)set transmission range selector to D (drive). (Volume 1, WP 0048) **NOTE** Dashboard parking brake indicator will illuminate when PARKING BRAKE control is applied.	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			b. Pull out PARKING BRAKE control. (Volume 1, WP 0045) c. Release service brake pedal. (Volume 1, WP 0046) d. Set transmission range selector to N (neutral). (Volume 1, WP 0048) **NOTE** Operator may continue on with mission if vehicle requires no servicing.	Vehicle moves with PARKING BRAKE control applied (pulled out).
27	Before	Engine	Shut OFF engine (Volume 1, WP 0057) (as required).	

END OF WORK PACKAGE

OPERATOR MAINTENANCE
DURING - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Gloves, Welders

Table 1. PMCS - DURING

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.	
1	During	Engine	Check and/or listen for excessive smoke, unusual noise, rough running, and misfiring. **NOTE** Check trailer handbrake control lever only if a trailer is hooked up to vehicle.	Engine has excessive smoke, unusual noise, runs rough, or misfires.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
2	During	Trailer Handbrake Control Lever	Check trailer handbrake control lever for proper operation. (Volume 1, WP 0047)	Control lever does not apply trailer brakes.

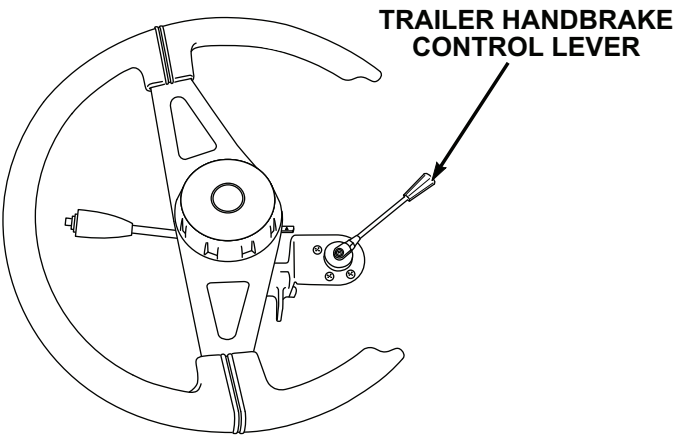


Figure 1.

			Listen for actuation. If none, refer to applicable trailer operator's manual. **NOTE** During operation, all gauges should maintain the proper readings listed in the PMCS BEFORE checks. (WP 0180)	
3	During	Instruments	Monitor all gauges, indicators, and warning lights for proper reading and operation while operating vehicle.	Gauges, indicators, and warning lights do not

Table 1. PMCS - DURING - Continued

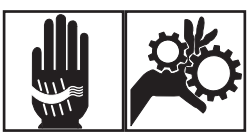
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				read/operate properly.
4	During	Transmission	Check transmission for proper operation. (Volume 1, WP 0048)	Transmission slips or will not shift.
5	During	Steering	Be alert for any unusual noise, binding, or difficulty in steering during operation.	Steering binds or is unresponsive.
6	During	Service Brakes	Be alert for chatter, noise, and side pull. **WARNING**  Keep hands clear of heavy-duty winch cable. Failure to comply may result in injury or death to personnel. **WARNING**  • Always wear protective gloves when handling	Service brakes do not operate properly.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel. • Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.	
7	During	Heavy-Duty Winch	Check cable of winch for kinks, frays, and breaks.	Evidence of kinks, frays, or breaks.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

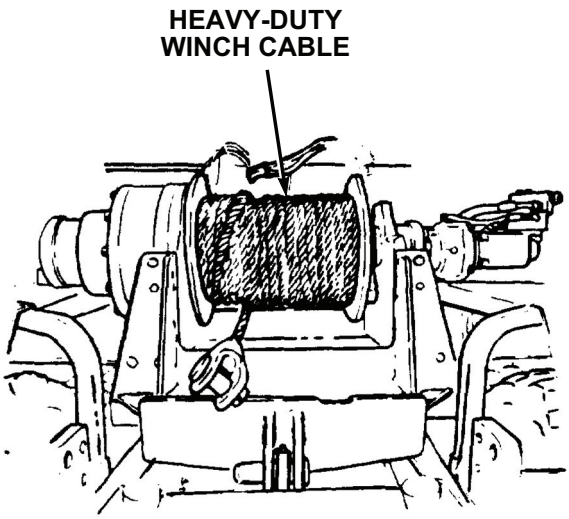


Figure 2.

			NOTE • PMCS for retrieval system should only be performed when retrieval system is required for mission. • Engine must be running to perform this check.	
8	During	Retrieval System	Check operation of retrieval system as follows: 1. Start engine. (Volume 1, WP 0044)	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			2. Set HYD ENABLE switch to on position. MAIN HYD ENABLE indicator will illuminate.	

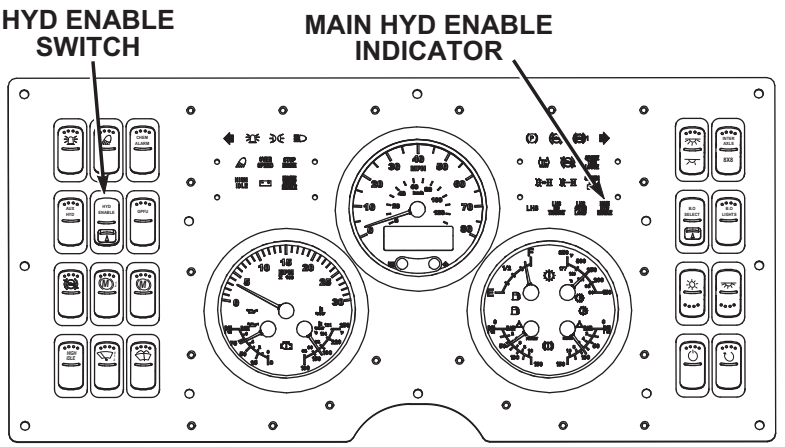


Figure 3.

			3. Set ON/OFF POWER switch to ON position.	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

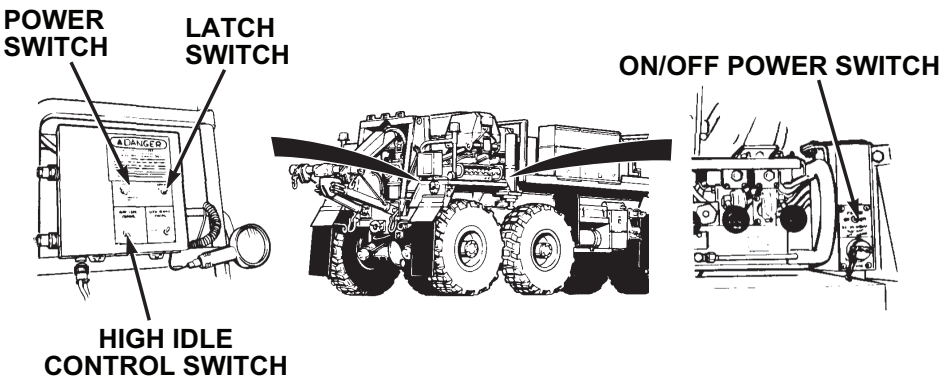


Figure 4.

			4. Set POWER switch to ON position. 5. Set HIGH IDLE CONTROL switch to CONTINUOUS. **WARNING** Excessive noise levels are present any time the heavy-duty winch, crane, or retrieval system is operating. Wear single hearing protection (earplugs or equivalent) while working around equipment when it is running. Failure to	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			comply may result in injury or death to personnel. Seek medical aid should you suspect a hearing problem.	
			6. Push and release LATCH switch. Engine speed should increase to approximately 1500 rpm.	Engine speed does not increase to 1500 rpm.
			7. Operate retrieval system control levers. Check for proper operation of levers and cylinders.	Retrieval system does not operate.

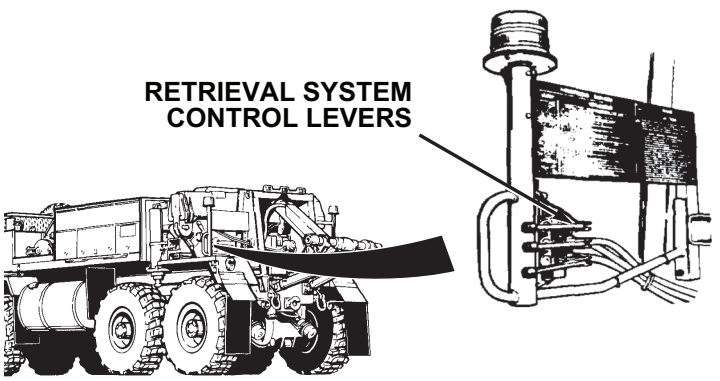


Figure 5.

Table 1. PMCS - DURING - Continued

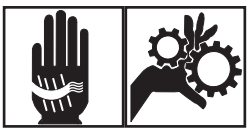
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Keep hands clear of heavy-duty winch cable. Failure to comply may result in injury or death to personnel. **WARNING**  • Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel. • Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE • PMCS for heavy-duty winch should only be performed when retrieval system is required for mission. • Engine must be running to perform this check.	
9	During	Heavy-Duty Winch	1. Check heavy-duty winch remote control and cable for proper operation, (Volume 1, WP 0039) obvious damage, missing parts, binding, and excessive looseness.	Controls malfunction, bind, or do not re-spond.

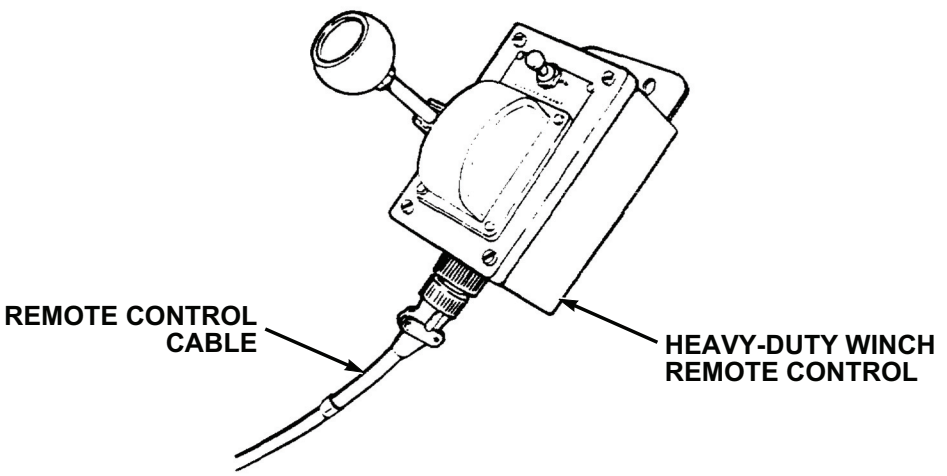


Figure 6.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			2. Check forward winch control and high idle switch for proper operation, (Volume 1, WP 0039) obvious damage, missing parts, binding, and excessive looseness.	Controls malfunction, bind, or do not re-spond.

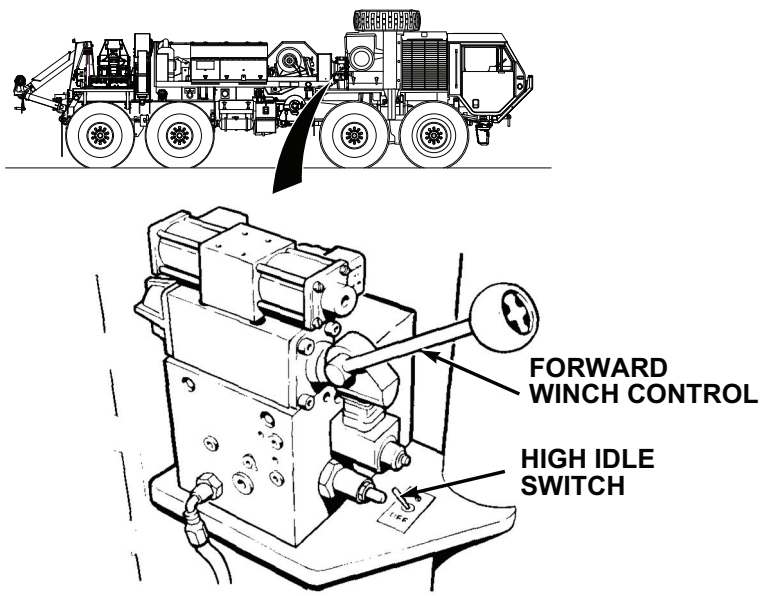


Figure 7.

			3. Check that winch cable clevis pin is secure and in place.	Clevis pin missing.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

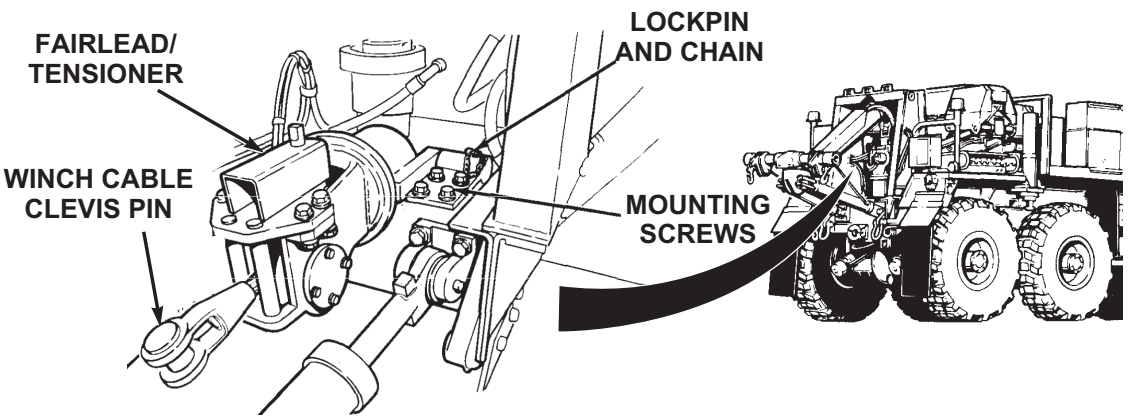


Figure 8.

			4. Check fairlead/tensioner for obvious damage, and that fairlead/tensioner can be swiveled and placed in both stowed and operational positions.	Fairlead/ tensioner will not swivel, cannot be raised or lowered.
			5. Check that fairlead/tensioner mounting screws are secure.	Mounting screws loose or missing.
			6. Check for missing or damaged fairlead/tensioner lockpin and chain.	Has one missing or broken lockpin.
			7. Push in FRONT BRAKE APPLICATION control and	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			check operation. Check housing for looseness and damage.	

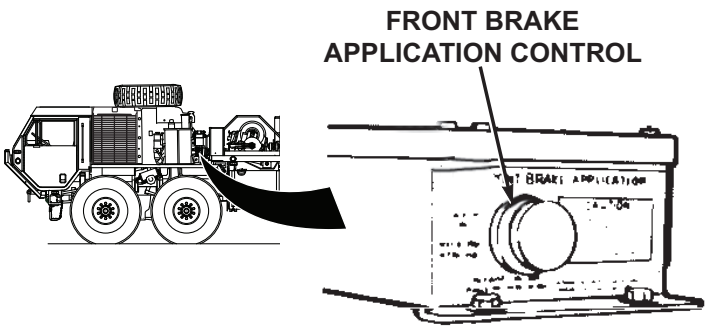


Figure 9.

10	During	Material Handling Crane	1. Check crane for loose nuts and screws, hydraulic leaks, damage to hydraulic hoses and lines, and obvious damage. **NOTE** • PMCS for material handling crane should only be performed when material handling crane is required for mission. • Engine must be running to perform this check.	Class III leak present or damage to hoses, lines, or fittings.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			1. Check that crane hydraulic system is operable as follows: a. Set HYD ENABLE switch in on position. MAIN HYD ENABLE indicator will illuminate.	

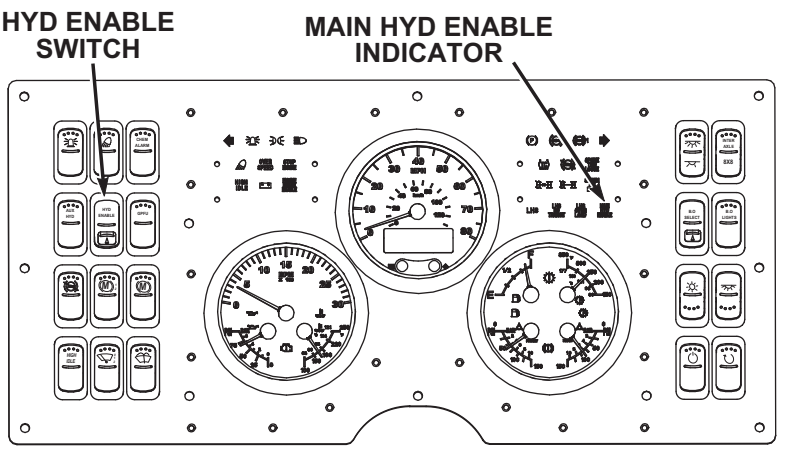


Figure 10.

			b. Set ON/OFF POWER switch to ON position.	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

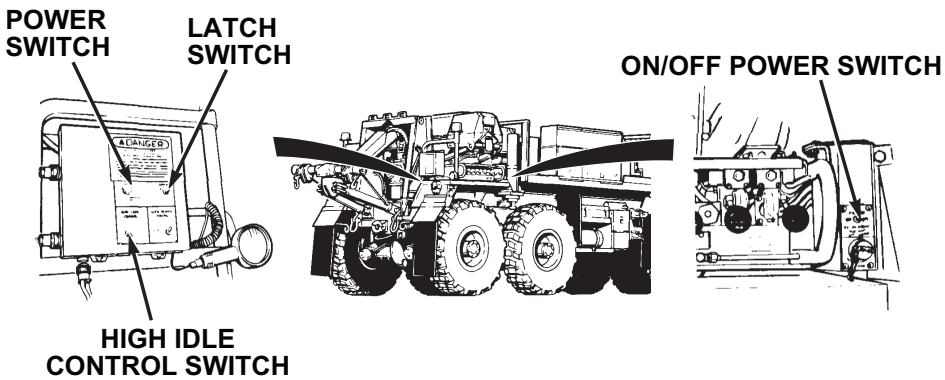


Figure 11.

			c. Set POWER switch to ON position. d. Set HIGH IDLE CONTROL switch to CONTINUOUS. **WARNING**  Excessive noise levels are present any time the heavy-duty winch, crane, or retrieval system is operating. Wear single hearing protection (earplugs or equivalent) while working around equipment when it is running. Failure to	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			comply may result in injury or death to personnel. Seek medical aid should you suspect a hearing problem. e. Push and release LATCH switch. Engine speed should increase to approximately 1500 rpm. 1. Check crane manual control levers as follows:	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

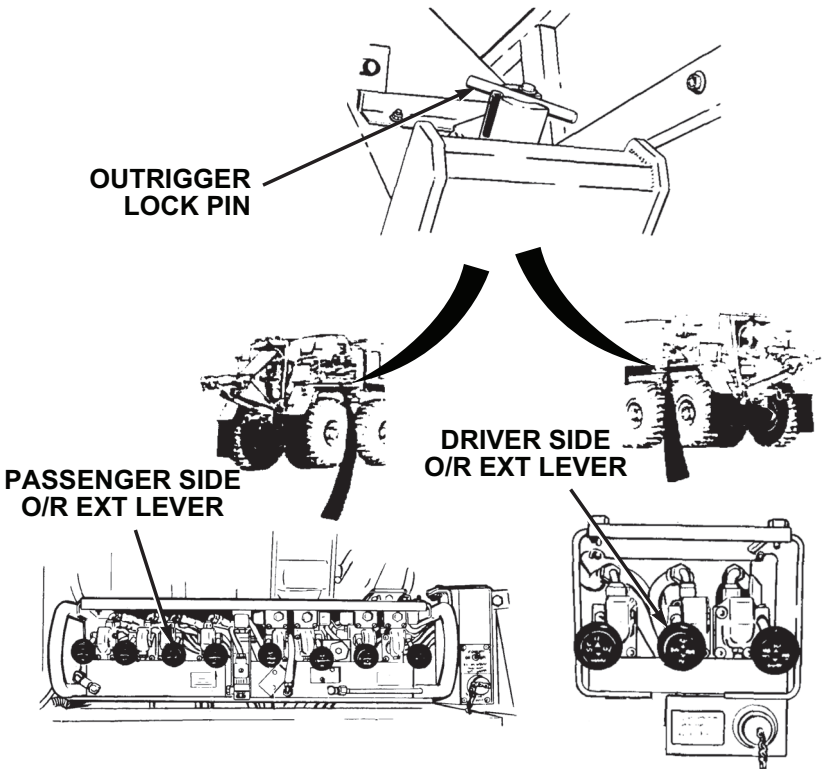


Figure 12.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING   • Stand clear of outrigger beams while operating levers. Failure to comply may result in injury or death to personnel. • Do not operate crane unless outriggers are firmly in place or vehicle could turn over. Failure to comply may result in injury or death to personnel. • Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **NOTE** • Operate control levers with light, even pressure. Moving lever slightly will cause slow movement of crane. Moving lever to full	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			travel will cause faster movement of crane. • Outrigger beams will come out slower with light pressure on lever. Pushing lever to full travel will cause fast movement. a. Move passenger side O/R EXT lever to IN position briefly. Move driver side O/R EXT lever to IN position briefly. b. Place both outrigger lockpins in unlock position. c. Check each control separately for malfunction, proper response, obvious damage, missing parts, binding, and extreme looseness. d. Move passenger side O/R EXT lever to OUT position until passenger side outrigger is completely out.	Controls malfunction, bind, or do not re-spond. Outrigger beam does not come out.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

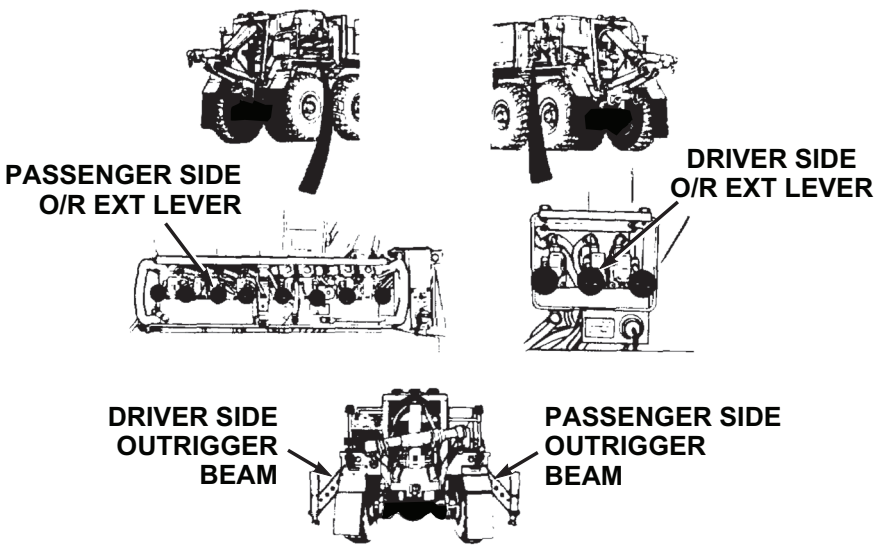


Figure 13.

			e. Move driver side O/R EXT lever to OUT position until driver side outrigger is completely out.	Outrigger beam does not come out.
			f. Set up outrigger pads. Check that two retaining pins are attached to each outrigger pad.	Retaining pin missing from either end.

Table 1. PMCS - DURING - Continued

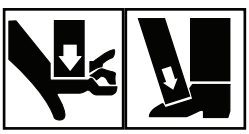
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Keep hands and feet clear of outrigger jack cylinders. Failure to comply may result in injury or death to personnel. **NOTE** Adjust outrigger pad position as required so rod end will lower into pad socket. g. Move LH O/R JACK control lever to DOWN position and lower outrigger jack until rod end is firmly seated in outrigger pad. Install retaining pins.	Outrigger jack cylinder will not come out or will not lower completely into pad.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

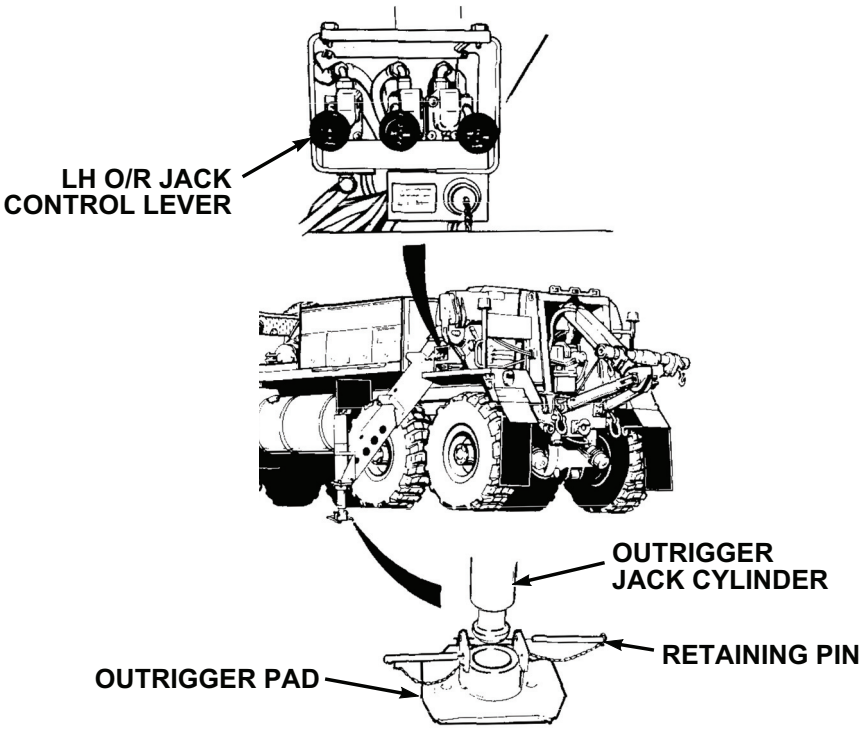


Figure 14.

			h. Move RH O/R JACK control lever to DOWN position and lower outrigger jack until rod end is firmly seated in outrigger pad. Install retaining pins.	Outrigger jack cylinder will not come out or will not lower completely into pad.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

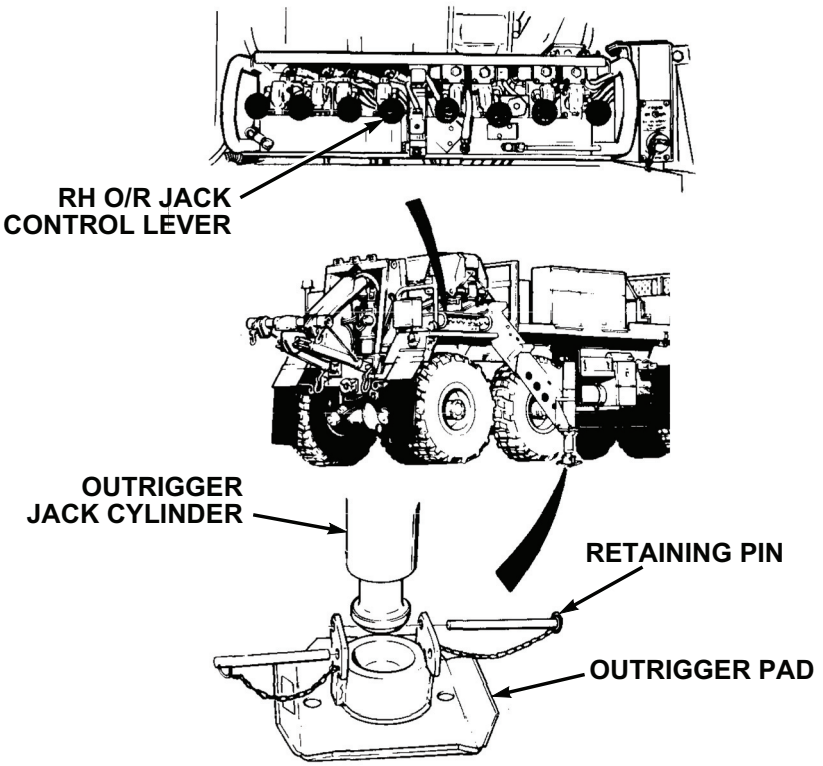


Figure 15.

		i. Check that outrigger jack cylinder on each side of vehicle is out and down.	Crane hydraulic system does not operate.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

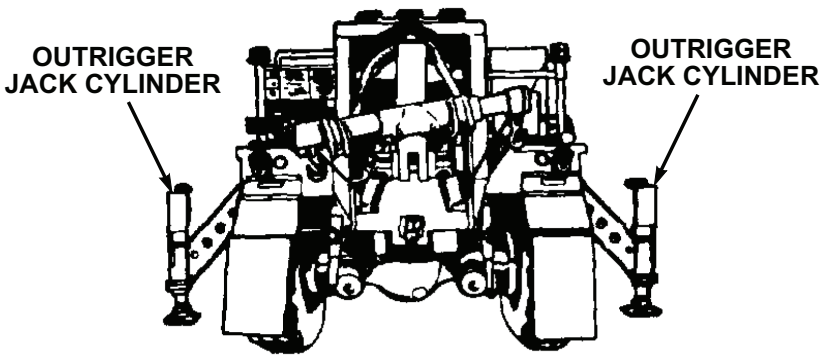


Figure 16.

			j. Seat outriggers. k. Raise boom to operating position. **WARNING**  Do not operate crane unless outriggers are firmly in place or vehicle could turn over. Failure to comply may result in injury or death to personnel.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			CAUTION Do not let cable unwind and become slack or cable may get tangled on drum. (1) Move HOIST control lever to DOWN position until hook block rests on fender.	

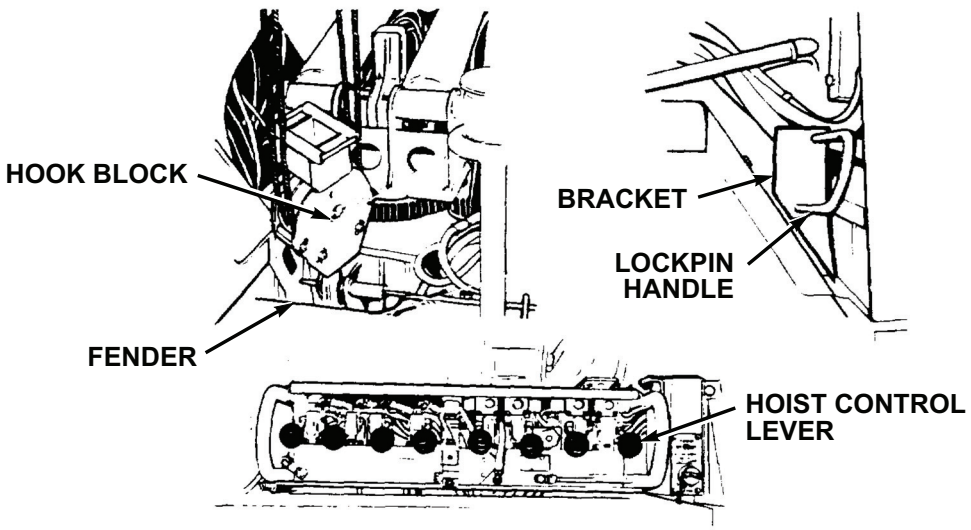


Figure 17.

			(2) Pull and turn lockpin handle so handle end rests on bracket to unstow hook block.	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(3) Check hook block for cracks.	Hook block is cracked.
			(4) Check hook block stowage guide wear plate for excessive wear.	

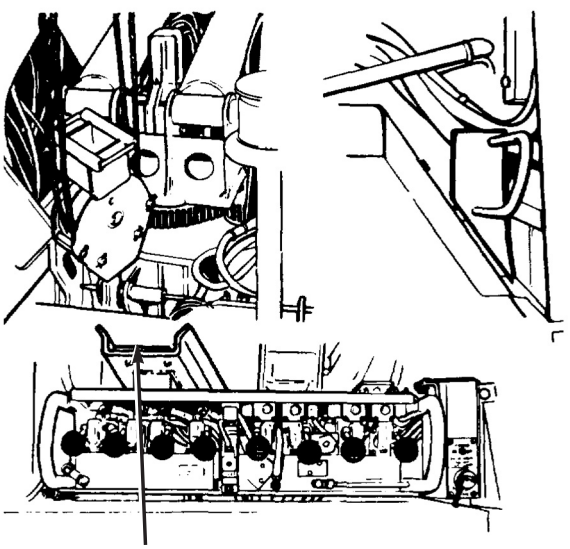


Figure 18.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **CAUTION** Do not hit outrigger leg with hook block. (5) Move BOOM control lever to UP position until hook is five to six feet (1.5 to 1.8 m) above driver side rear fender and boom is approximately 45° above horizontal.	Boom does not raise.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

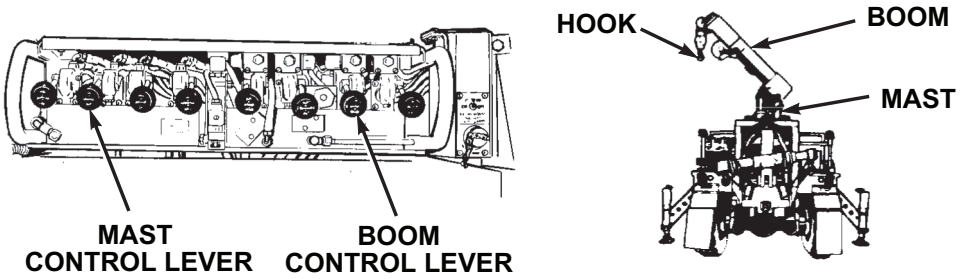


Figure 19.

			(6) Move MAST control lever to UP position until the mast is fully erect and the cylinders are fully extended. Use BOOM control lever UP simultaneously as required to maintain the boom at approximately 45° above horizontal until the mast is fully erect. Hold the MAST control lever to UP position for two to three seconds after mast is fully erect to ensure cylinders are fully filled with oil.	Mast cylinder does not raise completely before stopping.
			l. Rotate and telescope boom;	

Table 1. PMCS - DURING - Continued

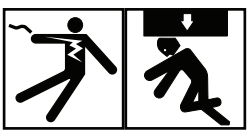
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  • When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. • Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may result in injury or death to personnel. **CAUTION** Boom must be above vehicle sides for clearance. (1) Move swing control lever to CW position to move boom clockwise.	Boom does not turn clockwise.

Table 1. PMCS - DURING - Continued

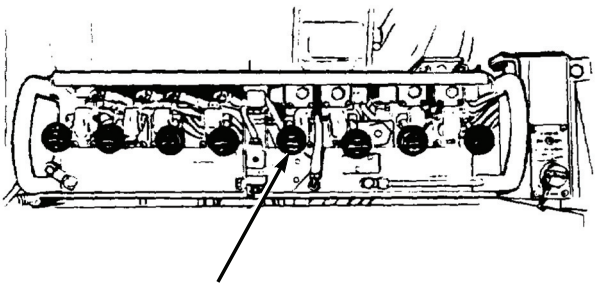
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 20.

			(2) Move swing control lever to CCW position to move boom counterclockwise. **CAUTION** Keep hook block at least one ft. (30 cm) from end of boom. If hook block hits end of boom, cable or hook block damage may occur and crane will lose power. Wait six seconds for power to return and check crane for damage. **NOTE** • TELESCOPE and HOIST levers should be operated at the same time.	Boom does not turn counter-clockwise.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			• Crane movement from one lever may be slower than the other when operating two levers together. (3) Move TELESCOPE control lever to OUT position to extend boom while moving hoist control lever to DOWN position to pay out cable.	Extensions do not come out.

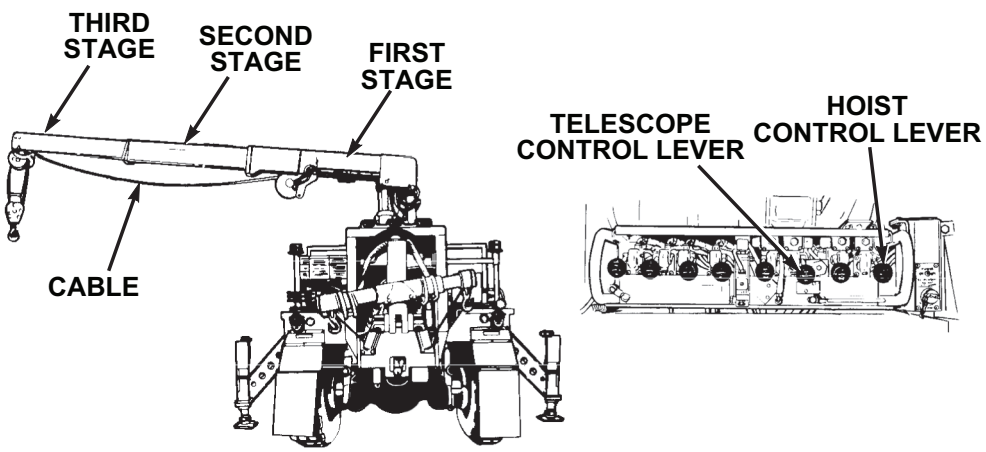


Figure 21.

			(4) Check first, second, and third stages of boom for broken welds or obvious damage.	There are any broken welds or obvious dam-

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				age to boom.
			WARNING  Always wear protective gloves when checking hoist cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.	
			(5) Check cable on hoist for kinks, frays, or breaks.	Evidence of kinks, frays, or breaks.

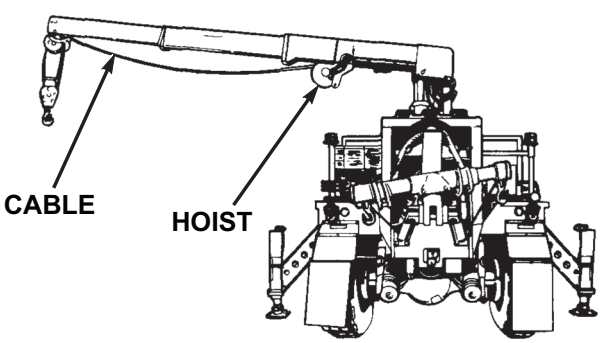


Figure 22.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(6) Check all hoses, fittings, valves, and cylinders for signs of leaks.	Class III leak present.
			(7) Check for cracked or broken welds.	Cracked or broken welds are present.
			(8) Check turntable bearing screws for obvious looseness.	One or more turntable bearing screws are loose.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

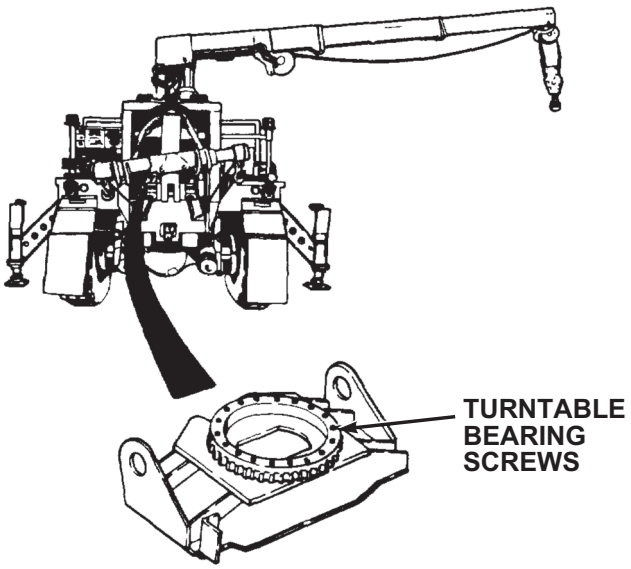


Figure 23.

			CAUTION Do not let cable become slack or cable may get tangled on drum. (9) Move HOIST control lever in UP position to reel in cable.	Cable does not reel in.

Table 1. PMCS - DURING - Continued

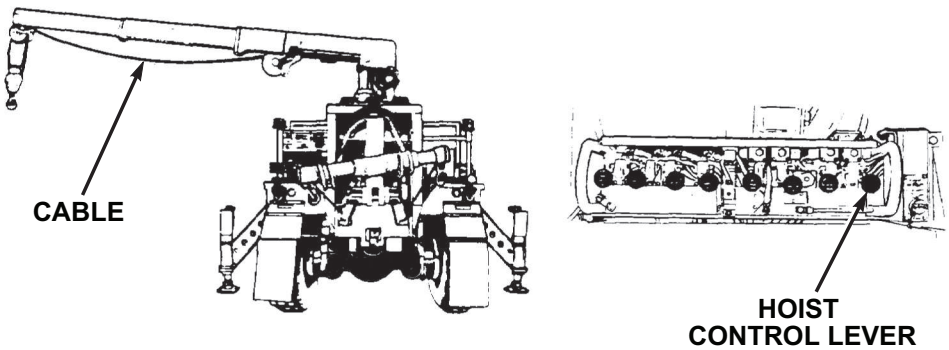
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 24.

			(10) Move HOIST control lever in DOWN position to pay out cable. **NOTE** PMCS for remote control unit should only be performed when remote control unit is used/required for mission. 2. Check crane remote control levers as follows: a. Set up REMOTE CONTROL UNIT passenger side.	Cable does not pay out.

Table 1. PMCS - DURING - Continued

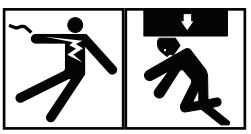
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  • When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. • Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may result in injury or death to personnel. **WARNING**  If electrical power fails during crane operation, move switch on remote control unit to SHUTDOWN position. Fail-	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			ure to comply may result in injury or death to personnel. **CAUTION** Crane must be above vehicle sides for clearance. **NOTE** Operate control levers with light, even pressure. Moving lever slightly will cause slow movement of crane. Moving lever to full travel will cause faster movement of crane. b. Check control levers for malfunction, proper response, obvious damage, missing parts, binding, and extreme looseness. c. Rotate and telescope boom. **WARNING**  Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may	Controls malfunction, bind, or do not respond.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			result in injury or death to personnel. (1) Move SWING control lever to CW position to turn boom clockwise.	Boom does not turn clockwise.

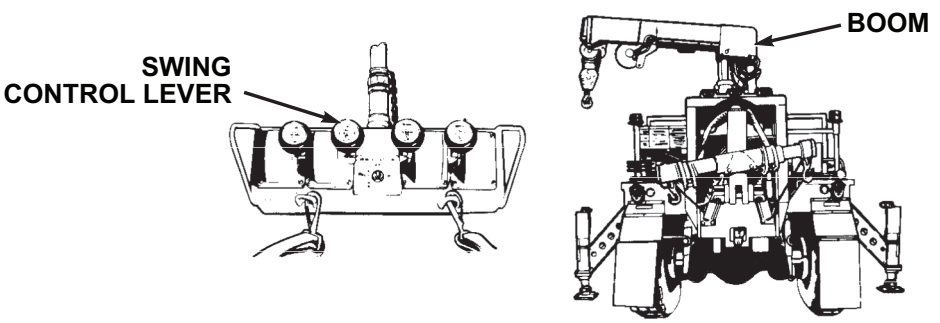


Figure 25.

			(2) Move SWING control lever to CCW position to turn boom counterclockwise. **WARNING**  When using crane on any vehicle, park vehicle clear of all overhead electrical lines.	Boom does not turn counterclockwise.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **CAUTION** Do not let cable become slack or cable may get tangled on drum. (3) Move HOIST control lever to UP position to take up cable. Move BOOM control lever to UP position to raise boom.	Cable does not reel in or boom does not raise.

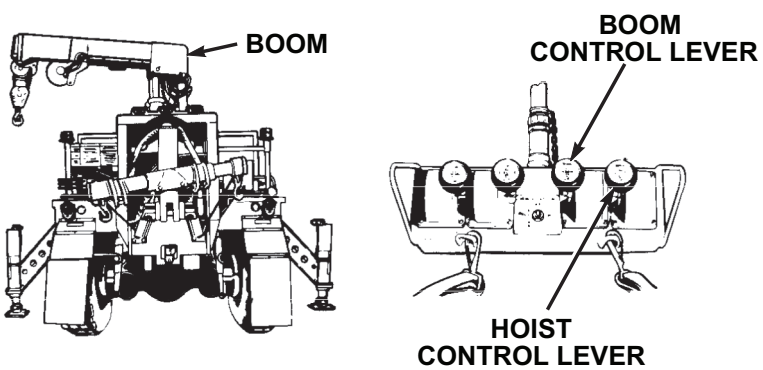


Figure 26.

			(4) Move HOIST control lever to DOWN position to pay out cable. Move	Cable does not pay out or boom

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			BOOM control lever to DOWN position to lower boom to horizontal position. **CAUTION** • Keep hook block at least one ft. (30 cm) from end of boom. If hook block hits end of boom it may damage cable or hook block and crane will lose power. Wait six seconds for power and check crane for damage. • Do not let cable become slack or cable may get tangled on drum. **NOTE** • TELESCOPE and HOIST levers should be operated at the same time. • Crane movement from one lever may be slower than the other when operating two levers together.	does not lower.
			(5) Move TELESCOPE control lever to OUT position while moving HOIST control lever to	Extensions will not come out or cable will not pay out.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			DOWN position to pay out cable.	

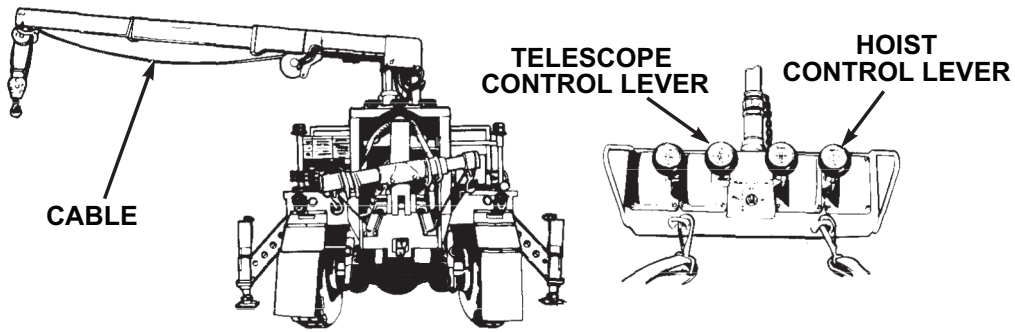


Figure 27.

			(6) Move HOIST control lever in UP position to reel in cable.	Cable will not reel in.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

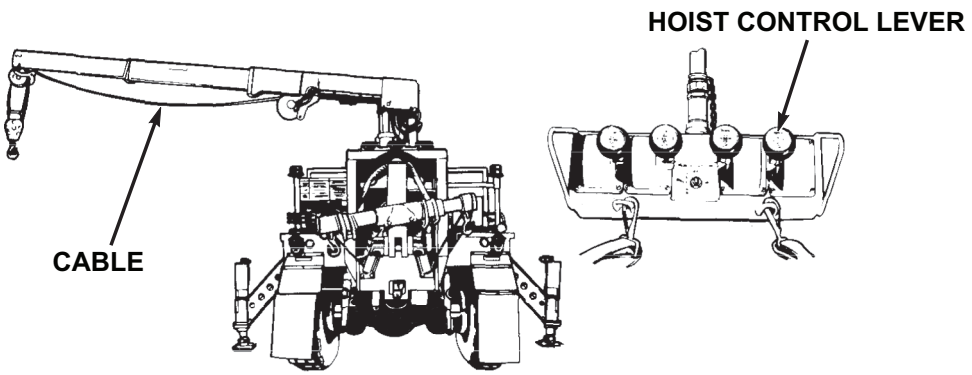


Figure 28.

			(7) Check that crane and ENGINE HIGH IDLE do not operate when REMOTE CONTROL UNIT is in MHC-SHUTDOWN position. Notify organizational maintenance if crane and ENGINE HIGH IDLE operates when in MHC-SHUTDOWN position. (8) Shut off remote control switches. (9) Disconnect remote control, passenger side.	Crane will operate, and engine speed will increase to 1500 rpm.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(10) Check operation of driver side remote control station. (11) Connect remote control to driver side remote control station. (12) Check operation of crane remote control levers. (13) Shut off remote control switches. (14) Disconnect and stow REMOTE CONTROL UNIT. (15) Shut down material handling crane. (Volume 1, WP 0102)	
11	During	Equipment Body	1. Check utility chains and pallet sling for any obvious damage.	Chain links, shackles or hooks cracked or broken.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

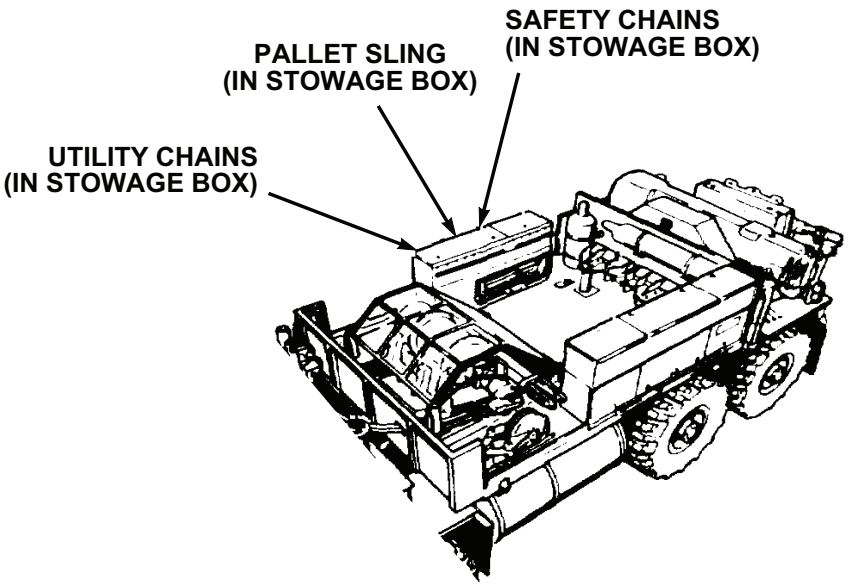


Figure 29.

			2. Check safety chains for obvious damage. **NOTE** • PMCS for SRW should only be performed when SRW is required for mission.	Chain links, shackles, or hooks cracked or broken.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			• Engine must be running to perform this check.	
12	During	Self-Recovery Winch (SRW)	Check SRW control for proper operation. (Volume 1, WP 0115)	

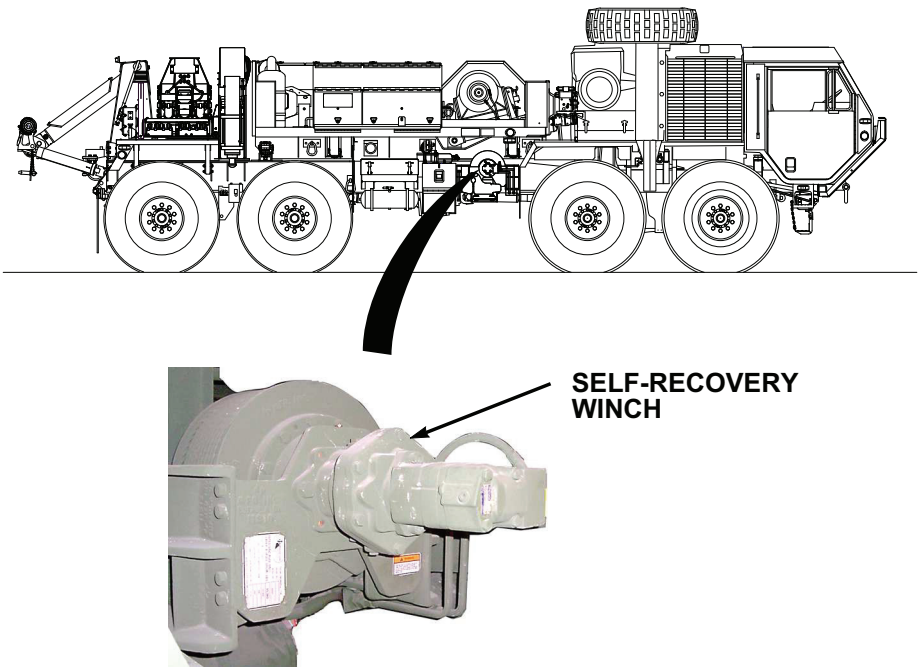


Figure 30.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
AFTER - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Gloves, Welders

Table 1. PMCS - AFTER

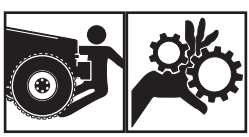
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel. **WARNING**  Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE Perform Operator's Before, After, and Weekly PMCS checks if: • You are the assigned driver but have not operated the vehicle since the last weekly inspection. • You are operating the vehicle for the first time. **NOTE** • Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated. • Always refer to lubrication instructions (WP 0186) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as	

Table 1. PMCS - AFTER - Continued

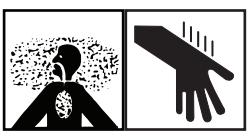
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			prescribed in lubrication instructions. (WP 0186)	
1	After	Underneath Vehicle	1. Check entire underside of vehicle for fluid and air leaks.	Any fuel, Class III leak, or air lines/fittings leaking or damaged.
			2. Check entire underside of vehicle for signs of fluid leakage (fuel, oil, and coolant). **WARNING**  Prolonged contact with lubricating oil may cause skin rash. Immediately wash skin and clothing that come in contact with lubricating oil thoroughly and remove saturated clothing. Keep area well-ventilated to keep fumes at a minimum. Failure to comply may result in injury or death to personnel. **CAUTION** Do not fill hydraulic reservoir past FULL COLD mark. Fail-	Any fuel leak. Class III leak of any other fluid.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			ure to comply may result in damage to equipment. **NOTE** • Hydraulic oil expands when heated, which may give the operator false (high) fluid level readings if the vehicle has been recently operated. • If possible, wait until hydraulic reservoir is completely cooled down (minimum of 2 hours) prior to adding hydraulic oil, otherwise fill reservoir to FULL COLD mark.	
2	After	Hydraulic Fluid Reservoir	1. Check that hydraulic fluid level in sight glass on hydraulic fluid reservoir is at FULL COLD mark (may be above FULL COLD mark if vehicle has been recently operated). If low, add hydraulic oil to FULL COLD mark:	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 1.

			a. Remove cap from hydraulic reservoir. b. Fill hydraulic reservoir with lubricating oil (WP 0186, Table 4) until sight glass reads at FULL COLD mark. c. Install cap on hydraulic reservoir. 2. Check appearance of hydraulic fluid in sight glass. Make sure it is clear and not milky or foamy.	Fluid appears milky or foamy.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
3	After	Driver Side Wheels	1. Check wheels for broken, cracked, and bent surfaces.	Wheel is broken, cracked, or bent.
			2. Check lugnuts and wheel studs for obvious looseness and damage. If loose, tighten and report to maintenance as soon as practical.	Two or more lug-nuts or studs on the same wheel are missing, broken, or bent.
4	After	Driver Side Shock Absorbers	Check driver side shock absorbers for leaks and damage.	Damaged or Class III leak present.
5	After	60-Ton Tackle Block	Check 60-Ton tackle block for any obvious damage.	60-Ton tackle block is broken or missing.

Table 1. PMCS - AFTER - Continued

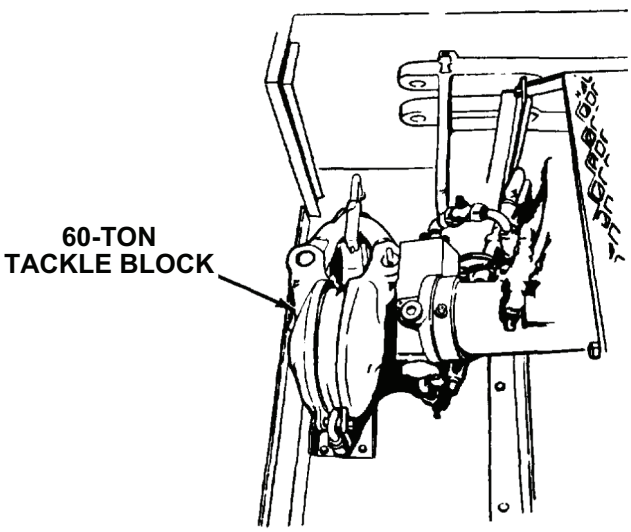
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			 *Figure 2.*	
6	After	Equipment Body, Towing Adapters	1. Check that towing adapters are properly secured and have no obvious damage.	Towing adapters are worn or broken.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

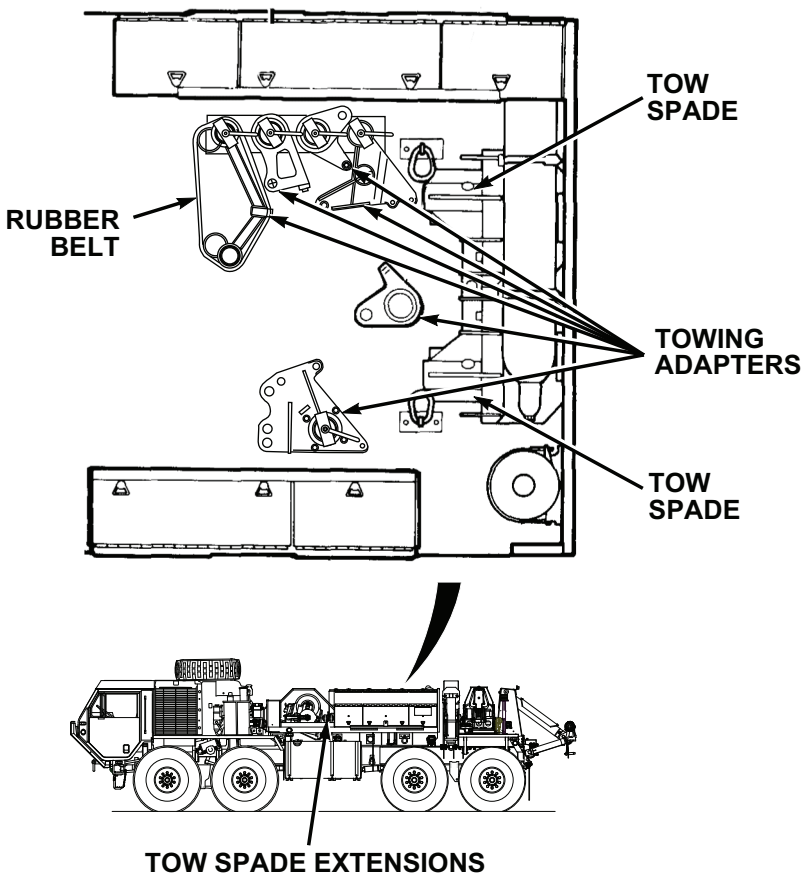


Figure 3.

		2. Check that tow spades are properly secured and have no obvious damage.	Tow spades are worn or broken.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			3. Check that tow spade extensions are properly secured and have no obvious damage.	
			4. Check that the width of rubber belt is not cut more that two in. (50 mm) or belt is not worn more than two of the four plies across the entire width of the belt.	Belt is cut more than two in. (50 mm) or worn more than two of the four plies across the width of the belt.
7	After	Oxygen Tank and Acetylene Tank	Check that oxygen tank and acetylene tank are properly mounted and securely fastened.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

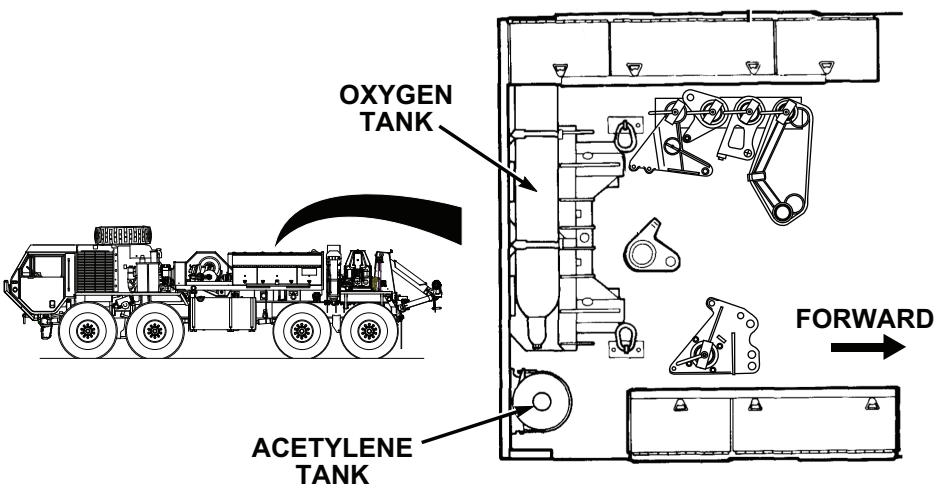


Figure 4.

8	After	Crane Control Knobs	Check all crane control knobs to make sure information on knobs is legible.	Information on crane control knobs is not legible.
9	After	Rear Exterior	Check rear of vehicle for obvious damage that would impair operation.	Any damage that would impair operation.
10	After	Towing Gladhands	Check for presence and condition of towing gladhands and rubber grommets.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
11	After	Passenger side Wheels	1. Check wheels for broken, cracked, and bent surfaces. 2. Check lugnuts and wheel studs for obvious looseness and damage. If loose, tighten and report to maintenance as soon as practical.	Wheel is broken, cracked, or bent. Two or more lug-nuts or studs on the same wheel are missing, broken, or bent.
12	After	Passenger Side Shock Absorbers	Check passenger side shock absorbers for leaks and damage. **WARNING**  Vehicles air system is pressurized, be sure to wear proper eye protection and keep face away from drain valves while draining air reservoirs. Open air drain valves slowly to prevent sudden blast of air. Failure to comply may result in injury to personnel.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
13	After	Air Reservoirs	1. Drain all air reservoirs by opening five air reservoir drain valves on air system drain manifold under battery box.	

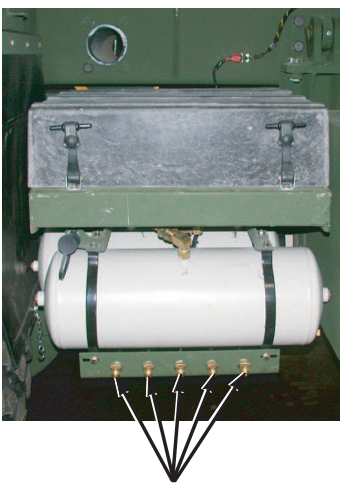


Figure 5.

			2. Once all air is exhausted from air reservoirs, close air reservoir drain valves on air system drain manifold. **CAUTION** Clean around end of fill tube prior to removing dipstick. This will aid in preventing dirt	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			or foreign matter from entering the transmission and causing damage. **NOTE** Vehicle is parked (Volume 1, WP 0056) on a flat, level surface. Engine is at idle. Transmission is at normal operating temperature, 160-200°F (71-93°C).	
14	After	Transmission	1. With engine running, check transmission fluid level on dipstick.	

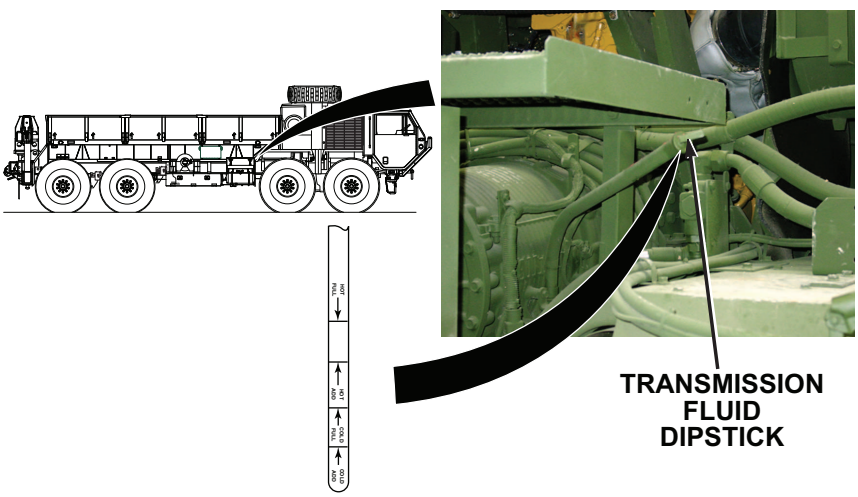


Figure 6.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE Fluid level should be between HOT FULL and HOT ADD marks.	
			2. Add OE/HDO (WP 0186, Table 2) as required.	Overfull. Notify field level maintenance.
15	After	Spare Tire/ Wheel	1. With engine running, lower tire carrier (Volume 1, WP 0041) and check spare tire for cuts, gouges, cracks, or scratches. Remove any sharp objects.	Tire has cuts, gouges, or cracks that could result in tire failure. Tire is missing or unserviceable.
			2. Check wheel for broken, cracked, and bent surfaces.	Wheel is broken, cracked, or bent.
			3. Check lugnuts and wheel studs for obvious looseness and damage.	Two or more lugnuts or studs are missing, broken, or bent.
			4. Raise tire carrier.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
16	After	Exterior of Cab	1. Visually inspect cab and components for damage. **NOTE** Operation of vehicle with broken/missing mirrors may violate AR 385-55. (WP 0200)	Any component is damaged that would impair vehicle mission.
17	After	Mirrors	Check condition of mirrors.	

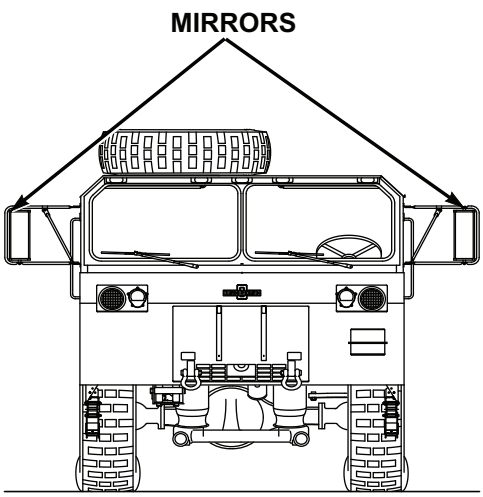


Figure 7.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE Operation of vehicle with damaged or missing windshield may violate AR 385-55. (WP 0200)	
18	After	Windshield and Wiper Arms/ Blades	1. Check windshield glass for presence and condition.	

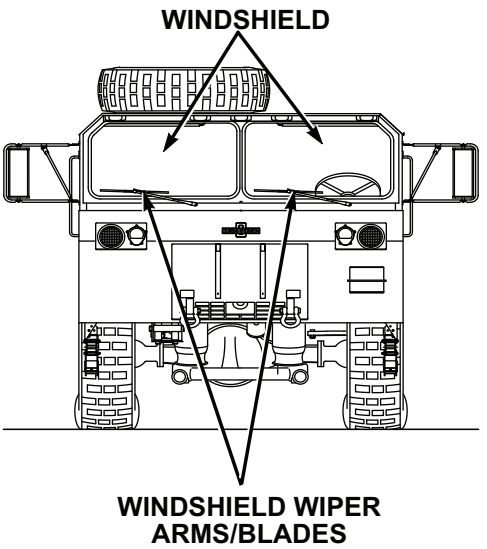


Figure 8.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE Operation of vehicle with damaged wiper arms/blades may violate AR 385-55. (WP 0200) 2. Check condition of wiper arms and blades.	
19	After	Fan Switch	Check fan control switch for proper operation (Volume 1, WP 0035) in low, medium, and high positions.	

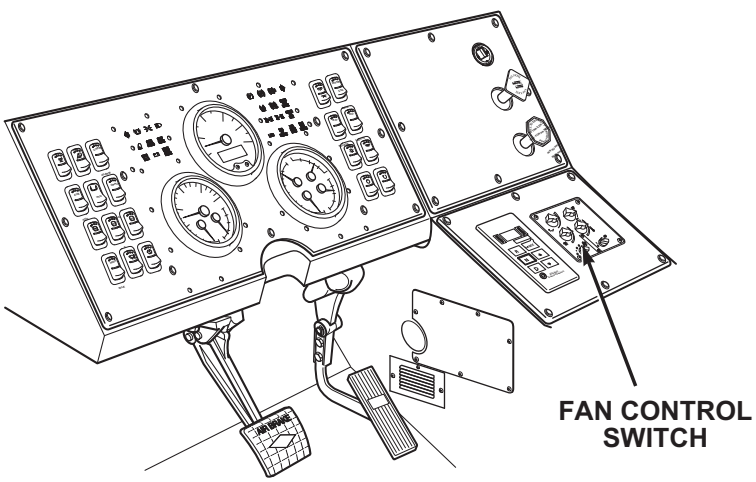


Figure 9.

			NOTE Operation of vehicle with malfunctioning windshield wash-	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			er may violate AR 385-55. (WP 0200)	
20	After	Washer Control	Check windshield washer control for proper operation.	

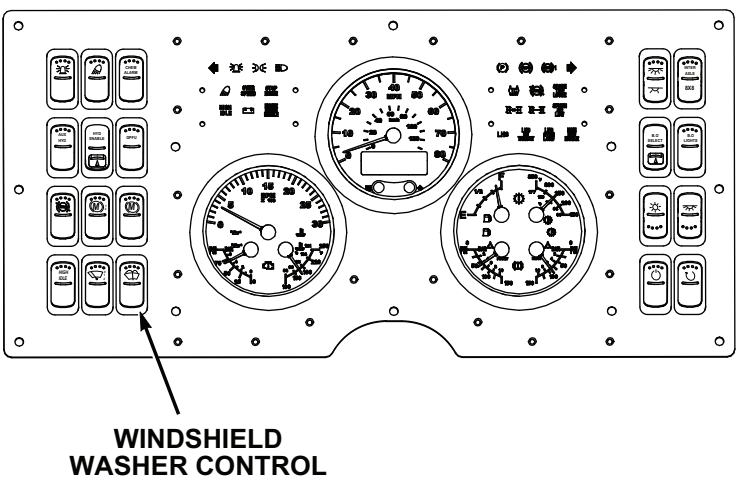


Figure 10.

			NOTE Operation of vehicle with malfunctioning windshield wiper may violate AR 385-55. (WP 0200)	
21	After	Wiper Control	Check windshield wiper control for proper operation (Volume 1, WP 0034) in both low and high speed position.	

Table 1. PMCS - AFTER - Continued

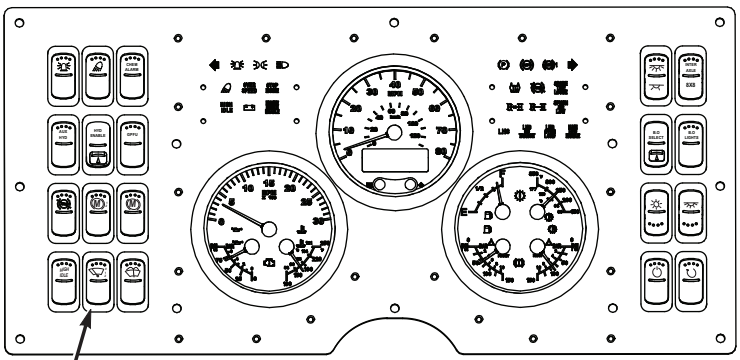
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				
			Figure 11.	
22	After	Horns	**NOTE** Operation of vehicle with malfunctioning horn may violate AR AR 385-55. (WP 0200) Check both horns (air and electric) for proper operation. **NOTE** • Light checks will require assistance. • Operation of vehicle with malfunctioning turn signal	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			control may violate AR 385-55. (WP 0200)	
23	After	Turn Signal Control	Check turn signal control for proper operation. (Volume 1, WP 0021)	

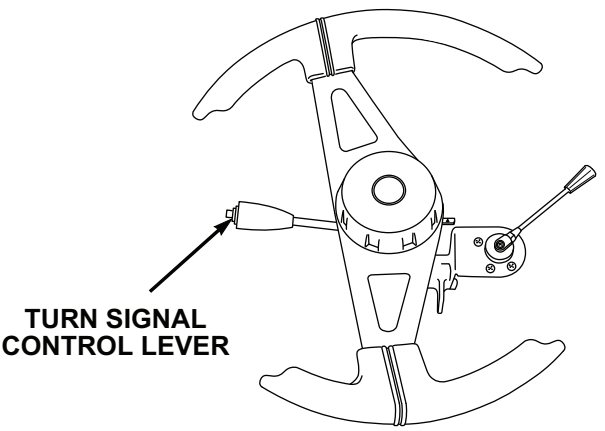


Figure 12.

24	After	Turn Signal Indicators	Check turn signal indicators for proper operation. (Volume 1, WP 0022)	

Table 1. PMCS - AFTER - Continued

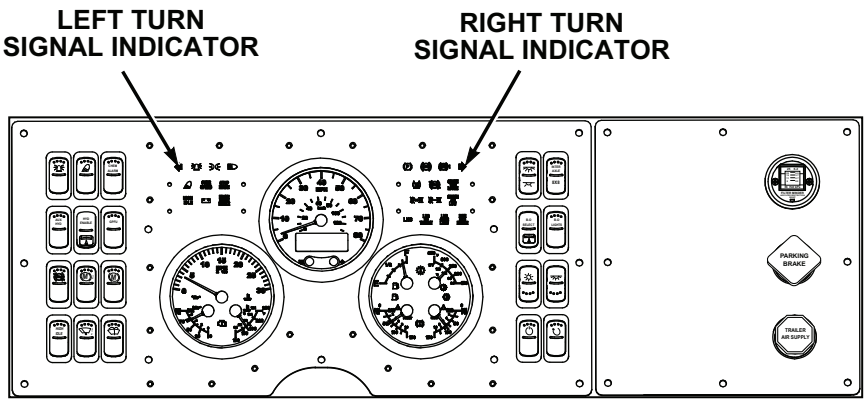
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				
			NOTE • Light checks will require assistance. • Operation of vehicle with malfunctioning emergency flasher control may violate AR 385-55. (WP 0200)	
25	After	Emergency Flasher Control	Check emergency flasher control for proper operation. (Volume 1, WP 0021)	

Figure 13.

Table 1. PMCS - AFTER - Continued

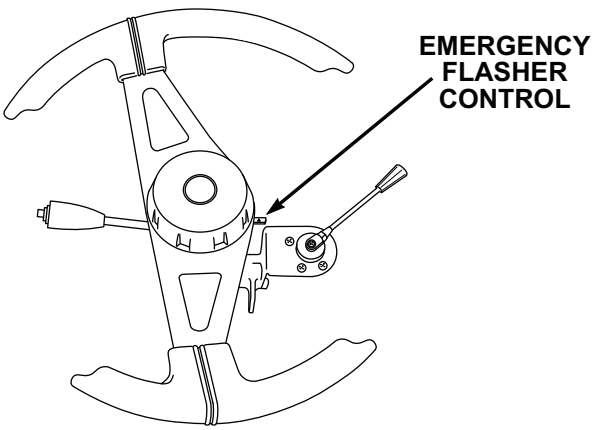
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			 *Figure 14.*	
			NOTE • Light checks will require assistance. • Operation of vehicle with malfunctioning service lights may violate AR 385-55. (WP 0200)	
26	After	Lights	Check headlights, clearance lights, turn signals, and brake lights for proper operation. **NOTE** Operation of vehicle with malfunctioning beacon light may	

Table 1. PMCS - AFTER - Continued

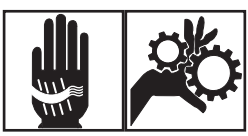
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			violate AR 385-55. (WP 0200)	
27	After	Portable Beacon Light (If equipped)	Remove beacon light from glove box and check for proper operation. (Volume 1, WP 0094) **WARNING**  Keep hands clear of heavy-duty winch cable. Failure to comply may result in injury or death to personnel. **WARNING**  • Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			• Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel. **NOTE** Complete this PMCS procedure only if heavy-duty winch was used during mission.	
28	After	Heavy-Duty Winch (if used)	1. Check for evidence of bent or crushed hydraulic hoses or leakage at any threaded coupling or quick disconnect.	Class III leak present. Lines or fittings are damaged.

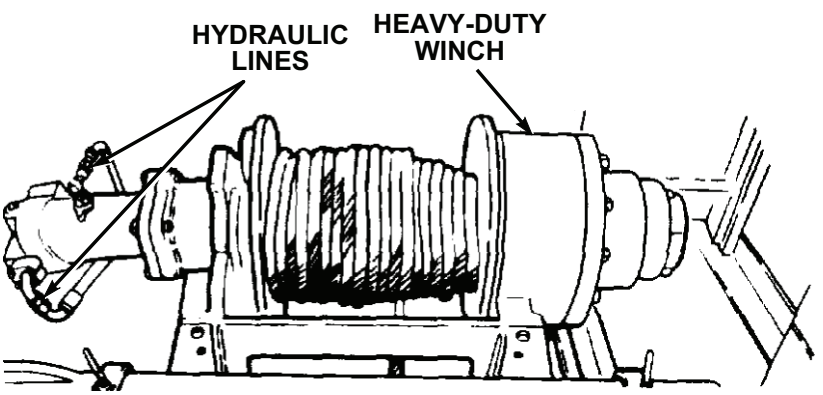


Figure 15.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			2. Check that winch cable clevis pin is secure and in place.	Clevis pin missing.

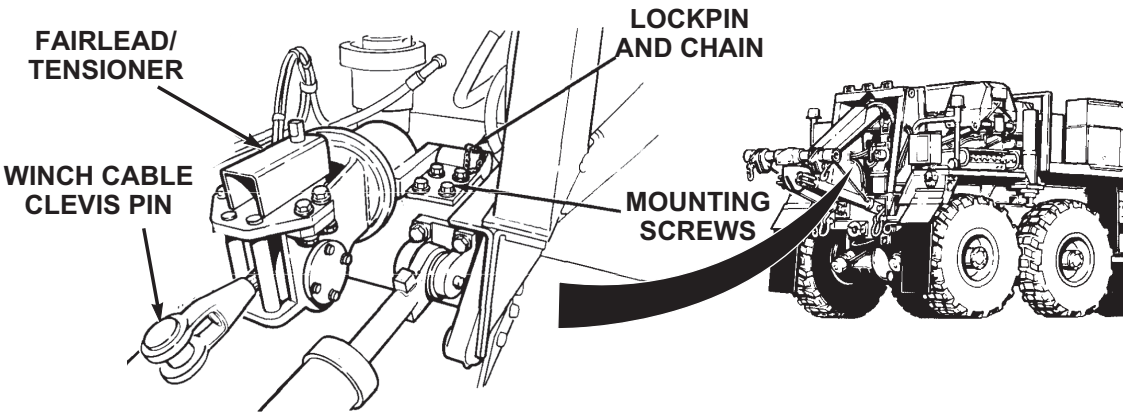


Figure 16.

			3. Check fairlead/tensioner for obvious damage, and that fairlead/tensioner can be swiveled and placed in both stowed and operational positions.	Fairlead/ tensioner will not swivel, cannot be raised or lowered.
			4. Check that fairlead/tensioner mounting screws are secure.	Mounting screws loose or missing.
			5. Check for missing or damaged fairlead/tensioner lockpin and chain.	Has one missing or

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				broken lock-pin.
			NOTE This procedure is a two soldier task.	
			6. Pay out heavy-duty winch cable (Volume 1, WP 0039) and check cable of winch for kinks, frays, or breaks.	Evidence of kinks, frays, or breaks.

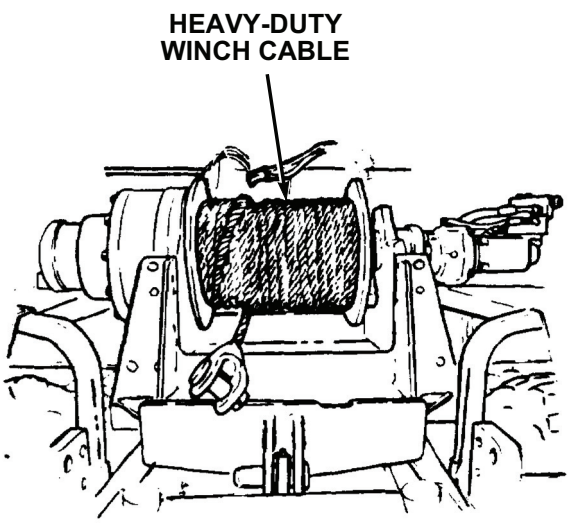


Figure 17.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE This procedure is a two soldier task. 7. Clean and lubricate heavy-duty winch cable with OE/HDO. (WP 0186) **NOTE** Lubricate heavy-duty snatch block center shaft only after each use. 8. Lubricate heavy-duty snatch block center shaft (one fitting) with GAA (one fitting). (WP 0186) **NOTE** • Complete drain and refill of heavy-duty winch drum gearbox after first 10 hours of heavy-duty winch operation. • After initial 10 hour drain and refill this procedure becomes an annual requirement. 9. Drain and refill heavy-duty winch drum gearbox with lubricant appropriate to operating environment). (WP 0186)	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

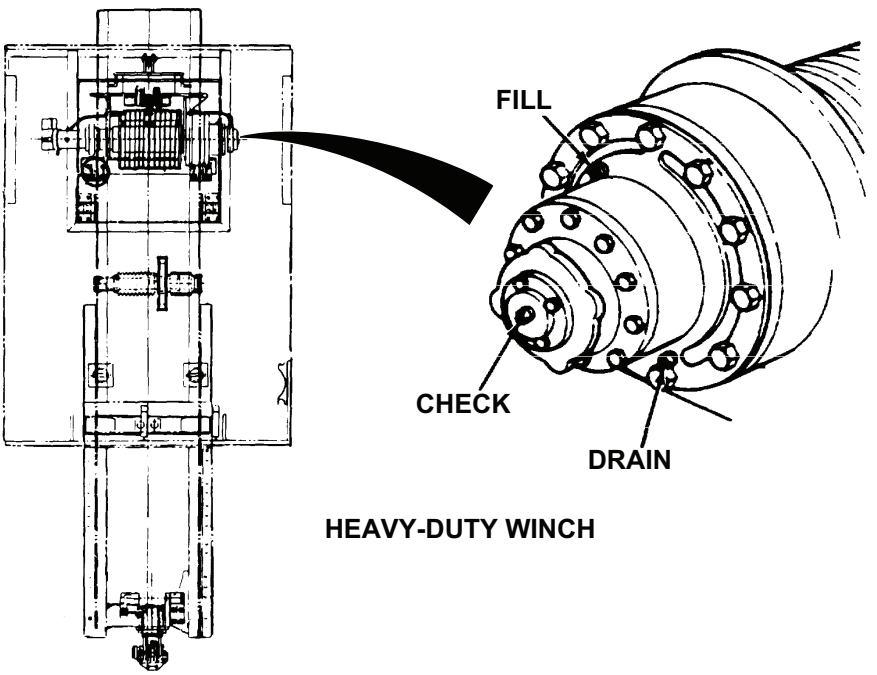


Figure 18.

			NOTE • Complete this PMCS procedure only if retrieval system was used during mission. • Retrieval cylinder thermal relief valves (located on crosstube end of cylinders) can discharge	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			small amounts of oil as part of normal operation.	
29	After	Retrieval System (if used)	1. Check lift cylinder and hoses, driver side and passenger side tow cylinders and hoses, crosstube, and control valves for leaks and obvious damage.	Any Class III leaks are found.

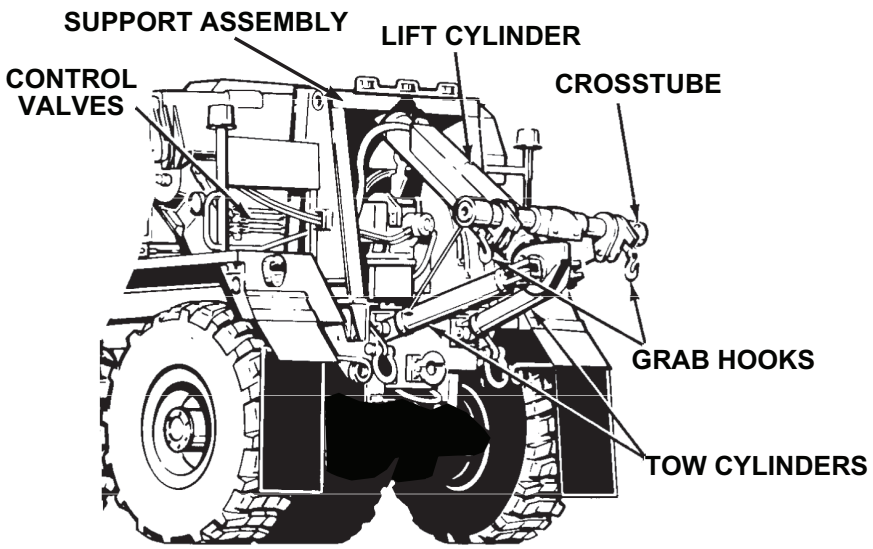


Figure 19.

		NOTE When properly installed, cotter pins should be toward outside of vehicle.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			2. Check grab hooks for damaged or missing cotter pins. **NOTE** PMCS for retrieval system should only be performed when retrieval system is required for mission. 3. Check operation of retrieval system as follows: a. Start engine. (Volume 1, WP 0044) b. Set HYD ENABLE switch in on position. MAIN HYD ENABLE indicator will illuminate.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

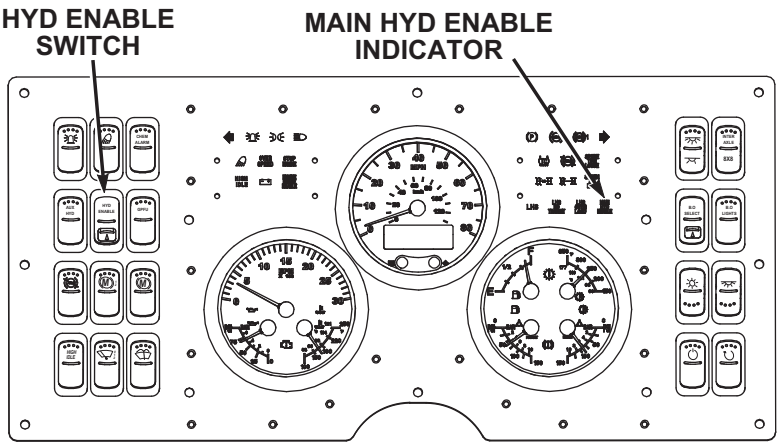


Figure 20.

			c. Set ON/OFF POWER switch to ON position.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

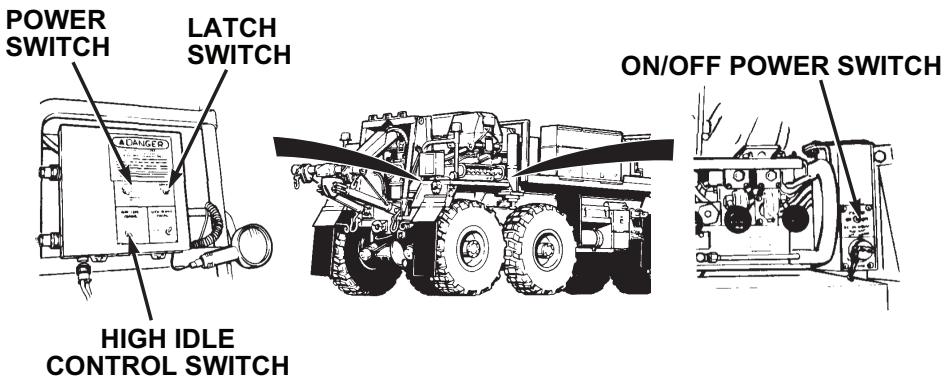


Figure 21.

			d. Set POWER switch to ON position. e. Set HIGH IDLE CONTROL switch to CONTINUOUS. **WARNING** Excessive noise levels are present any time the heavy-duty winch, crane, or retrieval system is operating. Wear single hearing protection (earplugs or equivalent) while working around equipment when it is running. Failure to	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			comply may result in injury or death to personnel. Seek medical aid should you suspect a hearing problem.	
			f. Push and release LATCH switch. Engine speed should increase to approximately 1500 RPM.	Engine speed does not increase to 1500 RPM.
			g. Operate retrieval system control levers (Volume 1, WP 0032) and check for proper operation of both levers and cylinders.	Retrieval system does not operate.

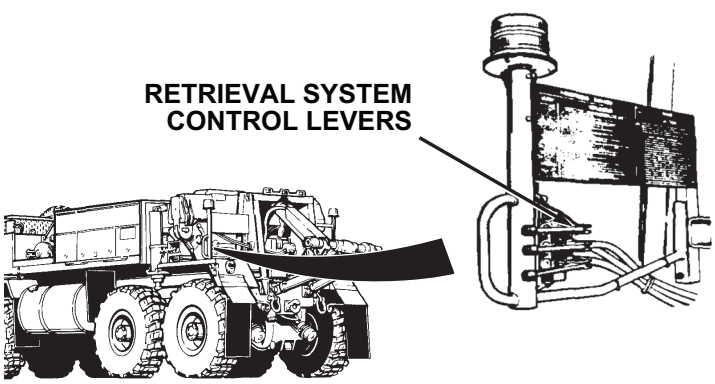


Figure 22.

			NOTE Complete this PMCS procedure only if material handling	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			crane was used during mission.	
30	After	Material Handling Crane (if used)	1. Inspect crane for loose nuts and screws, hydraulic leaks, damage to hydraulic hoses and lines, and obvious damage. **NOTE** For more information on material handling crane operating instructions, refer to grove crane operation (manual control) procedures. (Volume 1, WP 0102) 2. Check that crane hydraulic system is operable as follows: a. Start engine. (Volume 1, WP 0044) b. Set HYD ENABLE switch to on position. MAIN HYD ENABLE indicator will illuminate.	Class III leak or damaged hoses, lines, or fittings.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

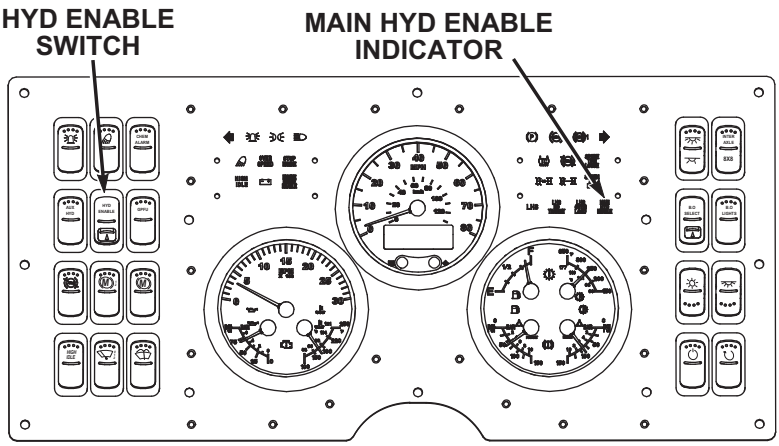


Figure 23.

			c. Set ON/OFF POWER switch to ON position.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

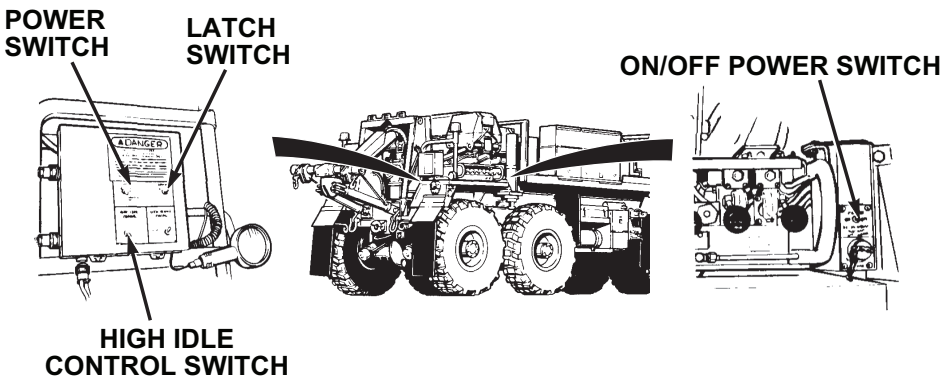


Figure 24.

			d. Set HIGH IDLE CONTROL switch to CONTINUOUS. **WARNING** Excessive noise levels are present any time the heavy-duty winch, crane, or retrieval system is operating. Wear single hearing protection (earplugs or equivalent) while working around equipment when it is running. Failure to comply may result in injury or death to personnel. Seek	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			medical aid should you suspect a hearing problem. e. Push and release LATCH switch. Engine speed should increase to approximately 1500 rpm. 3. Check crane manual control levers as follows:	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

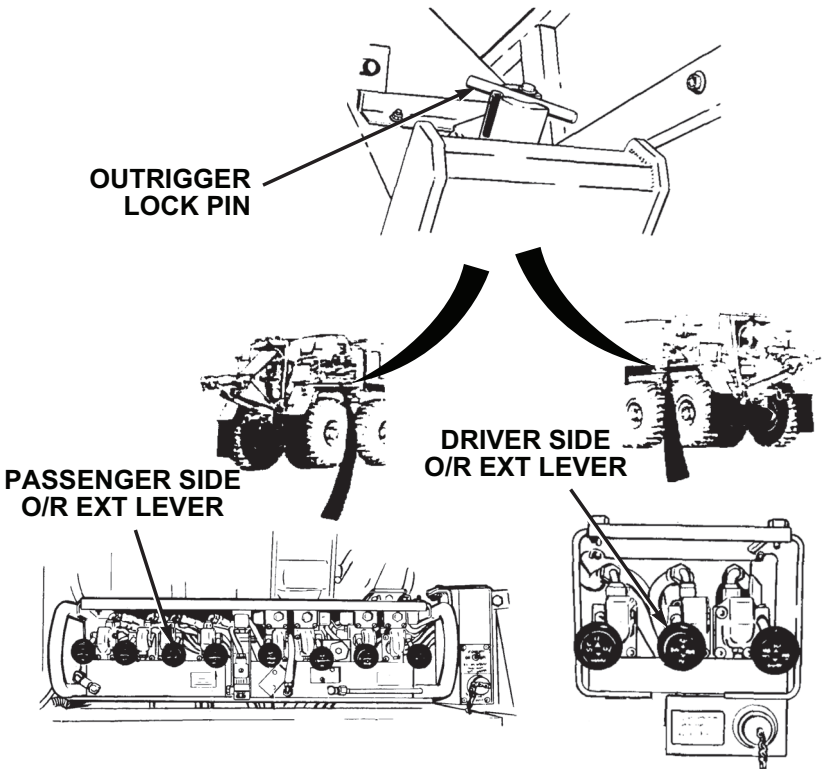


Figure 25.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  • Stand clear of outrigger beams while operating levers. Failure to comply may result in injury or death to personnel. • Do not operate crane unless outriggers are firmly in place or vehicle could turn over. Failure to comply may result in injury or death to personnel. • Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **NOTE** • Operate control levers with light, even pressure. Moving lever slightly will cause slow movement of crane. Moving lever to full	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			travel will cause faster movement of crane. • Outrigger beams will come out slower with light pressure on lever. Pushing lever to full travel will cause fast movement. a. Move passenger side O/R EXT lever to IN position briefly. Move driver side O/R EXT lever to IN position briefly. b. Place both outrigger lockpins in unlock position. c. Check each control separately for malfunction, proper response, obvious damage, missing parts, binding, and extreme looseness. d. Move right O/R EXT lever to OUT position until right outrigger is completely out.	Controls malfunction, bind, or do not respond. Outrigger beam does not come out.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

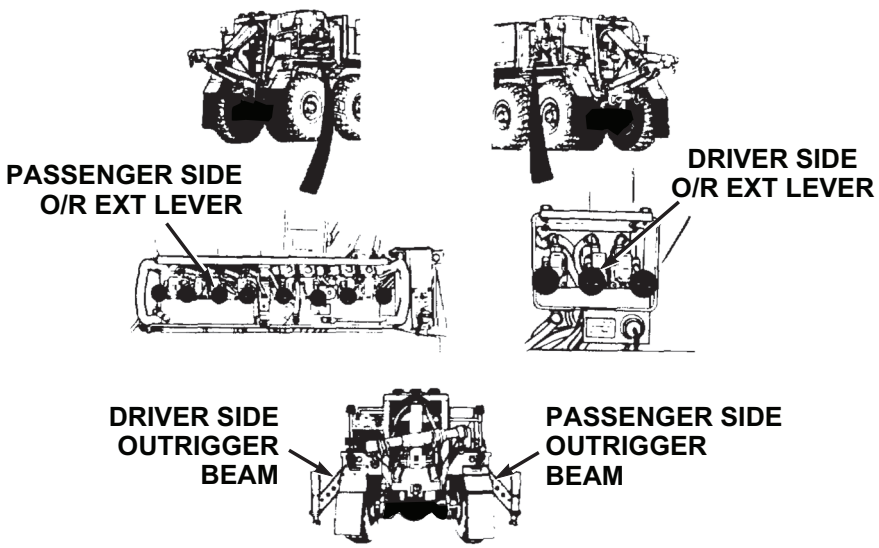


Figure 26.

		e. Move left O/R EXT lever to OUT position until left outrigger is completely out.	Outrigger beam does not come out.
		f. Set up outrigger pads. Check that two retaining pins are attached to each outrigger pad.	Retaining pin missing from either end.

Table 1. PMCS - AFTER - Continued

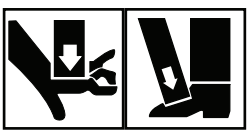
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Keep hands and feet clear of outrigger jack cylinders. Failure to comply may result in injury or death to personnel. **NOTE** Adjust outrigger pad position as required so rod end will lower into pad socket. g. Move LH O/R JACK control lever to DOWN position and lower outrigger jack until rod end is firmly seated in outrigger pad. Install retaining pins.	Outrigger jack cylinder will not come out or will not lower completely into pad.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

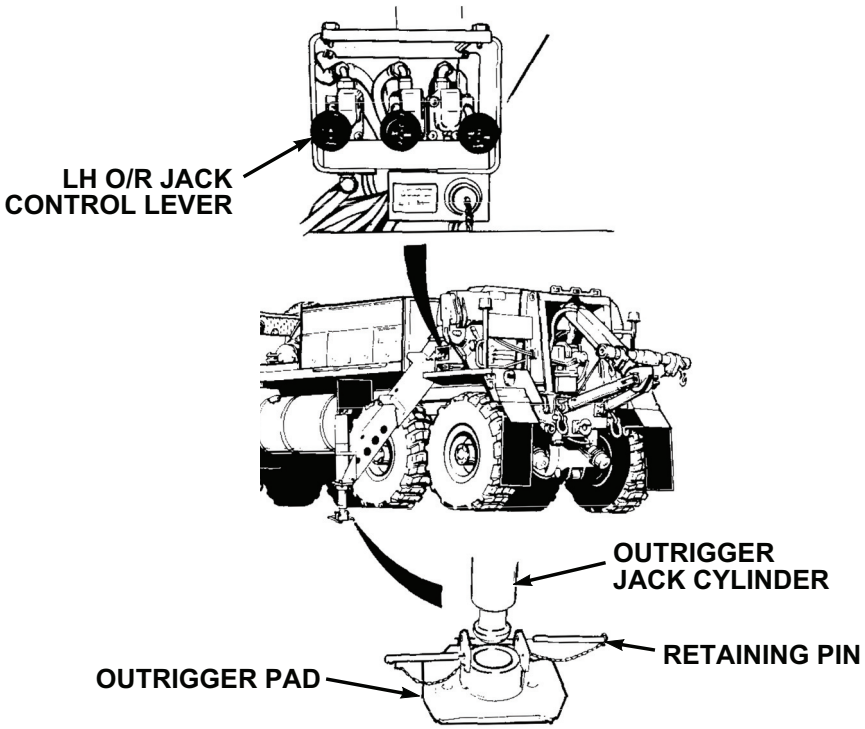


Figure 27.

			h. Move RH O/R JACK control lever to DOWN position and lower outrigger jack until rod end is firmly seated in outrigger pad. Install retaining pins.	Outrigger jack cylinder will not come out or will not lower completely into pad.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

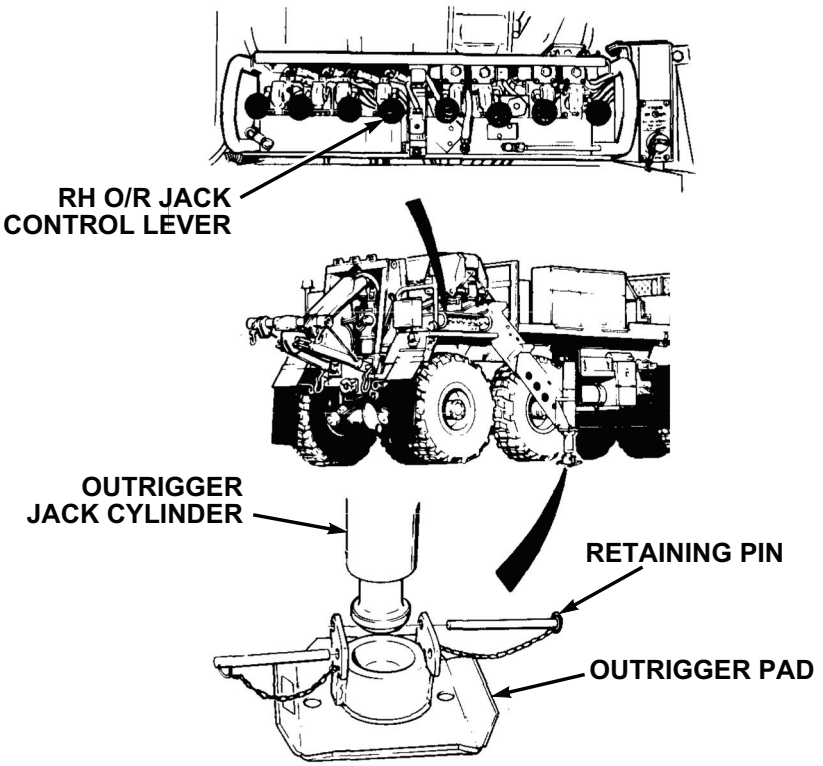


Figure 28.

		i. Check that outrigger jack cylinder on each side of vehicle is out and down.	Crane hydraulic system does not operate.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

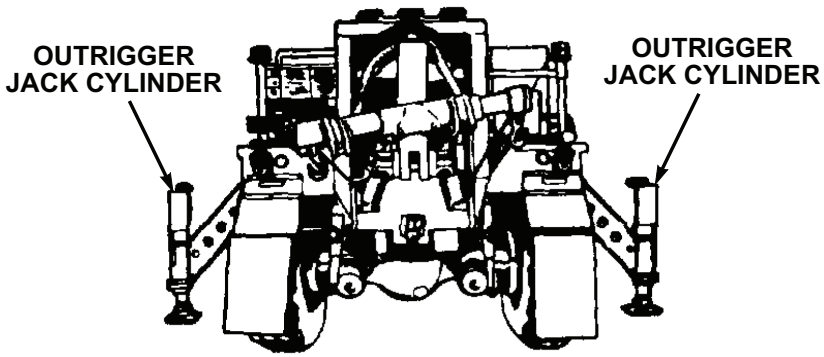


Figure 29.

			j. Seat outriggers. k. Raise boom to operating position. (Volume 1, WP 0102) **WARNING**  Do not operate crane unless outriggers are firmly in place or vehicle could turn over. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			CAUTION Do not let cable unwind and become slack, or cable may get tangled on drum. (1) Move HOIST control lever to DOWN position until hook block rests on fender.	

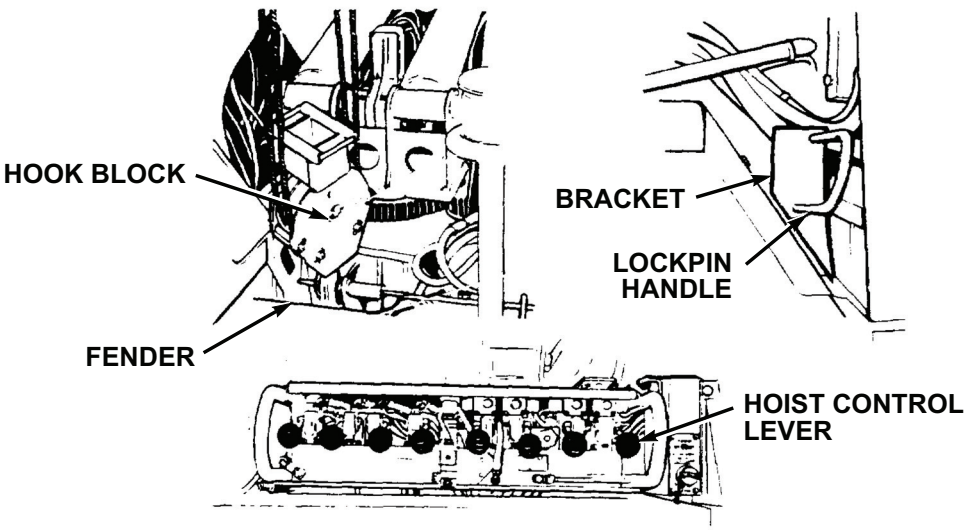


Figure 30.

			(2) Pull and turn lockpin handle so handle end rests on bracket to unstow hook block.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(3) Check hook block for cracks.	Hook block is cracked.
			(4) Check hook block stowage guide wear plate for excessive wear.	

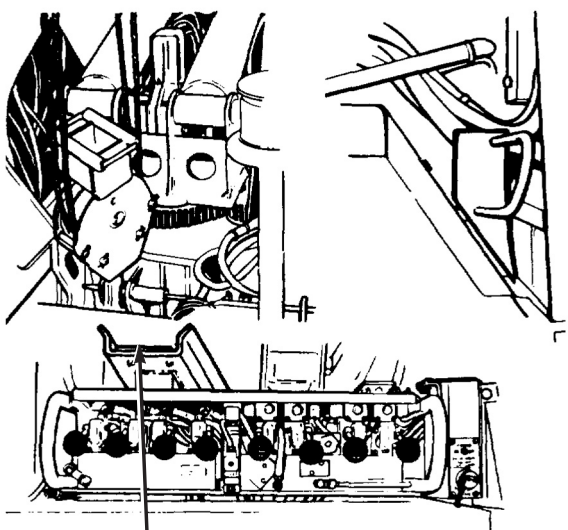


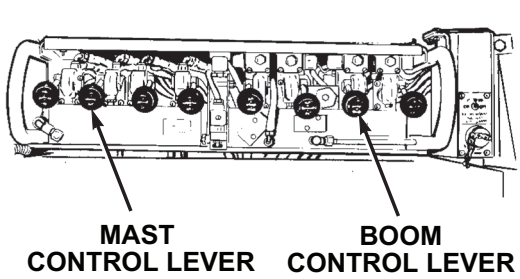
Figure 31.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **CAUTION** Do not hit outrigger leg with hook block. Failure to comply may result in damage to equipment. (5) Move BOOM control lever to UP position until hook is five to six feet (1.5 to 1.8 m) above driver side rear fender, and boom is approximately 45° above horizontal.	Boom does not raise.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:



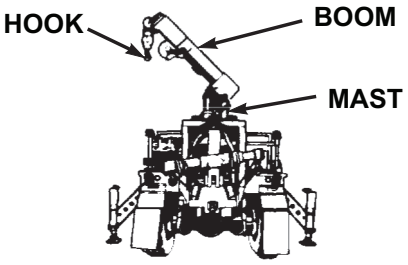


Figure 32.

			(6) Move MAST control lever to UP position until the mast is fully erect and the cylinders are fully extended. Use BOOM control lever UP simultaneously as required to maintain the boom at approximately 45° above horizontal until the mast is fully erect. Hold the MAST control lever to UP position for two to three seconds after mast is fully erect to ensure cylinders are fully filled with oil. l. Rotate and telescope boom;	Mast cylinder does not raise completely before stopping.

Table 1. PMCS - AFTER - Continued

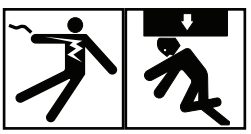
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  • When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. • Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may result in injury or death to personnel. **CAUTION** Boom must be above vehicle sides for clearance. (1) Move swing control lever to CW position to move boom clockwise.	Boom does not turn clockwise.

Table 1. PMCS - AFTER - Continued

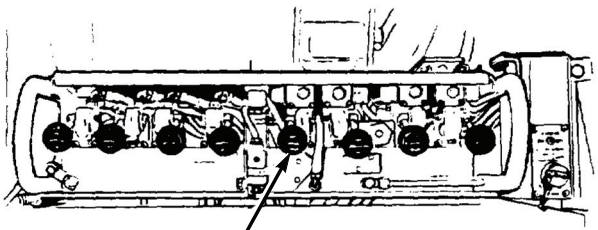
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 33.

			(2) Move swing control lever to CCW position to move boom counterclockwise. **CAUTION** Keep hook block at least one ft. (30 cm) from end of boom. If hook block hits end of boom cable or hook block damage may occur and crane will lose power. Wait six seconds for power to return and check crane for damage. **NOTE** • TELESCOPE and HOIST levers should be operated at the same time.	Boom does not turn counter-clockwise.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			• Crane movement from one lever may be slower than the other when operating two levers together. (3) Move TELESCOPE control lever to OUT position to extend boom while moving hoist control lever to DOWN position to pay out cable.	Extensions do not come out.

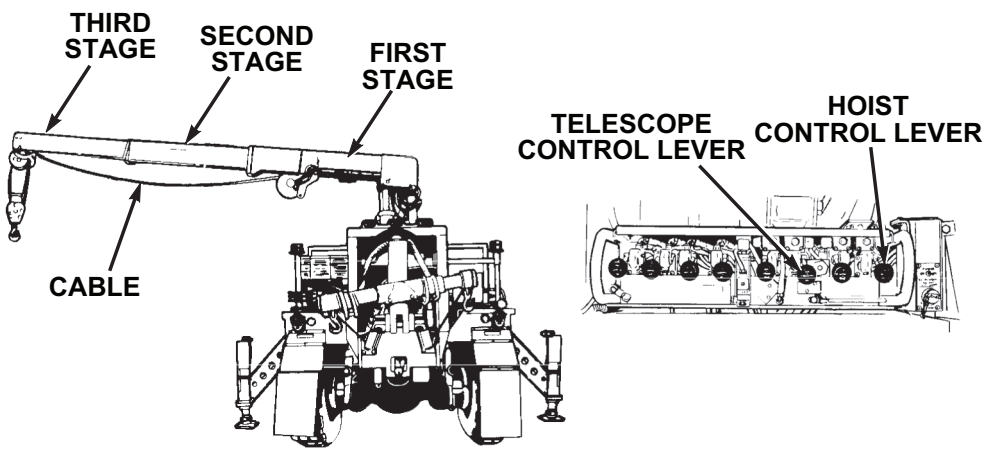


Figure 34.

			(4) Check first, second, and third stages of boom for broken welds or obvious damage.	There are broken welds or obvious dam-

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				age to boom.
			WARNING  Always wear protective gloves when checking hoist cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.	
			(5) Check cable on hoist for kinks, frays, or breaks.	Evidence of kinks, frays, or breaks.

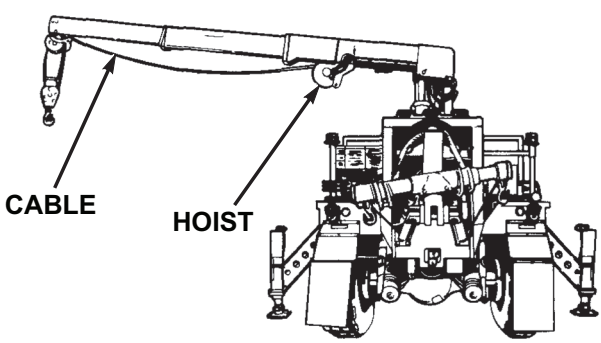


Figure 35.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(6) Check all hoses, fittings, valves, and cylinders for signs of leaks.	Class III leak present.
			(7) Check for cracked or broken welds.	Cracked or broken welds are present.
			(8) Inspect turntable bearing screws for obvious looseness.	One or more turntable bearing screws are loose.

Table 1. PMCS - AFTER - Continued

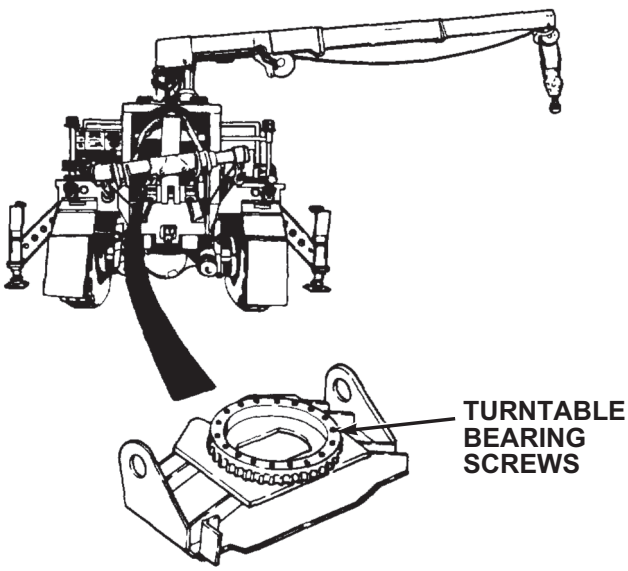
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 36.

			CAUTION Do not let cable become slack or cable may get tangled on drum. (9) Move HOIST control lever to UP position to reel in cable.	Cable does not reel in.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

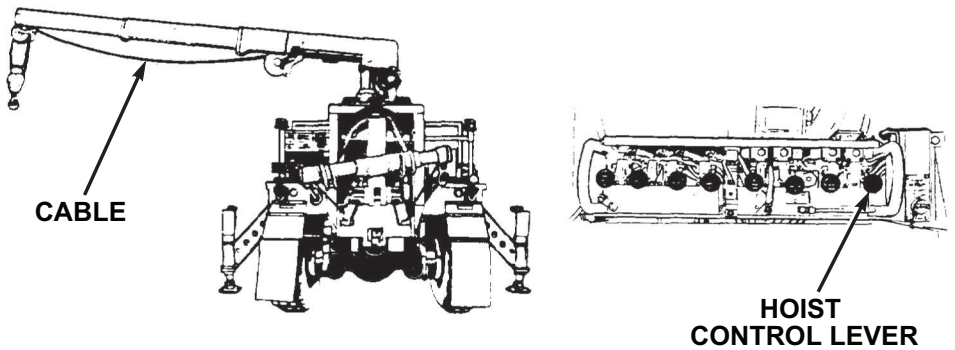


Figure 37.

			(10) Move HOIST control lever to DOWN position to pay out cable.	Cable does not pay out.
			NOTE For more information on material handling crane remote-control operating instructions, refer to grove crane operation (remote-control) procedures. (Volume 1, WP 0103)	
			4. Check crane remote control levers as follows:	
			a. Set up REMOTE CONTROL UNIT passenger side.	

Table 1. PMCS - AFTER - Continued

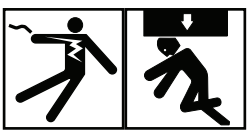
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  • When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. • Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may result in injury or death to personnel. **WARNING**  If electrical power fails during crane operation, move switch on remote control unit to SHUTDOWN position. Fail-	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			ure to comply may result in injury or death to personnel. **CAUTION** Crane must be above vehicle sides for clearance. **NOTE** Operate control levers with light, even pressure. Moving lever slightly will cause slow movement of crane. Moving lever to full travel will cause faster movement of crane. b. Check control levers for malfunction, proper response, obvious damage, missing parts, binding, and extreme looseness. c. Rotate and telescope boom. **WARNING**  Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may	Controls malfunction, bind, or do not respond.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			result in injury or death to personnel.	
			(1) Move SWING control lever to CW position to turn boom clockwise.	Boom does not turn clockwise.

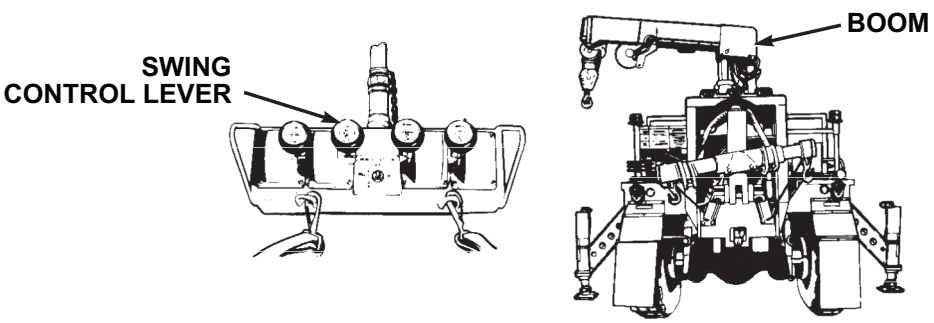


Figure 38.

			(2) Move SWING control lever to CCW position to turn boom counterclockwise.	Boom does not turn counter-clockwise.
			WARNING  When using crane on any vehicle, park vehicle clear of all overhead electrical lines.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **CAUTION** Do not let cable become slack or cable may get tangled on drum. (3) Move HOIST control lever to UP position to take up cable. Move BOOM control lever to UP position to raise boom.	Cable does not reel in or boom does not raise.

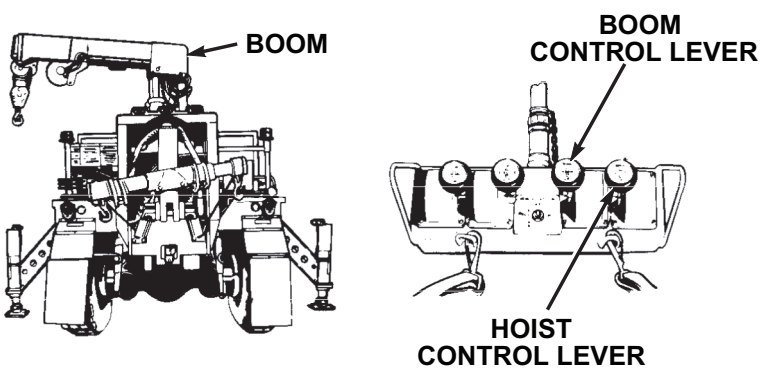


Figure 39.

			(4) Move HOIST control lever to DOWN position to pay out cable. Move	Cable does not pay out or boom

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			BOOM control lever to DOWN position to lower boom to horizontal position.	does not lower.
			CAUTION • Keep hook block at least one ft. (30 cm) from end of boom. If hook block hits end of boom it may damage cable or hook block and crane will lose power. Wait six seconds for power and check crane for damage. • Do not let cable become slack or cable may get tangled on drum.	
			NOTE • TELESCOPE and HOIST levers should be operated at the same time. • Crane movement from one lever may be slower than the other when operating two levers together.	
			(5) Move TELESCOPE control lever to OUT position, while moving HOIST control lever to	Extensions will not come out or cable will not pay out.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			DOWN position to pay out cable.	

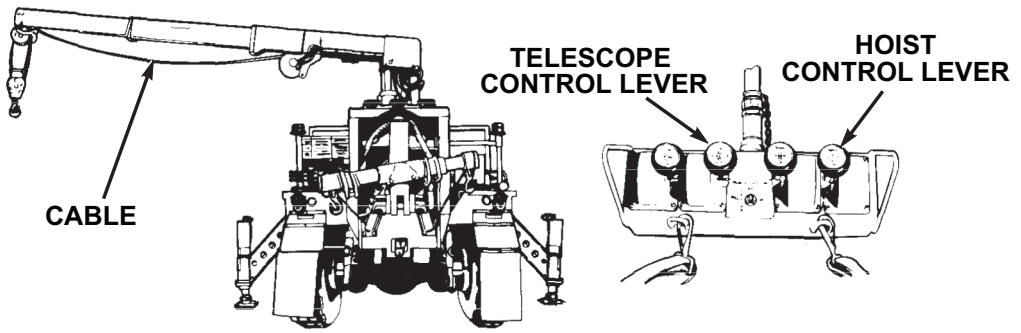


Figure 40.

			(6) Move HOIST control lever in UP position to reel in cable.	Cable will not reel in.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

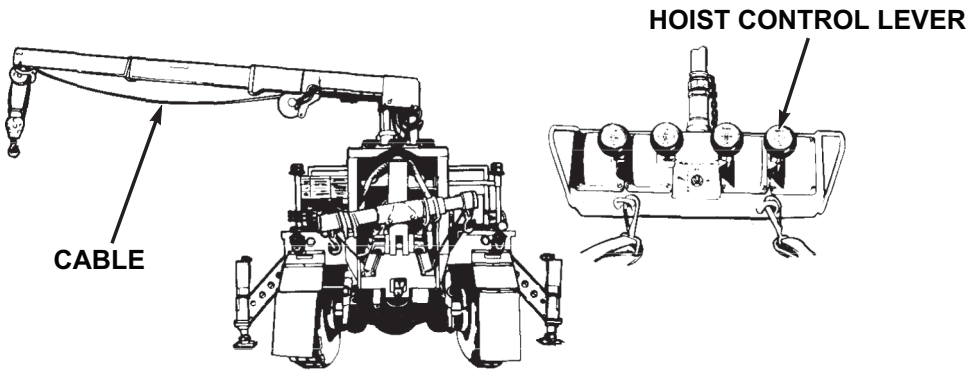


Figure 41.

			(7) Check that crane and ENGINE HIGH IDLE do not operate when REMOTE CONTROL UNIT is in MHC-SHUTDOWN position. Notify organizational maintenance if crane and ENGINE HIGH IDLE operates when in MHC-SHUTDOWN position. (8) Shut off remote control switches. (9) Disconnect remote control, passenger side. (10) Check operation of left remote control stations.	Crane will operate and engine speed will increase to 1500 rpm.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(11) Connect remote control to left remote control station. (12) Check operation of crane remote control levers. (13) Shut off remote control switches. (14) Disconnect and stow REMOTE CONTROL UNIT. (15) Shut down material handling crane.	
			5. Check all hoses, fittings, valves, and cylinders for signs of leaks and damage.	Any Class III leak present.
			6. Check for cracked or broken welds.	Cracked or broken welds.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
WEEKLY - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Gloves, Welders

Table 1. PMCS - WEEKLY

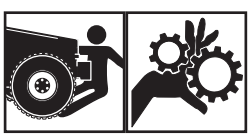
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel. **WARNING**  Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE Perform Operator's Before, After, and Weekly PMCS checks if: • You are the assigned driver but have not operated the vehicle since the last weekly inspection. • You are operating the vehicle for the first time. **NOTE** • Lubrication intervals are for normal operating conditions. Intervals may be shortened as required for severe operating conditions. • Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated. • Always refer to lubrication instructions (WP 0186) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as prescribed in lubrication instructions. (WP 0186) **WARNING**  Do not operate a vehicle with a tire in an over-inflated or under-inflated condition, or with a questionable defect. Failure to comply may result in injury or death to personnel and damage to equipment.	
1	Weekly	Driver Side Tires	Check tires for correct air pressure.	
2	Weekly	Propeller Shafts and U-Joints	1. Check propeller shafts and U-joints for excessive movement, obvious damage, and loose, missing or broken nuts and screws.	Propeller shaft or U-Joint has excessive movement, obvious damage, or one or more nuts or screws are loose, miss-

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				ing, or damaged.

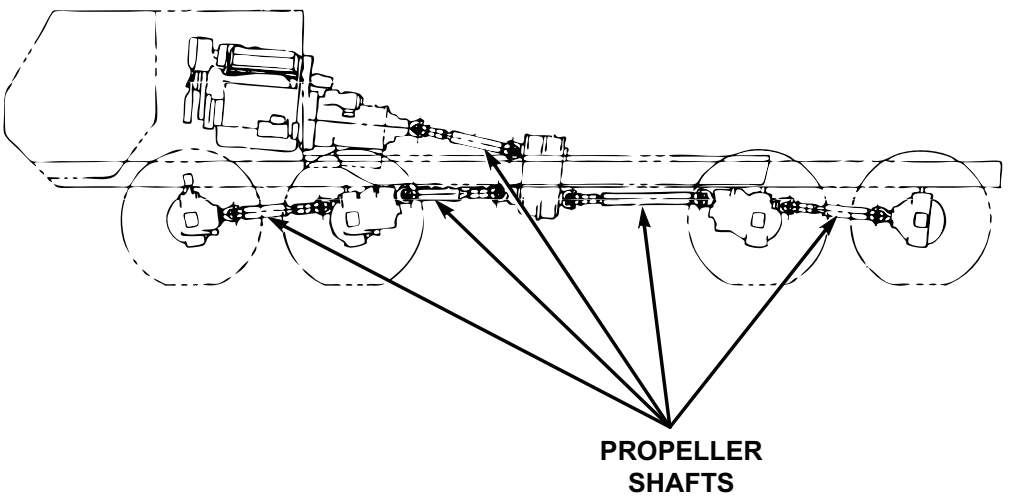


Figure 1.

			NOTE • When vehicle is operating under severe conditions, lubricate propeller shafts and universal joints every 50 hours of vehicle operation. • Complete Step 2 only if vehicle is operating under severe conditions. 2. Lubricate all propeller shafts, transmission to transfer case	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			propeller shaft, and U-joints with GAA (WP 0186) as required (refer to operator's semiannual PMCS table (item no. 2) for procedures. (WP 0184)	
3	Weekly	Axle Breathers	Check four axle breathers for damage and free movement of vent caps on breather body.	Any axle breather caps are damaged or vent caps do not move freely on breather body.

Table 1. PMCS - WEEKLY - Continued

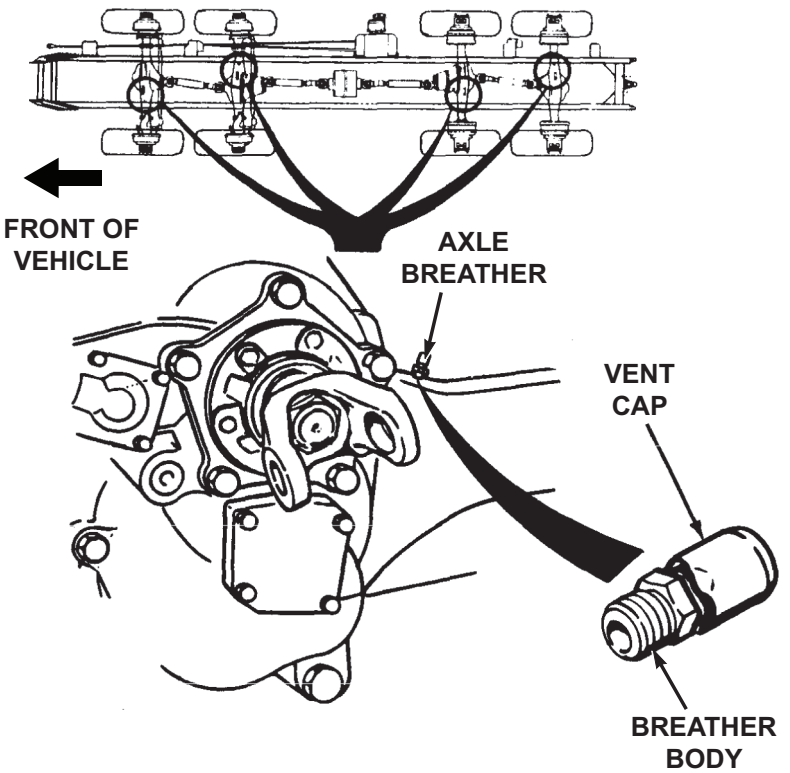
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				
			NOTE Operation of vehicle with damaged/malfunctioning air compressor may violate AR 385-55. (WP 0200)	

Figure 2.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
4	Weekly	Air Compressor	Check air compressor for loose screws, damaged mounting flange and air hoses, and loose fittings/ connections.	Screws missing, mounting flange broken, air hoses damaged or fittings/connections loose.

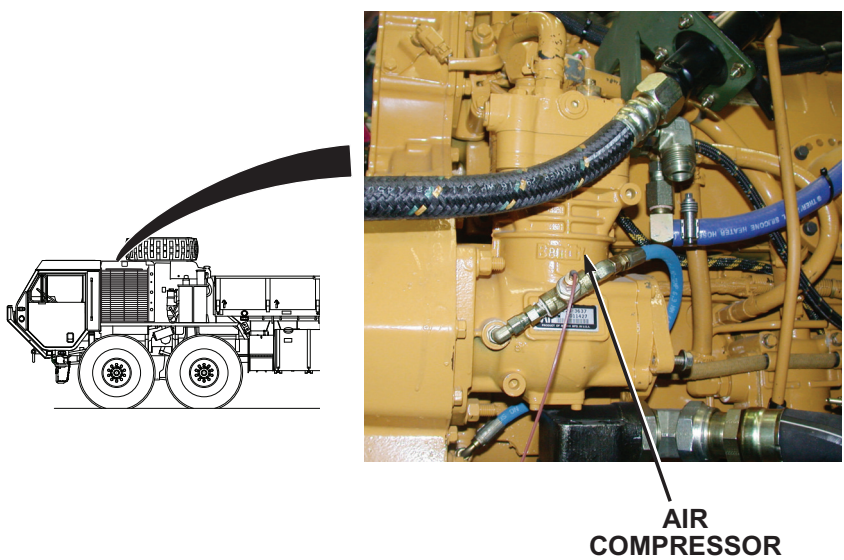


Figure 3.

5	Weekly	Secondary Fuel Filter	Check secondary fuel filter for leaks or damage.	Any fuel leak.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

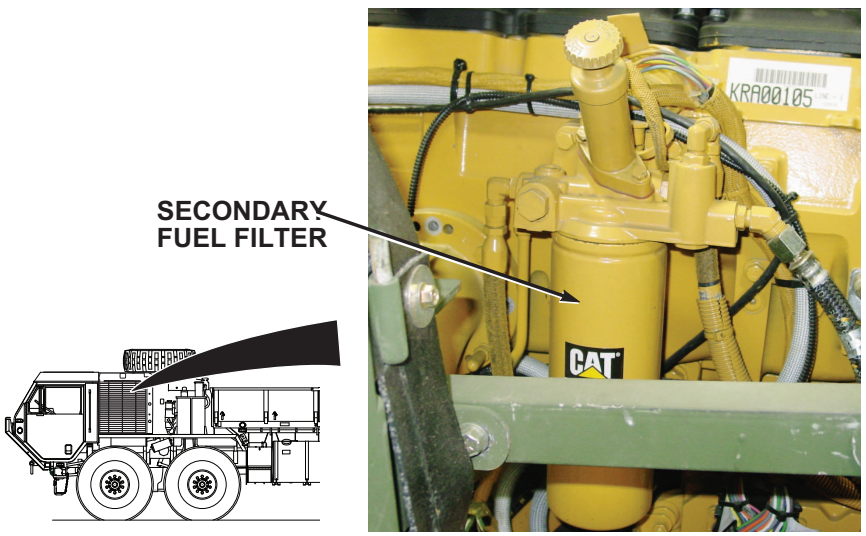


Figure 4.

			NOTE Operation of vehicle with any exhaust leaks may violate AR 385-55. (WP 0200)	
6	Weekly	Exhaust System	Check exhaust pipe, muffler, heatshield, tailpipe, raincap, clamps, and mounting for obvious damage, looseness, exhaust leak, and carbon buildup.	Exhaust pipe between turbocharger and exhaust manifold leaks. Any exhaust pipe miss-

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				ing or damaged.

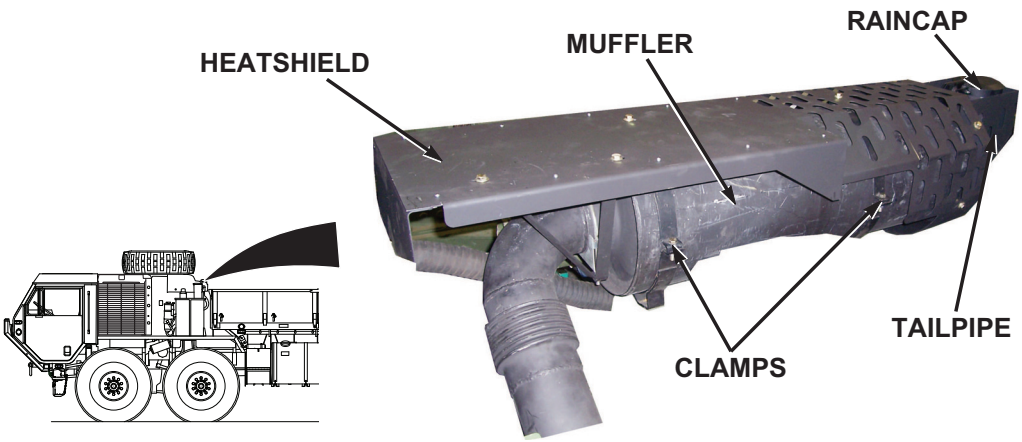


Figure 5.

7	Weekly	Fuel Tank	Check fuel tank, fuel hoses, fuel tank connections, and fuel tank socket head pipe plug for leaks and/or damage.	Any fuel leak.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

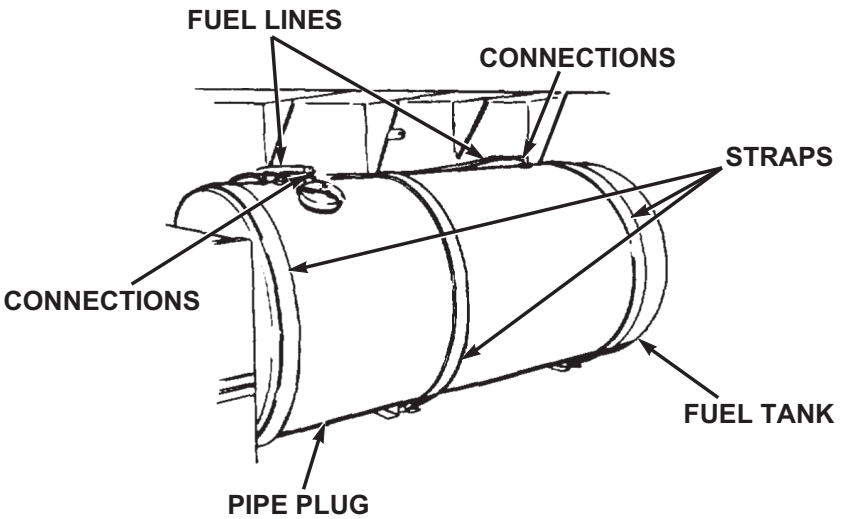


Figure 6.

8	Weekly	Fuel Tank Strainer	Check fuel tank strainer for clogs or damage. If strainer is clogged, clean strainer.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

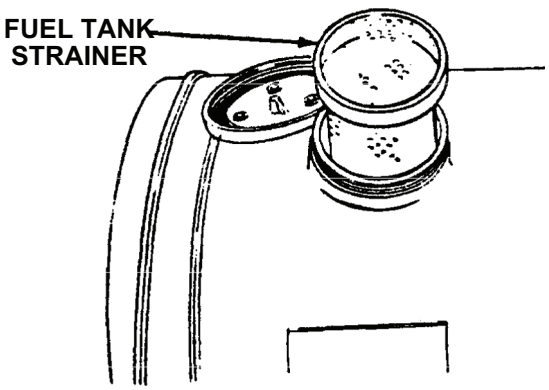


Figure 7.

9	Weekly	Hydraulic Pump	Check hydraulic pump for loose screws, leaks, and damage. Check for loose hose fittings.	Any Class III leak present or any mount-ing screw is loose or missing.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

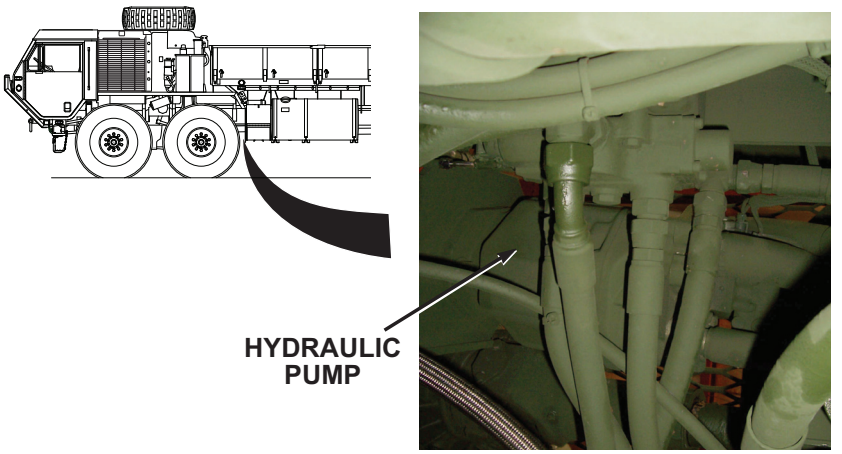


Figure 8.

10	Weekly	Hydraulic Hoses	Check all hydraulic hose routing for obvious damage to hydraulic hoses, chaffing, and leaks. **NOTE** Operation of vehicle with missing or equipment body mount may violate AR 385-55. (WP 0200)	Class III leak present. Chaffing or obvious damage to hydraulic hose present.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
11	Weekly	Equipment Body Mount	1. Check four equipment body mounts and pins (both driver and passenger side) for broken chains, missing pins, or other damage.	Body mount damaged, pin missing, or pin chains broken.

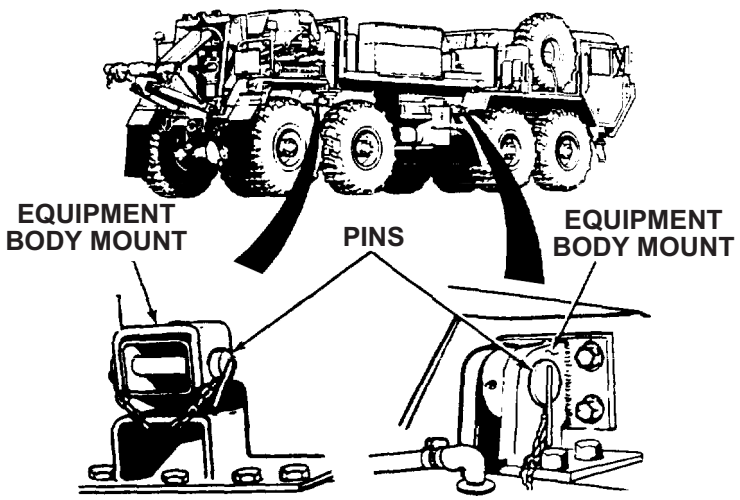


Figure 9.

			2. Lubricate four body mounts with GAA. (WP 0186, Table 11)	
12	Weekly	60-Ton Tackle Block	Check to ensure 60-ton tackle block is present and serviceable.	
13	Weekly	Equipment Body	1. Check utility chains and pallet sling for any obvious damage.	Chain links, shackles or hooks

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				cracked or broken.
			2. Check safety chains for obvious damage.	Chain links, shackles or hooks cracked or broken.
14	Weekly	Stowage Boxes	1. Check all stowage boxes/ compartments for missing hardware and other obvious damage.	
			2. Check inside all stowage boxes/ compartments for torn or damaged seals, water in bottom of stowage box/compartment, or other obvious damage.	
15	Weekly	Rear Spring/ Parking Brake Chambers	Check rear spring/parking brake chambers to ensure dust covers are in place and secure.	
16	Weekly	Towing Shackles	Check towing shackles for serviceability.	
17	Weekly	Pintle Hook	1. Check pintle hook for looseness and damaged locking mechanism of locking pin.	Pintle hook loose or locking mechanism damaged/ unservicea-ble.

Table 1. PMCS - WEEKLY - Continued

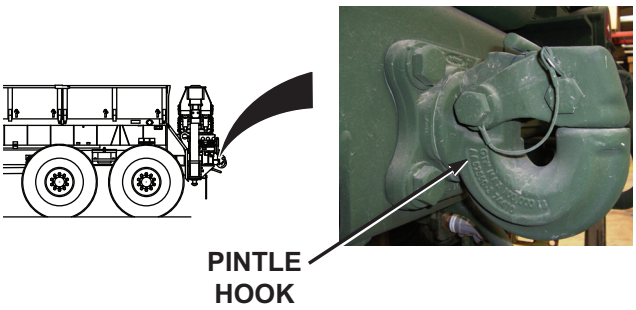
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				
			2. Clean pintle hook and coat with GAA. (WP 0186, Table 11)	
18	Weekly	Rear Lifting Shackles	Check rear lifting shackles for serviceability.	
19	Weekly	Inter-vehicle Connector	Check inter-vehicle connector seal and cable for damage.	

Figure 10.

Table 1. PMCS - WEEKLY - Continued

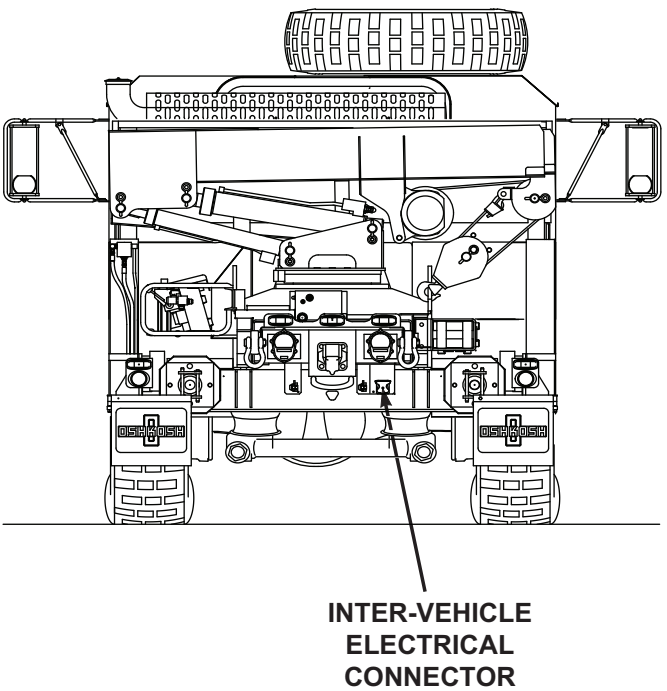
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

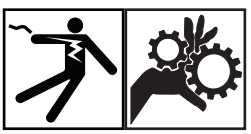
Figure 11.

			WARNING  Do not operate a vehicle with a tire in an over-inflated or under-inflated condition, or with a questionable defect. Failure	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			to comply may result in injury or death to personnel and damage to equipment. **NOTE** Inspection of passenger side tires includes spare tire.	
20	Weekly	Passenger Side Tires	Check tires for correct air pressure.	
21	Weekly	Chock Blocks	Check that chock blocks are present in top center stowage box.	
22	Weekly	Wrecker Vise	Check vise for secure mounting. **WARNING**  Wear proper eye and skin protection when working around batteries. Do not smoke, have open flames, or make sparks around batteries, especially if caps are off. Batteries can explode. Failure	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			to comply may result in injury or death to personnel. **WARNING**  Remove all jewelry such as rings, ID tags, bracelets, etc. prior to working on or around vehicle. Jewelry and tools can catch on equipment, contact positive electrical circuits, and cause a direct short, severe burns, or electrical shock. Failure to comply may result in injury or death to personnel.	
23	Weekly	Batteries	1. Check battery box for damage.	Cracks or holes in battery box.

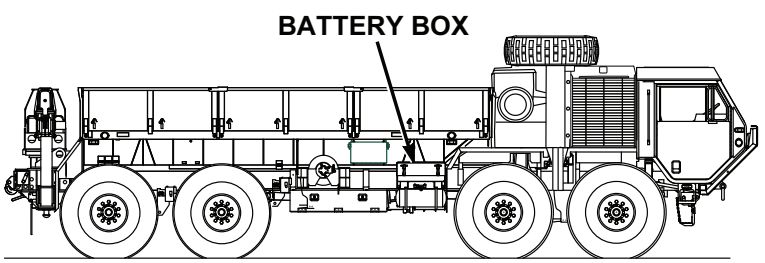


Figure 12.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			2. Check battery cables for presence, frays, splits, and looseness.	Battery cables missing, frayed, split, or loose.
			3. Check for loose, missing, or damaged batteries and corroded or burnt battery terminals.	One or more batteries missing, cracked, or unserviceable. Any battery terminal corroded or burnt. Any hold down not secure.
			NOTE The tire carrier pump will normally vent a small amount of oil as a mist when in use. This results in a coating of oil on the pump and the immediate surrounding area. This is normal and is not to be considered as a leak.	
24	Weekly	Tire Carrier	1. Check tire carrier pump for obvious damage and leaks.	Tire carrier pump has obvious damage or Class III leak is present.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

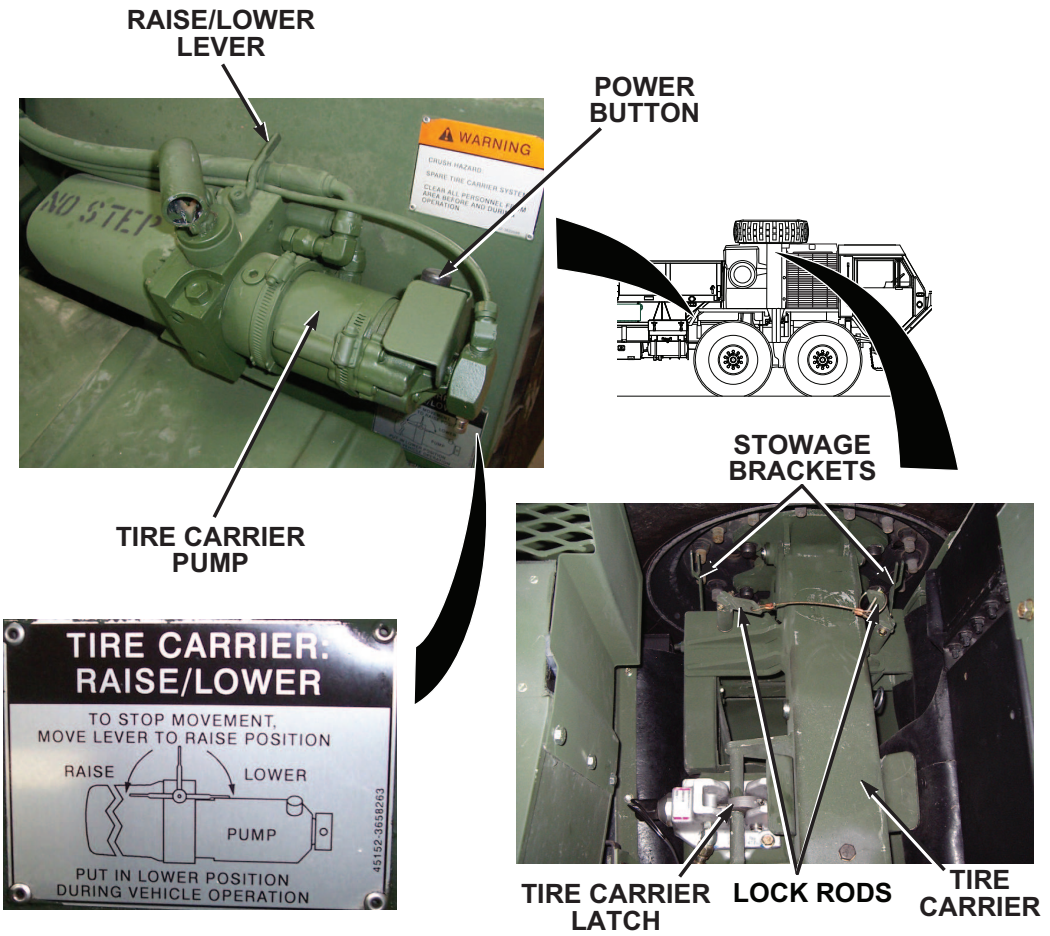


Figure 13.

			2. Check tire carrier latch for obvious damage and leaks.	Tire carrier latch has obvious

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				damage or Class III leak is present.
			3. Check operation/lower tire carrier: (Volume 1, WP 0041) a. Remove both lock rods from tire carrier and place on stowage brackets. **WARNING**  If tire carrier is in any position other than full up and locked (tire carrier latch engaged) or resting on ground, only tire carrier pump operator should be within six feet (1.83 m) of passenger side of vehicle from battery box forward. Failure to comply may result in personnel being struck by tire carrier/spare tire, causing injury or death to personnel. **CAUTION** • Ensure passenger side of vehicle has six ft. (1.8 m) of clearance from battery box forward to	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			accommodate lowering of tire carrier or damage to equipment may result. • Do not dump air suspension system with tire carrier in down position. Damage to tire carrier arm may result. **NOTE** • Once tire carrier has passed vertical (approximately 6 in. [15.24 cm] of movement), release power control (9) and allow the tire carrier to lower on its own until tire contacts ground. • The tire carrier can be stopped at any time during lowering operations by releasing the power control and moving the directional control lever to RAISE (pointing inboard) position. b. Set directional control lever to LOWER (pointing outboard) position. Push and hold power control on tire carrier pump to lower tire to ground.	Tire carrier does not lower to ground.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
25	Weekly	Air Intake System	1. Check air intake system for damaged air intake tube and loose clamps. Tighten clamps as needed.	Air intake system has damaged air intake tube or un-serviceable clamps.

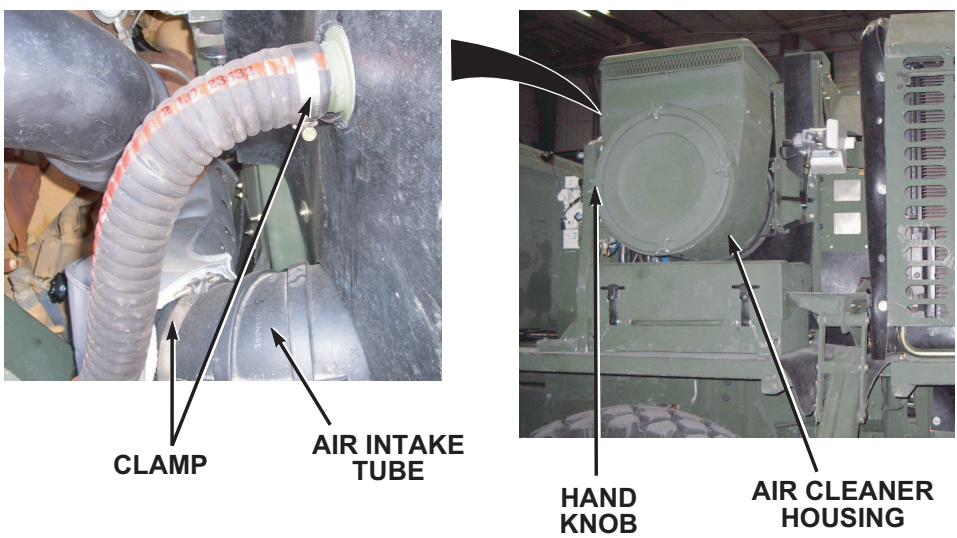


Figure 14.

			2. Check air cleaner housing for loose hand knobs. Tighten as needed.	
26	Weekly	Air Dryer	Check air dryer for loose screws and connections.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

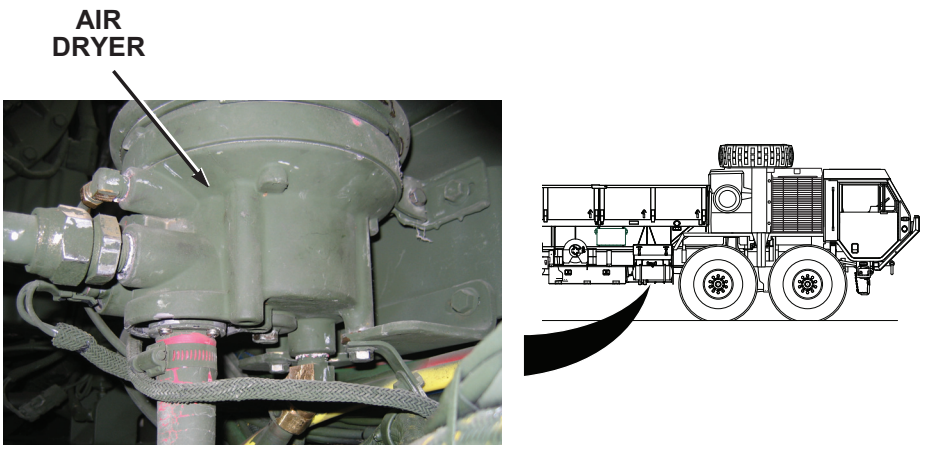


Figure 15.

			NOTE Pressurize air system prior to performing this check.	
27	Weekly	Air Lines and Hoses	Check routing, for obvious damage to air lines and hoses. Check for leaks.	Any leaks or damage to air lines, hoses, or fittings are found.
28	Weekly	Radiator and Hoses	1. Check radiator and hoses for leaks, clogs, or damaged fins. Check for loose hose clamps.	Any Class III leak.

Table 1. PMCS - WEEKLY - Continued

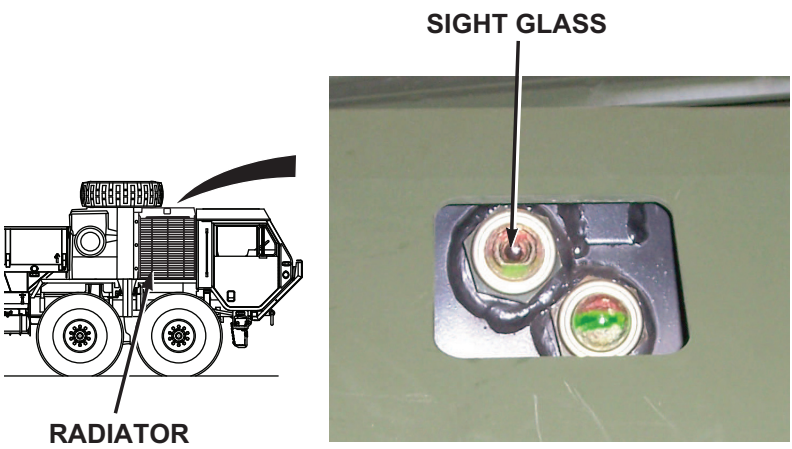
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 16.

			CAUTION Ensure lock rods are secured on stowage brackets before raising tire carrier. Damage to tire carrier may result. **NOTE** • Raising the tire carrier requires approximately 70 psi (5 bar) of air from the vehicle rear air system. If possible, the operator should start engine (Volume 1, WP 0044) and let idle during raise operation to	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			ensure adequate supply of air. • Ensure engine covers are closed before raising tire carrier.	
29	Weekly	Raise Tire Carrier	1. Raise tire carrier:	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

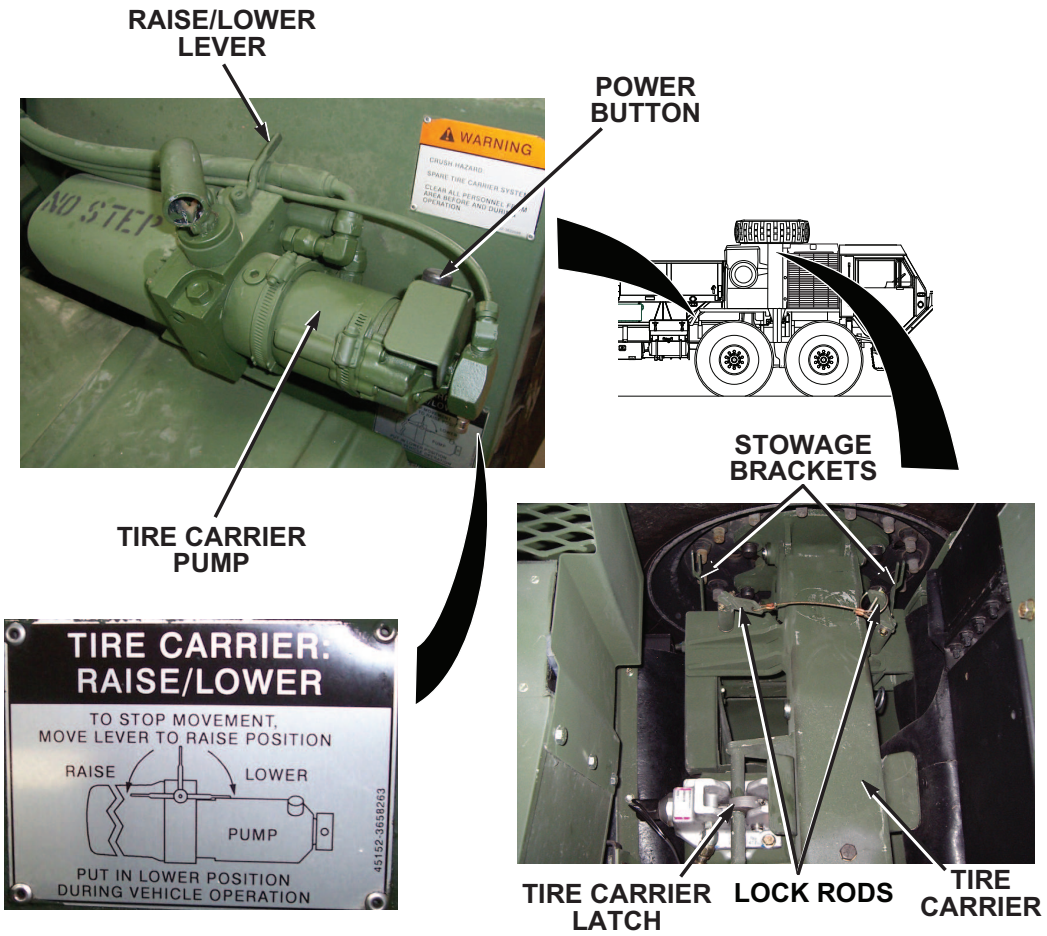


Figure 17.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			2. Set directional control lever to RAISE (pointing inboard) position.	
			3. Push and hold power control until tire carrier is fully raised and tire carrier latch is engaged.	Tire carrier does not raise or does not engage carrier latch.
			4. Remove lock rods from stowage brackets and install on tire carrier.	
			5. Tighten lock rods as required to properly secure tire carrier.	
			NOTE Operation of vehicle with damaged doors or windows may violate AR 385-55. (WP 0200)	
30	Weekly	Doors, Handles, and Windows	Check condition and operation of door, handles, and windows. (Volume 1, WP 0020)	
31	Weekly	Drive Belts and Pulleys	1. Check drive belts for cracking, fraying, and breaks. Check for tightness. Play should be about 1/2 in. (13 mm).	Any drive belt is broken, cracked to the belt fiber, has more than

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				one crack (1/8 in. in depth or 50% of belt thickness), has frays more than 2 in. long or excessive play.

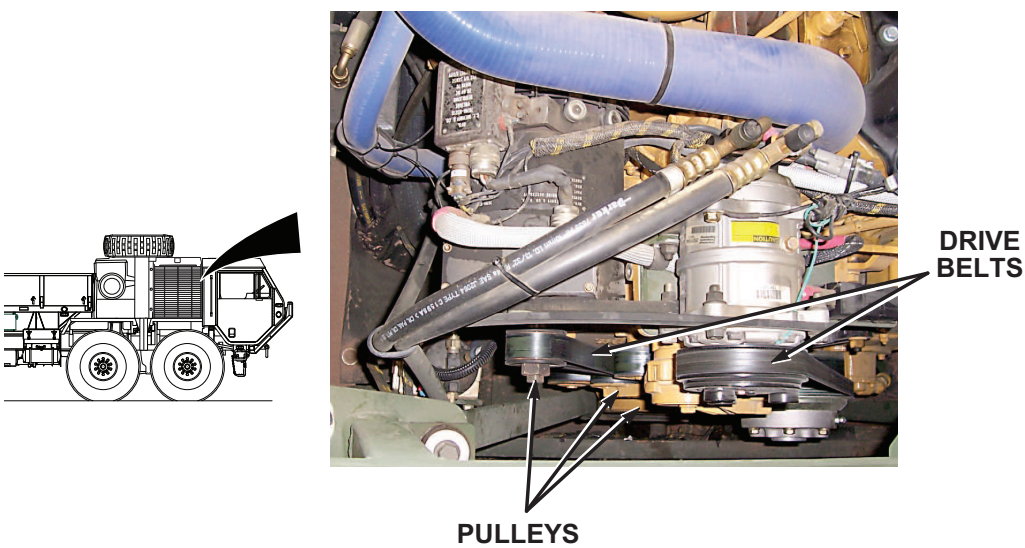


Figure 18.

			2. Check for bent or damaged pulley.	Pulley damaged or unserviceable.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE Start Engine. (Volume 1, WP 0044) Engine must be running for remaining PMCS checks.	
32	Weekly	Cab Temperature Controls	1. Check cab temperature controls for proper for proper operation: (Volume 1, WP 0035)	

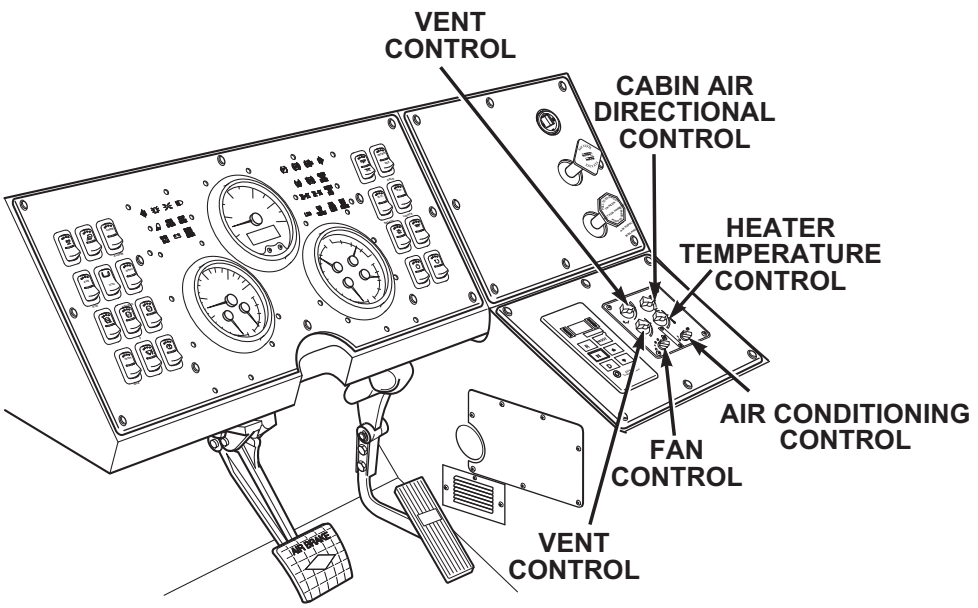


Figure 19.

		a. Check two vent controls.

Table 1. PMCS - WEEKLY - Continued

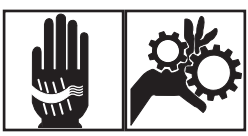
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			b. Check fan control. c. Check cabin air directional control. d. Check heater temperature control. e. Check air conditioning control. **WARNING**  Keep hands clear of heavy-duty winch cable. Failure to comply may result in injury or death to personnel. **WARNING**  • Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			injury or death to personnel. • Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.	
33	Weekly	Heavy-Duty Winch	1. Check for evidence of bent or crushed hydraulic hoses or leakage at any threaded coupling or quick disconnect.	Class III leak present. Lines or fittings are damaged.

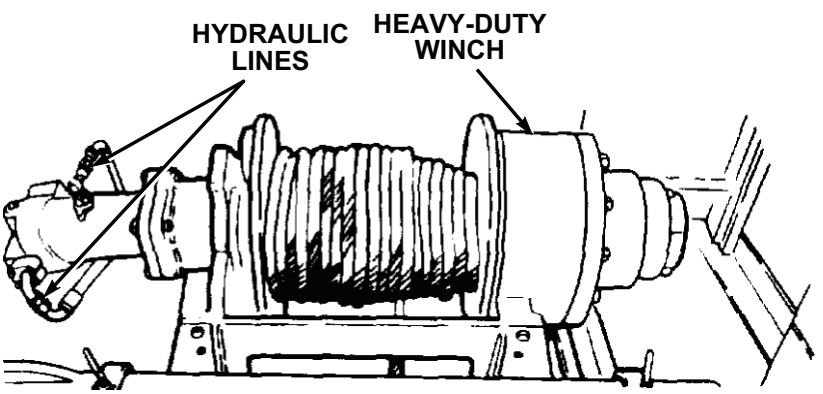


Figure 20.

			2. Check pressure roller for obvious damage.	Pressure roller unserviceable.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

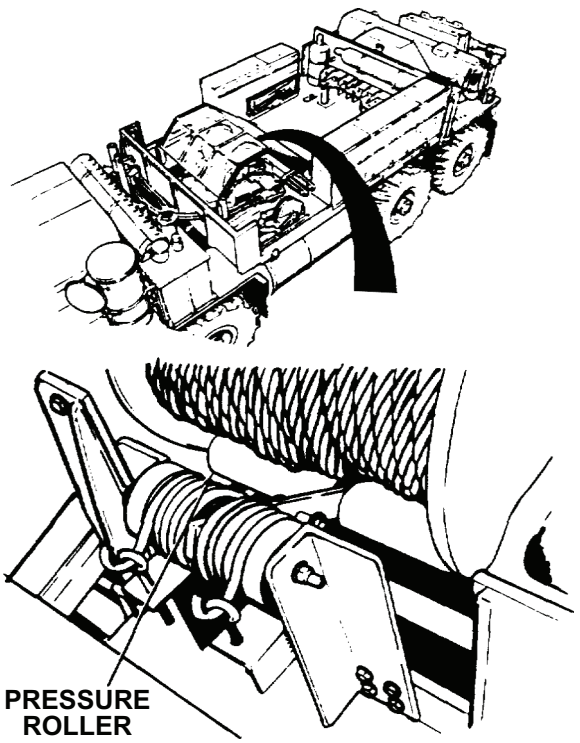


Figure 21.

			3. Check that winch cable clevis pin is secure and in place.	Clevis pin missing.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

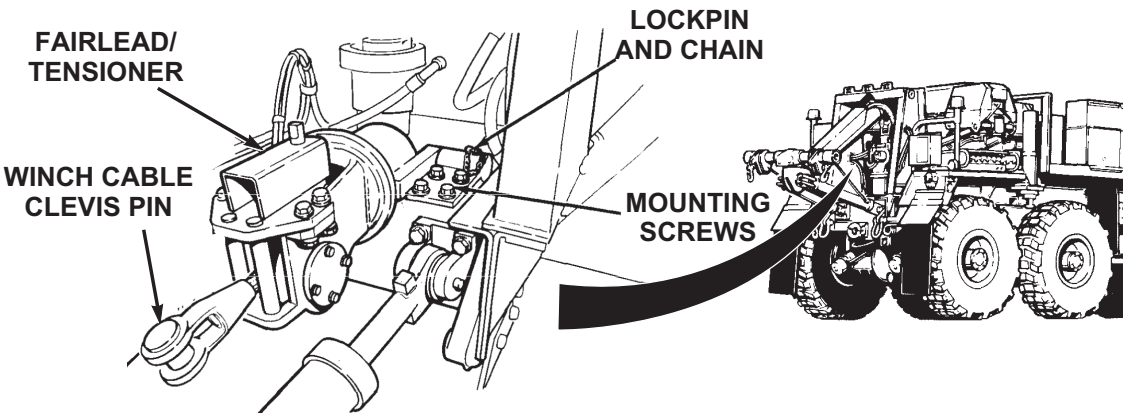


Figure 22.

			4. Check fairlead/tensioner for obvious damage, and that fairlead/tensioner can be swiveled and placed in both stowed and operational positions.	Fairlead/ tensioner will not swivel, cannot be raised or lowered.
			5. Check that fairlead/tensioner mounting screws are secure.	Mounting screws loose or missing.
			6. Check for missing or damaged fairlead/tensioner lockpin and chain.	Has one missing or broken lockpin.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			7. Check cable guide for obvious damage. Check bellows for cuts and tears.	

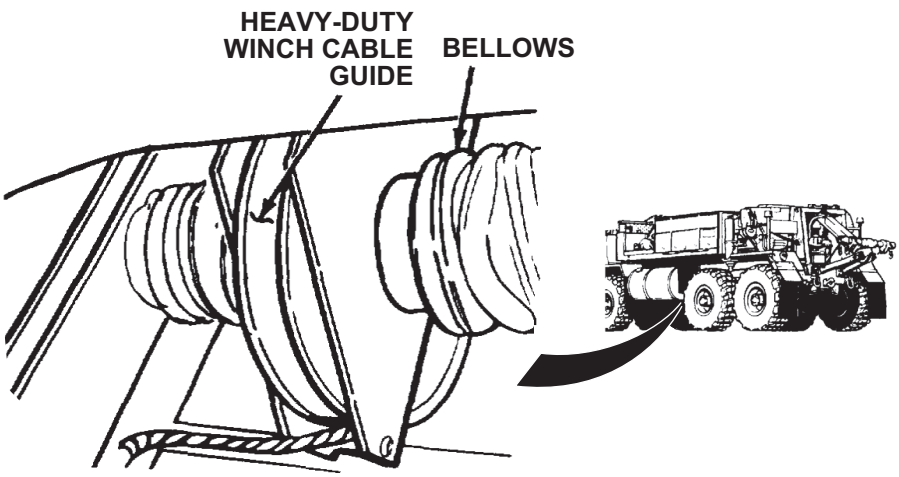


Figure 23.

			8. Check heavy-duty winch remote control and cable for proper operation (Volume 1, WP 0039) obvious damage, missing parts, binding, and excessive looseness.	Controls malfunction, bind, or do not re-spond.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

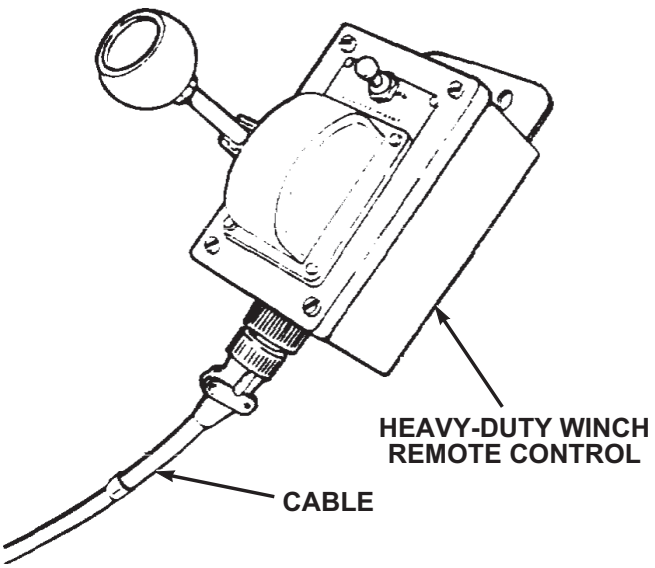


Figure 24.

			9. Check forward winch control for proper operation, obvious damage, missing parts, binding, and excessive looseness.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

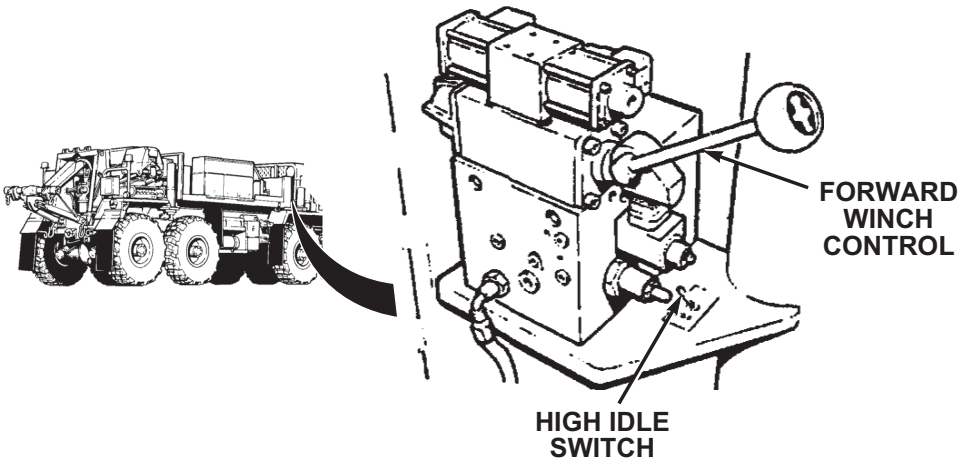


Figure 25.

			10. Check high idle switch for proper operation, obvious damage, missing parts, binding, and excessive looseness. (Volume 1, WP 0039)	Control malfunctions, binds, or does not respond.
			11. Unwind heavy-duty winch cable (Volume 1, WP 0039) and check cable of winch for kinks, frays, or breaks.	Evidence of kinks, frays, or breaks.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

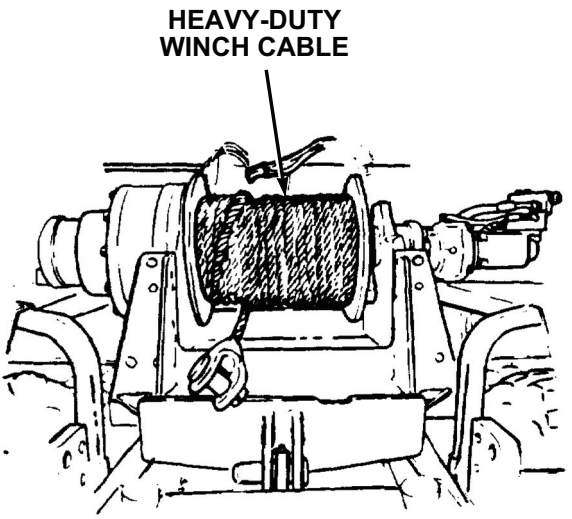


Figure 26.

			NOTE This procedure is a two soldier task. 12. Clean and lubricate heavy-duty winch cable with OE/HDO. (WP 0186)	
34	Weekly	Material Handling Crane	1. Inspect crane for loose nuts and screws, hydraulic leaks, damage to hydraulic hoses and lines, and obvious damage.	Class III leak present or damaged hoses, lines, or fittings.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE For more information on material handling crane operating instructions, refer to grove crane operation (manual control) procedures. (Volume 1, WP 0102) 2. Check that crane hydraulic system is operable as follows: a. Start engine. (Volume 1, WP 0044) b. Set HYD ENABLE switch to on position. MAIN HYD ENABLE indicator will illuminate.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

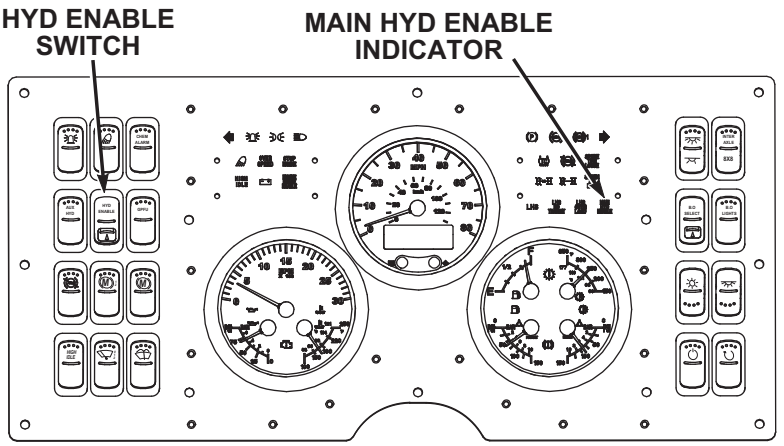


Figure 27.

			c. Set ON/OFF POWER switch to ON position.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

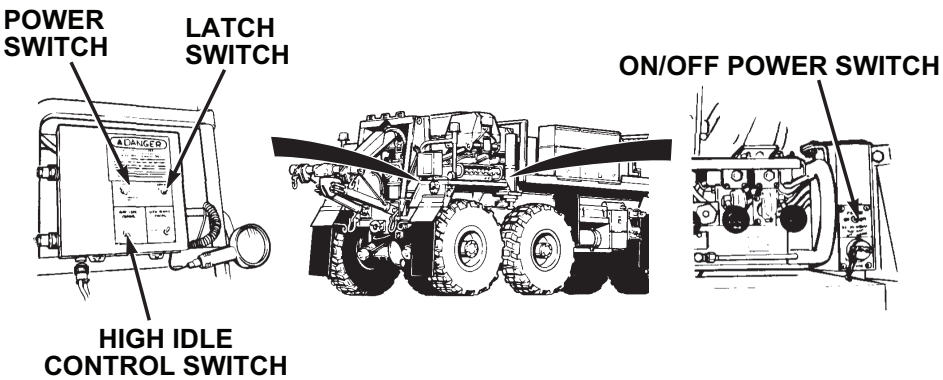


Figure 28.

			d. Set HIGH IDLE CONTROL switch to CONTINUOUS. **WARNING** Excessive noise levels are present any time the heavy-duty winch, crane, or retrieval system is operating. Wear single hearing protection (earplugs or equivalent) while working around equipment when it is running. Failure to comply may result in injury or death to personnel. Seek	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			medical aid should you suspect a hearing problem. e. Push and release LATCH switch. Engine speed should increase to approximately 1500 rpm. 3. Check crane manual control levers as follows:	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

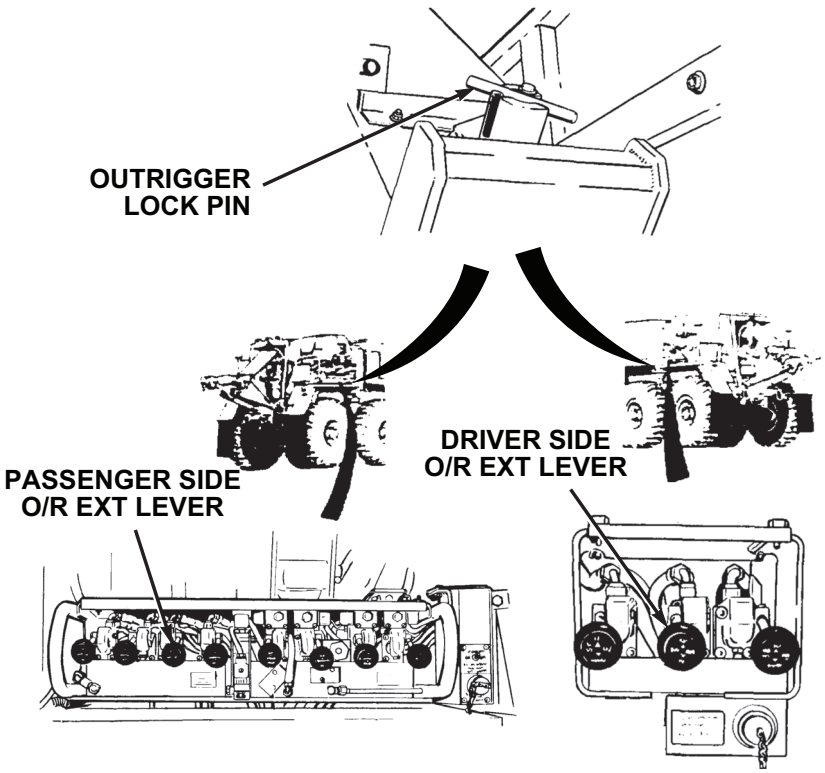


Figure 29.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING   • Stand clear of outrigger beams while operating levers. Failure to comply may result in injury or death to personnel. • Do not operate crane unless outriggers are firmly in place or vehicle could turn over. Failure to comply may result in injury or death to personnel. • Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **NOTE** • Operate control levers with light, even pressure. Moving lever slightly will cause slow movement of crane. Moving lever to full	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			travel will cause faster movement of crane. • Outrigger beams will come out slower with light pressure on lever. Pushing lever to full travel will cause fast movement. a. Move passenger side O/R EXT lever to IN position briefly. Move driver side O/R EXT lever to IN position briefly. b. Place both outrigger lockpins in unlock position. c. Check each control separately for malfunction, proper response, obvious damage, missing parts, binding, and extreme looseness. d. Move right O/R EXT lever to OUT position until right outrigger is completely out.	Controls malfunction, bind, or do not re-spond. Outrigger beam does not come out.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

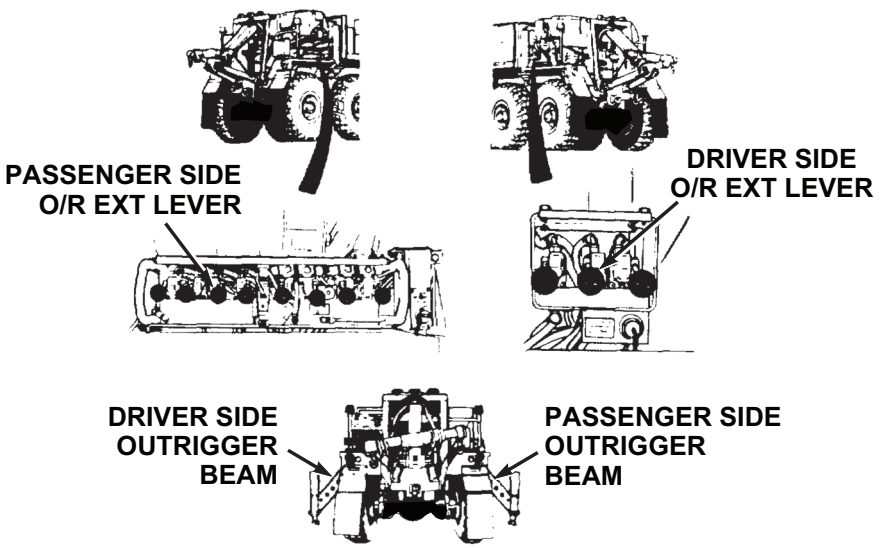


Figure 30.

		e. Move left O/R EXT lever to OUT position until left outrigger is completely out.	Outrigger beam does not come out.
		f. Set up outrigger pads. Check that two retaining pins are attached to each outrigger pad.	Retaining pin missing from either end.

Table 1. PMCS - WEEKLY - Continued

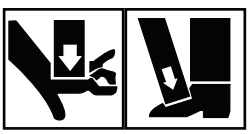
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Keep hands and feet clear of outrigger jack cylinders. Failure to comply may result in injury or death to personnel. **NOTE** Adjust outrigger pad position as required so rod end will lower into pad socket. g. Move LH O/R JACK control lever to DOWN position and lower outrigger jack until rod end is firmly seated in outrigger pad. Install retaining pins.	Outrigger jack cylinder will not come out or will not lower completely into pad.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

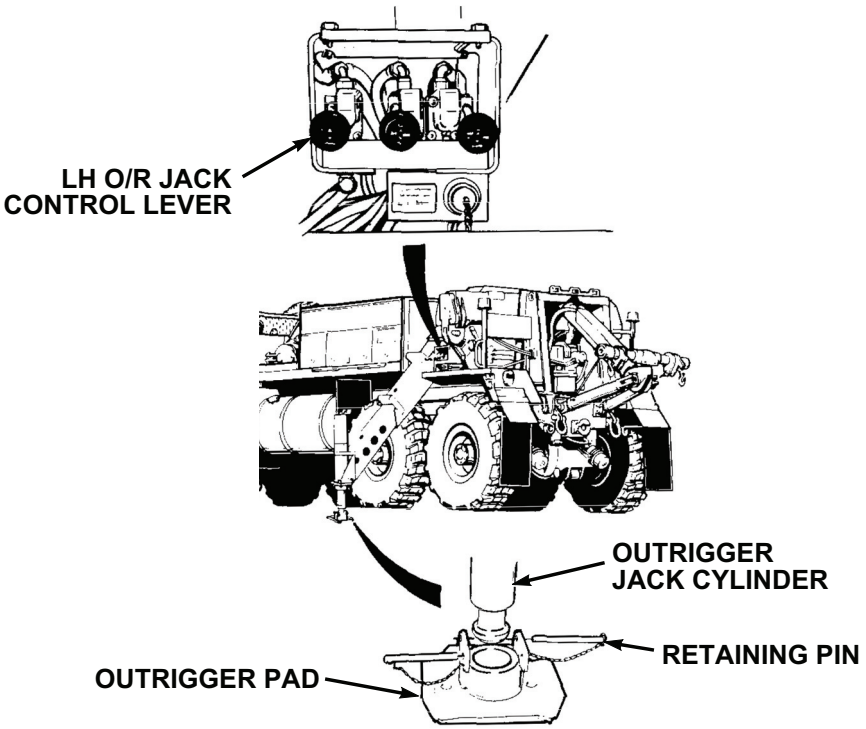


Figure 31.

			h. Move RH O/R JACK control lever to DOWN position and lower outrigger jack until rod end is firmly seated in outrigger pad. Install retaining pins.	Outrigger jack cylinder will not come out or will not lower completely into pad.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

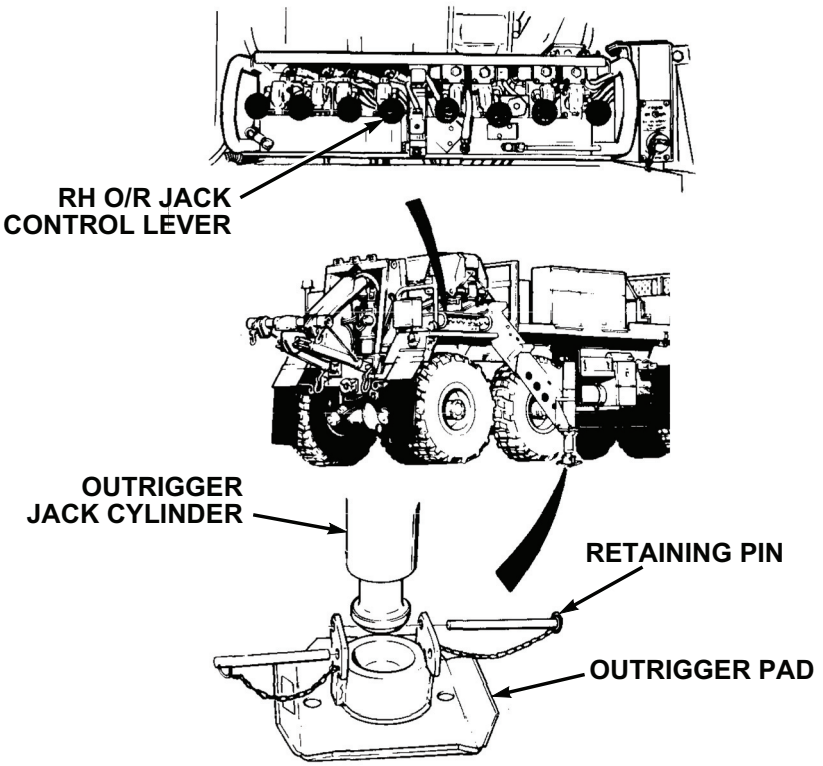


Figure 32.

		i. Check that outrigger jack cylinder on each side of vehicle is out and down.	Crane hydraulic system does not operate.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

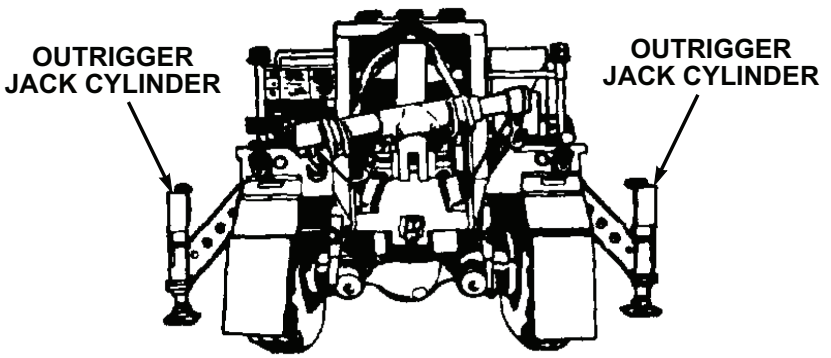


Figure 33.

			j. Seat outriggers. k. Raise boom to operating position. (Volume 1, WP 0102) **WARNING**  Do not operate crane unless outriggers are firmly in place or vehicle could turn over. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			CAUTION Do not let cable unwind and become slack, or cable may get tangled on drum. (1) Move HOIST control lever to DOWN position until hook block rests on fender.	

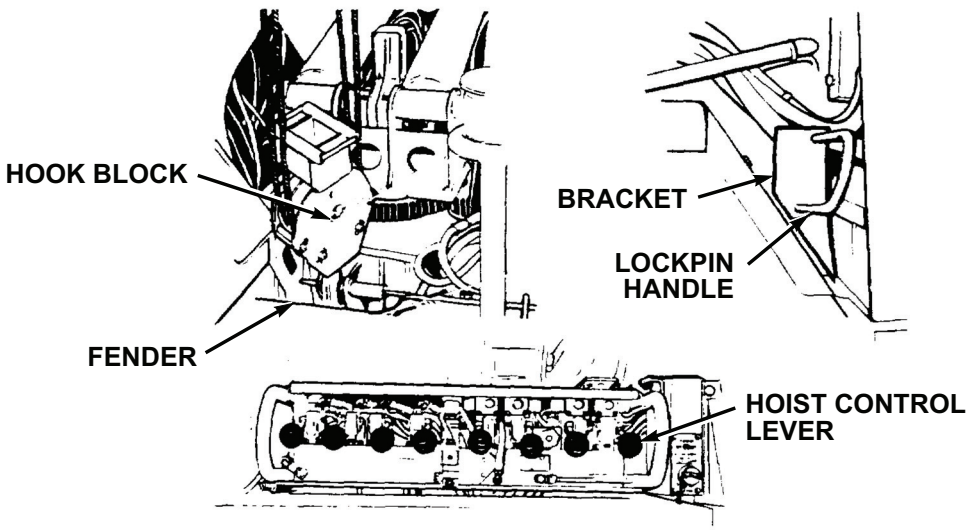


Figure 34.

			(2) Pull and turn lockpin handle so handle end rests on bracket to unstow hook block.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(3) Check hook block for cracks.	Hook block is cracked.
			(4) Check hook block stowage guide wear plate for excessive wear.	

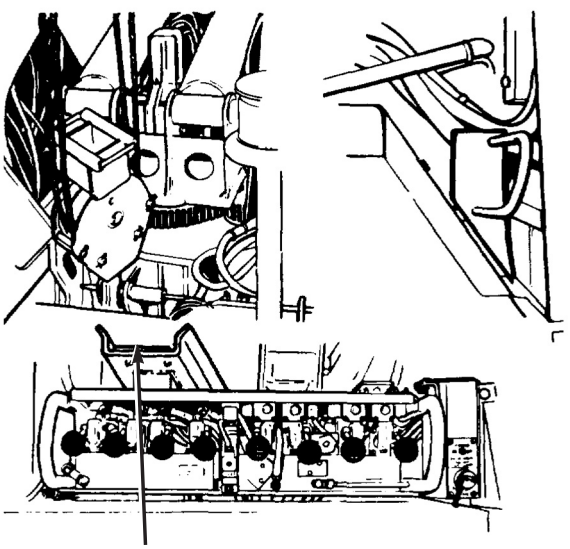


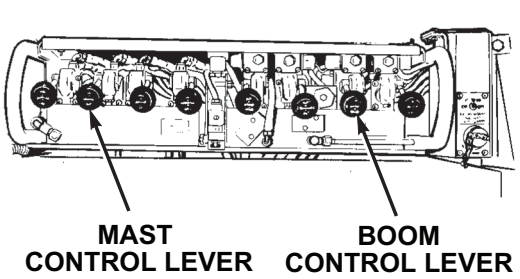
Figure 35.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **CAUTION** Do not hit outrigger leg with hook block. Failure to comply may result in damage to equipment. (5) Move BOOM control lever to UP position until hook is five to six feet (1.5 to 1.8 m) above driver side rear fender, and boom is approximately 45° above horizontal.	Boom does not raise.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:



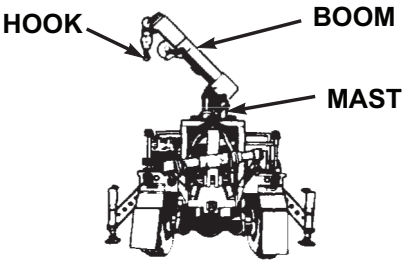


Figure 36.

			(6) Move MAST control lever to UP position until the mast is fully erect and the cylinders are fully extended. Use BOOM control lever UP simultaneously as required to maintain the boom at approximately 45° above horizontal until the mast is fully erect. Hold the MAST control lever to UP position for two to three seconds after mast is fully erect to ensure cylinders are fully filled with oil.	Mast cylinder does not raise completely before stopping.
			l. Rotate and telescope boom;	

Table 1. PMCS - WEEKLY - Continued

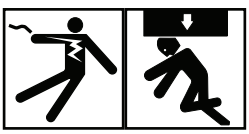
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  • When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. • Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may result in injury or death to personnel. **CAUTION** Boom must be above vehicle sides for clearance. (1) Move swing control lever to CW position to move boom clockwise.	Boom does not turn clockwise.

Table 1. PMCS - WEEKLY - Continued

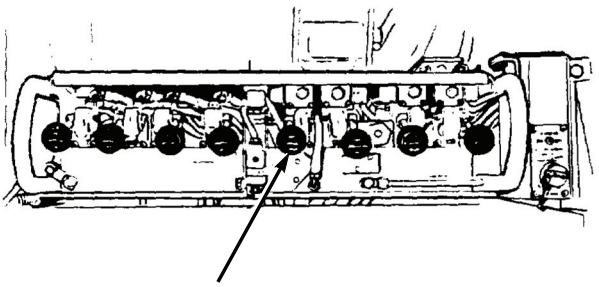
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			 **SWING CONTROL LEVER**	

Figure 37.

			(2) Move swing control lever to CCW position to move boom counterclockwise. **CAUTION** Keep hook block at least one ft. (30 cm) from end of boom. If hook block hits end of boom cable or hook block damage may occur and crane will lose power. Wait six seconds for power to return and check crane for damage. **NOTE** • TELESCOPE and HOIST levers should be operated at the same time.	Boom does not turn counter-clockwise.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			• Crane movement from one lever may be slower than the other when operating two levers together. (3) Move TELESCOPE control lever to OUT position to extend boom while moving hoist control lever to DOWN position to pay out cable.	Extensions do not come out.

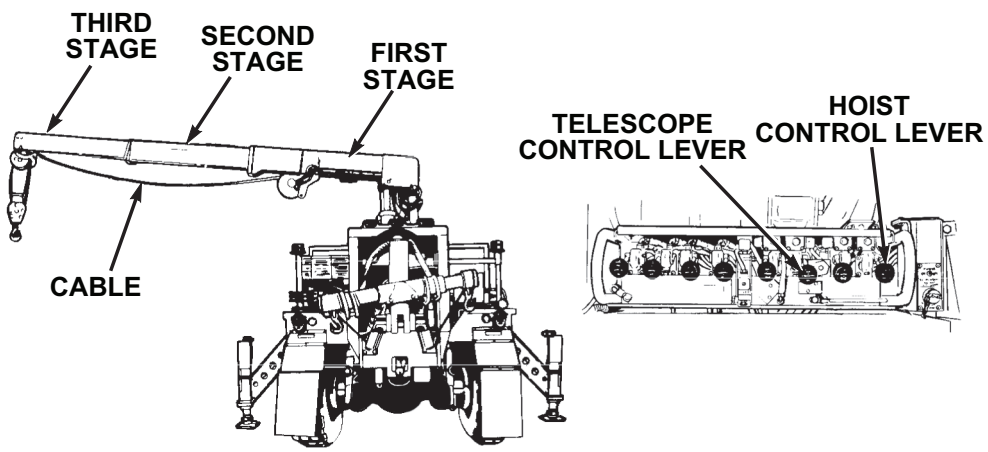


Figure 38.

			(4) Check first, second, and third stages of boom for broken welds or obvious damage.	There are broken welds or obvious dam-

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				age to boom.
			WARNING  Always wear protective gloves when checking hoist cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.	
			(5) Check cable on hoist for kinks, frays, or breaks.	Evidence of kinks, frays, or breaks.

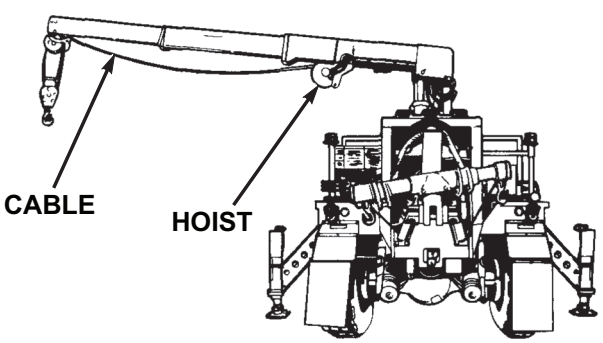


Figure 39.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(6) Check all hoses, fittings, valves, and cylinders for signs of leaks.	Class III leak present.
			(7) Check for cracked or broken welds.	Cracked or broken welds are present.
			(8) Inspect turntable bearing screws for obvious looseness.	One or more turntable bearing screws are loose.

Table 1. PMCS - WEEKLY - Continued

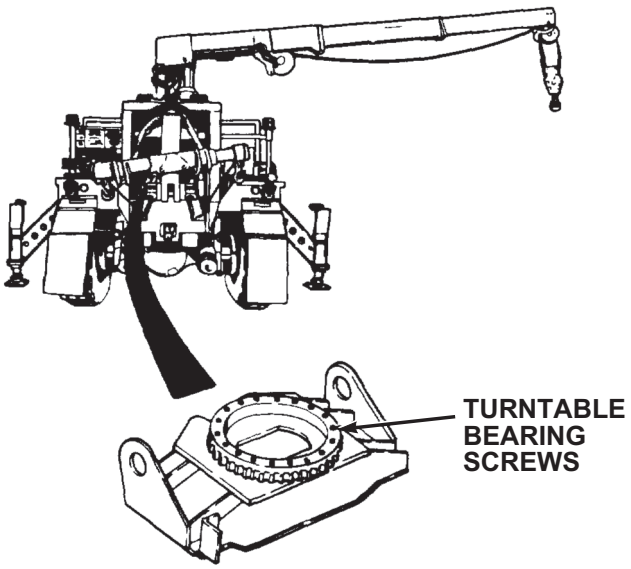
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 40.

			CAUTION Do not let cable become slack or cable may get tangled on drum. (9) Move HOIST control lever to UP position to reel in cable.	Cable does not reel in.

Table 1. PMCS - WEEKLY - Continued

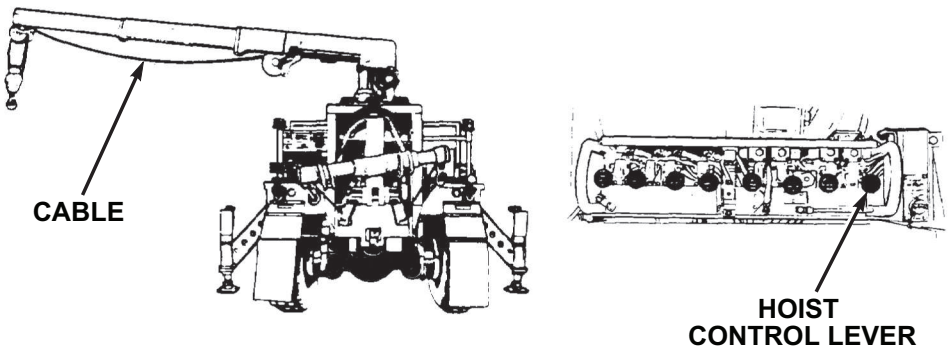
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 41.

			(10) Move HOIST control lever to DOWN position to pay out cable.	Cable does not pay out.
			NOTE For more information on material handling crane remote-control operating instructions, refer to grove crane operation (remote- control) procedures. (Volume 1, WP 0103)	
			4. Check crane remote control levers as follows:	
			a. Set up REMOTE CONTROL UNIT passenger side.	

Table 1. PMCS - WEEKLY - Continued

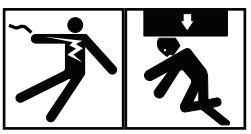
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  • When using crane on any vehicle, park vehicle clear of all overhead electrical lines. Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. • Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may result in injury or death to personnel. **WARNING**  If electrical power fails during crane operation, move switch on remote control unit to SHUTDOWN position. Fail-	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			ure to comply may result in injury or death to personnel. **CAUTION** Crane must be above vehicle sides for clearance. **NOTE** Operate control levers with light, even pressure. Moving lever slightly will cause slow movement of crane. Moving lever to full travel will cause faster movement of crane. b. Check control levers for malfunction, proper response, obvious damage, missing parts, binding, and extreme looseness. c. Rotate and telescope boom. **WARNING**  Ensure area is clear of personnel prior to moving SWING lever. Boom should be swung slowly enough so crane operator has complete control. Failure to comply may	Controls malfunction, bind, or do not respond.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			result in injury or death to personnel. (1) Move SWING control lever to CW position to turn boom clockwise.	Boom does not turn clockwise.

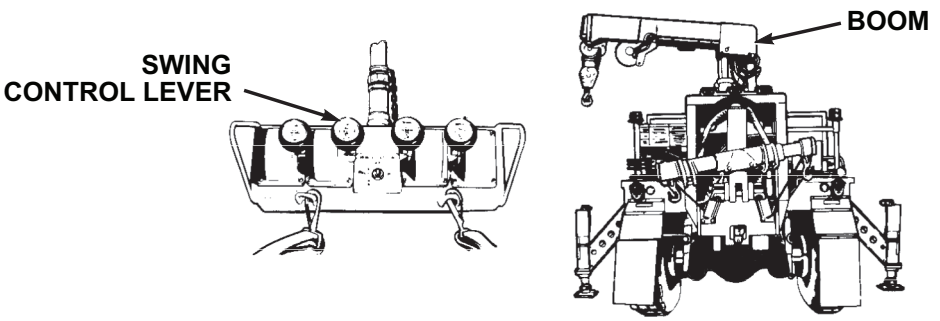


Figure 42.

			(2) Move SWING control lever to CCW position to turn boom counterclockwise. **WARNING**  When using crane on any vehicle, park vehicle clear of all overhead electrical lines.	Boom does not turn counterclockwise.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			Keep boom clear of all electrical lines and other obstacles while operating crane. Failure to comply may result in injury or death to personnel. **CAUTION** Do not let cable become slack or cable may get tangled on drum. (3) Move HOIST control lever to UP position to take up cable. Move BOOM control lever to UP position to raise boom.	Cable does not reel in or boom does not raise.

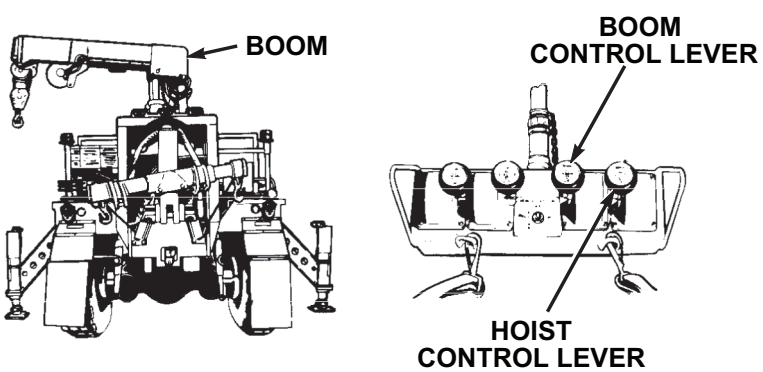


Figure 43.

			(4) Move HOIST control lever to DOWN position to pay out cable. Move	Cable does not pay out or boom

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			BOOM control lever to DOWN position to lower boom to horizontal position. **CAUTION** • Keep hook block at least one ft. (30 cm) from end of boom. If hook block hits end of boom it may damage cable or hook block and crane will lose power. Wait six seconds for power and check crane for damage. • Do not let cable become slack or cable may get tangled on drum. **NOTE** • TELESCOPE and HOIST levers should be operated at the same time. • Crane movement from one lever may be slower than the other when operating two levers together. (5) Move TELESCOPE control lever to OUT position, while moving HOIST control lever to	does not lower. Extensions will not come out or cable will not pay out.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			DOWN position to pay out cable.	

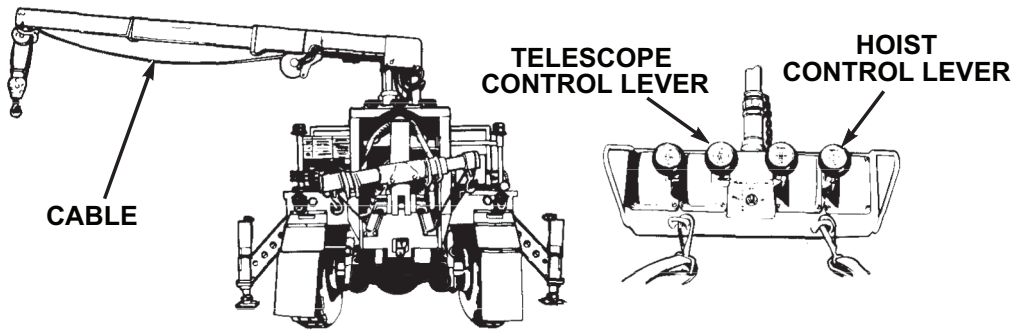


Figure 44.

			(6) Move HOIST control lever in UP position to reel in cable.	Cable will not reel in.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

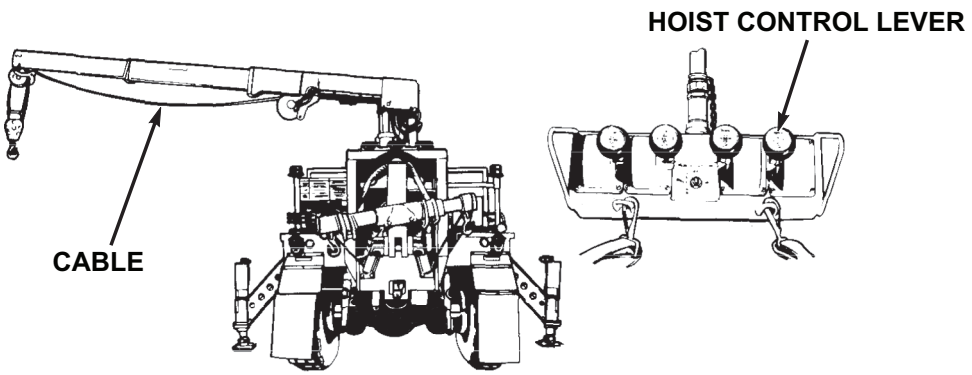


Figure 45.

			(7) Check that crane and ENGINE HIGH IDLE do not operate when REMOTE CONTROL UNIT is in MHC-SHUTDOWN position. Notify organizational maintenance if crane and ENGINE HIGH IDLE operates when in MHC-SHUTDOWN position. (8) Shut off remote control switches. (9) Disconnect remote control, passenger side. (10) Check operation of left remote control stations.	Crane will operate and engine speed will increase to 1500 rpm.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(11) Connect remote control to left remote control station. (12) Check operation of crane remote control levers. (13) Shut off remote control switches. (14) Disconnect and stow REMOTE CONTROL UNIT. (15) Shut down material handling crane. (Volume 1, WP 0102)	
			5. Check all hoses, fittings, valves, and cylinders for signs of leaks and damage.	Any Class III leak present.
			6. Check for cracked or broken welds.	Cracked or broken welds.
			NOTE Retrieval cylinder thermal relief valves (located on cross-tube end of cylinders) can discharge small amounts of oil as part of normal operation.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
35	Weekly	Retrieval System	1. Check lift cylinder and hoses, driver side and passenger side tow cylinders and hoses, crosstube, and control valves for leaks and obvious damage.	Any Class III leaks are found.

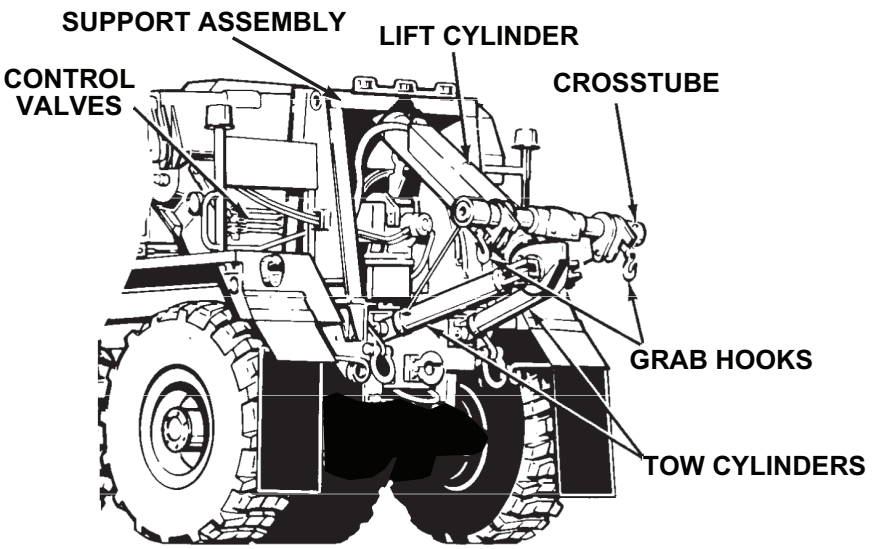


Figure 46.

			NOTE When properly installed, cotter pins should be toward outside of vehicle. 2. Check grab hooks for damaged or missing cotter pins.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE PMCS for retrieval system should only be performed when retrieval system is required for mission. 3. Check operation of retrieval system as follows: a. Start engine. (Volume 1, WP 0044) b. Set HYD ENABLE switch in on position. MAIN HYD ENABLE indicator will illuminate.	

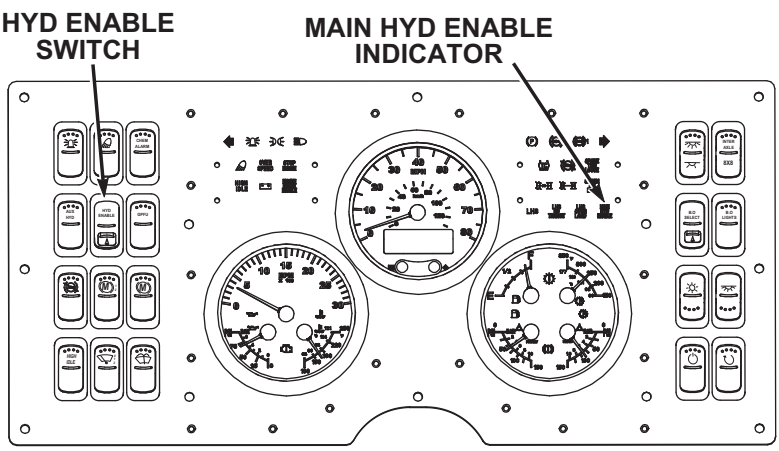


Figure 47.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			c. Set ON/OFF POWER switch to ON position.	

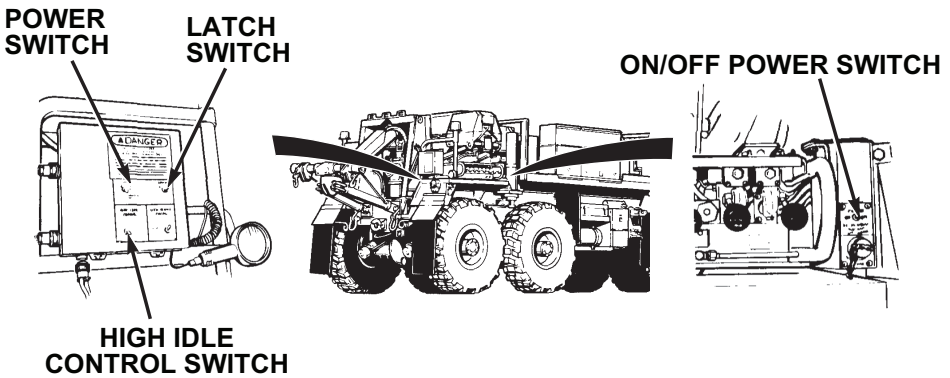


Figure 48.

			d. Set POWER switch to ON position. e. Set HIGH IDLE CONTROL switch to CONTINUOUS. **WARNING** Excessive noise levels are present any time the heavy-duty winch, crane, or retrieval system is operating. Wear single hearing protection	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			(earplugs or equivalent) while working around equipment when it is running. Failure to comply may result in injury or death to personnel. Seek medical aid should you suspect a hearing problem.	
			f. Push and release LATCH switch. Engine speed should increase to approximately 1500 RPM.	Engine speed does not increase to 1500 RPM.
			g. Operate retrieval system control levers (Volume 1, WP 0032) and check for proper operation of both levers and cylinders.	Retrieval system does not operate.

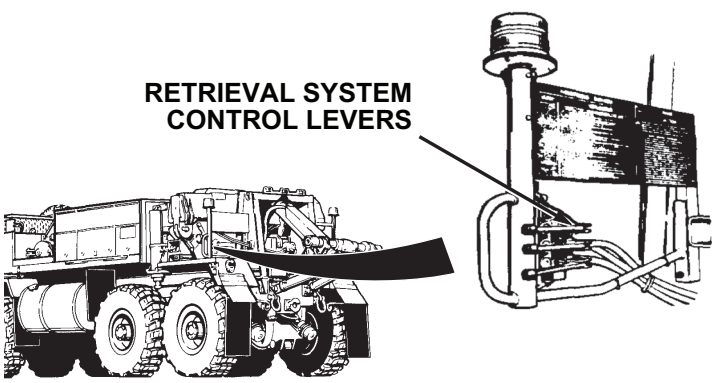


Figure 49.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
36	Weekly	Work Lights and Rear Beacon Lights	Check operation of work lights (Volume 1, WP 0092) and rear beacon lights. (Volume 1, WP 0093)	

END OF WORK PACKAGE

OPERATOR MAINTENANCE
SEMIANNUAL - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Gloves, Welders

Table 1. PMCS- SEMIANNUAL

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel. **WARNING**  Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE • Lubrication intervals are for normal operating conditions. Intervals may be shortened as required for severe operating conditions. • Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated. • Always refer to lubrication instructions (WP 0186) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as prescribed in lubrication instructions. (WP 0186)	
1	Semian nual	Brake System	Lubricate axles No. 1, No. 2, No. 3, and No. 4 brake camshafts and slack	Fitting will not purge old lubricant

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			adjusters (four fittings per axle) with GAA. (WP 0186, Table 11)	out of component.

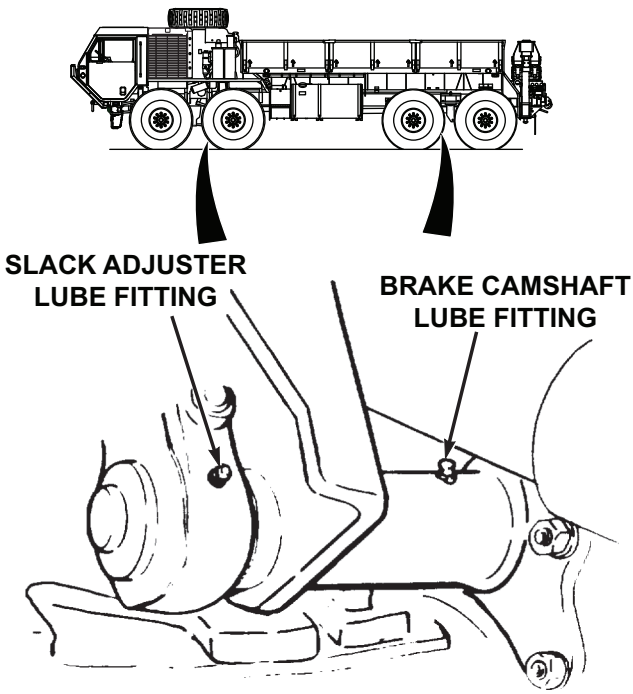


Figure 1.

			NOTE • When vehicle is operating under severe conditions, lubricate propeller shafts and universal joints every 50 hours of vehicle operation.	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			• Use the proper lubricant to purge all four bearing seals of each universal joint. This flushes abrasive contaminants from each bearing and assures all four bearings are filled properly. Pop the seals, these seals are made to be popped. • If any seals fail to purge, move propeller shaft from side-to-side while applying gun pressure. This allows greater clearance on thrust end of bearing that is not purging. If seals still do not purge, rock vehicle by releasing the parking brake, start engine, put transmission in D (drive) or R (reverse), and allow vehicle to roll. This removes the windup in the drive line and allows for a greater clearance on the thrust end of the universal joint. • Because of the design of the universal joint seal, there will occasionally be one or more bearing seals of a joint that may not purge. If this occurs, notify field level maintenance.	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			• Universal joint may have one or two grease fittings. If there are two grease fittings, either fitting can be greased. It is not necessary to grease both fittings.	
2	Semian nual	Propeller Shafts and U-Joints	1. Lubricate all axle propeller shafts, transmission to transfer case propeller shaft, and U-joints with GAA: (WP 0186, Table 11)	Fitting will not purge old lubricant out of com-ponent.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

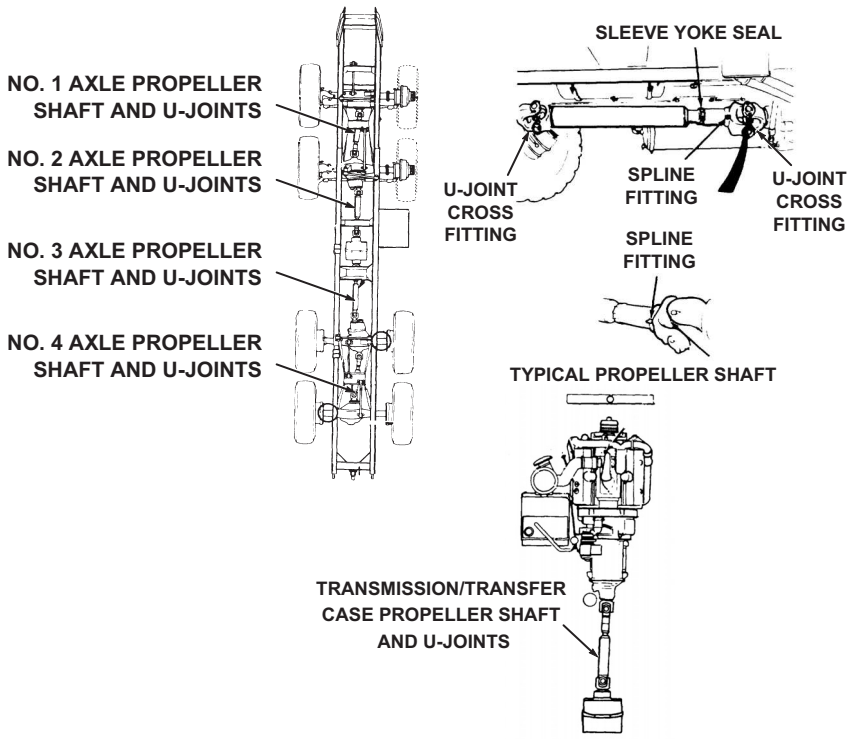


Figure 2.

			a. Complete the following when lubricating the spline end of the propeller shafts: (1) Apply GAA (WP 0186, Table 11) to spline fitting	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			until lubricant appears at pressure relief hole. (2) Cover pressure relief hole with finger and continue adding grease until it appears at sleeve yoke seal.	
3	Semian nual	Steering System	1. Lubricate steering column linkage, two steering gear boxes, and steering shaft universal joints (four fittings) with GAA. (WP 0186, Table 11)	Damage or wear present. Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

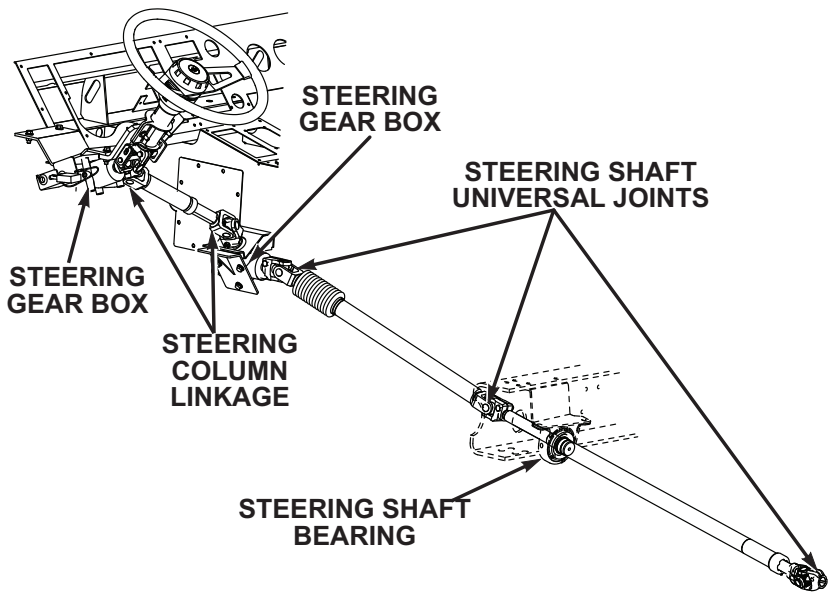


Figure 3.

			2. Lubricate steering shaft bearing (four fittings) with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of component.
			3. Lubricate master steering gear input shaft end (one fitting) with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

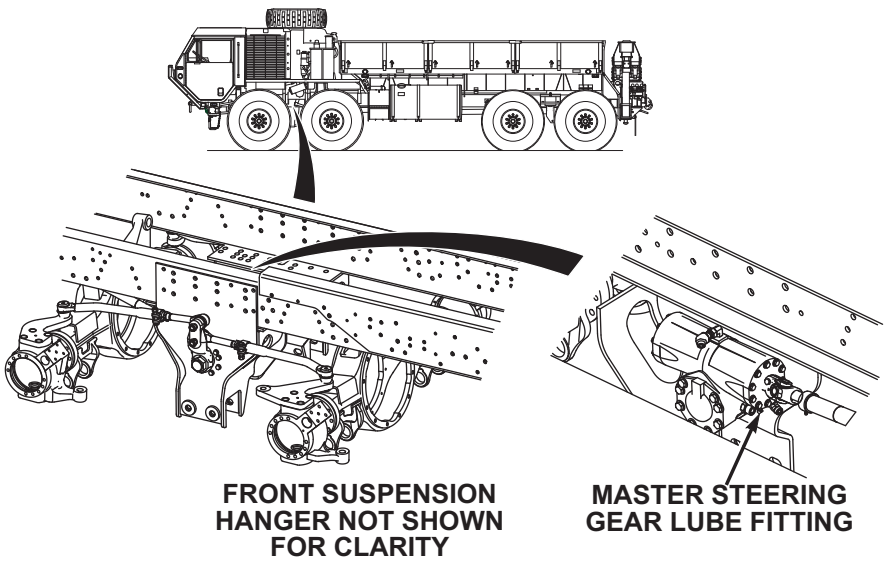
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 4.

			NOTE • The top trunnion bearing should be given 10 to 12 strokes with a grease gun through existing fitting. • The plug below the bottom should temporarily be removed and a grease fitting installed. The lower trunnion bearing should be lubricated with 10 to 12 strokes from a grease	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			gun. The grease fitting should then be removed and the plug reinstalled.	
			4. Lubricate axles No. 1 and No. 2 trunnion bearings with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of component.

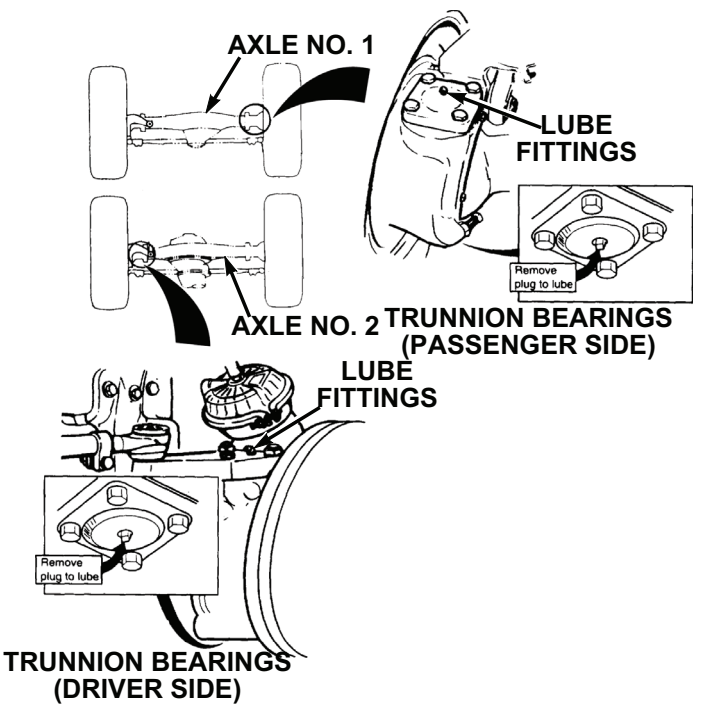


Figure 5.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
4	Semian nual	Battery Electrical System	Coat slave receptacle with corrosion preventive compound.	

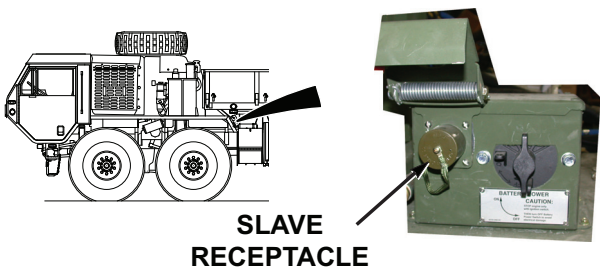


Figure 6.

5	Semian nual	Mirror Assembly	Lubricate mirror assembly swivel joints with GAA. (WP 0186)	

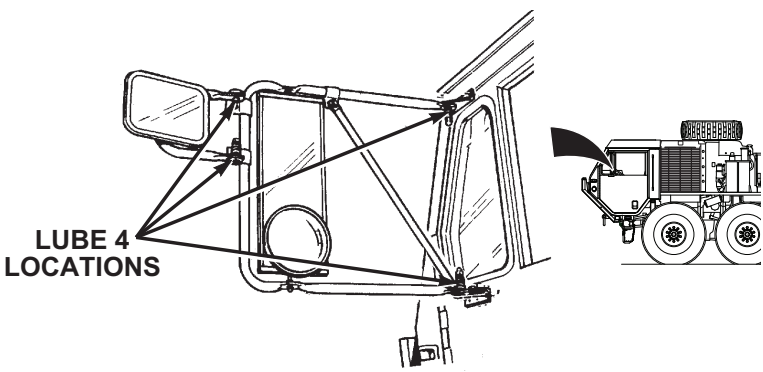


Figure 7.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
6	Semian nual	Wrecker Body Support Assembly Lubricatio n Points	Lubricate wrecker body support assembly (four fittings) with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of com- ponent.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

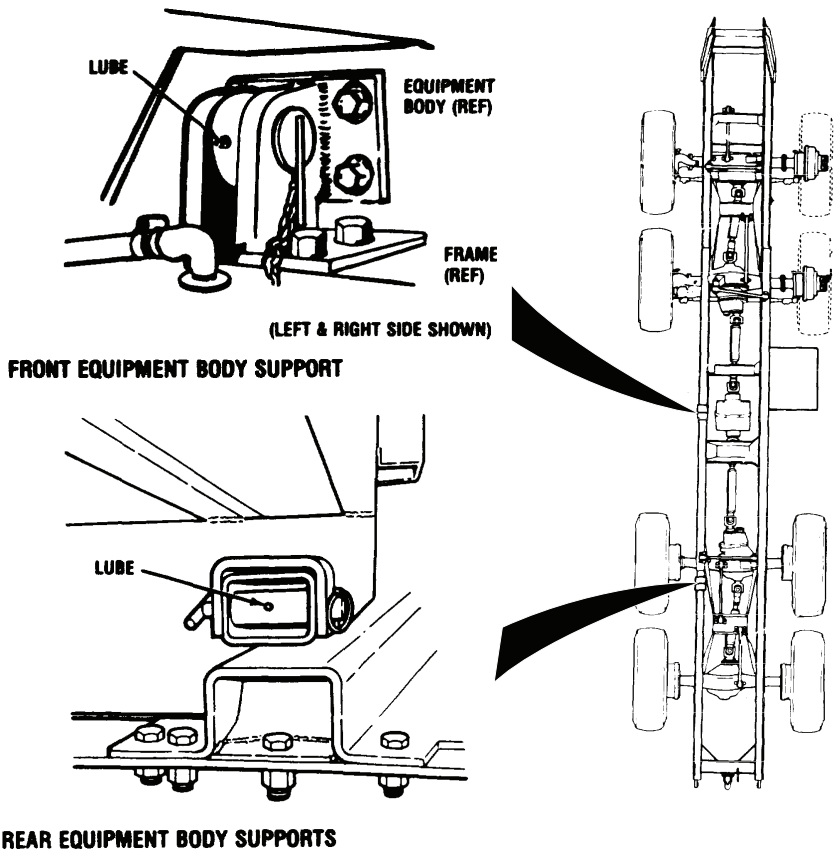


Figure 8.

7	Semian nual	Heavy-Duty Winch	1. Lubricate winch mounts (three fittings) with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of com-ponent.

Table 1. PMCS- SEMIANNUAL - Continued

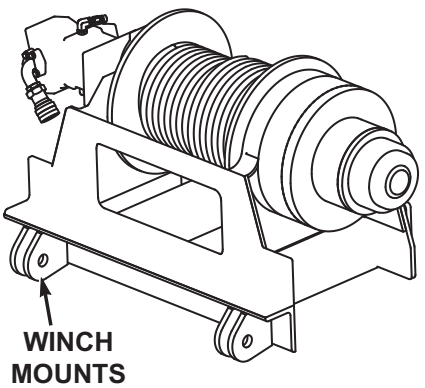
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			 *Figure 9.*	
			2. Check level of heavy-duty winch drum gearbox and fill with GO (WP 0186, Table 8) as required.	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

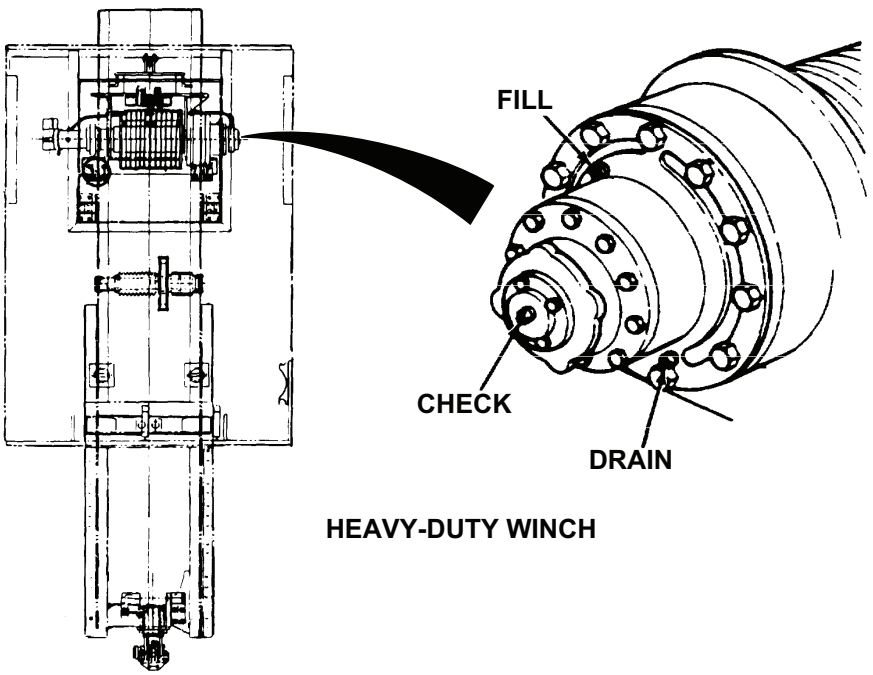


Figure 10.

		3. Lubricate fairlead tensioner (two fittings) with GAA. (WP 0186, Table 8)	Fittings will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

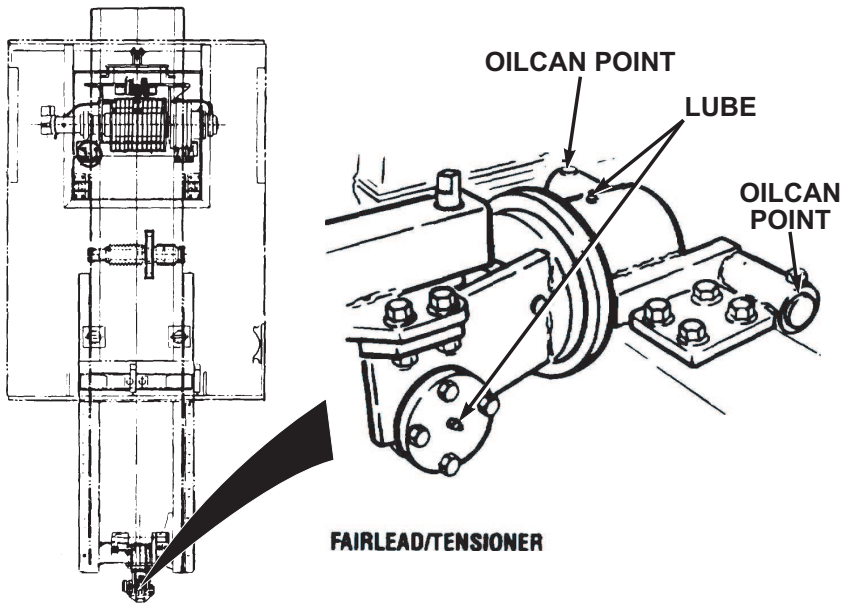


Figure 11.

			4. Lubricate fairlead pivot point with OE/HDO. (WP 0186, Table 10)	
			5. Lubricate fairlead/tensioner sheave with OE/HDO. (WP 0186, Table 10)	
			6. Lubricate cable guide assembly (1 fitting) with GAA. (WP 0186, Table 8)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

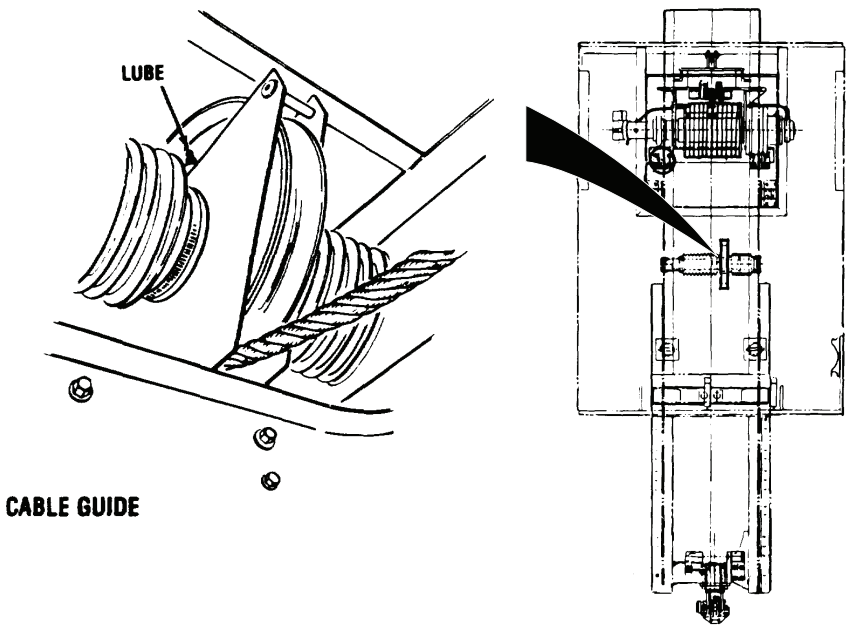


Figure 12.

		7. Lubricate heavy-duty snatch block center shaft (one fitting) with GAA. (WP 0186, Table 8)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

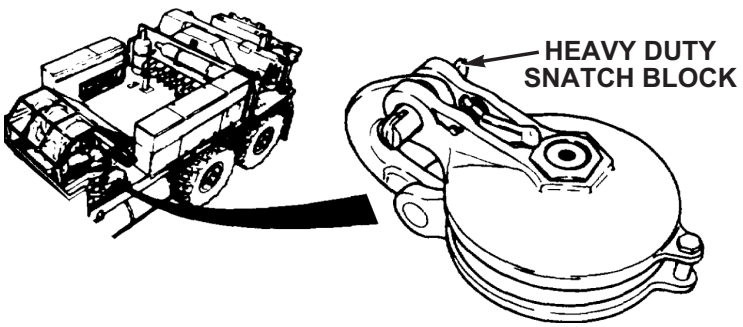


Figure 13.

			8. Lubricate heavy-duty snatch block locking jaws with GO (WP 0186, Table 8) **NOTE** Pintle hook plate lubrication fitting can be on any side.	
8	Semian nual	Pintle Hook	1. Lubricate pintle hook (3 fittings) with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of com-ponent.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

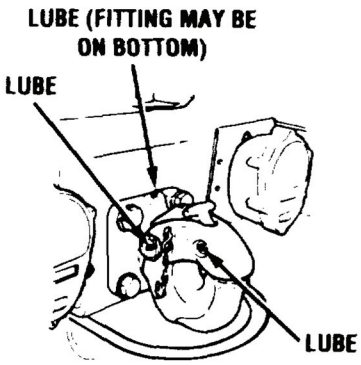


Figure 14.

9	Semian nual	Retrieval Assembly	1. Lubricate retrieval assembly (four fittings) with GAA. (WP 0186, Table 11)	Fittings will not purge old lubricant out of com-ponent.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

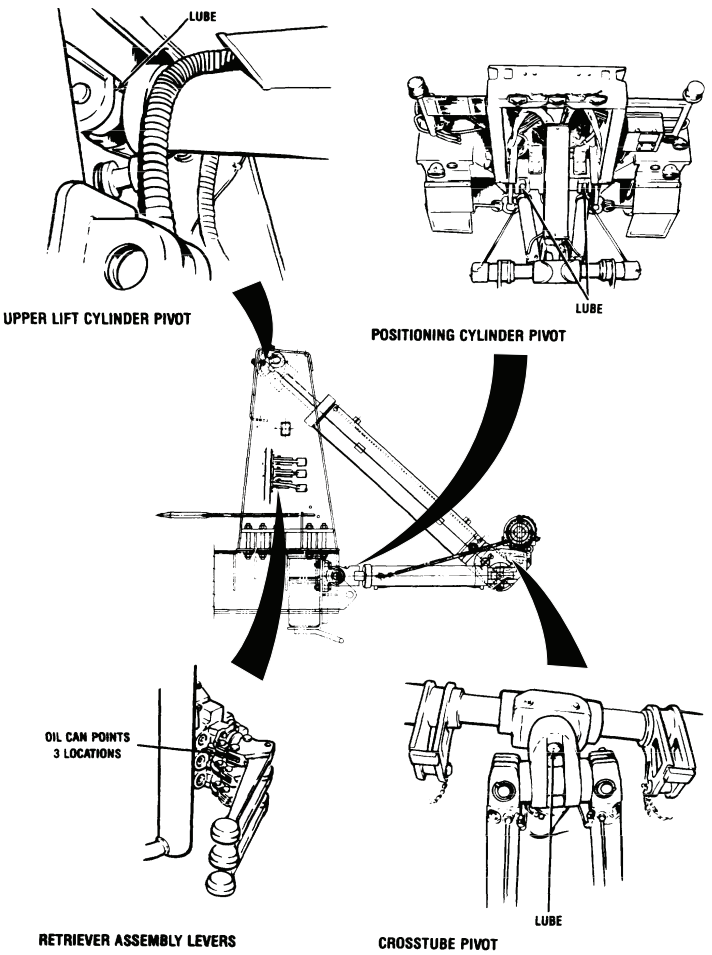


Figure 15.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			2. Lubricate control lever pivot points with OE/HDO. (WP 0186, Table 10) **NOTE** Always check grove crane for damaged parts and excessive wear during lubrication.	
10	Semian nual	Crane (Grove)	1. Lubricate grove crane:	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

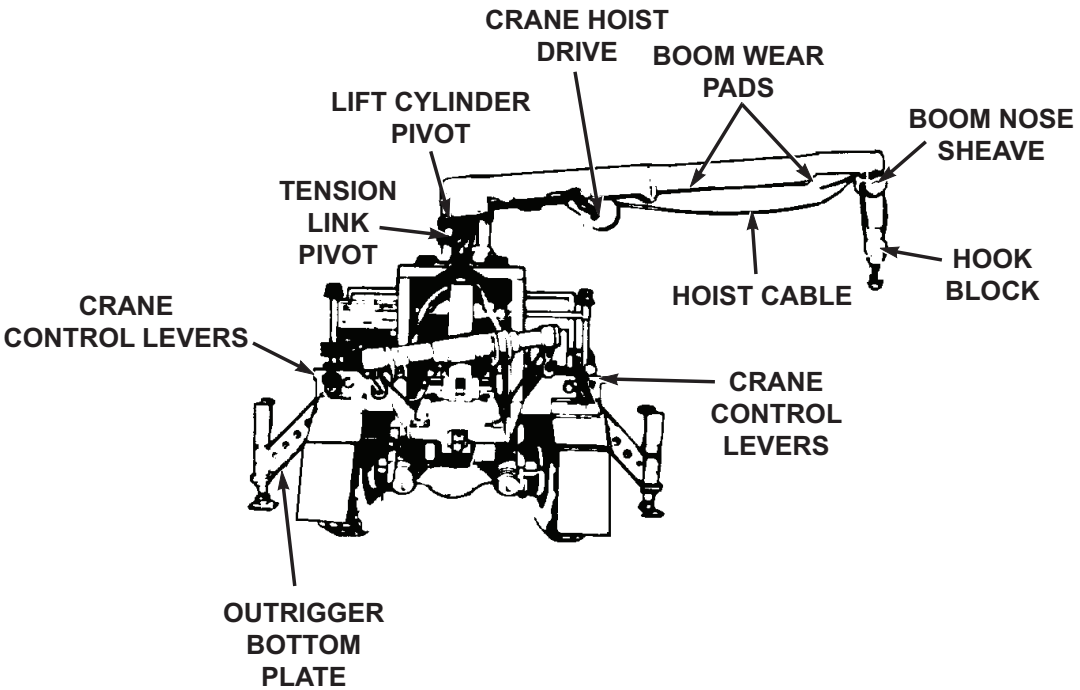


Figure 16.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

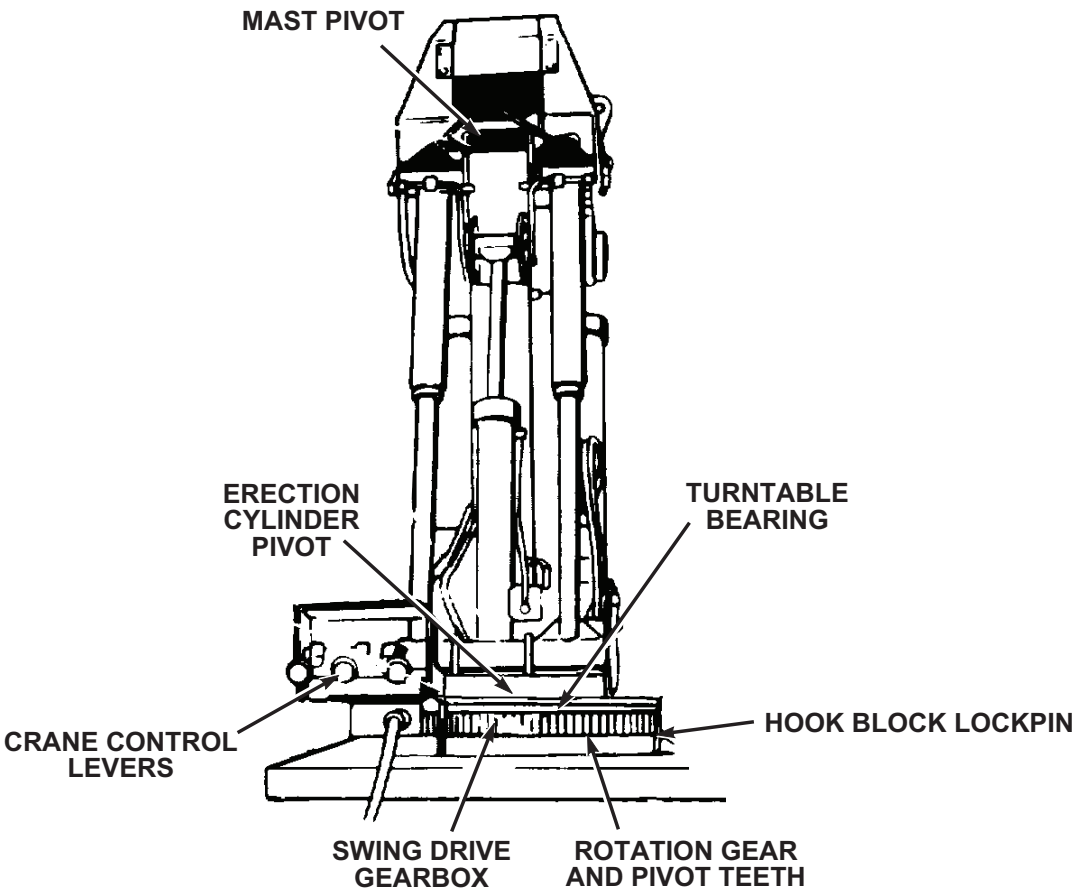


Figure 17.

			a. Lubricate pivot points at both ends of lift cylinders (eight	Fitting will not purge old lubricant

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			fittings) with GAA. (WP 0186, Table 9)	out of component.

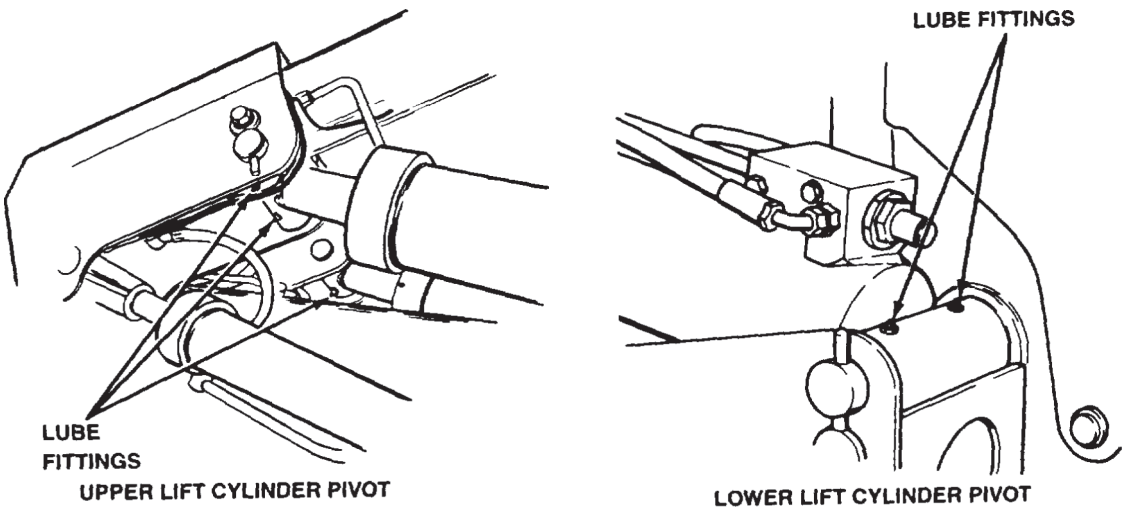


Figure 18.

			b. Lubricate pivots at both ends of tension link (eight fittings) with GAA. (WP 0186, Table 9)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

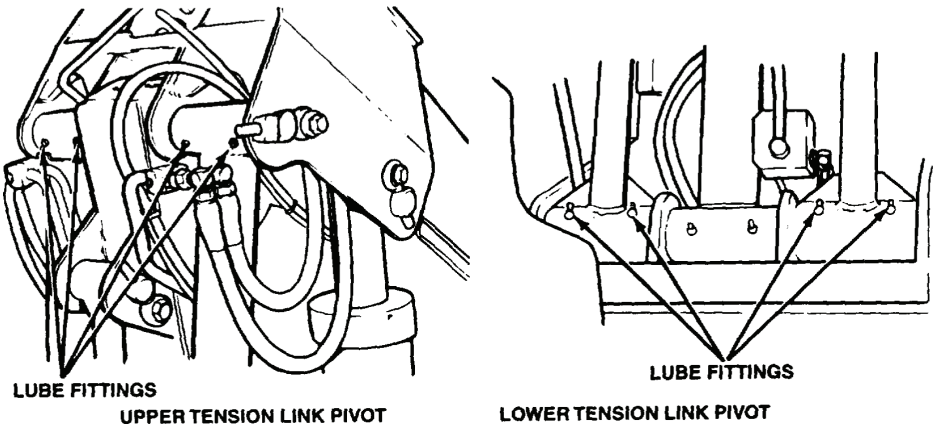


Figure 19.

			c. Lubricate both ends of mast pivot (four fittings) with GAA. (WP 0186, Table 9)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

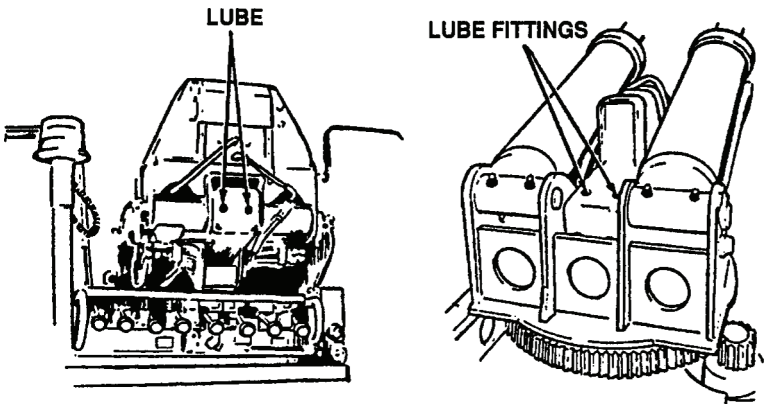


Figure 20.

		d. Lubricate pivot on lower end of erection cylinder (two fittings) with GAA. (WP 0186, Table 9)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

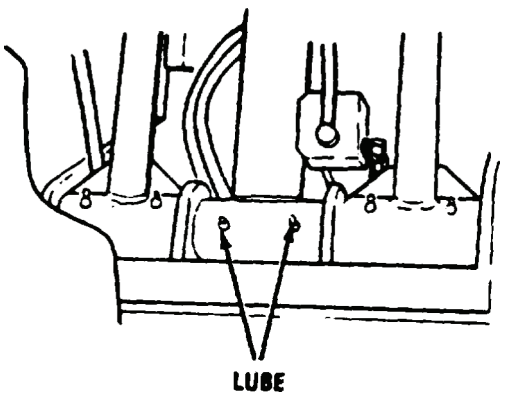
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 21.

			NOTE • Always re-lubricate rotation gear and pinion teeth after high pressure wash. • Clean and lubricate exposed rotation gears often when cranes are operating in sandy/dusty environment.	
			e. Check and lubricate rotation gear and pinion teeth with light coating of GAA. (WP 0186, Table 9)	Gear teeth broken or missing.

Table 1. PMCS- SEMIANNUAL - Continued

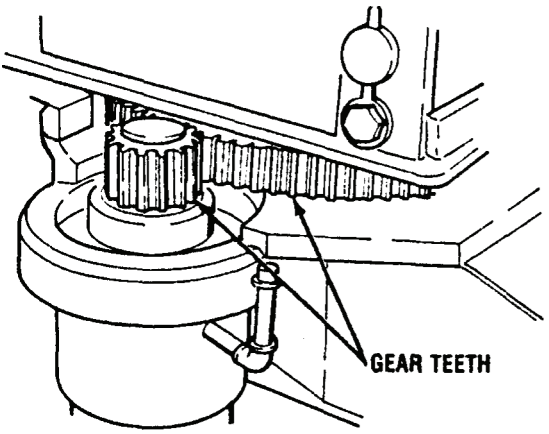
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			 *Figure 22.*	
			NOTE Raise crane mast until lube fitting comes into view. Turn and lubricate turntable every 90° until you have turned the turntable 360°, then rotate crane a full 360° to spread lubricant. f. Lubricate turntable bearing (one fitting) with GAA. (WP 0186, Table 9)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

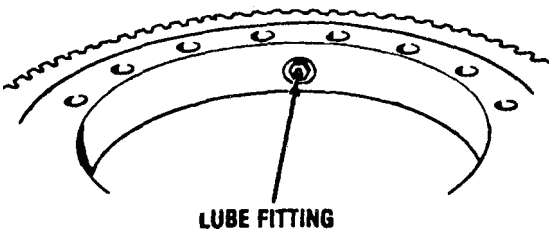
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			 *Figure 23.*	
			NOTE g. Clean and lubricate sliding surfaces of outrigger bottom plates with GAA. (WP 0186, Table 9) h. Lubricate hook block lockpin with OE/HDO. (WP 0186, Table 10)	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

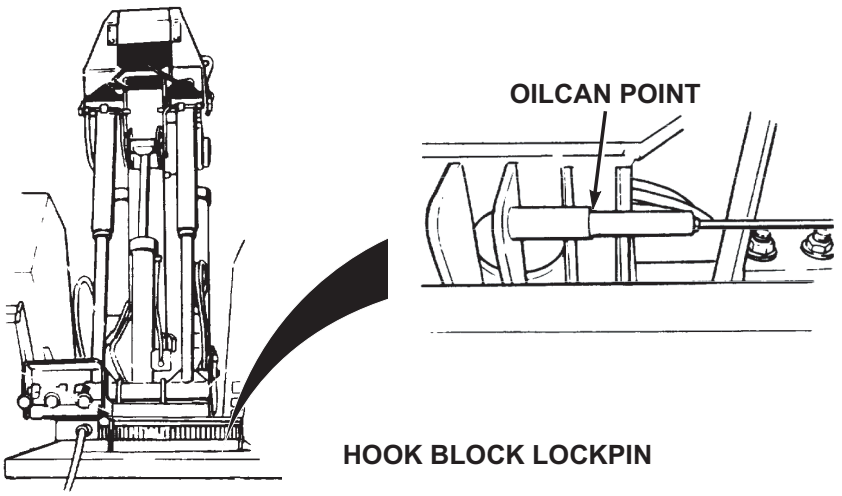


Figure 24.

		i. Lubricate hook block sheave bushing (two fittings) with GAA. (WP 0186, Table 9)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

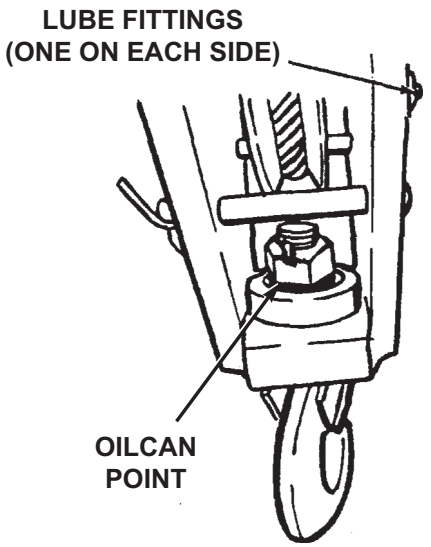


Figure 25.

			j. Lubricate hook block clevis pivot point with OE/HDO. (WP 0186, Table 10)	
			k. Lubricate boom nose sheave bushing (two fittings - one on each side) with GAA. (WP 0186, Table 9)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

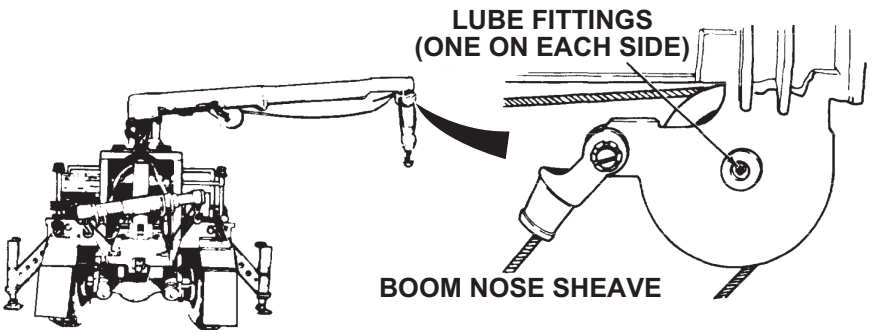
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 26.

			NOTE Clean and lubricate outrigger bottom plate often when cranes are operating in sandy/dusty environment. l. Clean and lubricate sliding surfaces of outrigger bottom plates with GAA. (WP 0186, Table 9)	

Table 1. PMCS- SEMIANNUAL - Continued

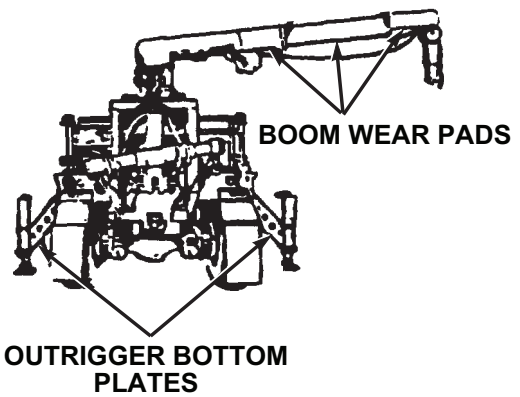
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				

Figure 27.

			NOTE Clean and lubricate boom wear pads often when cranes are operating in sandy/dusty environment. m. Clean and lubricate boom wear pads with GAA. (WP 0186, Table 9)	
11	Semian nual	Vise Assembly	1. Lubricate vise assembly (one fitting) with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of com-ponent.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

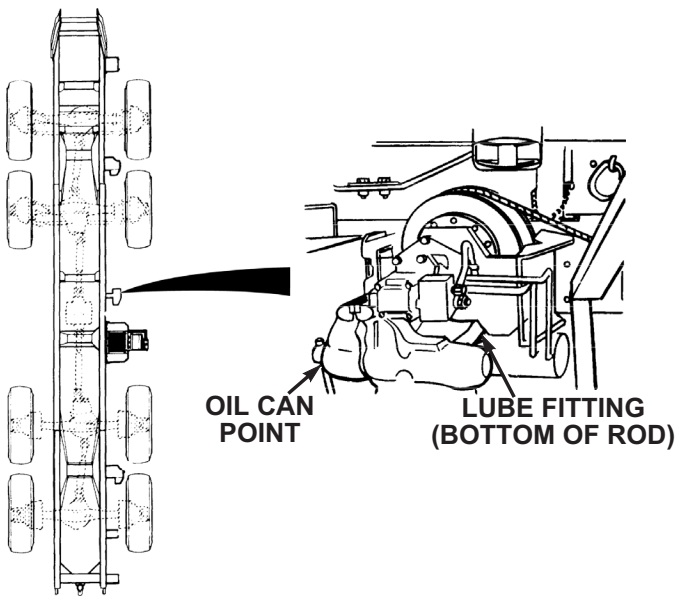


Figure 28.

			2. Lubricate vise adjustment screw with OE/HDO. (WP 0186, Table 10) **WARNING**  Always wear protective gloves when checking hoist cable. Never let cable run	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.	
12	Semian nual	Crane Hoist Cable	1. Unreel crane hoist cable and check hoist cable for kinks, broken strands, and wear.	Kinks, bro-ken strands, or wear present.
			2. Clean and lubricate hoist cable with OE/HDO. (WP 0186, Table 9)	Kinks, bro-ken strands, or wear present.
13	Semian nual	Self-Recovery Winch	1. Unreel, (Volume 1, WP 0115) clean, and lubricate cable with OE/HDO. (WP 0186, Table 10)	
			2. Lubricate front cable tensioner rollers (three fittings) with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of com-ponent.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

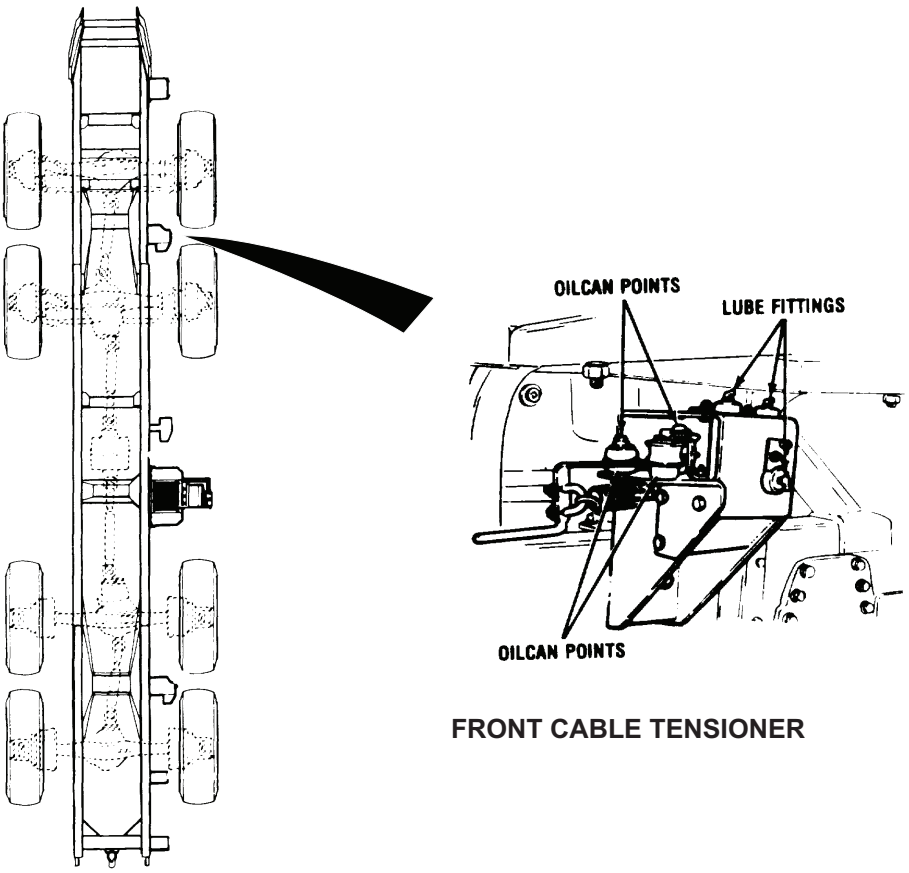


Figure 29.

		3.	Lubicate pivot points and pressure rollers with OE/HDO. (WP 0186, Table 10)

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			4. Lubricate front cable guide (four fittings) with GAA. (WP 0186, Table 11)	Fitting will not purge old lubricant out of component.

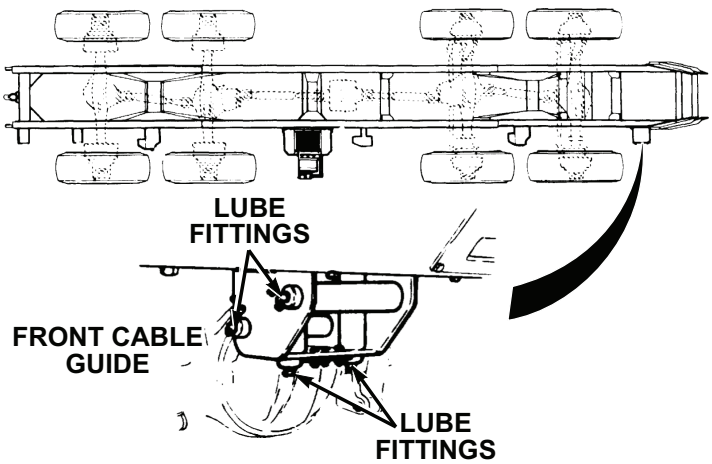


Figure 30.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
MONTHLY - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools
Gloves, Welders

Table 1. PMCS - MONTHLY

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			WARNING  Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel. **WARNING**  Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			NOTE • Lubrication intervals are for normal operating conditions. Intervals may be shortened as required for severe operating conditions. • Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing. • When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated. • Always refer to lubrication instructions (WP 0186) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as prescribed in lubrication instructions. (WP 0186)	
1	Monthly	Damage And	Check entire vehicle for obvious damage and/or corrosion.	Any broken, cracked, bent frame

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
		Corrosion Check		rails, cross-members, or screws are found.
2	Monthly	Lubricate Oilcan Points	1. Lubricate cabin door latching mechanisms and hinges with OE/HDO. (WP 0186) 2. Lubricate all side panel and engine cover hinges, locks, and latches with OE/HDO. (WP 0186) **NOTE** Steady illumination of the arctic engine heater indicator light indicates proper operation.	
3	Monthly	Arctic Engine Heater	1. Position arctic engine heater ON/OFF switch to ON position, indicator light will illuminate.	

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

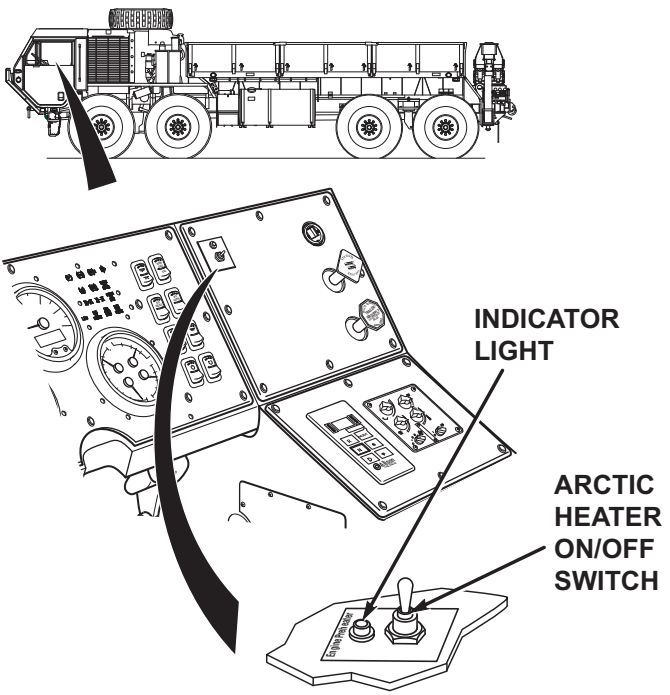


Figure 1.

		2. Visually check all fuel lines for leaks, cuts, loose clamps, and other obvious damage.	Any Class III leak.

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

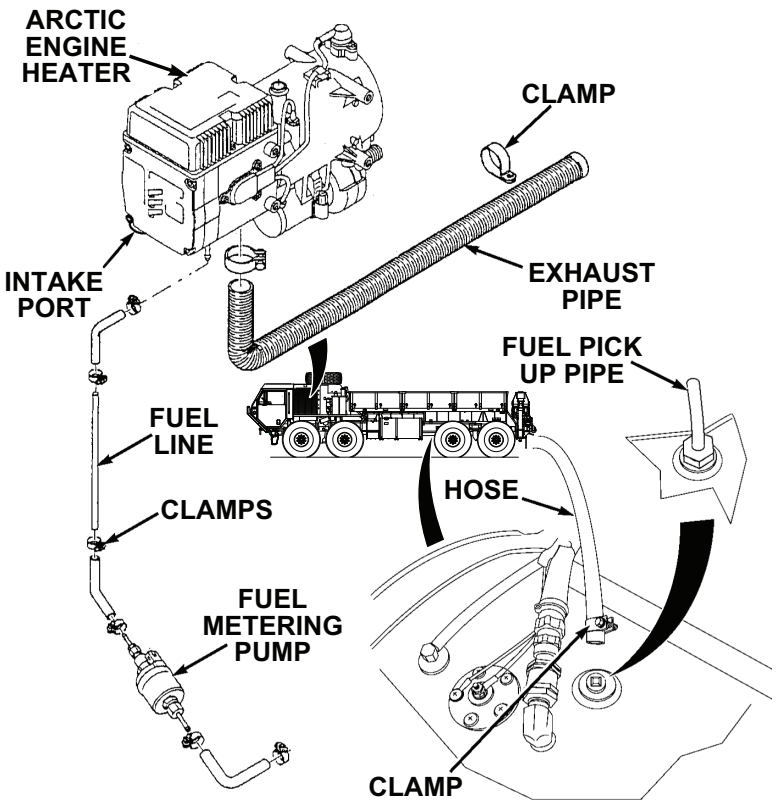


Figure 2.

		3. Visually check intake port and exhaust pipe for blockage. 4. Check water pump for unusual noise.	

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

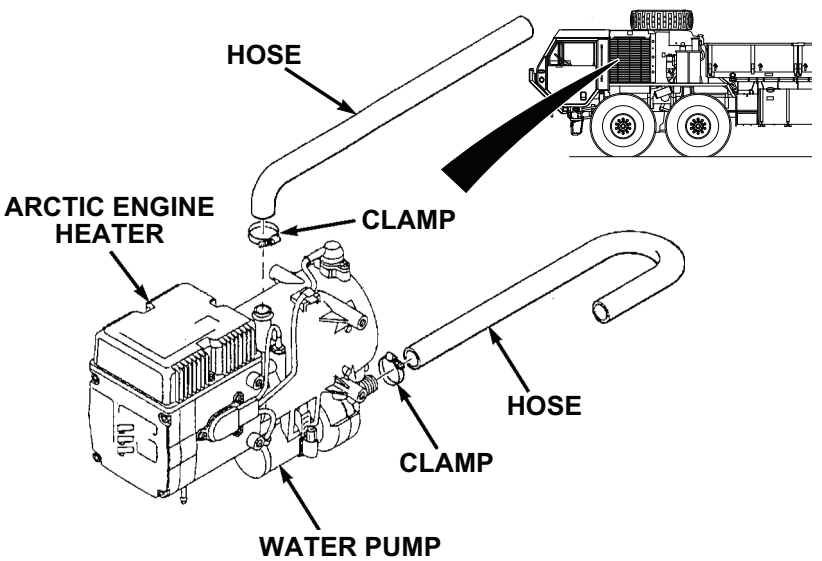


Figure 3.

			5. Check coolant hoses at arctic engine heater for leaks, cuts, loose hose clamps, and other obvious damage.	Any Class III leak.
			6. Check coolant hoses and fittings on engine for leaks, cuts, loose hose clamps, and other obvious damage.	Any Class III leak.

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			7. Run arctic engine heater for a minimum of 15 minutes at least once a month.	
4	Monthly	Heavy-Duty Winch Rear Attachment Fitting	Lubricate rear attachment fitting with GAA. (WP 0186)	Fitting will not purge old lubricant out of component.

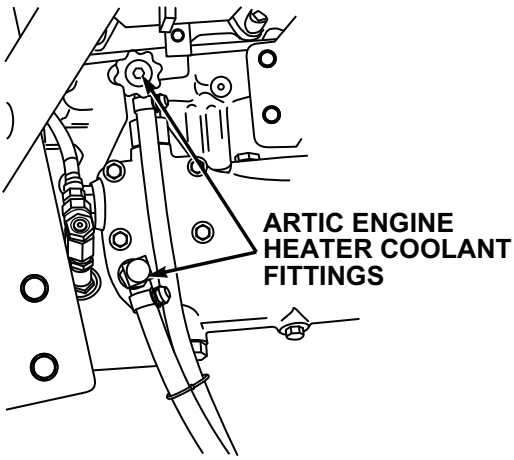


Figure 4.

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

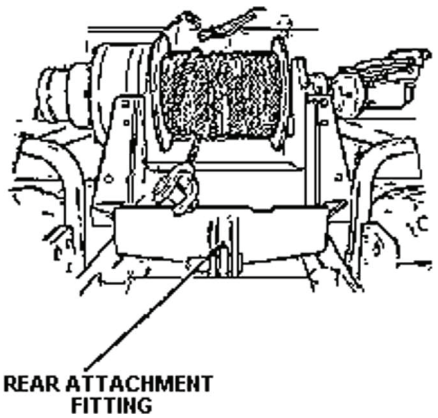


Figure 5.

5	Monthly	Crane Control Levers	Lubricate crane control lever pivots with OE/HDO. (WP 0186)	

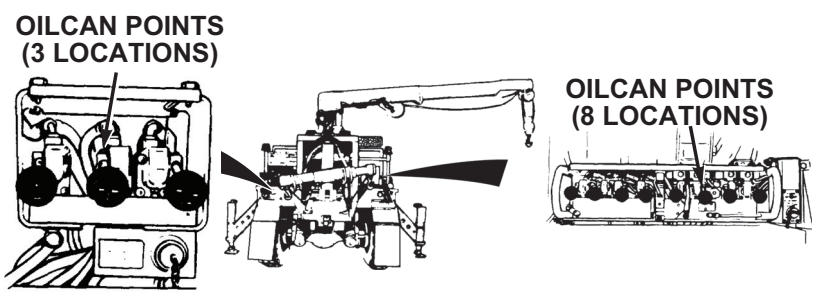


Figure 6.

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
6	Monthly	Heavy-Duty Snatch Block	Lubricate heavy-duty snatch block swivel and safety latch with OE/HDO. (WP 0186)	

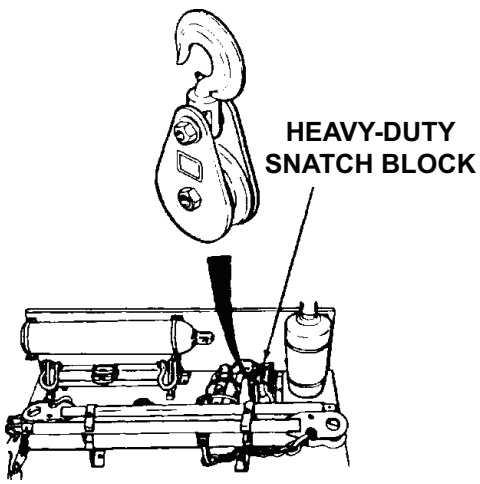


Figure 7.

7	Monthly	Stowage Boxes	Check all vehicle stowage boxes for missing hardware and other obvious damage.	

Table 1. PMCS - MONTHLY - Continued

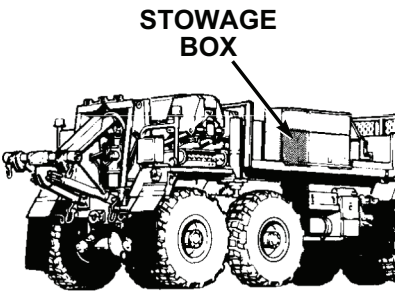
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			 *Figure 8.*	
			WARNING  • Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel. • Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.	

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
8	Monthly	Self-Recovery Winch (SRW)	1. Check winch cable for kinks, frays, and breaks.	
			2. Check self-recovery winch (SRW) lever (Volume 1, WP 0023) for proper operation in both directions.	Self-recovery winch (SRW) lever does not function.

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

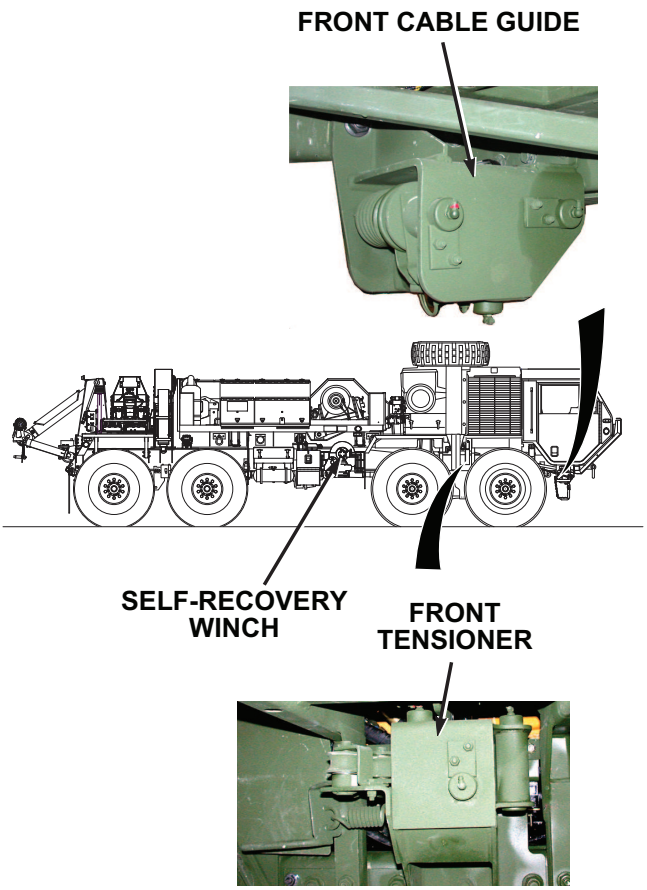


Figure 9.

			3. Inspect front cable guide for any loose or missing parts and any obvious damage.	Front cable guide has loose/miss-ing parts or

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				is unserviceable.
			4. Inspect front tensioner for loose or missing parts and any obvious damage.	Front tensioner has loose/missing parts or is unserviceable.
			NOTE Gas particulate filter unit must be in operation to perform the following checks.	
9	Monthly	Gas Particulate Filter Unit (GPFU)	1. Check heater for unusual loud noise or improper operation.	Heater does not operate/ operates abnormally and GPFU is required for mission.

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

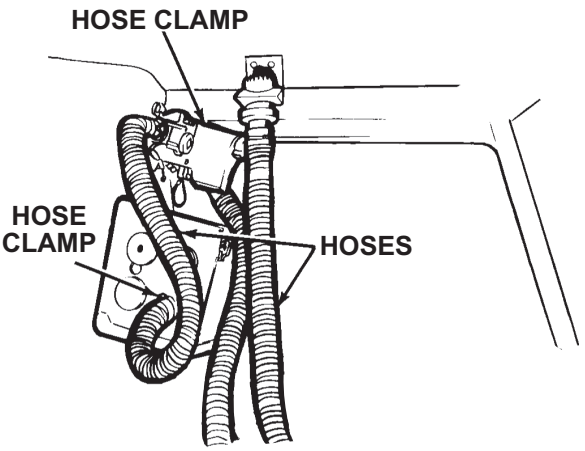


Figure 10.

			2. Disconnect two air duct breakaway sockets from mount and feel for airflow.	No airflow or not enough air-flow and GPFU is re-quired for mission.
			3. Turn heater control knob clockwise to make sure indicator light illuminates.	Heater is in-operative and GPFU is required for mission.
			4. Check hoses for cuts, tears, and other obvious damage.	Hoses cut, torn, or damaged and GPFU

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				is required for mission.
			5. Make sure hose clamps are secure.	Clamps loose and GPFU is required for mission.
10	Monthly	Rifle Stowage Mount	1. Check that mounting screws on top mount and lower mount are not broken or missing.	

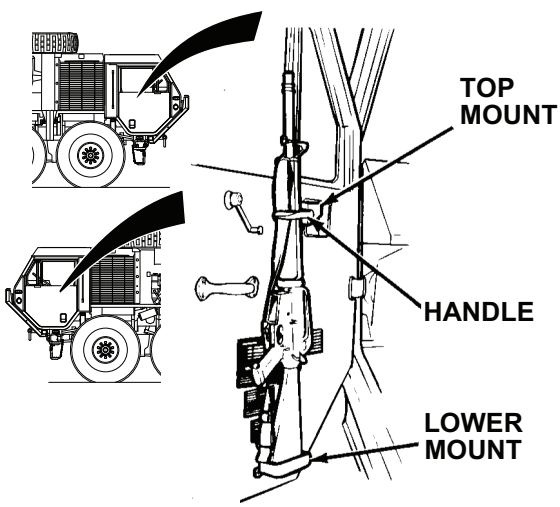


Figure 11.

			2. Check handle for excessive looseness or binding.	

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
11	Monthly	Machine Gun Operator's Platform Support	Check machine gun operator's platform support for loose, broken, or missing mounting screws.	
12	Monthly	Machine Gun Operator's Platform	Check machine gun operator's platform for cracks, loose or broken leg, missing or broken tie down strap.	
13	Monthly	Ring Mount	Check machine gun mounts for loose, broken, or missing mounting screws.	
14	Monthly	M-13 Decontamination Unit	Refer to TM 3-4230-214-12&P (WP 0200) for M-13 Decontamination Unit PMCS.	
15	Monthly	M-8 Chemical Alarm	Refer to TM 3-6665-225-12 (WP 0200) for M-8 Chemical Alarm PMCS.	
16	Monthly	Radio	Refer to TM 11-5820-498-12 (WP 0200) for radio PMCS.	

END OF WORK PACKAGE

CHAPTER 5

MAINTENANCE INSTRUCTIONS

OPERATOR MAINTENANCE
LUBRICATION INSTRUCTIONS

INITIAL SETUP:

Not Applicable

WARNING



Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury or death to personnel.

NOTE

- The lowest level of maintenance authorized to lubricate a specific point is indicated by where that lubrication point falls within the PMCS tables. Operator/crew are only authorized to lubricate those points within the operator PMCS tables. Field level maintenance personnel are authorized to lubricate all points regardless of which tables (operator or field level) those lubrication points are listed.
- Refer to PMCS tables for specific lubrication points and localized views.
- Lubrication intervals are for normal operating conditions. Intervals may be shortened as required for severe operating conditions.
- Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing.
- When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.
- After a thorough high pressure washing, lubricate all grease fittings and oil can points outside and underneath vehicle.

- If vehicle fords water obstacle, service all lubrication points below fording depth and check submerged gearboxes for presence of water.
- Ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as prescribed in these lubrication instructions.

Table 1. Engine Lubrication.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Desert Conditions	Interval
Engine Oil (with filter change)	42 qt. (39.73 L)	OE/ HDO-15W/40 MIL-PRF-2104	OE/ HDO-15W/40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1 and 2)	OE/ HDO-15W/40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1 and 2)	OE/ HDO-40 MIL-PRF-2104	A-Annual (1 year)
Engine Oil (without filter change)	40 qt. (37.84 L)	OE/ HDO-15W/40 MIL-PRF-2104	OE/ HDO-15W/40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1 and 2)	OE/ HDO-15W/40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1 and 2)	OE/ HDO-40 MIL-PRF-2104	A-Annual (1 year)

Table 1. Engine Lubrication. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Desert Conditions	Interval

NOTE

1. OEA must be used when temperatures are consistently below 0°F (-18°C).
2. OE/HDO-15W/40 must be used when temperatures are consistently above 0°F (-18°C).

Table 2. Transmission and Transfer Case Lubrication.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Transmission Oil (with filter change)	40 qt. (37.84 L)	OE/ HDO-15W/ 40 MIL-PRF-2104	OE/ HDO-15W/ 40 MIL-PRF-2104 (Note 2)	OE/ HDO-15W/ 40 MIL-PRF-2104 (Note 2)	A-Annual (1 year)
Transmission Oil (without filter change)	39 qt. (36.89 L)	OE/ HDO-15W/ 40 MIL-PRF-2104	OE/ HDO-15W/ 40 MIL-PRF-2104 (Note 2)	OE/ HDO-15W/ 40 MIL-PRF-2104 (Note 2)	A-Annual (1 year)
Transfer Case	6.5 qt. (6.15 L)	OE/ HDO-15W/ 40	OE/ HDO-15W/ 40 MIL-PRF-2104	OE/ HDO-15W/ 40 MIL-PRF-2104	A-Annual (1 year)

Table 2. Transmission and Transfer Case Lubrication. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
		MIL-PRF-2104	or OEA MIL-PRF-46167 (Notes 1 and 2)	or OEA MIL-PRF-46167 (Notes 1 and 2)	
All Other Transmission and Transfer Case Lubrication Points	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 2)	GAA MIL-PRF-10924 (Note 2)	As Required (Note 3)

NOTE

1. OE/HDO-15W/40 must be used when temperatures are consistently above 0°F (-18°C).
2. Refer to FM 9-207 (WP 0200) for arctic operation.
3. Refer to PMCS tables for specific lubrication intervals.

Table 3. Axle Lubrication.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Axle 1	17.5 qt. (16.56 L)	GO-85W/140 MIL-PRF-2105	GO-85W/140 MIL-PRF-2105 or	GO-80W/90 MIL-PRF-2105 or GO-75	B-Bienniel (2 Years) (Note 4)

Table 3. Axle Lubrication. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C) GO-80W/90 MIL-PRF-2105 (Notes 1 and 3)	Expected Temperatures +40 to -50°F (+4 to -46°C) MIL-PRF-2105 (Notes 2 and 3)	Interval
Axle 2 (and Power Divider)	21.5 qt. (20.34 L)	GO-85W/140 MIL-PRF-2105	GO-85W/140 MIL-PRF-2105 or GO-80W/90 MIL-PRF-2105 (Notes 1 and 3)	GO-80W/90 MIL-PRF-2105 or GO-75 MIL-PRF-2105 (Notes 2 and 3)	B-Bienniel (2 Years) (Note 4)
Axle 3 (and Power Divider)	21.5 qt. (20.34 L)	GO-85W/140 MIL-PRF-2105	GO-85W/140 MIL-PRF-2105 or GO-80W/90 MIL-PRF-2105 (Notes 1 and 3)	GO-80W/90 MIL-PRF-2105 or GO-75 MIL-PRF-2105 (Notes 2 and 3)	B-Bienniel (2 Years) (Note 4)
Oil Lubed Wheel Bearings	N/A	GO-85W/140 MIL-PRF-2105	GO-85W/140 MIL-PRF-2105 or GO-80W/90 MIL-PRF-2105	GO-80W/90 MIL-PRF-2105 or GO-75 MIL-PRF-2105 (Notes 2 and 3)	B-Bienniel (2 Years)

Table 3. Axle Lubrication. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C) (Notes 1 and 3)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
All Other Axle Lubrication Points	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 3)	GAA MIL-PRF-10924 (Note 3)	As Required (Note 5)

NOTE

1. GO-85W/140 must be used when temperatures are consistently above 30°F (-1°C).
2. GO-85W/90 must be used when temperatures are consistently above -15°F (-26°C).
3. Refer to FM 9-207 (WP 0200) for arctic operation.
4. An initial lubrication change on new or rebuilt axles should occur between 500 mi. (805 km) and 1,000 miles (1 609 km). Refer to Field Level Annual PMCS for more information.
5. Refer to PMCS tables for specific lubrication intervals.

Table 4. Hydraulic Reservoir Servicing.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Hydraulic Reservoir	205 qt. (193.93 L)	OE/HDO-10 MIL-PRF-2104 or OE/HDO-30 MIL-PRF-2104	OE/HDO-10 MIL-PRF-2104 (Note 2)	OEA MIL-PRF-46167 (Notes 2 and 3)	A-Annual (1 year)

Table 4. Hydraulic Reservoir Servicing. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C) (Note 1)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
NOTE 1. OE/HDO-30 must be used only when temperatures are consistently above 60°F (16°C). 2. Refer to FM 9-207 (WP 0200) for arctic operation. 3. OEA must be used when temperatures are consistently below 0°F (-18°C).					

Table 5. Radiator Servicing.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Antifreeze (CID A-A-52624) (Note 1)	58.5 qt. (55.34 L)	58.5 qt. (55.34 L) 50% Ethylene Glycol Type IC (Recycled) (Notes 1 and 2)	58.5 qt. (55.34 L) 50% Ethylene Glycol Type IC (Recycled) (Notes 1 and 2)	58.5 qt. (55.34 L) 60% Ethylene Glycol Arctic Type IB (Recycled) (Notes 1, 2, and 3)	A-Annual (1 year) (Note 4)
Antifreeze (CID A-A-52624) (Note 1)	58.5 qt. (55.34 L)	29.5 qt. (27.91 L) 100% Ethylene Glycol	29.5 qt. (27.91 L) 100% Ethylene Glycol	35.1 qt. (33.2 L) 100% Ethylene Glycol	A-Annual (1 year) (Note 4)

Table 5. Radiator Servicing. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
		Type IA (Recycled) plus 29 qt. (27.43 L) water (Notes 1 and 5)	Type IA (Recycled) plus 29 qt. (27.43 L) water (Notes 1 and 5)	Type IA (Recycled) plus 23.4 qt. (22.14 L) water (Notes 1, 3, and 6)	
Antifreeze (CID A-A-52624) (Note 1)	58.5 qt. (55.34 L)	29.5 qt. (27.91 L) 100% 100% Propylene Glycol Type IIA (virgin) plus 29 qt. (27.43 L) water (Notes 1 and 7)	29.5 qt. (27.91 L) 100% Propylene Glycol Type IIA (virgin) plus 29 qt. (27.43 L) water (Notes 1 and 7)	35.1 qt. (33.2 L) 100% Propylene Glycol Type IIA (virgin) plus 23.4 qt. (22.14 L) water (Notes 1, 3, and 8)	A-Annual (1 year) (Note 4)
Corrosion Inhibitor (Note 1)	1.8 qt. (1.7 L)	(Note 1)	(Note 1)	(Notes 1 and 3)	As Required

NOTE

1. Refer to TB 750-651 (WP 0200) for more information on antifreeze and additives used in the HEMTT series vehicle engine cooling system, and TM 750-254 (WP 0200) for detailed instructions for draining, cleaning, and flushing cooling systems of tactical vehicles.
2. Type 1C (normal) and Type 1B (arctic) antifreeze is premixed, and DOES NOT REQUIRE the addition of water. Never add water or inhibitor to Type IB antifreeze.
3. Refer to FM 9-207 (WP 0200) for arctic operation.

Table 5. Radiator Servicing. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval

4. Engine coolant contaminant level is checked annually. Engine coolant does not need to be changed until it fails check.
5. A mixture of 50% Ethylene Glycol (EG) antifreeze to 50% water will provide freeze protection down to -34°F (-37°C).
6. A mixture of 50% Propylene Glycol (PG) antifreeze to 50% water will provide freeze protection down to -27°F (-33°C).
7. A mixture of 60% Ethylene Glycol (EG) antifreeze to 40% water will provide freeze protection down to -62°F (-52°C).
8. A mixture of 60% Propylene Glycol (PG) antifreeze to 40% water will provide freeze protection down to -56°F (-49°C).

Table 6. Tire Carrier Lubrication.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Tire Carrier Pump (Note 1)	1.5 qt. (1.42 L)	OE/HDO-10 MIL-PRF-2104	OE/HDO-10 MIL-PRF-2104 (Note 2)	OEA MIL-PRF-46167 (Note 2)	S-Semiannual (WP 0184) (6 Months) (Note 3)

NOTE

1. Refer to tire carrier hydraulic system fill for information on servicing tire carrier pump.
2. Refer to FM 9-207 (WP 0200) for arctic operation.
3. Check level and add fluid as necessary. Currently there is no requirement to drain/fill tire carrier pump reservoir.

Table 7. Self-Recovery Winch Lubrication.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Self-Recovery Winch Gearbox (Note 1)	2 qt. (1.89 L)	GO-85W/140 MIL-PRF-2105	GO-75 MIL-PRF-2105 or GO-80W/90 MIL-PRF-2105 (Note 2)	GO-75 MIL-PRF-2105 (Note 2)	A-Annual (1 year)
Winch Cable	As Required	OE/HDO-30 MIL-PRF-2104	OE/HDO-10 MIL-PRF-2104 (Note 1)	OEA MIL-PRF-46167 (Note 1)	S-Semiannual (WP 0184) (6 Months)
All Other Self-Recovery Winch Lubrication Points	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 2)	GAA MIL-PRF-10924 (Note 2)	As Required (Note 3)

NOTE

1. Pre-lubricated from manufacturer.
2. Refer to FM 9-207 (WP 0200) for arctic operation.
3. Refer to PMCS tables for specific lubrication intervals.

Table 8. Heavy-Duty Winch Lubrication.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Winch Gearbox	12 qt. (11.35 L)	GO-85W/140 MIL-PRF-2105	GO-75 MIL-PRF-2105 or GO-80W/90 MIL-PRF-2105 (Note 1)	GO-75 MIL-PRF-2105 (Note 1)	A-Annual (1 year)
Winch Cable	As Required	OE/HDO-30 MIL-PRF-2104	OE/HDO-10 MIL-PRF-2104 (Note 1)	OEA MIL-PRF-46167 (Note 1)	S-Semiannual (WP 0184) (6 Months)
All Other Winch Lubrication Points	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	As Required (Note 2)

NOTE

1. Refer to FM 9-207 (WP 0200) for arctic operation.
2. Refer to PMCS tables for specific lubrication intervals.

Table 9. Material Handling Crane Lubrication.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Crane Swing	2.5 pt. (1.18 L)	GO-80W/90	GO-80W/90	GO-75	A-Annual (1 year)

Table 9. Material Handling Crane Lubrication. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Drive Gearbox		MIL-PRF-2105	MIL-PRF-2105 (Note 1)	MIL-PRF-2104 (Note 1)	(Note 2)
Crane Hoist	1 pt. (0.47 L)	GO-80W/90 MIL-PRF-2105	GO-80W/90 MIL-PRF-2105 (Note 1)	GO-75 MIL-PRF-2104 (Note 1)	A-Annual (1 year)
Hoist Cable	As Required	OE/HDO-30 MIL-PRF-2104	OE/HDO-10 MIL-PRF-2104 (Note 1)	OEA MIL-PRF-46167 (Note 1)	S-Semiannual (WP 0184) (6 Months)
All Other Crane Lubrication Points	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	As Required (Note 3)

NOTE

1. Refer to FM 9-207 (WP 0200) for arctic operation.
2. Check level and add fluid as necessary. Currently there is no requirement to drain/fill crane swing drive gearbox.
3. Refer to PMCS tables for specific lubrication intervals.

Table 10. Oil Can Point Lubrication.

Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Intervals
As Required	OE/HDO-30 MIL-PRF-2104	OE/HDO-10 MIL-PRF-2104	OEA MIL-PRF-46167	As Required (Note 2)

Table 10. Oil Can Point Lubrication. - Continued

Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C) (Note 1)	Expected Temperatures +40 to -50°F (+4 to -46°C) (Note 1)	Intervals
NOTE 1. Refer to FM 9-207 (WP 0200) for arctic operation. 2. Refer to PMCS tables for specific oilcan lubrication intervals.				

Table 11. Miscellaneous Lubrication Points.

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Brake Cam Slack Adjusters	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0184) (6 Months)
Pintle Hook	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	W-Weekly (WP 0183) S-Semiannual (WP 0184) (6 Months) (service fittings)
Propeller Driver Shafts and U-Joints	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0184) (6 Months) (Note 2)

Table 11. Miscellaneous Lubrication Points. - Continued

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Retrieval System	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0184) (6 Months)
Steering System	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0184) (6 Months)
Vise Assembly	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0184) (6 Months)
Wrecker Body Roll Mounts	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0184) (6 Months)

NOTE

1. Refer to FM 9-207 (WP 0200) for arctic operation.
2. When vehicle is operating under severe conditions, lubricate propeller shafts and universal joints every 50 hours of vehicle operation.
3. Refer to PMCS tables for specific lubrication intervals.

Table 12. Vehicle Cleaning.

Item	Capacities	Expected Temperature	Intervals
Cleaning Compound, Solvent	As Required	SD All Temperatures	As Required

Table 12. Vehicle Cleaning. - Continued

Item (Note 1)	Capacities	Expected Temperature (Note 2)	Intervals
NOTE 1. After a thorough high pressure washing, lubricate all grease fittings and oil can points outside and underneath vehicle. 2. Refer to FM 9-207 (WP 0200) for arctic operation.			

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CLOSE/OPEN HEATER VALVES

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Wheels chocked. (Volume 1, WP 0097)
Open passenger side engine cover. (WP 0195)

CLOSE HEATER VALVES

NOTE

- Closing two heater valves will improve the efficiency of the cabin air conditioning.
- Closing two heater valves will disable cabin heat.
- Heater valve knob is located on rear passenger side of engine.

1. Turn heater valve knob (1) counterclockwise to close.

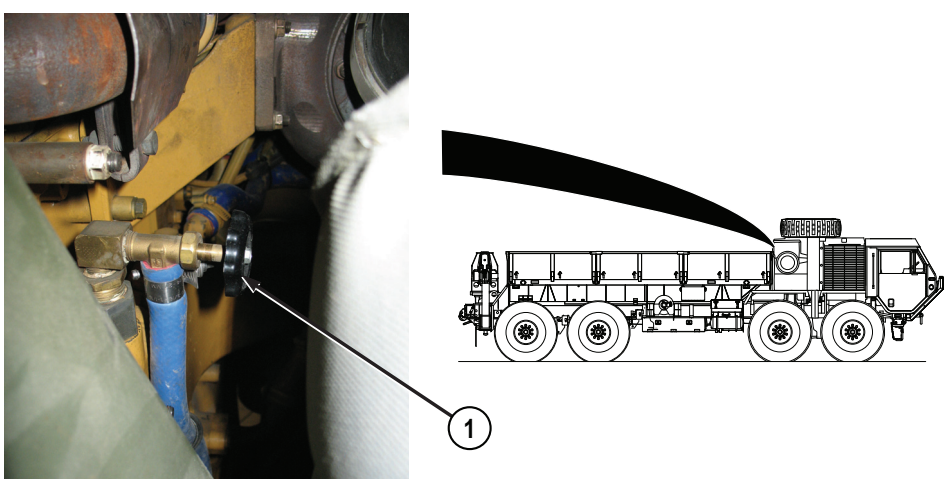


Figure 1.

CLOSE HEATER VALVES - Continued

NOTE

Heater valve knob is located towards bottom of front passenger side of engine.

2. Turn heater valve knob (2) counterclockwise to close.

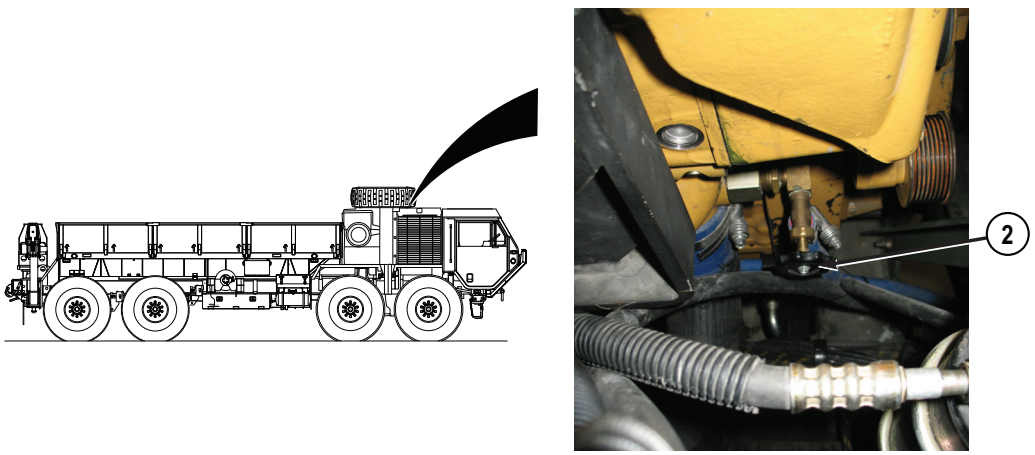


Figure 2.

END OF TASK

OPEN HEATER VALVES

NOTE

- Opening two heater valves will diminish efficiency of air conditioning kit.
- Opening two heater valves will enable cabin heat.
- Heater valve knob is located on rear passenger side of engine.

1. Turn heater valve knob (1) clockwise to close.

OPEN HEATER VALVES - Continued

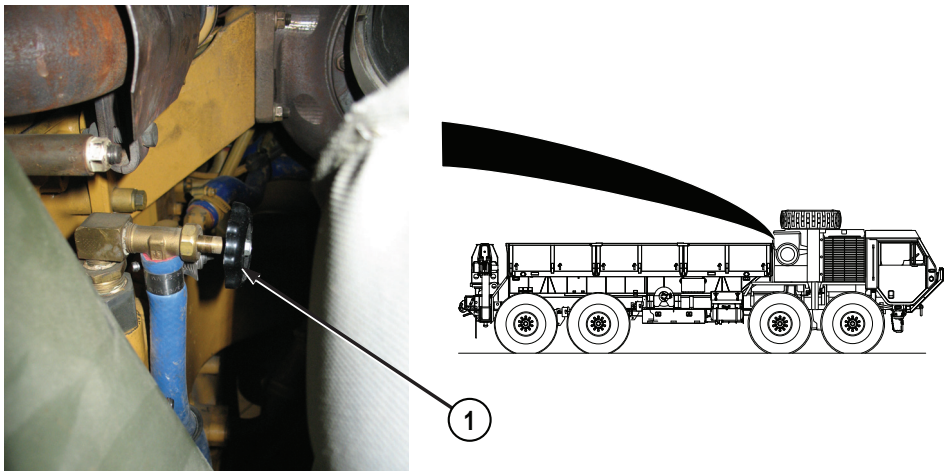


Figure 3.

NOTE

Heater valve knob is located towards bottom of front passenger side of engine.

2. Turn heater valve knob (2) clockwise to close.

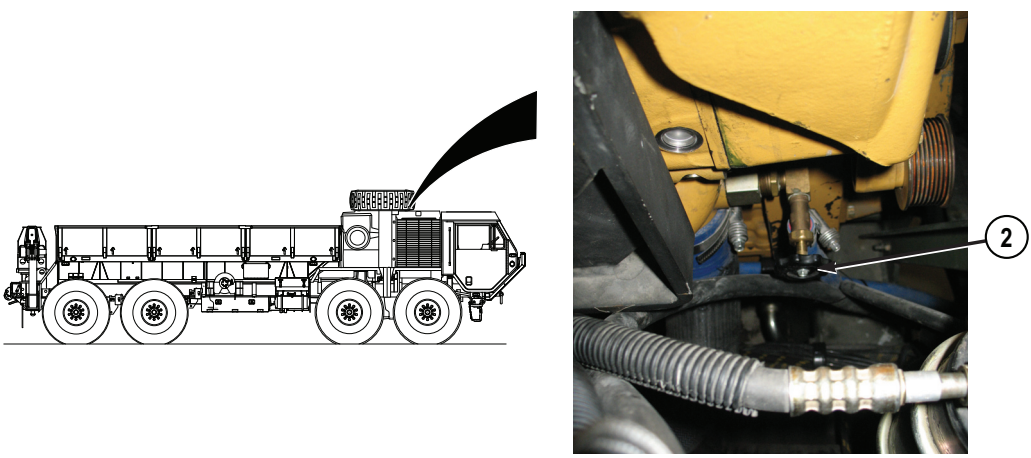


Figure 4.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Close passenger side engine cover. (WP 0195)
2. Remove wheel chocks.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
PRE/POST TOWING PROCEDURE (FRONT LIFT ONLY)

INITIAL SETUP:

Tools and Special Tools
Chain, 8 ft. (supplied by wrecker)
Chain, 7 ft. (supplied by wrecker)
(WP 0201)

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

PREPARE VEHICLE FOR TOWING

CAUTION

When installing axle restraint chains, route chains so hoses or lines are not between frame and chain or axle and chain. Failure to comply may result in damage to equipment.

NOTE

- This procedure is applicable to preparation for towing a HEMTT series vehicle from the front ONLY (refer to tow HEMTT-front lift (Volume 1, WP 0060) for further information).
- If disabled vehicle is either a BASE or A2 model HEMTT series vehicle (refer to data plate on inside of driver side door), complete Step (1).
- If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of driver side door), skip to Step (2).

1. Perform the following on disabled vehicle:
   a. Remove propeller shaft between transfer case and No. 3 axle.
   b. Install axle restraint chains (1):

PREPARE VEHICLE FOR TOWING - Continued

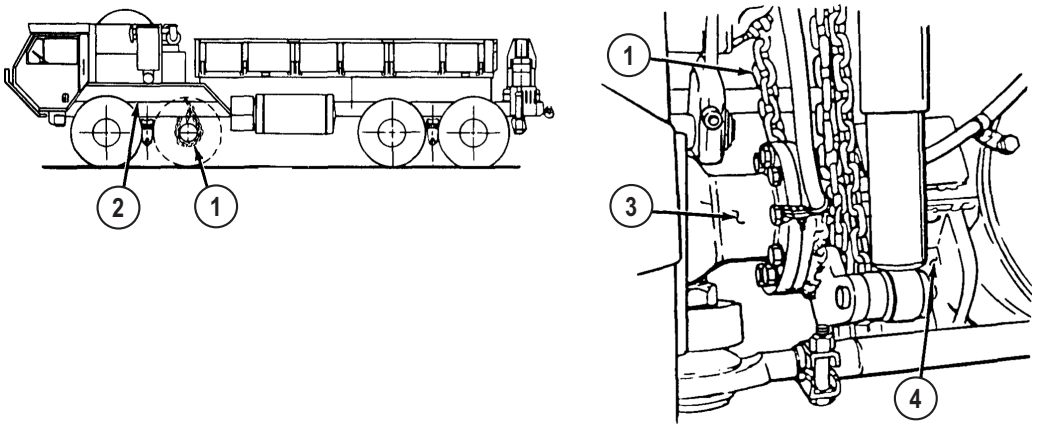


Figure 1.

NOTE

- Axle restraint chains are installed the same way, driver side shown.
- No. 2 axle should be restrained with chains on both sides of vehicle.

(1) Route axle restraint chain (1) over frame rail (2) and around axle (3) beside walking beam (4).

(2) Hook axle restraint chain (1) back into itself.

(3) Repeat Steps (1) and (2) for opposite side of No. 2 axle (3).

CAUTION

When installing axle restraint chains, route chain around frame rail and axle only. Do not wrap chain around lateral torque rod, shock absorber, shift cables, etc. as they could be crushed. Route chains so hoses or lines are not between frame and chain or axle and chain. Failure to comply may result in damage to equipment.

NOTE

- This procedure is applicable to preparation for towing a HEMTT series vehicle from the front ONLY (refer to tow HEMTT-front lift (Volume 1, WP 0060) for further information).
- If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of driver side door), complete Step (2).

PREPARE VEHICLE FOR TOWING - Continued

2. Perform the following on disabled vehicle:
   a. Remove propeller shaft between transfer case and No. 3 axle.
   b. Install axle restraint chains (1):

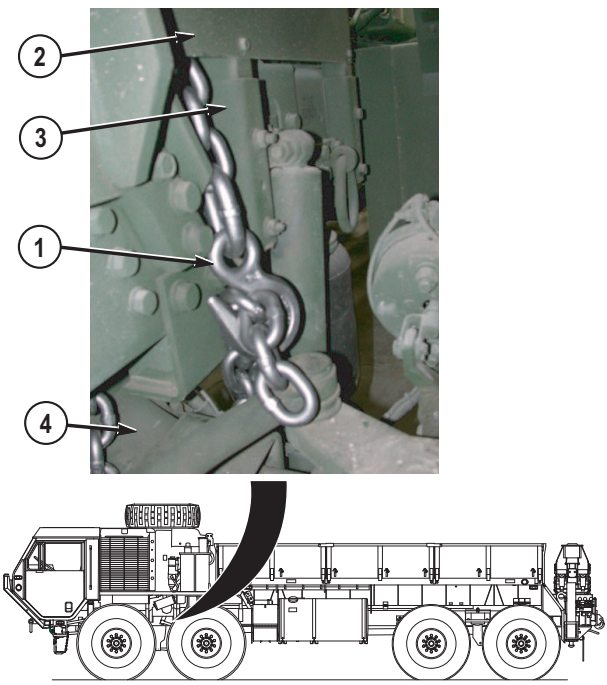


Figure 2.

NOTE

- Axle restraint chains are installed the same way, driver side shown.
- No. 2 axle should be restrained with chains on both sides of vehicle.

(1) Route axle restraint chain (1) under engine shroud (2), over frame rail (3), and around axle (4).

(2) Hook axle restraint chain (1) back into itself as shown.

(3) Repeat Steps (1) and (2) for opposite side of No. 2 axle (3).

END OF TASK

POST TOWING PROCEDURE

NOTE

- This post towing procedure is applicable to a HEMTT series vehicle that has been towed from the front ONLY (refer to tow HEMTT-front lift (Volume 1, WP 0060) for further information).
- If disabled vehicle is either a BASE or A2 model HEMTT series vehicle (refer to data plate on inside of driver side door), complete Step (1).
- If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of driver side door), skip to Step (2).

1. Perform the following to disabled vehicle:
   a. Remove two axle restraint chains (1) from around frame rails (2) and No. 2 axle (3).

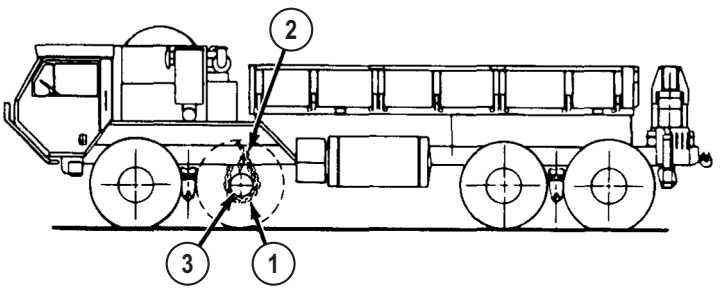


Figure 3.

   b. Return two axle restraint chains (1) to wrecker stowage.
   c. Install propeller shaft between transfer case and No. 3 axle.

NOTE

- This post towing procedure is applicable to a HEMTT series vehicle that has been towed from the front ONLY (refer to tow HEMTT-front lift (Volume 1, WP 0060) for further information).
- If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of driver side door), complete Step (2).

2. Perform the following to disabled vehicle:
   a. Remove two axle restraint chains (1) from under engine shroud (2), around frame rail (3), and No. 2 axle (4).

POST TOWING PROCEDURE - Continued

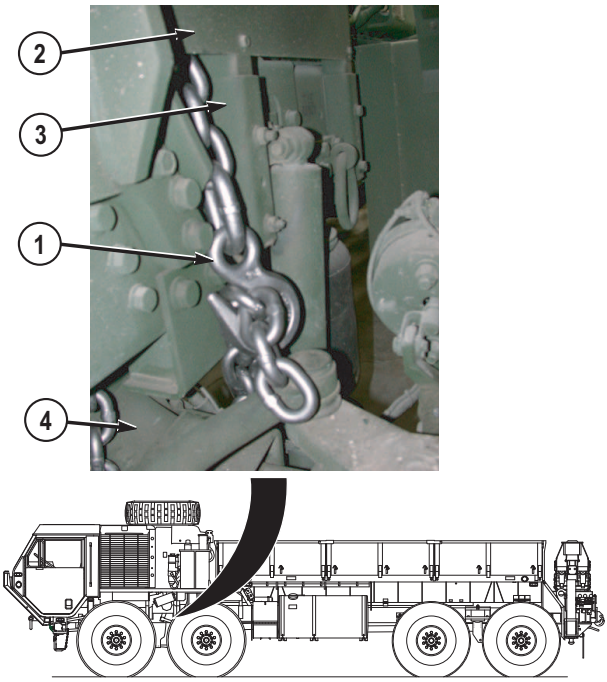


Figure 4.

b. Return two axle restraint chains (1) to wrecker stowage.

c. Install propeller shaft between transfer case and No. 3 axle.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CLEAN VEHICLE

INITIAL SETUP:

Materials/Parts
Rag, Wiping (WP 0203, Table 1, Item 50)

Equipment Condition
Engine OFF. (Volume 1, WP 0057)
Wheels chocked. (Volume 1, WP 0097)

CLEAN EXTERIOR

CAUTION

Do not wipe dirt off vehicle when vehicle is dry. Dirt, stones, or debris may scratch and damage vehicle.

NOTE

After a thorough high pressure washing, lubricate all grease fittings and oil can points outside and underneath vehicle (refer to lubrication instructions (WP 0186) for more information).

1. Wash vehicle often with cool or warm water. Do not use strong detergent or abrasives.

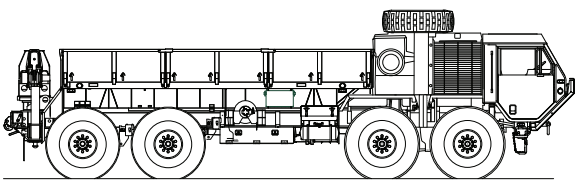


Figure 1.

2. While cleaning vehicle, look closely for rust, corrosion, bare metal, or other damage. Report any damage to Field Level Maintenance.

END OF TASK

CLEAN INTERIOR

1. Remove loose dirt and dust from cab interior components (1).

CLEAN INTERIOR - Continued

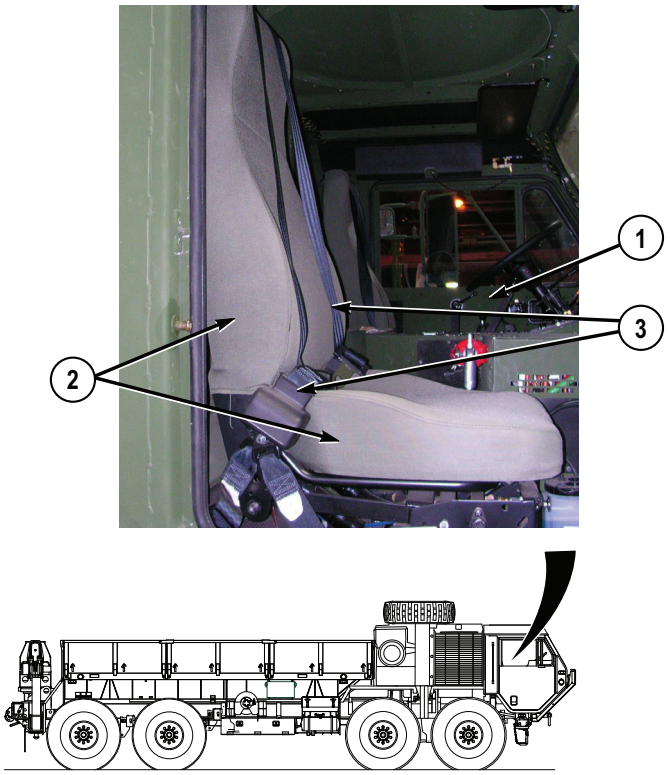


Figure 2.

2. Clean seat cushions (2) and seatbelts (3) with warm soapy water. Do not use abrasives or solvents.
3. Wipe seat cushions (2) and seatbelts (3) dry.

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CHANGE WHEEL AND TIRE ASSEMBLY

INITIAL SETUP:

Tools and Special Tools
Chocks, Wheel (4) (WP 0201, Table 3, Item 28)
Extension, Handle (WP 0201, Table 3, Item 40)
Handle, Wrench (WP 0201, Table 3, Item 43)
Jack, 12-ton, With Handle (WP 0201, Table 3, Item 52)
Jack, Base Plate (WP 0201, Table 3, Item 75)
Warning Device Set, Triangular (WP 0201, Table 3, Item 77)

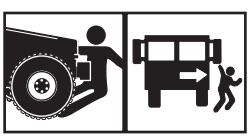
Tools and Special Tools - Continued
Wrench, Wheel Lugnut (WP 0201, Table 3, Item 111)
Wrench, Adjustable (WP 0201, Table 3, Item 107)

Personnel Required
Motor Transport Operator MOS 88M (2)

PREPARE VEHICLE

1. Shut off engine. (Volume 1, WP 0057)

WARNING



Park vehicle in safe area, out of traffic, where there is no danger to personnel changing tire assembly. Park vehicle on hard level ground. Failure to comply may result in injury or death to personnel.

2. Turn on emergency flashers. (Volume 1, WP 0096)
3. Set up emergency marker kit, as necessary. (Volume 1, WP 0128)

END OF TASK

REMOVE SPARE WHEEL AND TIRE ASSEMBLY FROM TIRE CARRIER

NOTE

- This procedure is a two soldier task.
- This procedure is not applicable when removing wheel and tire assembly for maintenance purposes and installing same wheel and tire assembly on vehicle:
  If wheel and tire assembly to be removed and reinstalled is on No. 1 or No. 2 axle, refer to remove wheel and tire assembly from No. 1 or No. 2 axle.
  If wheel and tire assembly to be removed and reinstalled is on No. 3 or No. 4 axle, refer to remove wheel and tire assembly from No. 3 or No. 4 axle.

1. Lower tire carrier. (Volume 1, WP 0041)
2. With spare wheel and tire assembly resting on ground, remove four spare wheel and tire assembly retention screws (1) from tire carrier mounting bracket (2).

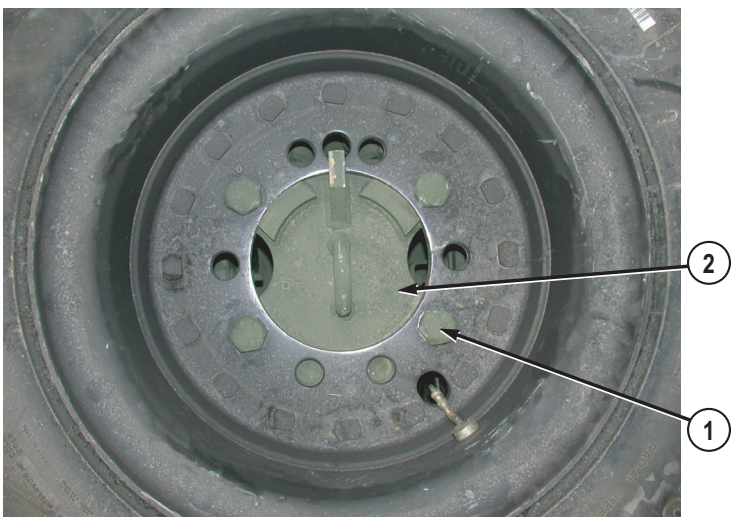


Figure 1.

3. While assistant steadies spare wheel and tire assembly, lower tire carrier (Volume 1, WP 0041) until completely clear of spare wheel and tire assembly.
4. With aid of an assistant, roll spare wheel and tire assembly to vehicle near flat wheel and tire assembly, and lean spare wheel and tire assembly against vehicle.
5. Check spare wheel and tire assembly air pressure.

REMOVE SPARE WHEEL AND TIRE ASSEMBLY FROM TIRE CARRIER - Continued

6. Service spare wheel and tire assembly as required. (WP 0193)

END OF TASK

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 1 OR NO. 2 AXLE

1. Service (inflate) vehicle air suspension to perform jacking procedure.
2. Turn No. 1 axle ball valves OFF to perform jacking procedure.

CAUTION

Jack placement is critical to avoid damaging vehicle suspension components. Follow jack placement notes and procedures carefully. Failure to comply may result in damage to equipment.

NOTE

- If wheel and tire assembly to be removed is on No. 3 or No. 4 axle, refer to remove wheel and tire assembly from No. 3 or No. 4 axle.
- All wheel and tire assemblies on No. 1 and No. 2 axles are removed the same. Passenger side No. 1 axle wheel and tire assembly shown.
- Jack ram should be fully screwed down (making jack as short as possible) for Step (3).

3. Check if jack base plate (1) and jack (2) will fit under apex of equalizing beam (3):

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 1 OR NO. 2 AXLE - Continued



Figure 2.

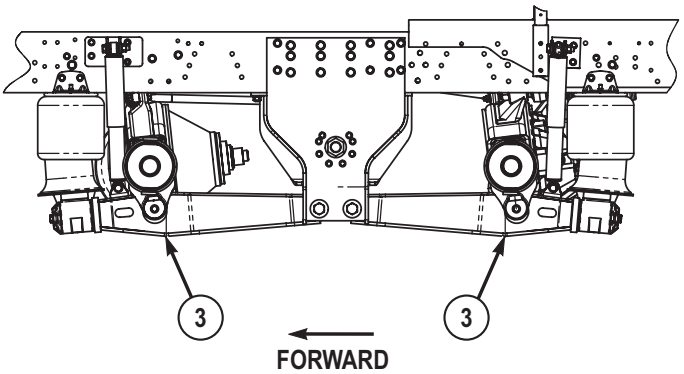


Figure 3.

NOTE

Position jack 12 in. (30 cm) from end of equalizing beam. The jack should be centered on apex as shown.

a. If jack base plate (1) and jack (2) fit under apex of equalizing beam (3), skip to Step (5).

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 1 OR NO. 2 AXLE - Continued

b. If jack base plate (1) and jack (2) DO NOT fit under apex of equalizing beam (3), continue with Step (4).

4. Drive flat/shredded wheel and tire assembly onto two wheel chocks (4).

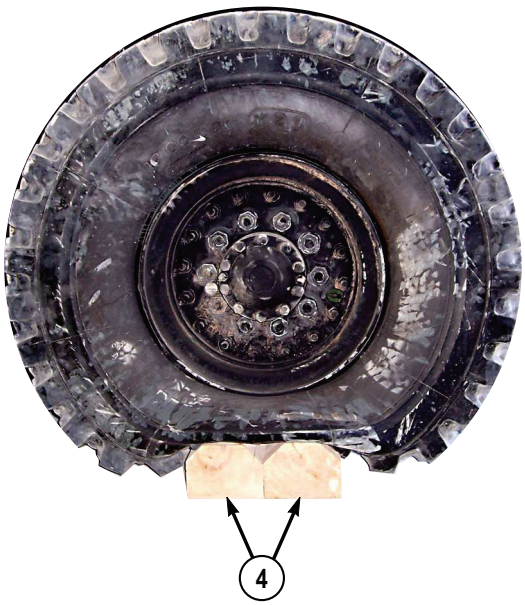


Figure 4.

5. Install two wheel chocks (Volume 1, WP 0097) (4) in front of and behind tire across (on same axle) from tire and wheel assembly which is being removed.

CAUTION

Jack placement is critical to avoid damaging vehicle suspension components. Follow jack placement notes and procedures carefully. Failure to comply may result in damage to equipment.

NOTE

- Jack ram should be fully screwed down (making jack as short as possible) for Step (6).
- Center jack on apex, 12 in. (30 cm) from end of equalizing beam.

6. Position jack base plate (1) and jack (2) under apex of equalizing beam (3).

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 1 OR NO. 2 AXLE - Continued

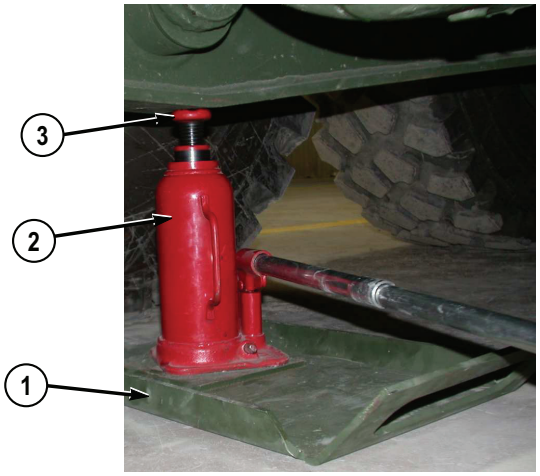


Figure 5.

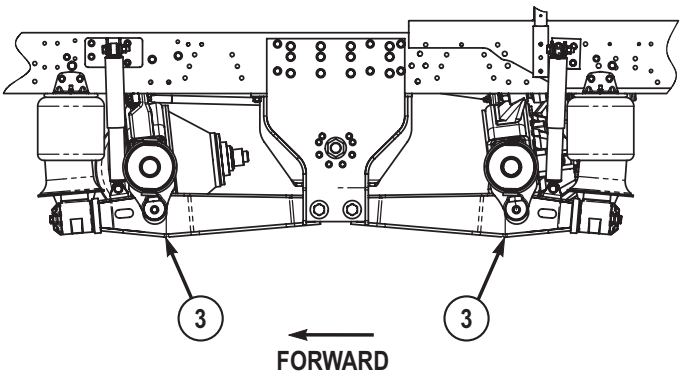


Figure 6.

NOTE

If possible, unscrew jack ram until it contacts jacking point on equalizing beam prior to completing Step (7).

7. Raise jack (2) until firm contact is established with apex of equalizing beam (3).

NOTE

- Studs and lugnuts on driver side of vehicle have left-hand threads. Rotate lugnuts clockwise to loosen, counterclockwise to tighten.

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 1 OR NO. 2 AXLE - Continued

Studs and lugnuts on passenger side of vehicle have right-hand threads. Rotate lugnuts counterclockwise to loosen, clockwise to tighten.

- Loosen lugnuts enough so they can be easily removed once weight is off wheel and tire assembly, but do not remove them.

8. Assistant loosens 10 lugnuts (5) until they turn easily.

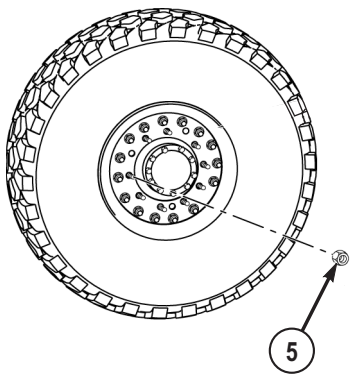


Figure 7.

NOTE

If wheel chocks were used under flat/shredded wheel and tire assembly to aid in jack placement, wheel and tire assembly does not have to be clear of wheel chocks.

9. Raise vehicle until wheel and tire assembly can be removed.
10. Assistant removes and sets 10 lugnuts (5) aside.

NOTE

If wheel chocks were used under flat/shredded wheel and tire assembly to aid in jack placement, remove them and return to vehicle stowage.

11. Lower vehicle until wheel and tire assembly is just touching ground.
12. Raise vehicle slightly while assistant tilts top of wheel and tire assembly forward. Flat wheel and tire assembly should move forward.
13. Repeat Steps (11) and (12) to walk wheel and tire assembly off axle studs (6).

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 1 OR NO. 2 AXLE - Continued

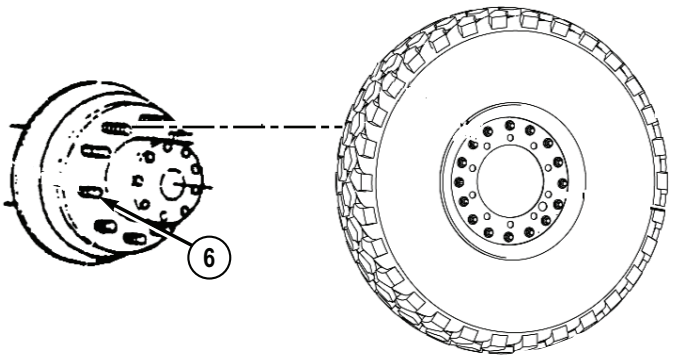


Figure 8.

14. With aid of an assistant, remove wheel and tire assembly and lean wheel and tire assembly against vehicle.

END OF TASK

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 3 OR NO. 4 AXLE

NOTE

- If wheel and tire assembly to be removed is on No. 1 or No. 2 axle, refer to remove wheel and tire assembly from No. 1 or No. 2 axle.
- All wheel and tire assemblies on No. 3 and No. 4 axles are removed the same. Passenger side No. 4 axle wheel and tire assembly shown.
- It may be necessary to drive flat/shredded wheel and tire assembly onto two wheel chocks in order to fit jack base plate and jack under transverse beam casting.

1. Service (inflate) vehicle air suspension needs to be serviced (inflated) to perform jacking procedure.
2. Turn No. 4 axle ball valves OFF to perform jacking procedure.
3. Install two wheel chocks (Volume 1, WP 0097) in front of and behind tire across (on same axle) from tire and wheel assembly which is being removed.

CAUTION

Jack placement is critical to avoid damaging vehicle suspension components. Follow jack placement notes and procedures carefully. Failure to comply may result in damage to equipment.

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 3 OR NO. 4 AXLE - Continued

NOTE

Position jack directly under flat spot in center of transverse beam casting.

4. Place jack base plate (1) and jack (2) under transverse beam casting (3):

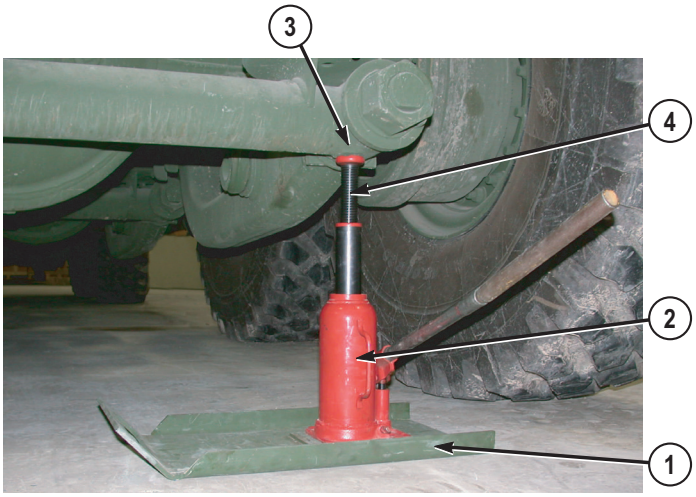


Figure 9.

5. Unscrew jack ram (4) until it is at full extension or contacts transverse beam end casting (3).
6. Raise jack (2) until firm contact is established with jacking point on transverse beam end casting (3).

NOTE

- Studs and lugnuts on driver side of vehicle have left-hand threads. Rotate lugnuts clockwise to loosen.
- Studs and lugnuts on passenger side of vehicle have right-hand threads. Rotate lugnuts counterclockwise to loosen.
- Loosen lugnuts enough so they can be easily removed once weight is off wheel and tire assembly, but do not remove them.

7. Assistant loosens 10 lugnuts (5) until they turn easily.

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 3 OR NO. 4 AXLE - Continued

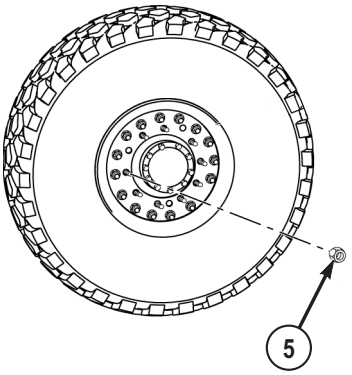


Figure 10.

NOTE

If wheel chocks were used under flat/shredded wheel and tire assembly to aid in jack placement, wheel and tire assembly does not have to be clear of wheel chocks.

8. Raise vehicle until wheel and tire assembly can be removed.
9. Assistant removes and sets 10 lugnuts (5) aside.

NOTE

If wheel chocks were used under flat/shredded wheel and tire assembly to aid in jack placement, remove them and return to vehicle stowage.

10. Lower vehicle until wheel and tire assembly is just touching ground.
11. Raise vehicle slightly while assistant tilts top of wheel and tire assembly forward. Tire should move forward.
12. Repeat Steps (10) and (11) to walk wheel and tire assembly off studs (6).

REMOVE WHEEL AND TIRE ASSEMBLY FROM NO. 3 OR NO. 4 AXLE - Continued

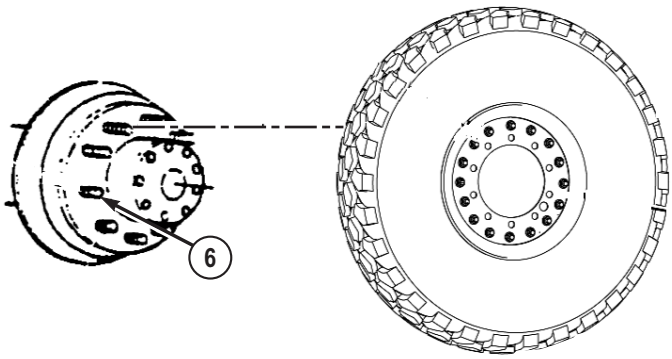


Figure 11.

13. With aid of an assistant, remove wheel and tire assembly and lean wheel and tire assembly against vehicle.

END OF TASK

INSTALL WHEEL AND TIRE ASSEMBLY

NOTE

Tire tread is non-directional. Vehicle operation is not affected by direction of traction bars.

1. With aid of an assistant, roll wheel and tire assembly (1) up to axle (2).

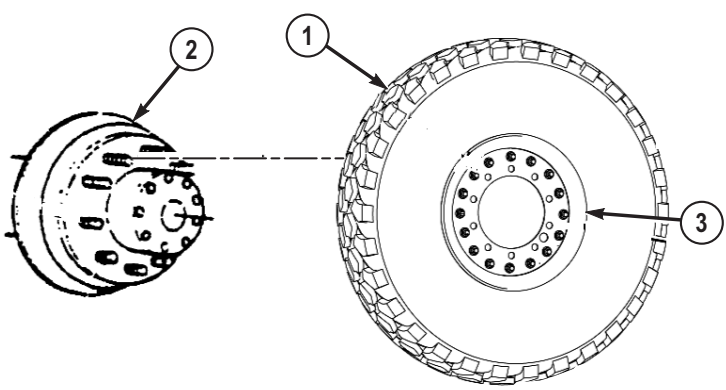


Figure 12.

INSTALL WHEEL AND TIRE ASSEMBLY - Continued

NOTE

Check that spare wheel and tire assembly wheel dish is in same position as flat wheel and tire assembly wheel dish. Deep side of wheel dish will face toward vehicle on four front wheels. Deep side of wheel dish will face away from vehicle on four rear wheels except M984A4. All eight wheels on M984A4 are installed with deep side of wheel dish facing toward vehicle.

2. Make sure deep side of spare wheel and tire assembly wheel dish (3) is in same position as flat/shredded wheel and tire assembly wheel dish when flat/shredded wheel and tire assembly was removed.

NOTE

- Tire valve stem extension must be removed to reposition wheel and tire assembly valve stem extension.
- It may be necessary to reposition valve stem to accomplish installation of valve stem extension.

3. Make sure wheel and tire assembly valve stem (4) is pointing out, away from vehicle.

INSTALL WHEEL AND TIRE ASSEMBLY - Continued

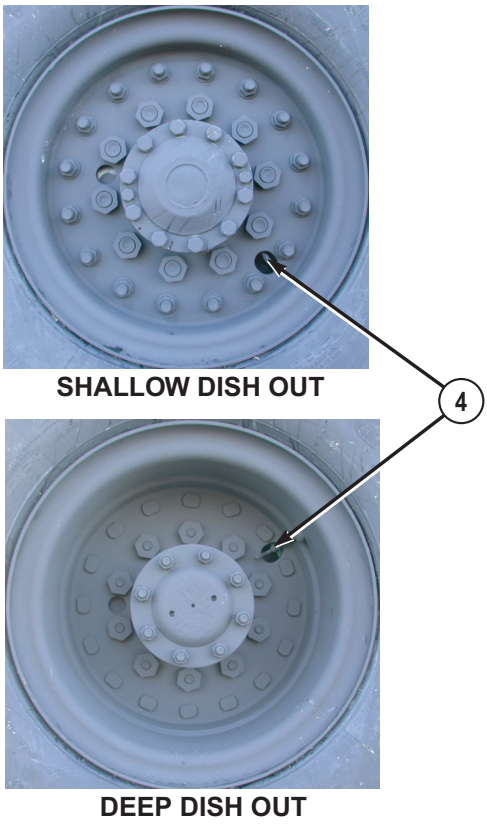


Figure 13.

4. Line up holes in rim (5) of wheel and tire assembly (1) with studs (6) on axle (2).

INSTALL WHEEL AND TIRE ASSEMBLY - Continued

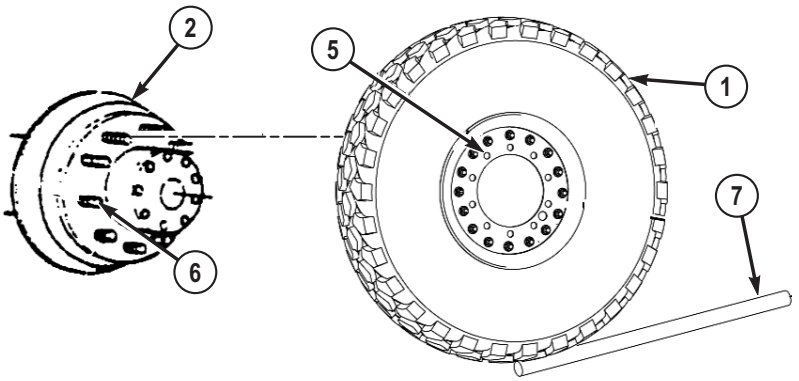


Figure 14.

WARNING



Wheel/tire assembly weighs 540 lbs (245 kg). Do not attempt to lift or move wheel/tire assembly without the aid of an assistant and a lifting device. Failure to comply may result in injury or death to personnel.

5. Lean top of wheel and tire assembly (1) against studs (6) and axle (2).

NOTE

Install a lugnut on top stud, and hand-tighten to hold wheel and tire assembly in place.

6. Using handle extension (7), slide spare wheel and tire assembly onto studs (6) while assistant raises vehicle with jack. Bottom of wheel and tire assembly (1) should swing toward axle (2).
7. Assistant lowers vehicle until wheel and tire assembly (1) just touches ground.
8. Repeat Steps (5) through (7) until wheel and tire assembly (1) is seated on axle (2) and studs (6).

NOTE

- Studs and lugnuts on driver side of vehicle have left-hand threads. Rotate lugnuts counterclockwise to tighten.

INSTALL WHEEL AND TIRE ASSEMBLY - Continued

- Studs and lugnuts on passenger side of vehicle have right-hand threads. Rotate lugnuts clockwise to tighten.

9. Install and tighten 10 lugnuts (8) in order shown using wheel lugnut wrench.

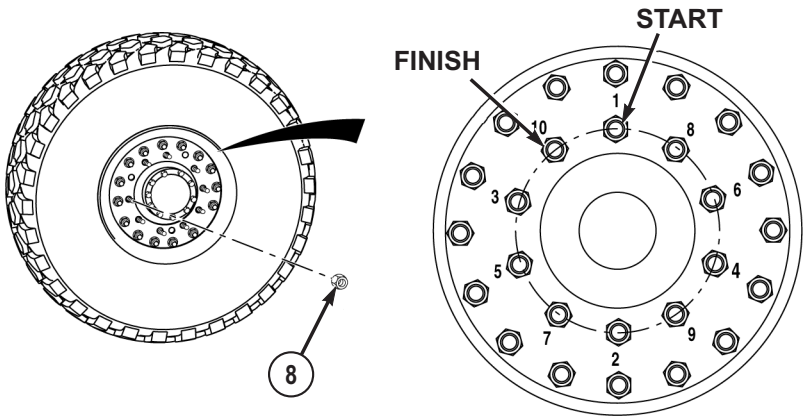


Figure 15.

10. Assistant lowers jack (9) until vehicle weight is fully supported by suspension system.
11. Remove jack (9) and jack base plate (10) from under vehicle.

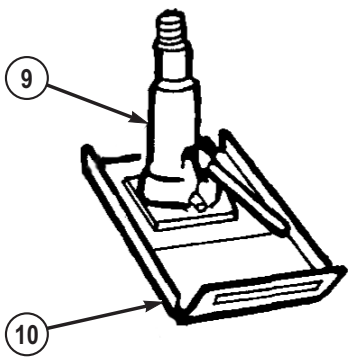


Figure 16.

12. Tighten 10 lugnuts (8) in order shown until they no longer tighten.

INSTALL WHEEL AND TIRE ASSEMBLY - Continued

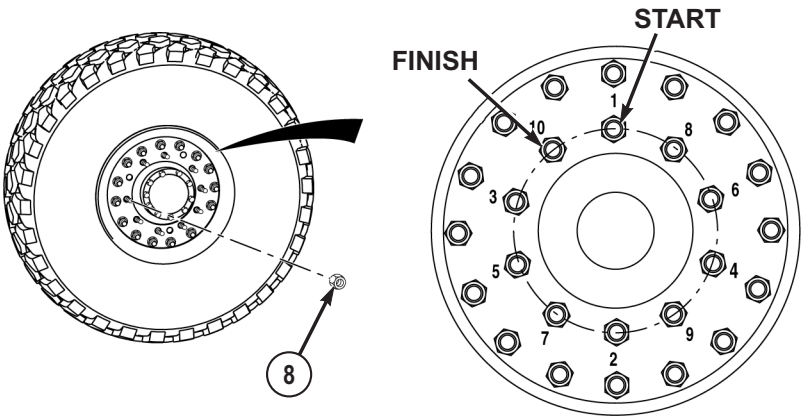


Figure 17.

13. Return all tools and equipment to proper stowage boxes.
14. Turn No. 1 or No. 4 axle ball valves ON (Volume 1, WP 0043) (as applicable).
15. Return vehicle to field level maintenance and have lugnuts (8) tightened to torque requirements as soon as possible.

END OF TASK

STOW FLAT/SHREDDED WHEEL AND TIRE ASSEMBLY

1. With aid of an assistant, roll flat/shredded wheel and tire assembly into position in front of wheel and tire assembly carrier.
2. While assistant maneuvers flat/shredded wheel and tire assembly, raise and lower wheel and tire assembly carrier (Volume 1, WP 0041) until wheel and tire assembly carrier mounting bracket tooth (1) catches rim (2) of spare wheel and tire assembly.

STOW FLAT/SHREDDED WHEEL AND TIRE ASSEMBLY - Continued

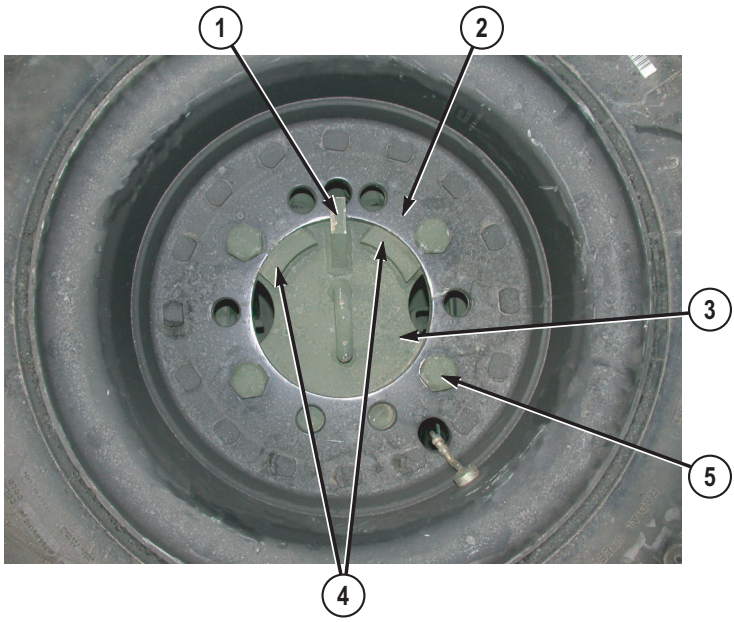


Figure 18.

3. Raise tire carrier slightly so weight of flat wheel and tire assembly pulls itself closer to tire carrier mounting bracket (3) and onto carrier mounting bracket alignment ridges (4).
4. Install and hand-tighten four spare wheel and tire assembly retention screws (5) into holes provided in tire carrier mounting bracket (3).
5. Securely tighten four spare wheel and tire assembly retention screws (5).
6. Raise tire carrier.
7. Pick up and stow emergency marker kit (as necessary).

END OF TASK

END OF WORK PACKAGE

OPERATOR MAINTENANCE
CLEAN FUEL TANK STRAINER

INITIAL SETUP:

Materials/Parts
Rag, Wiping (WP 0203, Table 1, Item 50)

Equipment Condition
Engine OFF. (Volume 1, WP 0057)
Wheels chocked. (Volume 1, WP 0097)

REMOVE/CLEAN FUEL TANK STRAINER

WARNING



Fuel is very flammable and can explode easily. Keep fuel away from open fire and keep fire extinguisher within easy reach when working with fuel. Do not work on fuel system when engine is hot. Fuel can be ignited when engine is hot. When working with fuel, post signs that read NO SMOKING WITHIN 50 FEET OF VEHICLE. Failure to comply may result in injury or death to personnel.

1. Wipe off dirt from fuel filler cap (1).

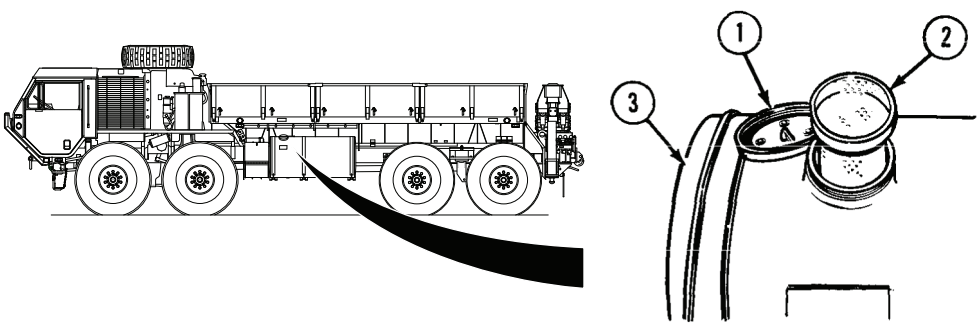


Figure 1.

2. Remove fuel filler cap (1).

REMOVE/CLEAN FUEL TANK STRAINER - Continued

3. Pull strainer (2) out of fuel tank (3).
4. Clean strainer (2) with clean dry rag.

END OF TASK

INSTALL FUEL TANK STRAINER

1. Put strainer (2) in fuel tank (3).

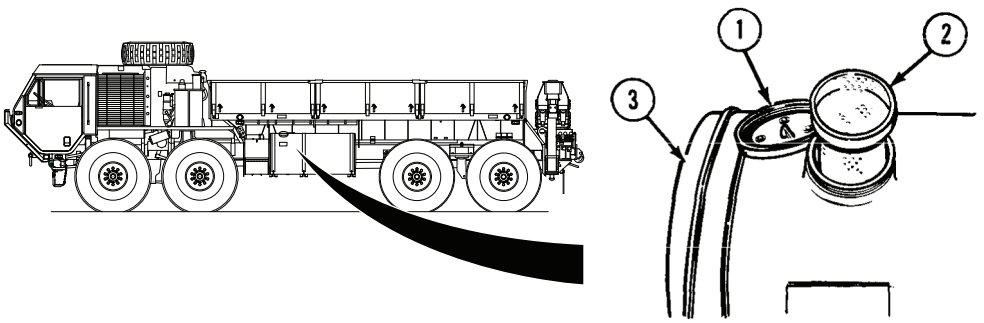


Figure 2.

2. Install and tighten fuel filler cap (1).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Remove wheel chocks.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
SERVICE AIR CLEANER ELEMENT

INITIAL SETUP:

Tools and Special Tools
Ladder (WP 0201, Table 2, Item 4)

Materials/Parts
Rag, Wiping (WP 0203, Table 1, Item 50)

Equipment Condition
Engine OFF. (Volume 1, WP 0057)
Wheels chocked. (Volume 1, WP 0097)

REMOVE AIR CLEANER ELEMENT

1. Unscrew four knobs (1) until retaining ring (2) is loose.

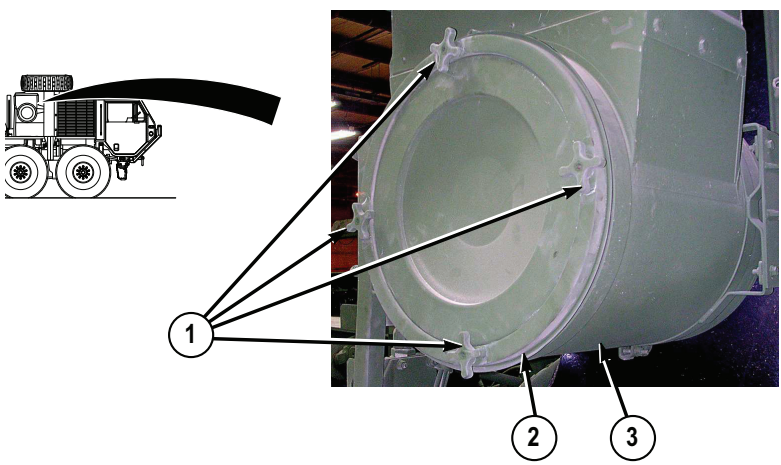


Figure 1.

2. Remove retaining ring (2) from canister (3).
3. Remove air cleaner element (4) from canister (3).

REMOVE AIR CLEANER ELEMENT - Continued

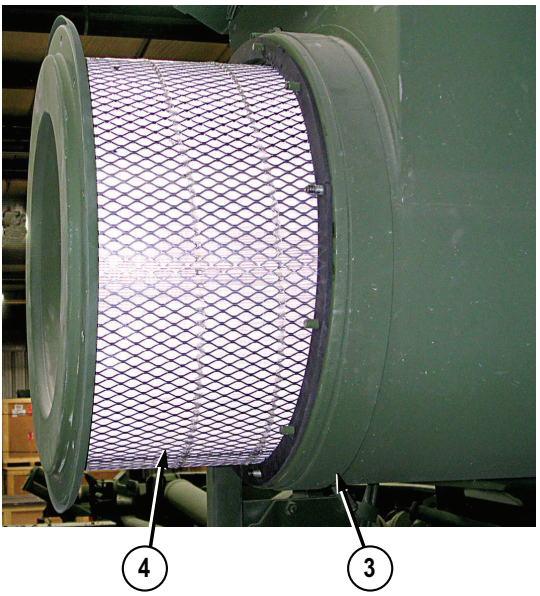


Figure 2.

END OF TASK

CLEAN AIR CLEANER ELEMENT

NOTE

Notify field level maintenance if air cleaner element is damaged or cannot be cleaned by tapping.

1. Tap side of air cleaner element (4) lightly against hand.

CLEAN AIR CLEANER ELEMENT - Continued

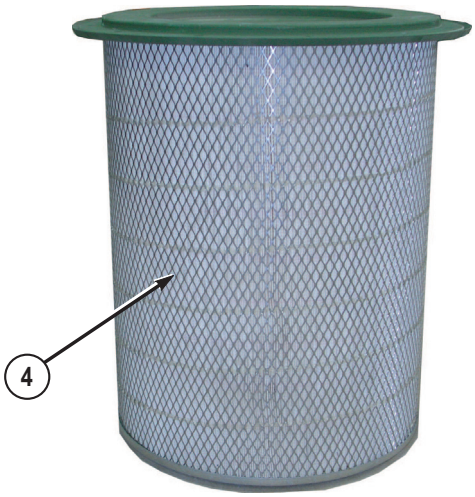


Figure 3.

2. Dump out dirt and dust from primary element (4).
3. Wipe air cleaner element (4) with clean rag.

END OF TASK

INSTALL AIR CLEANER ELEMENT

1. Install air cleaner element (4) in canister (3).

INSTALL AIR CLEANER ELEMENT - Continued

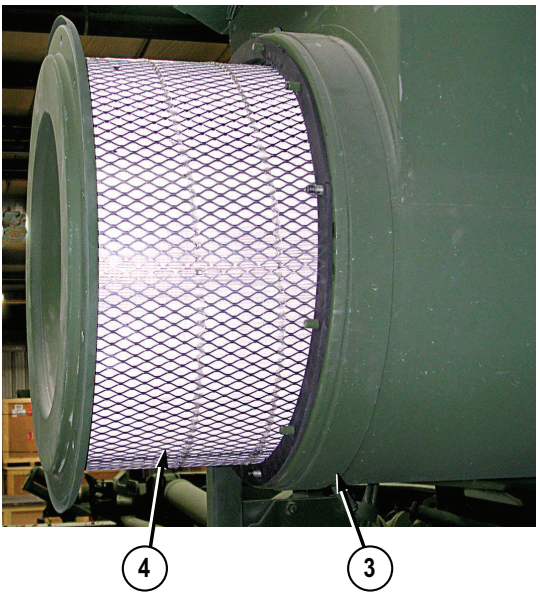


Figure 4.

2. Position retaining ring (2) over canister (3).

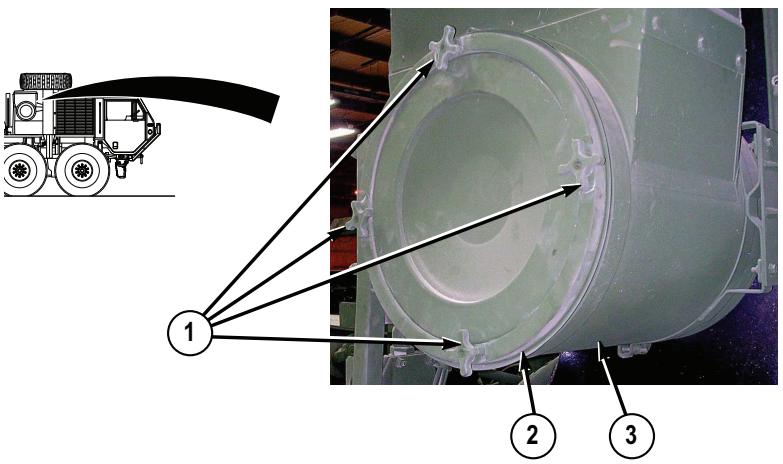


Figure 5.

3. Tighten four knobs (1) to secure retaining ring (2).
4. Start engine. (Volume 1, WP 0044)

INSTALL AIR CLEANER ELEMENT - Continued

5. Push button (5) to reset air cleaner restriction indicator (6). If indicator window (7) shows VACUUM INCHES H20 below 20, continue with vehicle operation. If indicator window shows VACUUM INCHES H20 above 20, notify Field Level Maintenance as soon as possible.

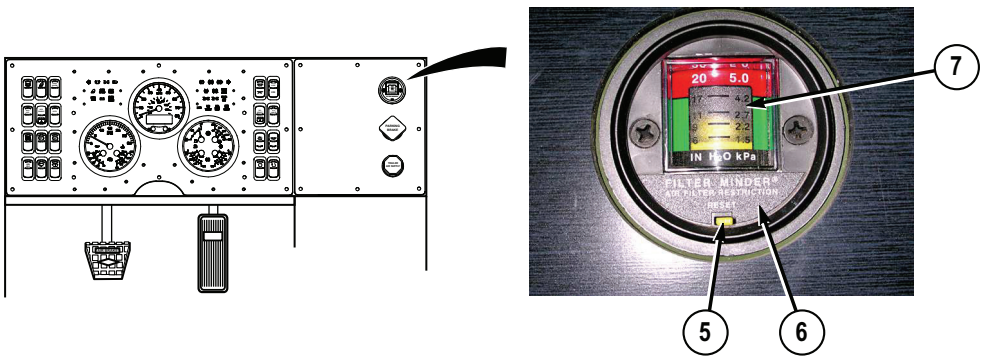


Figure 6.

6. Shut OFF engine. (Volume 1, WP 0057)

END OF TASK

FOLLOW-ON MAINTENANCE

1. Remove wheel chocks.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
SERVICE TIRES

INITIAL SETUP:

Tools and Special Tools
Gauge, Tire Pressure (WP 0201, Table 3, Item 37)

Tools and Special Tools - Continued
Gauge, Tire Pressure (WP 0201, Table 3, Item 51)
Hose: Air, Pneumatic (WP 0201, Table 3, Item 48)

Equipment Condition
Engine OFF. (Volume 1, WP 0057)
Wheels chocked. (Volume 1, WP 0097)

CHECK TIRE PRESSURE

WARNING



Failure to comply with these procedures may result in faulty positioning of the tire and/or rim parts and cause the assembly to burst with explosive force. Never mount or use damaged tires or rims. Failure to comply may result in injury or death to personnel.

NOTE

There are two types of air pressure gauges. One is a separate handheld gauge. The other is a combined pressure gauge/inflation hose.

Both may be used to check air pressure in tire.

ALWAYS use combined pressure gauge/inflation hose to inflate tire.

1. Check tire air pressure with tire pressure gauge.
2. Ensure tires have correct air pressure for road conditions and driving speed .

END OF TASK

INFLATE TIRE

1. Remove air hose (1) from stowage and connect air hose (1) to quick-disconnect coupling (2) by pushing back sleeve (3).

INFLATE TIRE - Continued

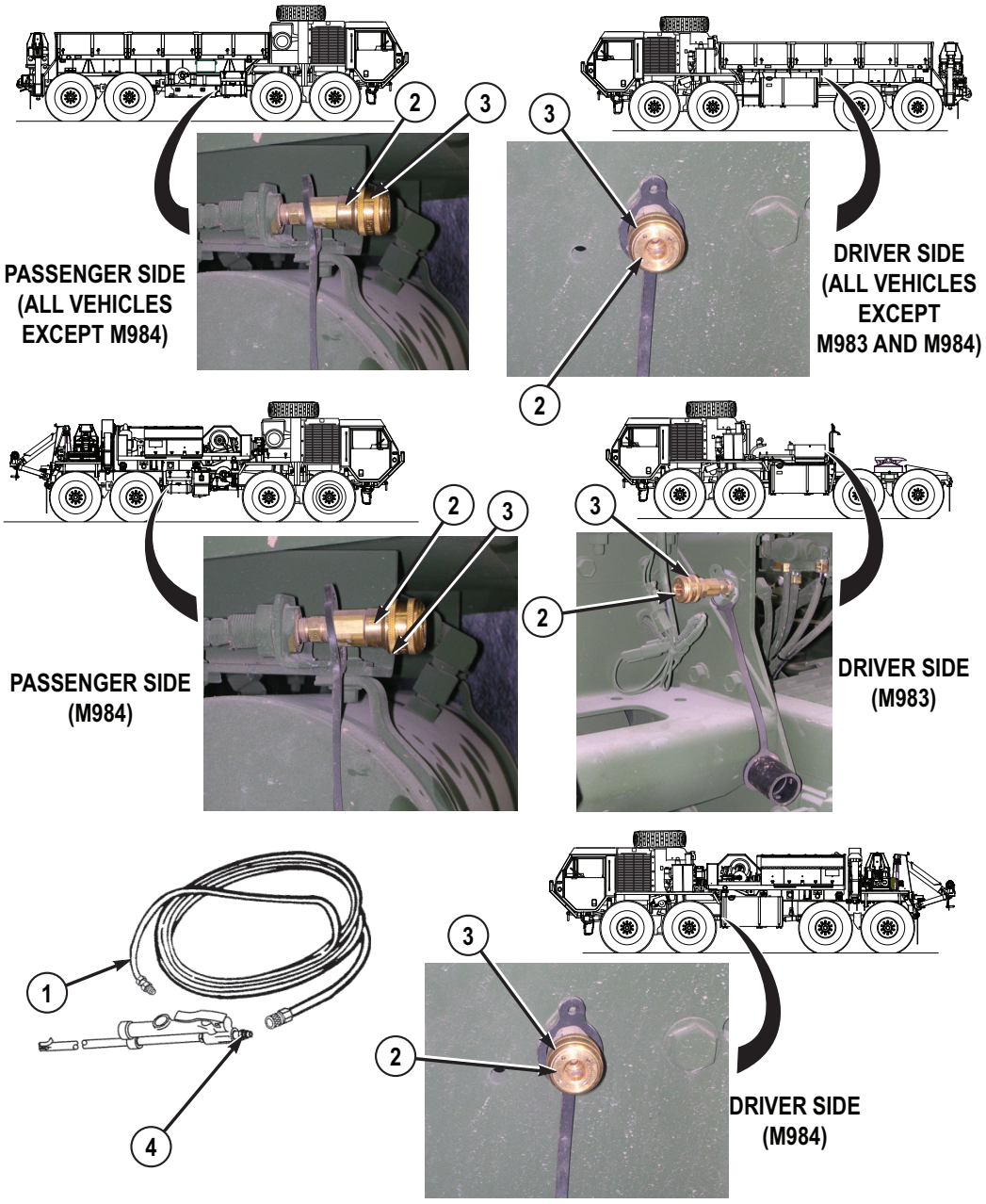


Figure 1.

INFLATE TIRE - Continued

2. Connect combined pressure gauge/inflation hose (4) to air hose (1).
3. Start engine. (Volume 1, WP 0044)
4. Remove valve stem cap (5) from valve stem (6).

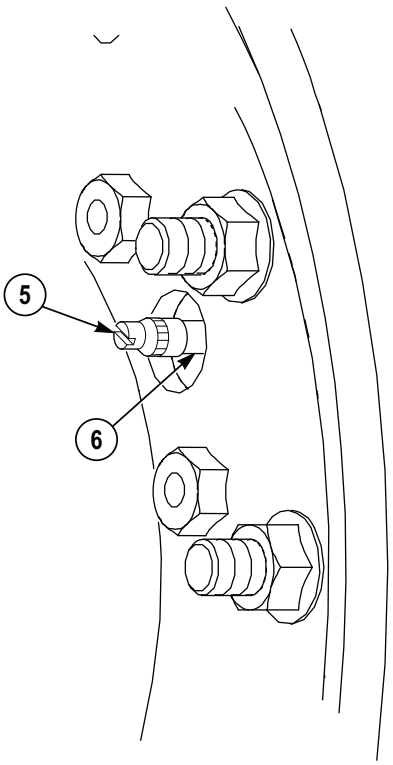


Figure 2.

WARNING



Prior to inflating or deflating tire, stand clear of trajectory area. Failure to comply may result in injury or death to personnel.

NOTE

- Trajectory area as shown applies to all wheel/tire assemblies.

INFLATE TIRE - Continued

- Air chuck must clamp securely with no leaks or air pressure gauge readings will be inaccurate.
- There are two types of air pressure gauges. One model is a separate handheld gauge . The other is a combined pressure gauge/inflation hose.
- Both may be used to check air pressure in tire.
- ALWAYS use combined pressure gauge/inflation hose to inflate tire.

5. Push latch handle (7) inward, while pushing air chuck (8) onto valve stem (6). Release latch handle (7) and immediately step out of the trajectory area and read tire air pressure gauge.

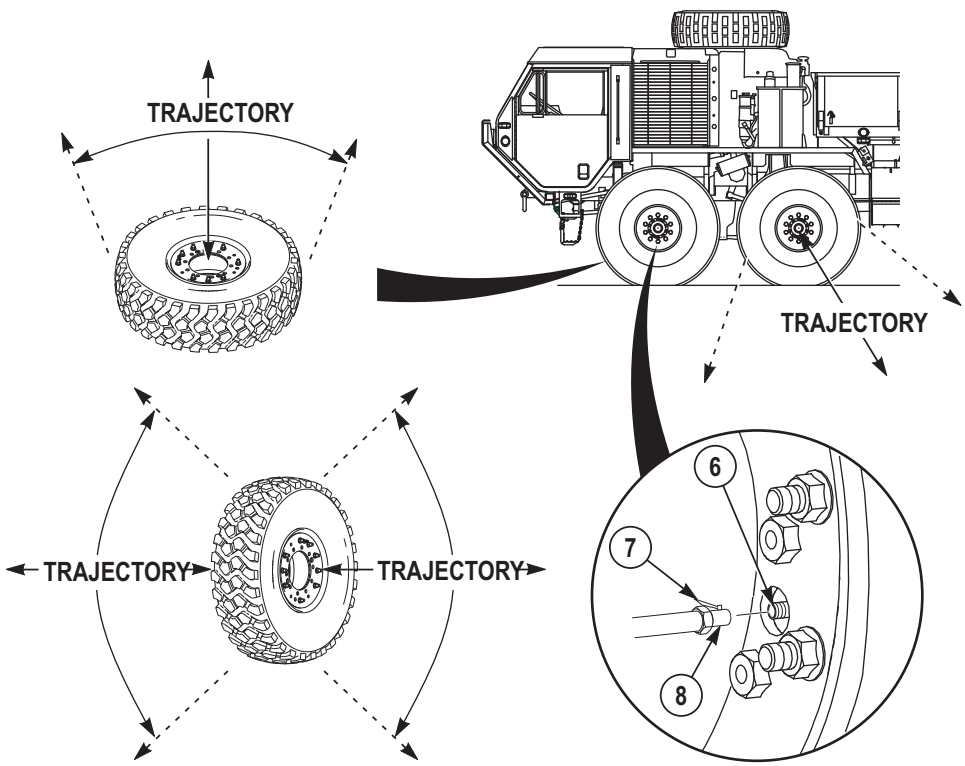


Figure 3.

INFLATE TIRE - Continued

WARNING



Prior to inflating or deflating tire, stand clear of trajectory area. Failure to comply may result in injury or death to personnel.

NOTE

Trajectory area as shown applies to all wheel/tire assemblies.

6. Inflate or deflate until proper pressure is attained. Press latch handle (7) and pull air chuck (8) from valve stem extension (6). Install valve cap (5).

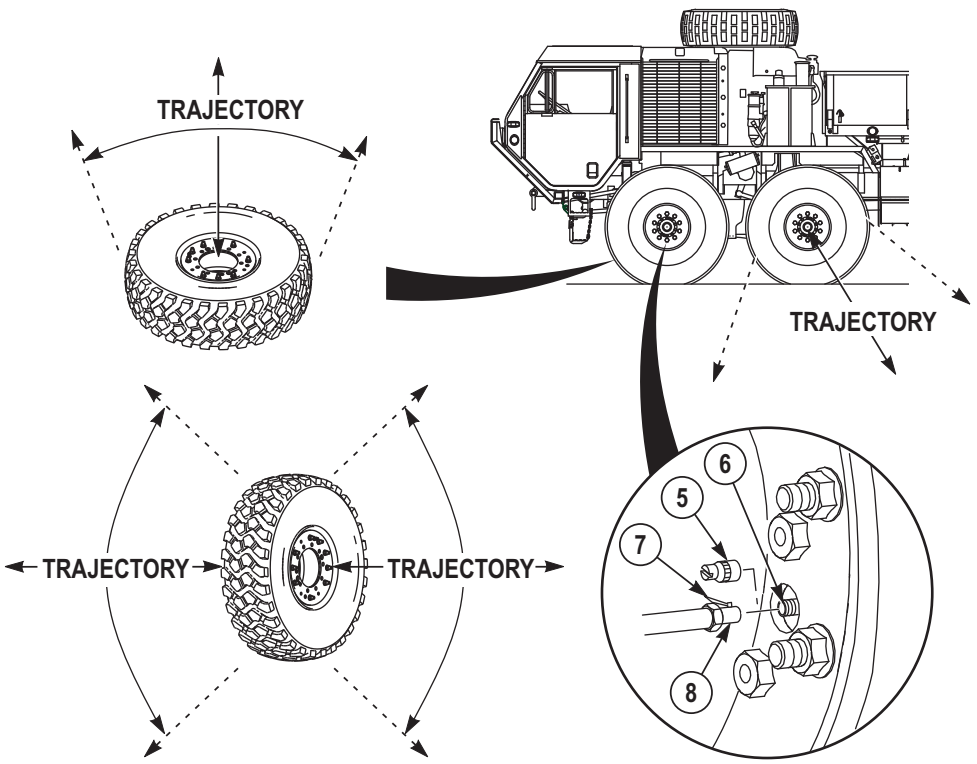


Figure 4.

7. Shut OFF engine. (Volume 1, WP 0057)

INFLATE TIRE - Continued

WARNING



Hold end of air line when disconnecting from quick-disconnect coupling. Air line is under pressure and can be ejected at a high rate of speed. Failure to comply may result in injury or death to personnel.

8. Remove combined pressure gauge/inflation hose (4) from air hose (1).

INFLATE TIRE - Continued

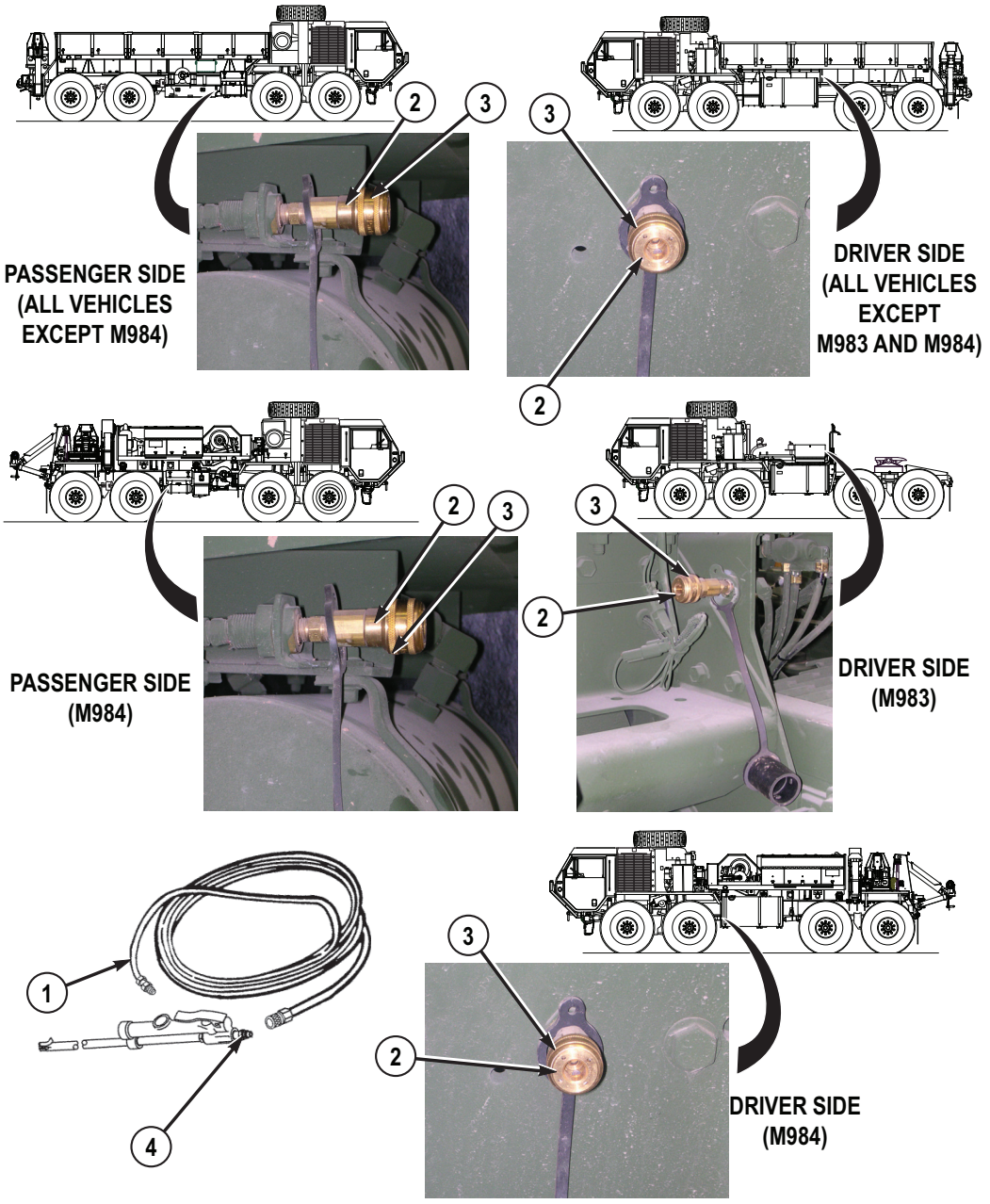


Figure 5.

INFLATE TIRE - Continued

9. Hold end of air hose (1) and push sleeve (3) back and remove air hose (1) from quick-disconnect coupling (2).
10. Stow air hose (1) and combined pressure gauge/inflation hose (4).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Remove wheel chocks. (Volume 1, WP 0097)

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPEN/CLOSE BATTERY BOX

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)
Wheels chocked. (Volume 1, WP 0097)

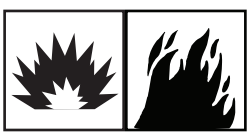
OPEN BATTERY BOX

WARNING



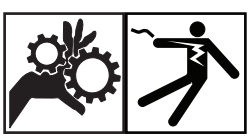
Wear proper eye protection when working around batteries. Failure to comply may result in injury or death to personnel.

WARNING



Batteries produce explosive gases. Do not smoke or use open flame near batteries. Do not allow hot, sparking, or glowing objects near batteries. If batteries are giving off gases, presence of a heat, flame, or spark may cause fire and/or explosion. Failure to comply may result in injury or death to personnel.

WARNING

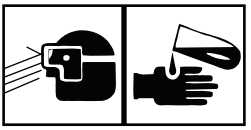


Use extreme care not to short out battery terminals. Remove all jewelry such as rings, ID tags, bracelets, etc. prior to working on or around

OPEN BATTERY BOX - Continued

vehicle. Jewelry and tools can catch on equipment, contact positive electrical circuits, and cause a direct short, severe burns, or electrical shock. Failure to comply may result in injury or death to personnel.

WARNING



LEAD-ACID BATTERIES - Avoid battery electrolyte contact with skin, eyes, or clothing. If battery electrolyte spills, take immediate action to stop burning effects:

- External - If battery electrolyte contacts skin, immediately flush effected area with cold running water to remove all acid. Failure to comply may result in injury or death to personnel.
- Eyes - If battery electrolyte contacts eyes, immediately flush eyes with cold water for 15 minutes and seek immediate medical attention. IMPORTANT - If only one eye is affected, ensure the affected eye is always (during both flushing and transport) kept lower (the lower the better) than unaffected eye. This will help keep affected eye from draining into (and contaminating) the unaffected eye. Failure to comply may result in injury or death to personnel.
- Internal - If battery electrolyte is ingested (swallowed), drink large amounts of water or milk. Follow with milk of magnesia, a beaten egg, or vegetable oil and seek immediate medical attention. Failure to comply may result in injury or death to personnel.
- Clothing or vehicle - Immediately flush area with cold water and neutralize battery electrolyte with baking soda or household ammonia solution. Failure to comply may result in injury or death to personnel.

1. Disconnect two rubber hooks (1).

OPEN BATTERY BOX - Continued

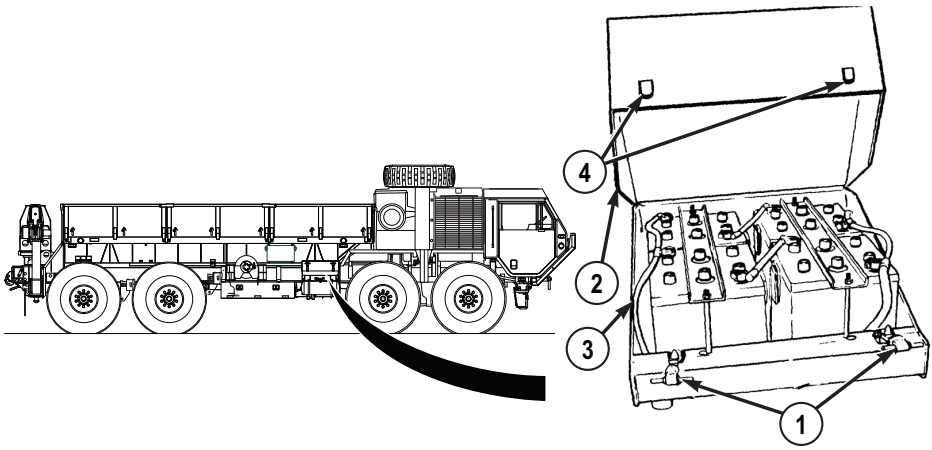


Figure 1.

2. Slide cover (2) up and out.
3. Hold cover (2) in place or remove cover.

END OF TASK

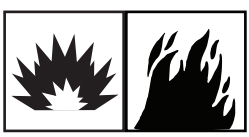
CLOSE BATTERY BOX

WARNING



Wear proper eye protection when working around batteries. Failure to comply may result in injury or death to personnel.

WARNING

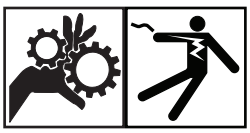


Batteries produce explosive gases. Do not smoke or use open flame near batteries. Do not allow hot, sparking, or glowing objects near batteries. If batteries are giving off gases, presence of a heat, flame, or spark may

CLOSE BATTERY BOX - Continued

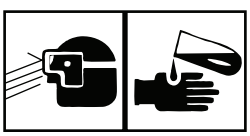
cause fire and/or explosion. Failure to comply may result in injury or death to personnel.

WARNING



Use extreme care not to short out battery terminals. Remove all jewelry such as rings, ID tags, bracelets, etc. prior to working on or around vehicle. Jewelry and tools can catch on equipment, contact positive electrical circuits, and cause a direct short, severe burns, or electrical shock. Failure to comply may result in injury or death to personnel.

WARNING



LEAD-ACID BATTERIES - Avoid battery electrolyte contact with skin, eyes, or clothing. If battery electrolyte spills, take immediate action to stop burning effects:

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- Eyes - If battery electrolyte contacts eyes, immediately flush eyes with cold water for 15 minutes and seek immediate medical attention. IMPORTANT - If only one eye is affected, ensure the affected eye is always (during both flushing and transport) kept lower (the lower the better) than unaffected eye. This will help keep affected eye from draining into (and contaminating) the unaffected eye. Failure to comply may result in injury or death to personnel.
- Internal - If battery electrolyte is ingested (swallowed), drink large amounts of water or milk. Follow with milk of magnesia, a beaten egg, or vegetable oil and seek immediate medical attention. Failure to comply may result in injury or death to personnel.
- Clothing or vehicle - Immediately flush area with cold water and neutralize battery electrolyte with baking soda or household ammonia solution. Failure to comply may result in injury or death to personnel.

CLOSE BATTERY BOX - Continued

1. Slide cover (2) on battery box (3).

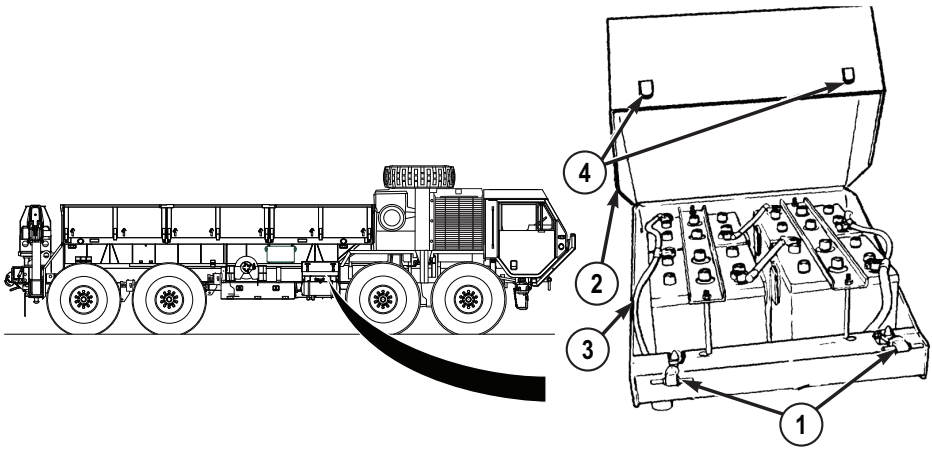


Figure 2.

2. Align rubber hooks (1) and brackets (4).
3. Connect rubber hooks (1).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Remove wheel chocks. (Volume 1, WP 0097)

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPEN/CLOSE ENGINE COVERS AND ENGINE SIDE PANEL REMOVAL/ INSTALLATION

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)

Equipment Condition - Continued
Wheels chocked. (Volume 1, WP 0097)
Tire carrier lowered (if opening passenger side engine cover). (Volume 1, WP 0041)

OPEN ENGINE COVERS

NOTE

Driver side and passenger side engine covers are opened the same way. Driver side shown.

1. Lift handle (1) and turn clockwise.

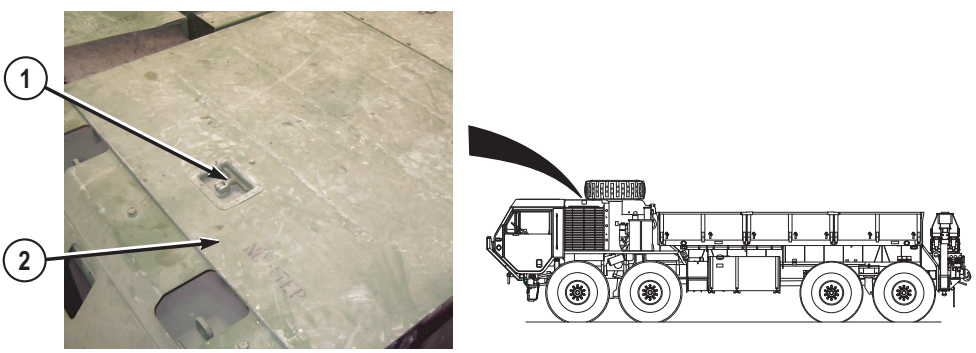


Figure 1.

2. Lift engine cover (2).
3. Release hood prop rod (3) from holding bracket (4).

OPEN ENGINE COVERS - Continued

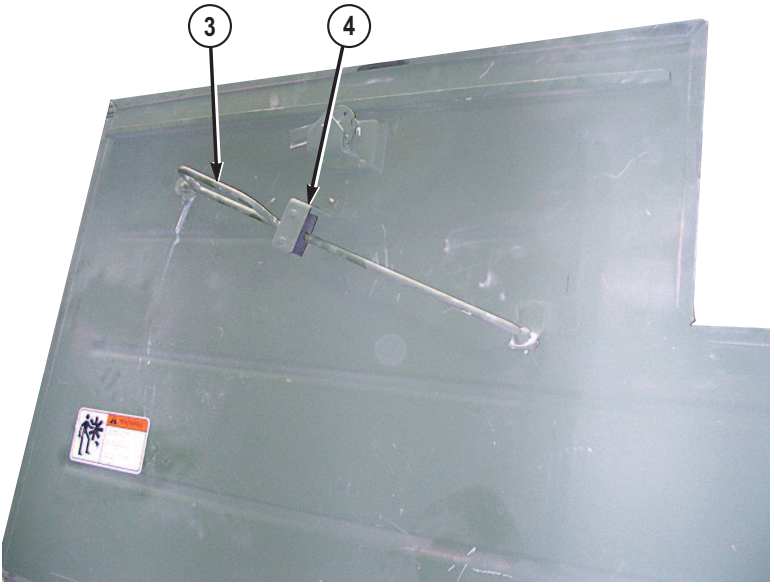


Figure 2.

4. Insert hood prop end (5) into support bracket (6).

OPEN ENGINE COVERS - Continued

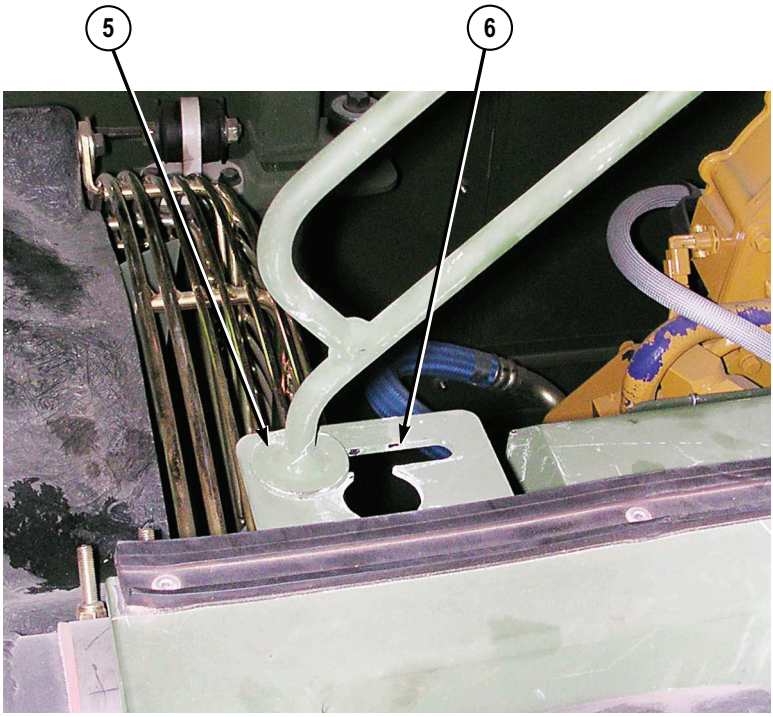


Figure 3.

END OF TASK

CLOSE ENGINE COVERS

NOTE

Driver side and passenger side engine covers are closed the same way. Driver side shown.

1. Remove hood prop rod end (5) from support bracket (6).

CLOSE ENGINE COVERS - Continued

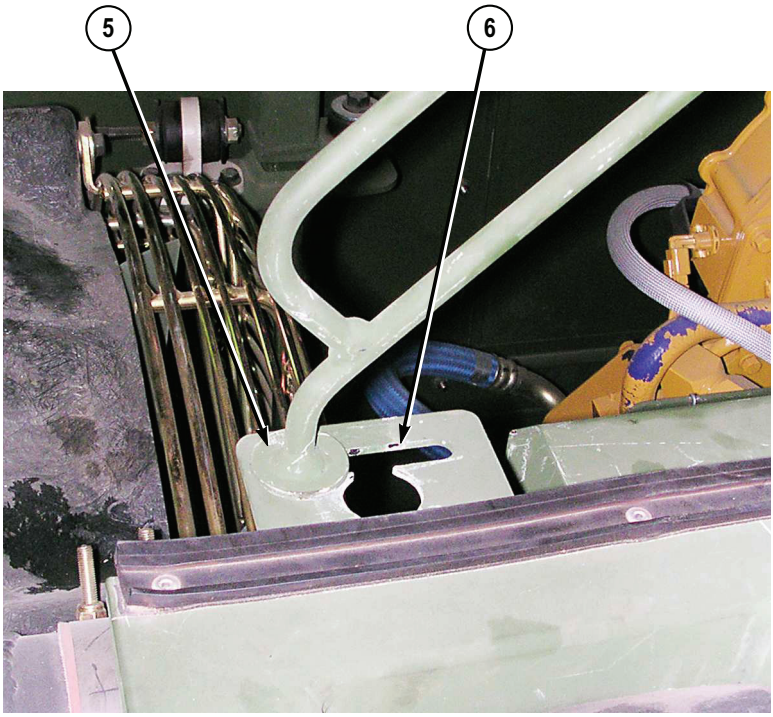


Figure 4.

2. Insert hood prop rod (3) into holding bracket (4).

CLOSE ENGINE COVERS - Continued

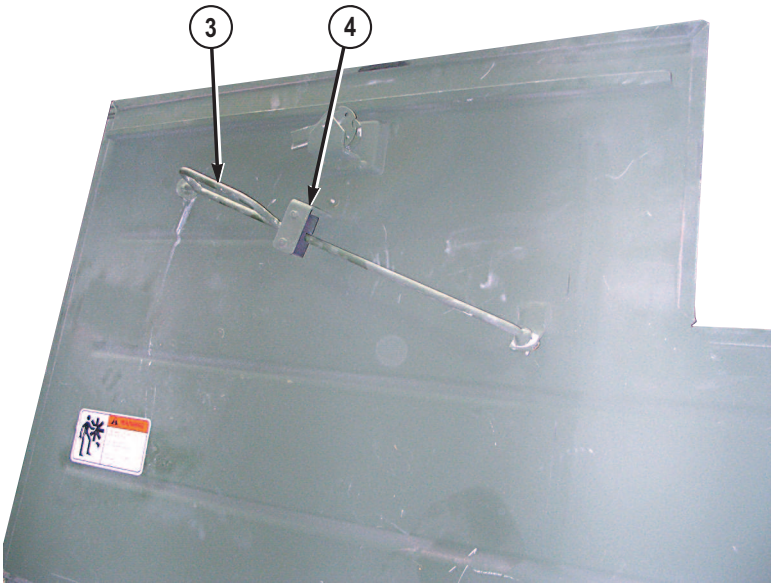


Figure 5.

3. Close engine cover (2).

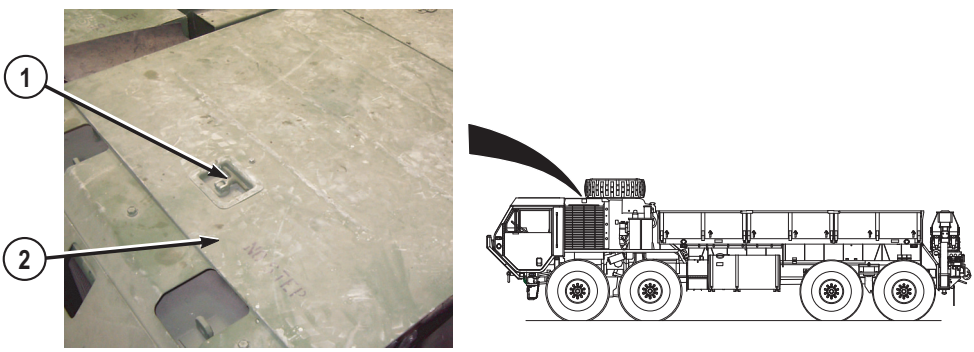


Figure 6.

4. Turn handle (1) counterclockwise and fold down handle (1).

END OF TASK

DRIVER SIDE ENGINE ACCESS PANEL REMOVAL

1. Unlatch two rubber latches (1) from brackets (2).

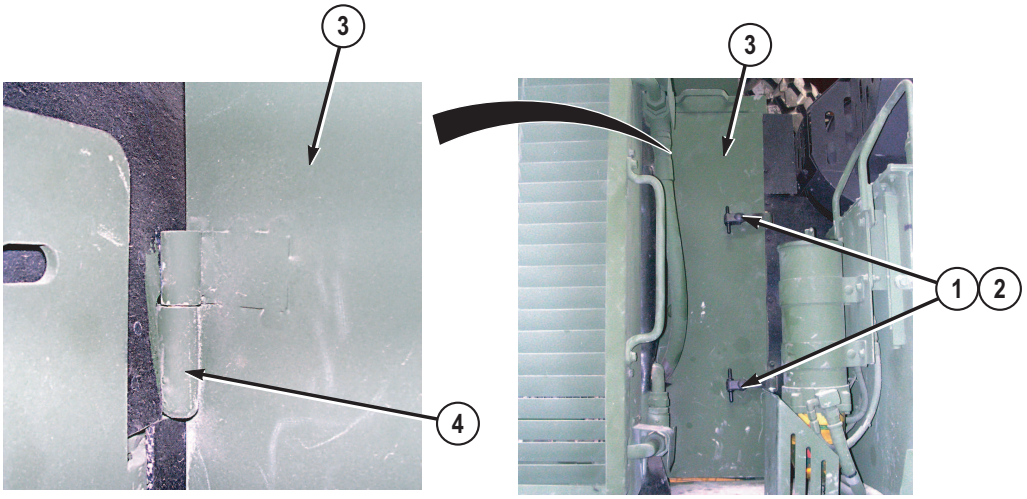


Figure 7.

2. Open access panel (3).
3. Lift access panel (3) straight up and remove from two hinge pins (4).

END OF TASK

DRIVER SIDE ENGINE ACCESS PANEL INSTALLATION

1. Install access panel (3) on two hinge pins (4).

DRIVER SIDE ENGINE ACCESS PANEL INSTALLATION - Continued

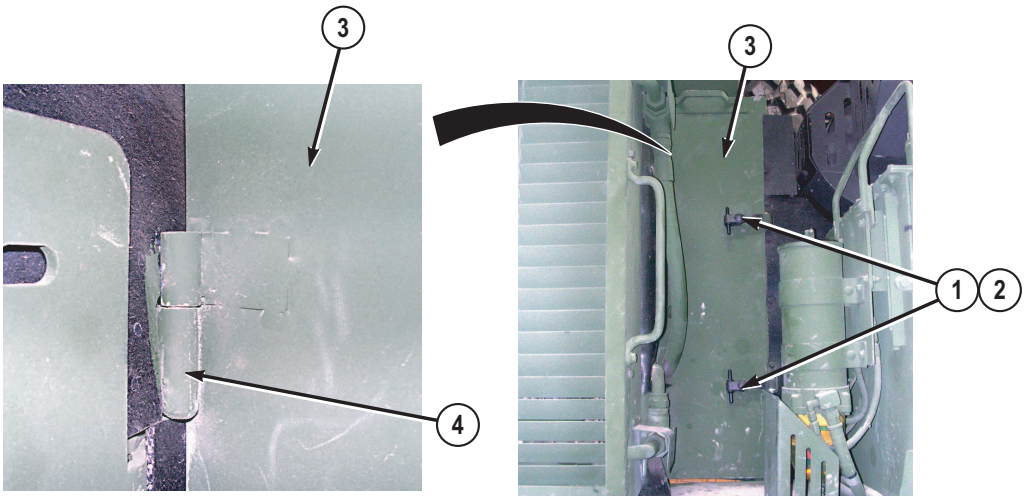


Figure 8.

2. Close access panel (3).
3. Latch two rubber latches (1) on brackets (2).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Raise tire carrier (if passenger side engine cover was opened). (Volume 1, WP 0041)
2. Remove wheel chocks. (Volume 1, WP 0097)

END OF WORK PACKAGE

OPERATOR MAINTENANCE
PRIMING FUEL SYSTEM

INITIAL SETUP:

Materials/Parts
Rag, Wiping (WP 0203, Table 1, Item 50)

Equipment Condition
Driver side engine cover opened. (WP 0195)
Driver side engine access panel opened. (WP 0195)

PRIMING

WARNING



Fuel and oil are slippery and can cause falls. To avoid injury, wipe up spilled oil with a clean cloth. Failure to comply may result in injury or death to personnel.

WARNING



Fuel is very flammable and can explode easily. Keep fuel away from open fire and keep fire extinguisher within easy reach when working with fuel. Do not work on fuel system when engine is hot. Fuel can be ignited when engine is hot. When working with fuel, post signs that read NO SMOKING WITHIN 50 FEET OF VEHICLE. Failure to comply may result in injury or death to personnel.

1. Loosen air bleed plug (1) three full turns. Do not remove air bleed plug.

PRIMING - Continued

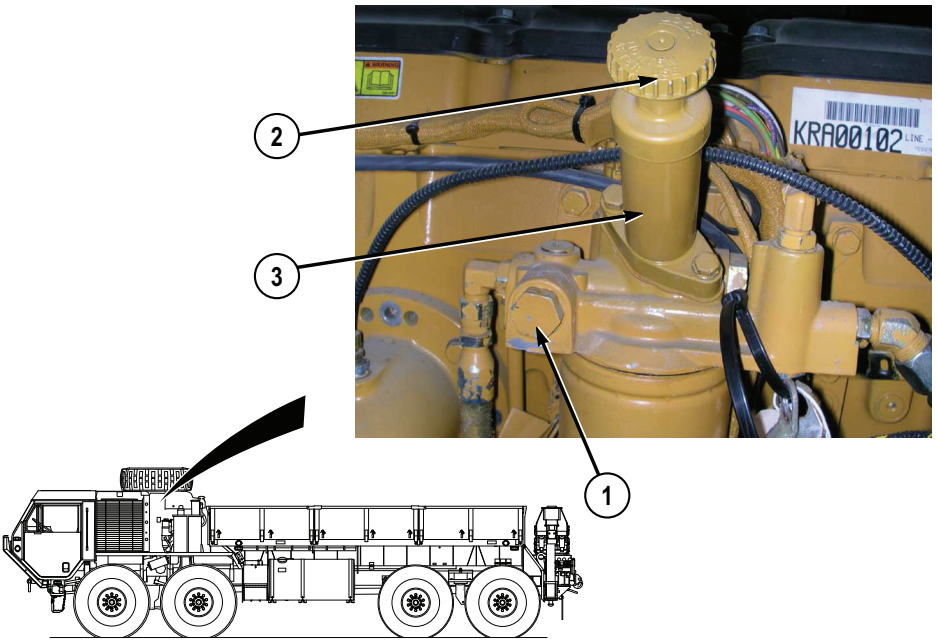


Figure 1.

2. Turn knob (2) counterclockwise until knob (2) can be pulled out.
3. Push and pull knob (2) on priming pump (3) until fuel appears at air bleed plug (1).
4. Tighten air bleed plug (1).
5. Push and pull knob (2) until strong resistance is felt.

CAUTION

Fuel priming pump knob must be in locked position prior to starting engine. Failure to comply may result in damage to equipment.

6. Push knob (2) in and turn clockwise until locked.

CAUTION

If engine fails to start within 30 seconds, turn ignition switch to OFF and allow starter motor to cool at least two minutes before trying again. Failure to comply may result in damage to equipment.

PRIMING - Continued

NOTE

If vehicle does not start after three attempts, contact field level maintenance.

7. Attempt to start engine. (Volume 1, WP 0044) If engine fails to start or does not operate smoothly for more than 30 seconds, repeat Steps (1) through (6).

END OF TASK

FOLLOW-ON MAINTENANCE

1. Close driver side engine access panel. (WP 0195)
2. Close driver side engine cover. (WP 0195)

END OF WORK PACKAGE

OPERATOR MAINTENANCE
OPEN/CLOSE CIRCUIT BREAKER ACCESS PANEL

INITIAL SETUP:

Equipment Condition
Engine OFF. (Volume 1, WP 0057)
Wheels chocked. (Volume 1, WP 0097)

OPEN

1. Push in two screws (1) and turn counterclockwise to release screws (1) and open circuit breaker access panel (2).



Figure 1.

END OF TASK

CLOSE

1. Close circuit breaker access panel (2) and turn two screws (1) clockwise to lock.

CLOSE - Continued



Figure 2.

END OF TASK

FOLLOW-ON MAINTENANCE

1. None.

END OF WORK PACKAGE

OPERATOR MAINTENANCE
1.5 IN. (38 MM) SPACER ASSEMBLY

INITIAL SETUP:

Materials/Parts
Spacer, 1.5W, Weldment (WP 0201, Table 3, Item 92) Qty: 4
Pin, 1-1/4 in. (WP 0201, Table 3, Item 70) Qty: 4

Materials/Parts - Continued
Pin, Cotter (WP 0201, Table 3, Item 59) Qty: 1
Ring, Rue (WP 0201, Table 3, Item 61) Qty: 2

Equipment Condition
Wheels chocked. (Volume 1, WP 0097)

ASSEMBLY

1. Fit two spacer weldments (1) together and insert two pins (2 and 3).

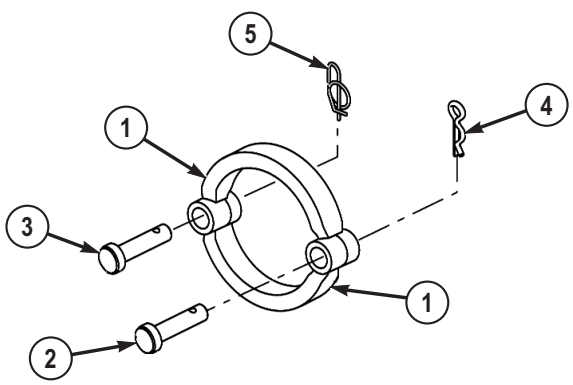


Figure 1.

2. Secure pin (2) with cotter pin (4).
3. Secure pin (3) and with rue ring (5).
4. Repeat Steps (1) through (3) to assemble other spacer assembly.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Remove wheel chocks. (Volume 1, WP 0097)

END OF WORK PACKAGE

OPERATOR MAINTENANCE
3 IN. (76 MM) SPACER ASSEMBLY

INITIAL SETUP:

Materials/Parts
Spacer, 3W, Weldment (WP 0201, Table 3, Item 93) Qty: 4
Pin, 3 in. (WP 0201, Table 3, Item 74) Qty: 4

Materials/Parts - Continued
Pin, Spring (WP 0201, Table 3, Item 69) Qty: 6
Ring, Rue (WP 0201, Table 3, Item 61) Qty: 2

Equipment Condition
Wheels chocked. (Volume 1, WP 0097)

ASSEMBLY

1. Install two spring pins (1) on one side of two pins (2 and 3).

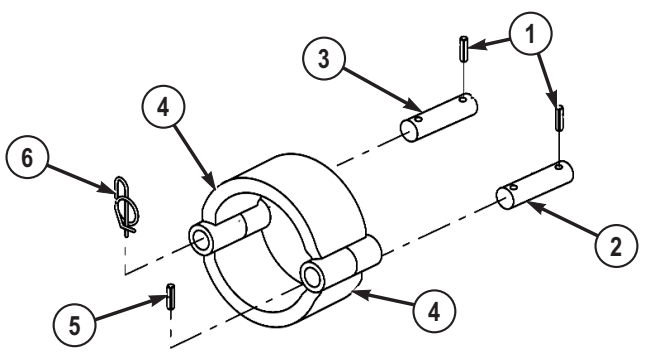


Figure 1.

2. Fit two spacer weldments (4) together and insert two pins (2 and 3).
3. Secure pin (2) with spring pin (5).
4. Secure pin (3) and with rue ring (6).
5. Repeat Steps (1) through (4) to assemble other spacer assembly.

END OF TASK

FOLLOW-ON MAINTENANCE

1. Remove wheel chocks. (Volume 1, WP 0097)

END OF WORK PACKAGE

CHAPTER 6

SUPPORTING INFORMATION

FIELD MAINTENANCE REFERENCES

SCOPE

This work package lists all pamphlets, forms, field manuals, technical manuals, and other publications referenced in this manual. Also, those publications that should be consulted for additional information about vehicle operations are listed.

DEPARTMENT OF ARMY PAMPHLETS

The following indexes should be consulted frequently for latest changes or revisions and for new publications relating to material covered in this technical manual.

DA PAM 25-30	Consolidated Index of Army Publications and Blank Forms
DA PAM 25-33	User's Guide for Army Publications and Forms
DA PAM 710-2-1	Using Unit Supply System (Manual Procedures)
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual

FORMS

DA FORM 2028	Recommended Changes to Publications and Blank Forms
DA FORM 2062	Hand Receipt
DA FORM 2401	Organization Control Record for Equipment
DA FORM 2402	Maintenance Tag
DA FORM 2404	Equipment Inspection and Maintenance Worksheet
DA FORM 2407	Maintenance Request
DA FORM 2407-1	Maintenance Request Continuation Sheet
DA FORM 2408	Equipment Log Assembly (Records)
DA FORM 2408-9	Equipment Control Record
DA FORM 5988-E	Equipment Inspection Maintenance Worksheet (EGA)
DD FORM 250	Material Inspection and Receiving Report
DD FORM 314	Preventive Maintenance Schedule and Record
DD FORM 1149	Requisition and Invoice/Shipping Document
DD FORM 1348-1	DOD Single Line Item Release/Receipt Document

FORMS - Continued

DD FORM 1397	Processing and Deprocessing Record for Shipment, Storage, and Issue of Vehicles and Spare Engines
DD FORM 2282	Reinspection Decal Convention for Safe Containers
OPTIONAL FORM 346	U.S. Government Motor Vehicle Operator Identification Card
STANDARD FORM 91	Motor Vehicle Accident Report
STANDARD FORM 364	Report of Discrepancy (ROD)
STANDARD FORM 368	Product Quality Deficiency Report
STANDARD FORM 4895	Equipment Preservation Data Sheet (EPDS)

FIELD MANUALS

FM 3-6	Field Behavior of NBC Agents (Including Smoke and Incendiaries)
FM 3-11.3	Multiservice Tactics, Techniques, and Procedures For Chemical, Biological, Radiological, and Nuclear Decontamination Avoidance {MCWP 3-37.2A, NTTP 3-11.25, AFTTP(I) 3-2.56}
FM 3-11.4	Multiservice Tactics, Techniques, and Procedures For Nuclear, Biological, and Chemical (NBC) Protection {MCWP 3-37.2; NTTP 3-11.27; AFTTP (I) 3-2.46} (This Item is included on EM 0205)
FM 3-11.5	Multiservice Tactics, Techniques, and Procedures For Chemical, Biological, Radiological, and Nuclear Decontamination {MCWP 3-37.3; NTTP 3-11.26; AFTTP(I) 3-2.60}
FM 4-25.11	First Aid
FM 4-30.31	Recovery and Battle Damage Assessment and Repair
FM 5-100-15	Corps Engineer Operations
FM 5-125	Rigging Techniques, Procedures, and Applications
FM 9-207	Operation and Maintenance of Ordnance Materiel in Cold Weather
FM 10-16	General Fabric Repair
FM 10-67-1	Concepts and Equipment of Petroleum Operations
FM 20-3	Camouflage, Concealment, and Decoys
FM 21-10	Field Hygiene and Sanitation
FM 21-305	Manual for the Wheeled Vehicle Driver
FM 31-70	Basic Cold Weather Manual

FIELD MANUALS - Continued

FM 31-71	Northern Operations
FM 55-21	Railway Operating and Safety Rules
FM 55-30	Army Motor Transport Units and Operations
FM 90-3	Desert Operations
FM 90-13	River Crossing Operations

TECHNICAL BULLETINS

TB ORD 1030	Manufacture of Data Plates
TB 5-5420-234-15	Warranty Program for Common Bridge Transporter (CBT)
TB 9-2300-281-35	Standards for Oversea Shipment or Domestic Issue of Special Purpose Vehicles, Combat, Tactical, Construction, and Selected Industrial and Troop Support US Army Tank-Automotive Materiel Readiness Command Managed Items
TB 9-2300-422-20	Security of Tactical Wheeled Vehicles
TB 43-0001-62-SERIES	Equipment Improvement Report and Maintenance Digest for Tank, Automotive, and Armament Equipment
TB 43-0142	Safety Inspection and Testing of Lifting Devices
TB 43-0209	Color, Marking and Camouflage Painting of Military Vehicles, Construction Equipment, and Materials Handling Equipment
TB 43-0212	Purging, Cleaning, and Coating Interior Ferrous and Terne Sheet Vehicle Fuel Tanks
TB 43-0216	Safety and Hazard Warnings for Operation and Maintenance of TACOM Equipment
TB 750-651	Use of Antifreeze Solutions, Antifreeze Extender, Cleaning Compounds and Test Kit in Engine Cooling Systems
TB 9-289	Reconditioning of Type I and Type II Reusable Metal Containers

TECHNICAL MANUALS

TM 3-4230-214-12&P	Operator's and Unit Maintenance Manual Including Repair Parts and Special Tools List for Decontamination Apparatus
TM 3-4240-280-10	Operator's Manual for Mask, Chemical-Biological: Aircraft, ABC-M24 and Accessories and Mask, Chemical-Biological, Tank, M25A1 and Accessories (Reprinted W/Basic Incl C1-2) (This item is included on EM 0045)
TM 3-6665-225-12	Operator's and Organizational Maintenance Manual: for Alarm Chemical
TM 5-1940-277-10	Operator’s Manual for Boat, Bridge Erection, Twin Jet, Aluminum Hull, Models USCSBMK 1 (NSN 1940-01-105-5728) and USCSBMK 2 (1940-01-218-9165)

TECHNICAL MANUALS - Continued

TM 5-2090-202-12&P	Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tools List) for Cradle, Bridge Erection Boat, Twin Jet, Aluminum Hull (NSN 2090-01-106-9789)
TM 5-5420-208-12&P	Operator and Unit Maintenance Manual Including Repair Parts and Special Tools List for Cargo Pallet, Ribbon Bridge Transporter (NSN 5420-01-006-7436)
TM 5-5420-209-12	Operator's and Unit Maintenance Manual for Improved Float Bridge (Ribbon Bridge)
TM 5-5420-277-14&P	Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Cradle, Boat, Improved, M14, (NSN 3990-01-442-1914)
TM 9-214	Inspection, Care and Maintenance of Antifriction Bearings
TM 9-243	Use and Care of Hand Tools and Measuring Tools
TM 9-1005-245-13&P	Operator's, Unit, and Direct Support Maintenance Manual with Repair Parts and Special Tools List (RPSTL) for Machine Gun Mounts and Combinations for Tactical/Armored Vehicles
TM 9-1440-600-10	Operator's Manual, Launching Station, M901 Guided Missile, Semitrailer Mount
TM 9-2320-326-10HR	Hand Receipt Covering Contents Of Components Of End Item (COEI), Basic Issue Items (BII), And Additional Authorization List (AAL) for M977 Series, 8x8 Heavy Expanded Mobility Tactical Trucks
TM 9-2330-357-14&P	Operator's, Organizational, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools Lists) For Semitrailer, Flatbed, Radar Set and Launching Station M860A1 (NSN 2330-01-117-3280) (This Item Is Included On EM 0049)
TM 9-2330-385-14	Operator's, Unit, Direct Support and General Support Maintenance Manual for Palletized Load System Trailer (PLST) Model M1076 (NSN 2330-01-303-5197)
TM 9-2330-385-24P	Unit, Direct Support and General Support Maintenance Repair Parts and Special Tools List for Trailer, Palletized Load System (PLST) Model M1076 (NSN 2330-01-303-5197)
TM 9-2610-200-14	Operator's, Unit, Direct Support, and General Support Maintenance Manual for Care, Maintenance, Repair, and Inspection of Pneumatic Tires and Inner Tubes
TM 9-3990-206-14&P	Operator's Unit, Direct Support and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Palletized Load System (PLS) Flatrack Model M1077/ M1077A1

TECHNICAL MANUALS - Continued

TM 9-3990-260-14&P	Operator's, Unit, Direct Support and General Support Maintenance Manual (Including Repair Parts and Special Tools List) For Container Roll-In/Out Platform (CROP) Model M3 (NSN 3990-01-442-2751); Container Roll-In/Out Platform (CROP) Model M3A1 (3990-01-450-5671) (This Item is Included on EM 0038 and EM 0052)
TM 9-2330-366-14&P	Operator's, Organizational, Direct Support, and General Support Maintenance Including Repair Parts and Special Tools Lists For Semitrailer, Lowbed, 12-Ton, XM974 (NSN 2330-01-116-0288)
TM 9-4910-571-12&P	Operator's and Organizational Maintenance Manual (Including Repair Parts and Special Tools List) for Simplified Test Equipment for Internal Combustion Engines (STE/ICE-R)
TM 9-4910-783–13&P	Operator's, Unit, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Standard Automotive Test Set (SATS)
TM 9-4940-468-13	Operator's, Unit, and Direct Support Maintenance Manual for Tool Outfit, Hydraulic Systems Test and Repair Unit (HSTRU)
TM 9-4940-568-10	Operator's Maintenance Manual for Forward Repair System (FRS)
TM 9-6115-465-24P	Unit, Direct Support and General Support Maintenance Repair Parts and Special Tools List (Including Deport Maintenance Repair Parts and Special Tools List) for Generator Set, Diesel Engine Driven, Tactical
TM 9-6140-200-14	Operator's, Unit, Direct Support and General Support Maintenance Manual for Lead-Acid Storage Batteries
TM 9-8000	Principles of Automotive Vehicles
TM 11-5820-498-12	Operator's and Organizational Maintenance Manual: Radio Sets
TM 11-5820-498-35	Direct Support, General Support, and Depot Maintenance Manual for Radio Sets
TM 38-250	Preparing Hazardous Materials for Military Air Shipments
TM 43-0139	Painting Instructions for Army Materiel
TM 55-2200-001-12	Transportability Guidance for Application of Blocking, Bracing and Tiedown Materials for Rail Transport
TM 55-2320-279-14	Transportability Guidance Heavy Expanded Mobility Tactical Truck (HEMTT)
TM 750-244-3	Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command)
TM 750-244-6	Procedures for Destruction of Tank Automotive Equipment to Prevent Enemy Use (U.S. Army Tank-Automotive Command)
TM 750-254	Cooling Systems: Tactical Vehicles

TECHNICAL MANUALS - Continued

TM 5-2330-378-14&P	Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Semitrailer, Lowbed: 40-Ton Construction Equipment Transporter, M870 (CCE) (CMI/Load King Model 403LF), and M870A1
TM 5-2330-325-14&P	Operator's, Unit, and Direct Support Maintenance Manual with Repair Parts and Special Tools List (RPSTL) for Trailer, Medium Heavy Equipment Transporter (MHET), 40-Ton, M870A3
TM 9-2330-213-14&P	Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools Lists) For Trailer, Chassis: 1-1/2-Ton, 2-Wheel M103A1 (NSN 2330-00-835-8629) M103A3 (NSN 2330-00-141-8052) Trailer, Cargo: 1-1/2-Ton, 2-Wheel M105A1 (NSN 2330-00-835-8631) M105A2 (NSN 2330-00-141-8050) M105A2C (NSN 2330-00-542-5689) Trailer, Tank, Water: 1-1/2-Ton, 2-Wheel, 400-Gallon M107A1 (NSN 2330-00-835-8633) M107A2 (NSN 2330-00-141-8049) M107A2C (NSN 2330-00-542-5688) Trailer, Van, Shop: Folding Sides, 1-1/2-Ton, 2-Wheel M448 (NSN 2330-00-631-5692)
TM 9-2330-231-14&P	Technical Manual Operator's, Organizational, Direct Support, And General Support Maintenance (Including Repair Parts and Special Tools List) Trailer, Ammunition: 1 1/2-Ton, 2-Wheel, M332 (NSN 2330-00-200-1785)
TM 9-2330-368-14&P	Operators, Organizational, Including Repair Parts and Special Tools List For Trailer, Ammunition, Heavy Expanded Mobility, 11-Ton, M989 (NSN 2330-01-109-4258)

MISCELLANEOUS PUBLICATIONS

AR 70-1	Army Acquisition Policy
AR 200-1	Environmental Protection and Enhancement
AR 385-55	Prevention of Motor Vehicle Accidents
AR 700-138	Army Logistics Readiness and Sustainability
AR 700-139	Army Warranty Program
AR 702-7	Product Quality Deficiency Report Program
AR 750-1	Army Materiel Maintenance Policy
AR 750-10	Army Modification Program
CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-970	Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)

MISCELLANEOUS PUBLICATIONS - Continued

GPM 94-02	Maintenance Advisory for Purging all Fuel Tankers using a Biodegradable Purging Solution
SB 725-92-1	US Army Missile Command Nonexpendable Reusable Shipping and Storage Containers
TC 9-237	Welding Theory and Application
TC 9-510	Metal Body Repair and Related Operations
TO 00-25-234	General Shop Practice Requirements for Repair, Maintenance, and Test of Electronic Equipment

END OF WORK PACKAGE

OPERATOR MAINTENANCE
COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

INTRODUCTION

Scope

This work package lists COEI and BII for the HEMTT series vehicles to help you inventory items required for safe and efficient operation.

General

The Components of End Item and Basic Issue Items Lists are divided into the following lists:

Components of End Item (COEI) This listing is for informational purposes only and is not authority for requisition replacements. These items are part of the HEMTT series vehicle. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

Basic Issue Items (BII) These are the minimum essential items required to place the HEMTT series vehicle in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the vehicle during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on your authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

Explanation of Entries in the COEI List and BII List

The following provides an explanation of columns found in the tabular listings:

Item Number. Gives you the reference number of the item listed.

National Stock Number (NSN) and Illustration. Identifies the stock number of the item to be used for requisitioning purposes and provides an illustration of the item.

Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this entry. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. These codes are identified below:

INTRODUCTION - Continued

Table 1. List of Usable On Codes

Code	Used On
LH7	M984A4 Wrecker with winch

Column (5) - U/I Unit of Issue (U/I) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) - Qty. Indicates the quantity required.

COMPONENTS OF END ITEM

Table 2. Components of End Item

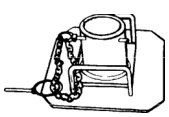
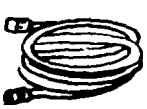
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
1	2590-01-180-0996 	BASE ASSEMBLY, OUTRIGGER: Pad (Located: One each mounted on driver side and passenger side outrigger jack cylinder) 1354640W(45152)	LH7	EA	2
2	6150-01-184-1901 	CABLE AND CONDUIT ASSEMBLY, ELECTRICAL: Crane (Located in passenger side equipment body, bottom stowage box) 2-198-6-00061(12361)	LH7	EA	1

Table 2. Components of End Item - Continued

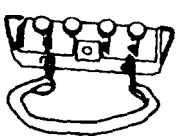
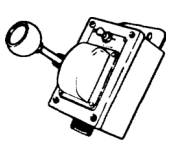
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
3	6150-01-231-6662 	CABLE ASSEMBLY, POWER, ELECTRICAL: HD Winch (passenger side equipment body, in bottom forward stowage box) 1491030(45152)	LH7	EA	1
4	2540-01-166-1384 	LADDER, VEHICLE BOARDING (Located over battery box on passenger side of vehicle) 1766590W(45152)	LH7	EA	1
5	2520-01-188-5129 	RECEIVER-TRANSMITTER, HYDRAULIC CONTROL: Crane RCU (Located in passenger side cargo body, bottom forward stowage box) 2-198-6-00053(12361)	LH7	EA	1
6	2590-01-217-8317 	STATION, WINCH CONTROL: HD Winch (Located in passenger side equipment body, bottom forward stowage box) 1437940U(45152)	LH7	EA	1

Table 2. Components of End Item - Continued

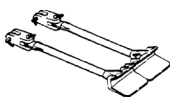
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
7	2540-01-217-8312 	TOWBAR, MOTOR VEHICLE: Tow Spade Assembly (Located in equipment body) 1444560U(45152)	LH7	EA	1

Table 3. Basic Issue Items

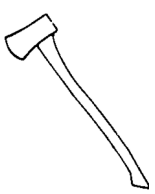
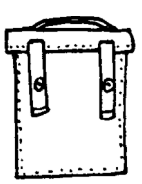
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
1	5110-00-293-2336 	AXE, SINGLE BIT (Located on pioneer tool bracket) 6150925(19207)	LH7	EA	1
2	8105-01-353-2497 	BAG, TEXTILE: Pamphlet (Located in cabin in glove box forward of passenger/ crew seat) 1362710(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

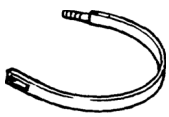
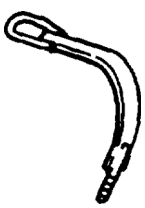
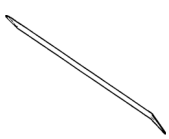
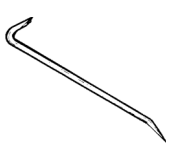
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
3	5340-01-236-2109 	BAND, RETAINING: Acetylene Tank (Located on acetylene tank in equipment body) 1454420W(45152)	LH7	EA	2
4	5340-01-182-9527 	BAND, RETAINING: Oxygen Tank (Located on oxygen tank in equipment body) 1374630W(45152)	LH7	EA	2
5	5120-00-224-1372 	BAR, PINCH (Located in driver side tool box) 15840(79202)	LH7	EA	1
6	5120-00-293-0665 	BAR, WRECKING (Located in driver side tool box) 11873(96508)	LH7	EA	1

Table 3. Basic Issue Items - Continued

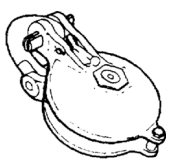
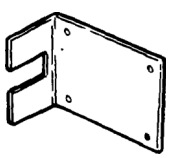
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
7	7510-00-889-3494 	BINDER, LOOSE-LEAF (Located on passenger side of cab in glove box) 11677003(19207)	LH7	EA	1
8	3940-01-163-2319 	BLOCK, TACKLE: 20 TON (Located in driver side equipment body, top center stowage box) 168400(75535)	LH7	EA	1
9	3940-01-230-0294 	BLOCK, TACKLE: 60 Ton (Located in driver side equipment body) 6250-08(95975)	LH7	EA	1
10	5340-01-211-6107 	BRACKET, ANGLE: Steering Lock (Located in passenger side equipment body, bottom stowage box) 1358410(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

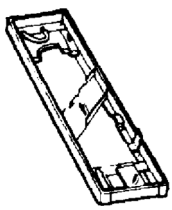
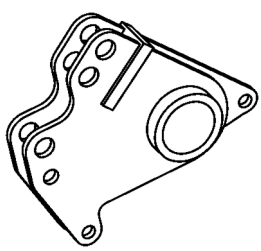
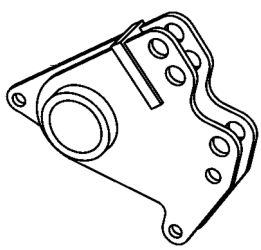
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11	2540-00-409-8891 	BRACKET ASSEMBLY, TOOL: Pioneer (Located in passenger side equipment body stowage box) MS53053-1(96906)	LH7	EA	1
12	5340-01-516-2058 	BRACKET, MOUNTING: (LH) MUA (Located/mounted on equipment body) 3483699(45152)	LH7	EA	1
13	5340-01-516-2059 	BRACKET, MOUNTING: (RH) MUA (Located/mounted on equipment body) 3484856(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

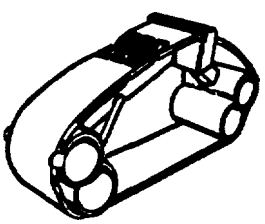
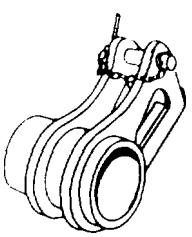
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14	2540-01-246-5218 	BRACKET, TOW HOOK: Extension Assembly (Located on crosstube of retrieval system) 1543440W(45152)	LH7	EA	2
15	2540-01-246-8013 	BRACKET, TOW HOOK: (LH) Lift Adapter (Located/mounted on equipment body) 1531180U(45152)	LH7	EA	1
16	2540-01-226-3373 	BRACKET, TOW HOOK: (LH) Lift Adapter (Located/mounted on equipment body) 1497260W(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

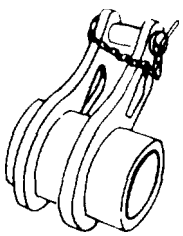
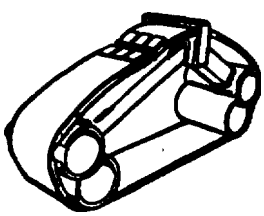
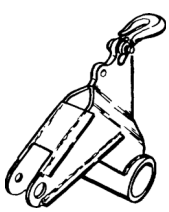
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17	2540-01-226-5266 	BRACKET, TOW HOOK: (RH) Lift Adapter (Located/ mounted on equipment body) 1497250W(45152)	LH7	EA	1
18	2540-01-246-7770 	BRACKET, TOW HOOK: (RH) Lift Adapter (Located/ mounted on equipment body) 1531170U(45152)	LH7	EA	1
19	2540-01-246-5219 	BRACKET, TOW HOOK: (RH) Lift Adapter (Located/ mounted on equipment body) 1532170W(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

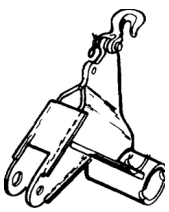
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20	2540-01-246-8012 	BRACKET, TOW HOOK: (LH) Lift Adapter (Located/mounted on equipment body) 1532180W(45152)	LH7	EA	1
21	6150-01-022-6004 	CABLE ASSEMBLY, POWER, ELECTRICAL: NATO (Located in driver side tool box) 11682336-1(19207)	LH7	EA	1
22	6150-01-180-6035 	CABLE ASSEMBLY, POWER, ELECTRICAL: Worklamp (Located in driver side equipment body, bottom forward stowage box) 1419770U(45152)	LH7	EA	1
23	4010-01-229-7769 	CHAIN: 8 ft. (Located in driver side equipment body, forward stowage box) 1340930(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

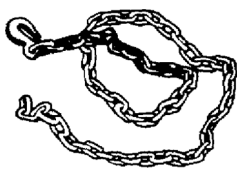
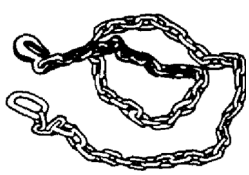
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24	4010-01-200-1506 	CHAIN ASSEMBLY, SINGLE LEG: 7 ft. Limp Home (Located in passenger side equipment body, top forward stowage box) 1452490(45152)	LH7	EA	1
25	4010-01-250-5428 	CHAIN ASSEMBLY, SINGLE LEG: 12 ft. 022-4712(80535)	LH7	EA	4
26	4010-01-249-0548 	CHAIN ASSEMBLY, SINGLE LEG: 14 ft. Utility (Located in passenger side equipment body, top forward stowage box) 0044-9973(96508)	LH7	EA	1
27	5110-00-221-1075 	CHISEL, BLACKSMITHS (Located in passenger side equipment body, bottom forward stowage box) MS16882-2(96906)	LH7	EA	1

Table 3. Basic Issue Items - Continued

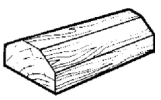
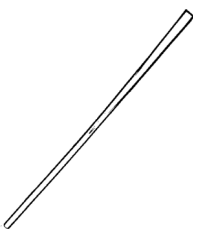
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28	2540-01-165-6136 	CHOCK, WHEEL-TRACK (Located in driver side equipment body, top center stowage box) CS-2540-0067(16236)	LH7	EA	4
29	5120-00-224-1390 	CROWBAR (Located on front passenger side fender) 10501985(56161)	LH7	EA	1
30	8120-00-268-3360 	CYLINDER, COMPRESSED GAS, ACETYLENE (Located in rear of equipment body) MIL-C-3701-4(81349)	LH7	CY	1

Table 3. Basic Issue Items - Continued

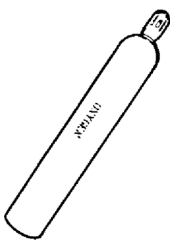
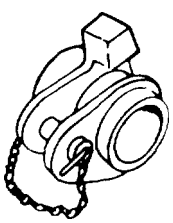
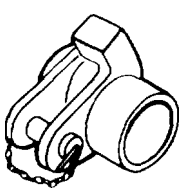
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31	8120-00-357-7992 	CYLINDER, COMPRESSED GAS, OXYGEN (Located in rear of equipment body) C901/1-15(81348)	LH7	CY	1
32	2540-01-226-7138 	EXTENSION ASSEMBLY (LH) (Located on crosstube of retrieval system) 1447200W(45152)	LH7	EA	1
33	3040-01-224-5497 	EXTENSION ASSEMBLY (RH) (Located on crosstube of retrieval system) 1447190W(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

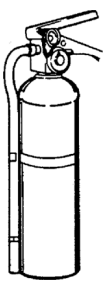
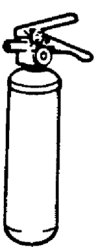
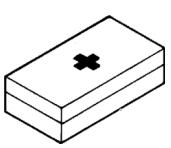
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34	4210-01-460-9083 	EXTINGUISHER, FIRE (Mounted to passenger side stowage box) 36250(99539)	LH7	EA	1
35	4210-01-133-9053 	EXTINGUISHER, FIRE: 2.7 lbs, 10 BC (Located: mounted to rear cabin wall, left of crew/ passenger seat) 429101(03670)	LH7	EA	1
36	6545-00-922-1200 	FIRST AID KIT, GENERAL PURPOSE (Located in cabin in glove box forward of passenger/crew seat) SCC-6545-ILVOL2(64616)	LH7	EA	1

Table 3. Basic Issue Items - Continued

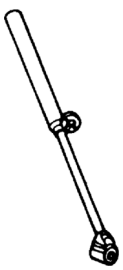
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37	4910-01-003-9599 	GAUGE, TIRE PRESSURE, SELF-CONTAINED (Located in cabin in glove box forward of passenger/ crew seat) 61-J2-1506(94894)	LH7	EA	2
38	5120-01-526-1378 	HAMMER, HAND: 6 lbs (Located in passenger side equipment body, bottom forward stowage box) 1362600(45152)	LH7	EA	1
39	5120-00-900-6098 	HAMMER, HAND: 12 lbs Sledge (Located in passenger side equipment body, bottom forward stowage box) 1362570(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

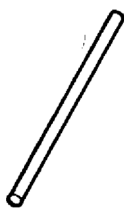
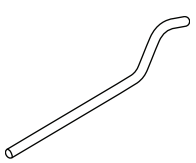
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40	5340-01-209-7841 	HANDLE, EXTENSION (for lug wrench) (Located in passenger side equipment body, bottom forward stowage box) 1347720(45152)	LH7	EA	1
41	5120-00-288-6574 	HANDLE, PICK-MATTOCK (Located on pioneer tool bracket) 10501973(56161)	LH7	EA	1
42	5340-01-558-6515 	HANDLE, PUMP, TIRE CARRIER (Located in passenger side stowage box) 3636440(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

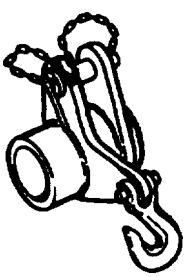
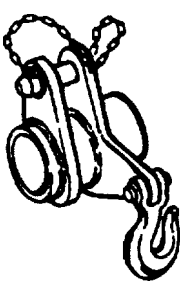
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43	5120-01-233-9508 	HANDLE, SOCKET WRENCH: Wheel Lugnut (Located in passenger side equipment body, bottom forward stowage box) ORR301(66784)	LH7	EA	1
44	2590-01-226-3349 	HOOK ASSEMBLY, TOW: (LH) Lift Adapter (Located/mounted on equipment body) 1481840W(45152)	LH7	EA	1
45	2540-01-226-7139 	HOOK ASSEMBLY, TOW: (RH) Lift Adapter (Located/mounted on equipment body) 1481830W(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

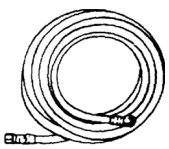
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46	4030-01-234-0032 	HOOK, GRAB: Clevis 450-3815(80535)	LH7	EA	2
47	4720-00-356-8571 	HOSE ASSEMBLY, NONMETALLIC: Acetylene 25 ft. (Located in passenger side equipment body, top rear stowage box) 21-1108(13699)	LH7	EA	1
48	4720-01-558-6415 	HOSE ASSEMBLY, NONMETALLIC: Air 50 ft. 2155210U(45152)	LH7	EA	2
49	4720-01-254-0189 	HOSE ASSEMBLY, NONMETALLIC: Inter-Vehicular (Located in tool box) MS39325-9-140-B(96906)	LH7	EA	2

Table 3. Basic Issue Items - Continued

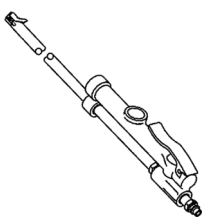
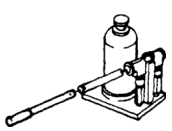
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50	4720-00-356-8572 	HOSE ASSEMBLY, NONMETALLIC: Oxygen (Located in passenger side equipment body, top rear stowage box) ZZ-H-461(81348)	LH7	EA	1
51	4910-01-386-4300 	INFLATOR-GAUGE, PNEUMATIC TIRE (Located in cabin in glove box forward of passenger/crew seat) I-405M(63900)	LH7	EA	2
52	5120-01-146-8096 	JACK, HYDRAULIC, HAND: 12 Ton with Handle (Located in driver side tool box) EBJ-12GC(26952)	LH7	EA	1

Table 3. Basic Issue Items - Continued

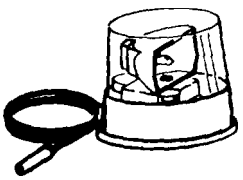
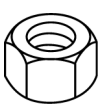
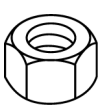
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53	6220-01-250-5190 	LIGHT, WARNING: Beacon (Located on passenger side of cab in glove box) 3145661(45152)	LH7	EA	1
54	5120-00-243-2395 	MATTOCK: Pick (Located on pioneer tool bracket) 11677022(19207)	LH7	EA	1
55	5310-01-063-8970 	NUT, PLAIN, HEXAGON: 38-16 G5 ZY 434AX145152	LH7	EA	4
56	5310-01-081-8244 	NUT, SELF-LOCKING, HEXAGON: .50-13 G8 60860AX45152	LH7	EA	4

Table 3. Basic Issue Items - Continued

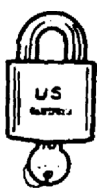
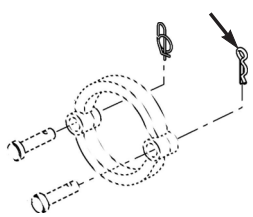
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57	5340-00-158-3807 	PADLOCK: With Chain (for stowage boxes) AA59487-2SC(58536)	LH7	EA	5
58	5340-00-158-3805 	PADLOCK: Without Chain (for steering column) (Located in steering column lock bracket under dash) AA59487-2S(58536)	LH7	EA	1
59	5315-01-513-1553 	PIN, COTTER (Located in driver side equipment body, top rear stowage box) 3341263(45152)	LH7	EA	4

Table 3. Basic Issue Items - Continued

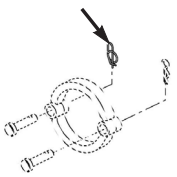
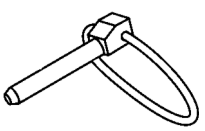
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60	5315-01-515-6848 	PIN, COTTER: Hairpin 1533610(45152)	LH7	EA	4
61	5315-01-490-5334 	PIN, COTTER: Ring, Rue (Located in driver side equipment body, top rear stowage box) 3471752(45152)	LH7	EA	8
62	5315-01-259-0313 	PIN, LOCK: Hairpin, Cotter 21-0796652	LH7	EA	2
63	5315-01-490-7325 	PIN, QUICK (Located in driver side equipment body, top rear stowage box) 3406240(45152)	LH7	EA	4

Table 3. Basic Issue Items - Continued

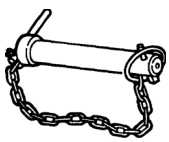
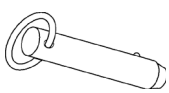
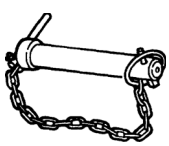
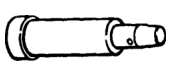
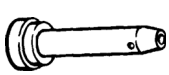
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
64	5315-01-250-4676 	PIN, QUICK RELEASE: Extension (Located on extension tow adapter of retrieval system crosstube) 1543800U(45152)	LH7	EA	2
65	5315-01-257-7801 	PIN, QUICK RELEASE: Hitch Pin (Located on fairlead lift bar) 30-18(96652)	LH7	EA	1
66	5315-01-258-8581 	PIN, SHOULDER, HEADED: Quick Release 1536450U(45152)	LH7	EA	1
67	5315-01-257-4512 	PIN, SHOULDER, HEADED: Tow Adapter (Located in driver side equipment body, top rear stowage box) 1532880(45152)	LH7	EA	2
68	5315-01-257-7802 	PIN, SHOULDER, HEADED: Tow Adapter (Located in passenger side equipment body, top rear stowage box) 1532890(45152)	LH7	EA	2

Table 3. Basic Issue Items - Continued

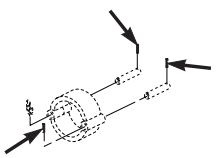
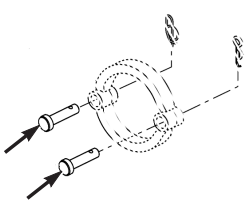
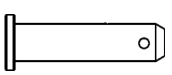
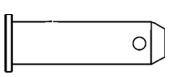
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
69	5315-01-516-2071 	PIN, SPRING: .125 x .75 (Located in driver side equipment body, top rear stowage box) 3475291(45152)	LH7	EA	6
70	5315-01-516-2070 	PIN, STRAIGHT, HEADED: 1-1/4 in. (Located in driver side equipment body, top rear stowage box) 3471882(45152)	LH7	EA	4
71	5315-01-515-6846 	PIN, STRAIGHT, HEADED: MUA Lower (Located in driver side equipment body, top rear stowage box) 3483740(45152)	LH7	EA	2
72	5315-01-516-2062 	PIN, STRAIGHT, HEADED: MUA MTVR/ 939 (Located in driver side equipment body, top rear stowage box) 3483735(45152)	LH7	EA	4

Table 3. Basic Issue Items - Continued

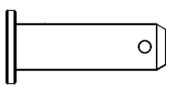
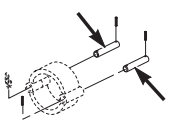
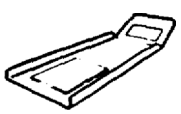
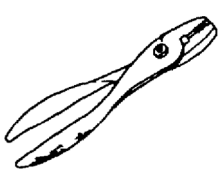
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73	5315-01-515-6847 	PIN, STRAIGHT, HEADED: MUA Upper (Located in driver side equipment body, top rear stowage box) 3483739(45152)	LH7	EA	2
74	5315-01-516-2068 	PIN, STRAIGHT, HEADLESS: 3 in. (Located in driver side equipment body, top rear stowage box) 3471888(45152)	LH7	EA	4
75	2540-01-165-5987 	PLATE, BASE, JACK (Located in driver side toolbox) 2540V0730(16236)	LH7	EA	1
76	5120-01-480-0640 	PLIERS, SLIP JOINT: 10 in. Adjustable (Located in passenger side equipment body, bottom forward stowage box - part of tool roll) 1350150(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

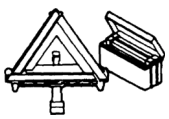
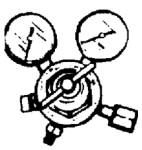
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
77	9905-01-480-0644 	REFLECTOR SET, HIGHWAY WARNING, TRIANGULAR (Located in cabin mounted under glove box forward of passenger/crew seat) 6432GBX(45152)	LH7	SE	1
78	4820-01-079-8235 	REGULATOR, COMPRESSED GAS: Oxygen (Located in passenger side equipment body, top rear stowage box) 0781-3905(63026)	LH7	EA	1
79	5140-01-167-1541 	ROLL, TOOLS AND ACCESSORIES (Located in passenger side equipment body, bottom forward stowage box) 1350190(45152)	LH7	EA	1
80	5140-01-227-9604 	ROLL, TOOLS AND ACCESSORIES: Welding Kit (Located in passenger side equipment body, top rear stowage box) 1478710(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

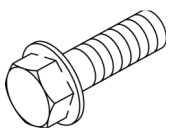
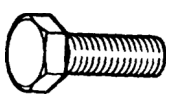
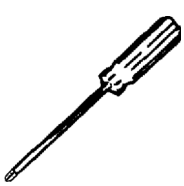
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
81	5305-01-167-9408 	SCREW, CAP, HEXAGON HEAD: . 50-13 X 2.00 128131A(45152)	LH7	EA	4
82	5305-01-056-5448 	SCREW, CAP, HEXAGON HEAD: Capscrew 0.38-16 X 0.75 (Located in passenger side equipment body, forward bottom stowage box) 501BO1(45152)	LH7	EA	4
83	5120-01-398-8053 	SCREWDRIVER, CROSS TIP: Phillips No. 3 (Located in passenger side equipment body, bottom forward stowage box - part of tool roll) SDFP56(96508)	LH7	EA	1
84	5120-00-293-3309 	SCREWDRIVER, FLAT TIP: No. 6 (Located in passenger side equipment body, bottom forward stowage box - part of tool roll) 66-110(03914)	LH7	EA	1

Table 3. Basic Issue Items - Continued

(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
85	4030-00-377-1397 	SHACKLE: Anchor, Limp Home (Located in passenger side equipment body, bottom forward stowage box) RR-C-271 TY4AGRBCL2SZ 1.000(81348)	LH7	EA	1
86	4030-01-316-1552 	SHACKLE: Towing: (Located on front and rear towing eyes) RR-C-271D TYIVAGRACL1 3/8 IN(81348)	LH7	EA	4
87	5120-01-515-7117 	SHOVEL, HAND (Located on pioneer tool bracket) 3453866(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

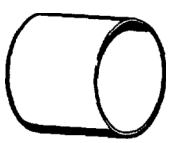
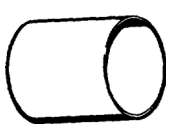
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
88	3940-01-209-6008 	SLING AND WIRE ROPE ASSEMBLY SET (Located in driver side equipment body, top forward stowage box) AC 2000 00331(28620)	LH7	EA	1
89	3940-01-270-3389 	SLING, MULTIPLE LEG: 16 ft. Safety Chain (Located in passenger side equipment body, top forward stowage box) 1482010(45152)	LH7	EA	2
90	5365-01-257-4399 	SPACER, SLEEVE: Tube 4 in. long (Located in driver side equipment body, top rear stowage box) 1531110(45152)	LH7	EA	2
91	5365-01-257-4400 	SPACER, SLEEVE: Tube 5 in. long (Located in driver side equipment body, top rear stowage box) 1531120(45152)	LH7	EA	2

Table 3. Basic Issue Items - Continued

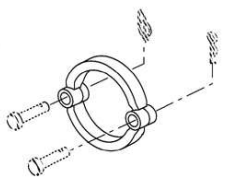
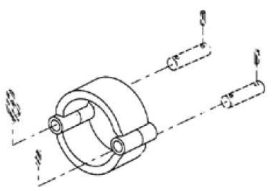
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
92	5365-01-516-2069 	SPACER, SPECIAL SHAPED: MUA 1.5 (Located in driver side equipment body, top rear stowage box) 3471878(45152)	LH7	EA	4
93	5365-01-516-2066 	SPACER, SPECIAL SHAPED: MUA 3.0 (Located in driver side equipment body, top rear stowage box) 3471714(45152)	LH7	EA	4
94	5340-00-543-3398 	STRAP, WEBBING: 1 in. x 12 in. (Located: Three (3) in driver side equipment body, bottom rear stowage box. One (1) on wrecking bar, front passenger side fender) 8690462(19207)	LH7	EA	4

Table 3. Basic Issue Items - Continued

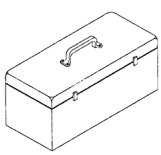
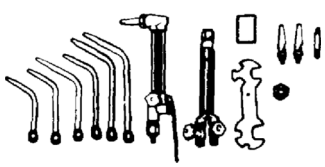
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
95	5340-01-209-7806 	STRAP, WEBBING: 1 in. x 16 in. (Located on pioneer tool bracket) 1376380(45152)	LH7	EA	1
96	5340-00-753-3744 	STRAP, WEBBING: 1 in. x 36 in. 8690473(19207)	LH7	EA	8
97	5180-00-754-0661 	TOOL KIT, WELDERS (Located in passenger side equipment body, top rear stowage box - holds torch set) SC5180-90-N39(50980)	LH7	EA	1
98	3433-00-294-6743 	TORCH SET , TYPE 2 (Located in passenger side equipment body, top rear stowage box) MIL-T-13880(81349)	LH7	SE	1

Table 3. Basic Issue Items - Continued

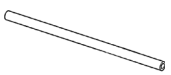
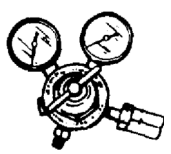
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
99	2540-01-254-5029 	TOWBAR, MOTOR VEHICLE: Fairlead Lift Bar (Located/mounted on retrieval system frame, rear of vehicle) 1567820W(45152)	LH7	EA	1
100	6220-01-558-7997 	TOW LIGHT ASSEMBLY: Emergency (Located in driver side equipment body, bottom center stowage box) 3421169(45152)	LH7	EA	1
101	4820-00-551-1094 	VALVE, REGULATING, FLUID PRESSURE: Acetylene (Located in passenger side equipment body, top rear stowage box) UL252– TYPE-1(80204)	LH7	EA	1
102	5120-00-243-9072 	VISE, BENCH AND PIPE: 6 in. SWIVEL BASE (Located on passenger side frame, under self-recovery winch) 1362540(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

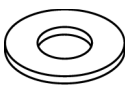
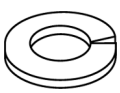
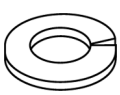
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
103	5310-00-080-6004 	WASHER, FLAT (Located on oxygen tank strap in equipment body) MS27183-14(96906)	LH7	EA	2
104	5310-00-637-9541 	WASHER, LOCK (Located on acetylene tank straps) 4700-5(75906)	LH7	EA	2
105	5310-00-637-9541 	WASHER, LOCK (Located on oxygen tank straps) 4700-5(75906)	LH7	EA	2
106	2590-01-222-5437 	WIRE AND PLUG, ELECTRICAL: Tow Light Cable (Located in driver side equipment body, forward bottom stowage box) CS-2590-SV-0705(16236)	LH7	EA	1

Table 3. Basic Issue Items - Continued

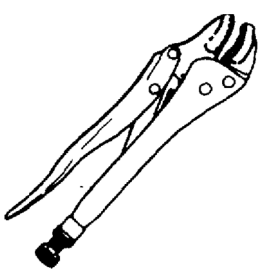
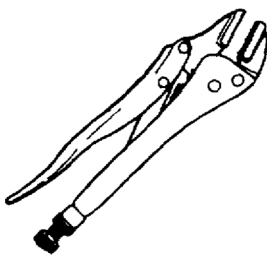
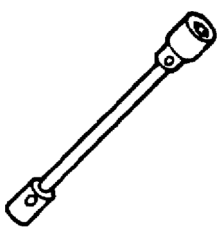
(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
107	5120-01-436-2924 	WRENCH, ADJUSTABLE: 8 in. (Located in passenger side equipment body, bottom forward stowage box - part of tool roll) AC18(96508)	LH7	EA	1
108	5120-00-264-3796 	WRENCH, ADJUSTABLE: 12 in. (Located in passenger side equipment body, bottom forward stowage box - part of tool roll) 120405A(45152)	LH7	EA	1
109	5120-01-522-0827 	WRENCH, PLIER: 8-1/2 in. Curved Jaw (Located in passenger side equipment body, bottom forward stowage box - part of tool roll) 1362660(45152)	LH7	EA	1

Table 3. Basic Issue Items - Continued

(1) Illus No.	(2) National Stock Number (NSN)	(3) Description, Part Number/(CAGEC)	(4) Usable On Code	(5) U/I	(6) Qty Rqr
110	5120-00-277-4244 	WRENCH, PLIER: 10 in. Flat Jaw (Located in passenger side equipment body, bottom forward stowage box - part of tool roll) 01GS(77243)	LH7	EA	1
111	5120-01-070-8386 	WRENCH, SOCKET: Wheel Nut (Located in passenger side equipment body, bottom forward stowage box) 1048-TR(45152)	LH7	EA	1

END OF WORK PACKAGE

OPERATOR MAINTENANCE
ADDITIONAL AUTHORIZATION LIST (AAL)

Introduction

Scope

This work package lists additional authorization items that are needed to operate and maintain the HEMTT Series Vehicles.

General

This list identifies items that do not have to accompany the HEMTT Series Vehicles and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

Explanation of Columns in the AAL

Column (1) - National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (2) - Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (3) - Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Table 1. List of Usable On Codes

Code	Used On
LH7	M984A4 Wrecker with winch

Column (4) - U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number.

Column (5) - Qty Recm. Indicates the quantity recommended.

Table 2. Additional Authorization List

(1) National Stock Number (NSN)	(2) Description, Part Number/ (CAGEC)	(3) Usable On Code	(4) U/I	(5) Qty Recom
8415-00-250-2531	APRON, WELDER'S KK-C-450(81348)	LH7	EA	1
4910-00-347-9703	BAR ASSEMBLY, HOISTING 8690061(52793)	LH7	EA	1
2510-00-741-7585	BOARD GROUND JACK 7417585(19207)	LH7	EA	2
7240-00-242-6153	CAN, WATER, MILITARY 11655980(19207)	LH7	EA	1
2540-01-152-7813	CHAIN, TIRE, EMERGENCY 2624-10-8(46156)	LH7	PR	2
3439-00-270-6047	CLEANER SET, WELDING AND CUTTING TIPS MIL-C-17223(81349)	LH7	SE	1
4230-01-220-3221	DECONTAMINATION KIT, INDIVIDUAL EQUIPMENT 5705588(19207)	LH7	EA	1
5130-01-400-0129	EXTENSION, SOCKET WRENCH: IMPACT 3/4 in. DRIVE, 13 in. LONG 07569(1CV05)	LH7	EA	1
4240-01-220-6373	GAS PARTICULATE KIT 3SK663(45152)	LH7	KT	1
8415-00-634-4658	GLOVES, LEATHER 37G2940(90142)	LH7	PR	2

Table 2. Additional Authorization List - Continued

(1) National Stock Number (NSN)	(2) Description, Part Number/ (CAGEC)	(3) Usable On Code	(4) U/I	(5) Qty Recom
2990-01-509-1954	HEATER, COOLANT, ENGINE: ARCTIC 3460259(45152)	LH7	EA	1
1055-01-137-4441	HOIST ATTACHMENT: LAUNCH PAD CONTAINER, MLRS ONLY 11508999(18876)	LH7	EA	1
4030-01-234-0032	HOOK, GRAB: CLEVIS 450-3815(80535)	LH7	EA	2
4720-01-341-4912	HOSE ASSEMBLY 1759750U(45152)	LH7	EA	1
5895-01-506-4503	INSTALLATION KIT, ELECTRONIC EQUIPMENT: C4ISR 3418900(45152)	LH7	EA	1
1005-01-519-2126	INSTALLATION KIT: MOUNTING, MACHINE GUN 1301740UW/OR45152	LH7	KT	1
6665-01-220-3220	KIT, CHEMICAL ALARM 5705589(19207)	LH7	KT	1
4930-01-028-1442	LUBRICATING GUN, HAND: GREASE 3133414(10001)	LH7	EA	1
5120-00-892-5709	MIRROR, INSPECTION UH1487(11676)	LH7	EA	1
1005-01-266-1233	MOUNT, RIFLE: INSTALLATION 5705590(19207)	LH7	EA	1

Table 2. Additional Authorization List - Continued

(1) National Stock Number (NSN)	(2) Description, Part Number/ (CAGEC)	(3) Usable On Code	(4) U/I	(5) Qty Recom
5120-00-197-9473	PUNCH, BLACKSMITH'S: 17 in. 647008(60903)	LH7	EA	1
7240-00-222-3084	SAFETY CAN: FUEL A-A-1702(58536)	LH7	EA	1
4030-01-316-1552	SHACKLE: TOWING (used with towbar, 10 ton) 1307540(45152)	LH7	EA	2
4230-00-540-0623	SHIELD: FACE A-A-1994(58536)	LH7	EA	1
8415-00-164-0513	SLEEVES, WELDERS KK-C-450(81348)	LH7	PR	1
3940-01-209-6008	SLING AND WIRE ROPE ASSEMBLY SET AC 2000 00331(28620)	LH7	EA	1
3940-00-040-2297	SLING, MULTIPLE LEG 8330151(19207)	LH7	EA	1
3940-01-270-3389	SLING, MULTIPLE LEG: 16 FT. SAFETY CHAIN 1482010(45152)	LH7	EA	1
5130-01-400-0164	SOCKET, SOCKET WRENCH (3/4 in. drive, 1 3/4 in. hex, impact) J07528L(1CV05)	LH7	EA	1
7240-00-177-6154	SPOUT, CAN, FLEXIBLE 11677020(19207)	LH7	EA	1

Table 2. Additional Authorization List - Continued

(1) National Stock Number (NSN)	(2) Description, Part Number/ (CAGEC)	(3) Usable On Code	(4) U/I	(5) Qty Recom
3990-01-204-3009	TIE DOWN, CARGO, VEHICLE MIL-PRF-71224-1(OHK26)	LH7	EA	8
2540-00-378-2012	TOW BAR, MOTOR VEHICLE: 10 tonShould be used in conjunction with two (2) safety chains: 16 ft. NSN: 3940-01-270-3389, P/N: 1482010, C/C: 45152. 8383802(19207)	LH7	EA	1
5120-00-423-6728	WRENCH, ADJUSTABLE: 15 in. 6187328(19207)	LH7	EA	1
5102-00-449-8084	WRENCH, ADJUSTABLE: 24 in. AC124(72368)	LH7	EA	1
5130-01-428-3751	WRENCH, IMPACT, PNEUMATIC 1789100U(45152)	LH7	EA	1
5120-00-277-1462	WRENCH, PIPE: 24 in. TKCX1D(19204)	LH7	EA	1

END OF WORK PACKAGE

OPERATOR MAINTENANCE
EXPENDABLE AND DURABLE ITEMS LIST

Introduction

Scope

This work package lists expendable supplies and materials that are needed to operate and maintain the HEMTT Series Vehicles. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/ Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Entries in the Expendable/Durable Items List

Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., Use brake fluid (Expendable/Durable Items List)).

Level. This column identifies the lowest level of maintenance that requires the listed item.
- C -- Operator/Crew
- O -- Unit/AMC
- F -- Direct Support/ASB
- H -- General Support
- D -- Depot

National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

(U/I). Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I

Table 1. Expendable and Durable Items List - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
			Antifreeze, Arctic Type	
1	O	6850-01-464-9096	Antifreeze, Arctic Type 55-gal drum A-A-52624 (58536)	DR
			Antifreeze, Permanent, Glycol, Inhibited	
2	O	6850-01-464-9125	Antifreeze, Permanent, Glycol, Inhibited 1-gal container AA52624 (58536)	GL
3	O	6850-00-464-9137	Antifreeze, Permanent, Glycol, Inhibited 5-gal container MILA46153 (81349)	CO
4	O	6850-01-464-9152	Antifreeze, Permanent, Glycol, Inhibited 55-gal drum A-A-52624 TY I RECYCLED (58536)	DR
			Cleaner, Lubricant	
5	O	9150-01-079-6124	Cleaner, Lubricant A,4 oz bottle w/ extender tube MIL-PRF-63460 (81349)	BT
			Cleaning Compound, Solvent	
6	O	6850-01-474-2319	Cleaning Compound, Solvent 1 gallon can MIL-PRF-680 Type II (81349)	GL
7	O	6850-01-474-2317	Cleaning Compound, Solvent 5 gallon can MIL-PRF-680 Type II (81349)	CO

Table 1. Expendable and Durable Items List - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
8	O	6850-01-474-2316	Cleaning Compound, Solvent 55 gallon drum MIL-PRF-680 Type II (81349)	DR
9	O	6850-01-474-2318	Cleaning Compound, Solvent 1 gallon can MIL-PRF-680 Type III (81349)	GL
10	O	6850-01-474-2320	Cleaning Compound, Solvent 5 gallon can MIL-PRF-680 Type III (81349)	BX
11	O	6850-01-474-2321	Cleaning Compound, Solvent 5 gallon can MIL-PRF-680 Type III (81349)	DR
			Compound, Cleaning Windshield	
12	O	6850-00-926-2275	Compound, Cleaning Windshield 1-pt can 0854-000 (0FTT5)	BX
			Fuel, DF-1, Winter	
13	O	9140-01-413-7511	Fuel, DF-1, Winter Bulk VV-F-800 (81348)	GL
14	O	9140-00-286-5286	Fuel, DF-1, Winter Bulk ASTM D 975 (81346)	GL
15	O	9140-00-286-5287	Fuel, DF-1, Winter 5-gal can ASTM D 975 (81346)	CN
16	O	9140-00-286-5288	Fuel, DF-1, Winter 55-gal drum, 16 gauge ASTM D 975 (81346)	DR
17	O	9140-00-286-5289	Fuel, DF-1, Winter 55-gal drum, 18 gauge ASTM D 975 (81346)	DR

Table 1. Expendable and Durable Items List - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
			Fuel	
18	O	9130-01-031-5816	Fuel, JP8 Bulk MILT83133 GR JP8 (81349)	GL
19	O	9140-01-412-1311	Fuel, DF-2, Regular Bulk VV-F-800 (81348)	GL
20	O	9140-00-286-5294	Fuel, DF-2, Regular Bulk ASTM D 975 (81346)	GL
21	O	9140-00-286-5295	Fuel, DF-2, Regular 5-gal can ASTM D 975 (81346)	CN
22	O	9140-00-286-5296	Fuel, DF-2, Regular 55-gal drum, 16 gauge ASTM D 975 (81346)	DR
23	O	9140-00-286-5297	Fuel, DF-2, Regular 55-gal drum, 18 gauge ASTM D 975 (81346)	DR
			Grease, Automotive and Artillery GAA	
24	O	9150-01-197-7688	Grease, Automotive and Artillery GAA 2-1/2 oz tube M-10924-A (81349)	TU
25	O	9150-01-197-7693	Grease, Automotive and Artillery GAA 14-oz cartridge M-10924-B (81349)	CA
26	O	9150-01-197-7690	Grease, Automotive and Artillery GAA 1-lb can M-10924-C (81349)	CN

Table 1. Expendable and Durable Items List - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
27	O	9150-01-197-7689	Grease, Automotive and Artillery GAA 5-lb can M-10924-D (81349)	CN
28	O	9150-01-197-7692	Grease, Automotive and Artillery GAA 35-lb can M-10924-E (81349)	CN
			Oil, Lubricating Gear, GO 75 (MIL-L-2105)	
29	O	9150-01-035-5390	Oil, Lubricating Gear, GO 75 (MIL-L-2105) 1-qt can M2105-1-75W (81349)	QT
30	O	9150-01-035-5391	Oil, Lubricating Gear, GO 75 5-gal can MIL-PRF-2105 (81349)	CN
			Oil, Lubricating Gear, GO 80W/90 (MIL-L-2105C)	
31	O	9150-01-035-5393	Oil, Lubricating Gear, GO 80W/90 (MIL-L-2105C) 5-gal can J2360 (81343)	CN
			Oil, Lubricating OEA Ice, Subzero	
32	O	9150-00-403-2372	Oil, Lubricating OEA Ice, Subzero 1-qt can EMERY3908D (33358)	QT
33	O	9150-00-402-2372	Oil, Lubricating OEA Ice, Subzero 5-gal can MIL-PRF-46167 (81349)	CN

Table 1. Expendable and Durable Items List - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
34	O	9150-00-491-7197	Oil, Lubricating OEA Ice, Subzero 55-gal drum, 16 gauge MIL-PRF-46167 (81349)	DR
			Oil, Lubricating OE/HDO 10	
35	O	9150-01-518-9471	Oil, Lubricating OE/HDO 10 1-qt can M2104-1-10W (81349)	QT
36	O	9150-00-186-6668	Oil, Lubricating OE/HDO 10 5-gal can M2104-3-10W (81349)	CN
37	O	9150-00-191-2772	Oil, Lubricating OE/HDO 10 55-gal drum, 18 gauge M2104-4-10W (98308)	DR
			Oil, Lubricating OE/HDO 30, (SAE 30)	
38	O	9150-01-496-1962	Oil, Lubricating OE/HDO 30, (SAE 30) Bulk M2104-2-30W (81349)	GL
39	O	9150-00-186-6681	Oil, Lubricating OE/HDO 30, (SAE 30) 1-qt can M2104-3-30W (81349)	QT
40	O	9150-00-188-9858	Oil, Lubricating OE/HDO 30, (SAE 30) 5-gal can MIL-PRF-2104 (81349)	CN
41	O	9150-01-433-7978	Oil, Lubricating OE/HDO 30, (SAE 30) 55-gal can M2104-4-30W (81349)	DR
42	O	9150-01-433-7978	Oil, Lubricating OE/HDO 30, (SAE 30) 55-gal drum, 18 gauge M2104-4-30W (81349)	DR

Table 1. Expendable and Durable Items List - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
			Oil, Lubricating OE/HDO 50	
43	O	9150-00-188-9865	Oil, Lubricating OE/HDO 50 5-gal drum BRAYC0423H (98308)	CN
			Oil, Lubricating Gear, GO 85W/140	
44	O	9150-01-035-5396	Oil, Lubricating Gear, GO 85W/140 55-gallon drum J2360 (81343)	DR
45	O	9150-01-035-5395	Oil, Lubricating Gear, GO 85W/140 5-gallon can J2360 (81343)	CN
			Oil, Lubricating, Internal Combustion Engine, Tactical Service OE/HDO 15W/40 (MIL-L-2104)	
46	O	9150-01-421-1432	Oil, Lubricating, Internal Combustion Engine, Tactical Service OE/HDO 15W/40 (MIL-L-2104) 55-gal drum, 18 gauge M2104-5-15W40 (81349)	DR
47	O	9150-01-518-9477	Oil, Lubricating, Internal Combustion Engine, Tactical Service OE/HDO 15W/40 (MIL-L-2104) 1-quart can M2104-1-15W40 (81349)	QT
48	O	9150-01-421-1427	Oil, Lubricating, Internal Combustion Engine, Tactical Service OE/HDO 15W/40 (MIL-L-2104) 24-quart box MIL-PRF-2104 (81349)	QT

Table 1. Expendable and Durable Items List - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
			Oil, Lubricating, OE/HDO 40	
49	O	9150-00-188-9862	Oil, Lubricating, OE/HDO 40 55-gal drum MIL-PRF-2104 (81349)	DR
			Rag, Wiping	
50	O	7920-00-205-1711	Rag, Wiping 50-pound bale 7920-00-205-1711 (80244)	BE
			Rope	
51	O	4020-00-968-1357	Rope, Fibrous MIL-R-17343 (81349)	RL
			Oil, Lubricating, Preventative	
52	O	9150-01-293-7696	Oil, Lubricating, Preventative 5-gal drum MIL-L-21260C (81349)	CN
53	O	9150-01-438-6079	Oil, Lubricating, Preventative 55-gallon drum J2363 (81349)	DR

END OF WORK PACKAGE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
TO: *(Forward to proponent of publication or form) (Include ZIP Code)* TACOM Life Cycle Management Command, ATTN: AMSTA-LC-LMPP/TECH PUBS, 1 Rock Island Arsenal, Rock Island, IL 61299-7630	**FROM:** *(Activity and location) (Include ZIP Code)*	

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE

ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

** Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

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PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

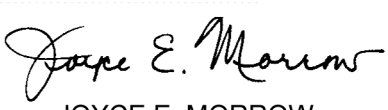
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By Order of the Secretary of the Army:

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General, United States Army
Chief of Staff

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Administrative Assistant to the
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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE
1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS
1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE
1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE
1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

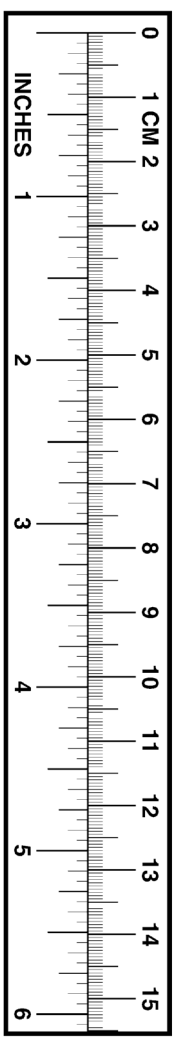
CUBIC MEASURE
1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

TEMPERATURE
5/9 (°F - 32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5 C° + 32 = F°

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds/Sq Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Sq Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Sq Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Sq Inch	0.145
Km per Liter	Miles per Gallon	2.354
Km per Hour	Miles per Hour	0.621



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